

U.S. FLAG PACIFIC ISLANDS VESSEL GROUNDING WORKSHOPS

JANUARY AND FEBRUARY 2002

WORKSHOPS PROCEEDINGS



M/V Nago, Saipan, CNMI

**National Oceanic and Atmospheric Administration
National Ocean Service
and
Pacific Basin Development Council**





U.S. FLAG PACIFIC ISLANDS VESSEL GROUNDING WORKSHOPS JANUARY AND FEBRUARY 2002

SUMMARY AND NEXT STEPS



Figure 1. *M/V Nago*, Saipan, CNMI

I. INTRODUCTION

Vessel groundings in coral reef ecosystems can cause significant habitat damage ranging from physical destruction to toxic pollution. While several federal, state, territorial, and commonwealth legal authorities address some vessel grounding impacts on coral reef ecosystems, cumulatively, these policy and funding mechanisms do not address the full scope of the problem. Gaps in the current policy and legal framework create a number of challenges for natural resource managers working to address these impacts.

The nine longline fishing vessels once grounded and abandoned in Pago Pago Harbor, American Samoa, illustrate the management complexities created by inadequate legal authorities and funding mechanisms. The process to remove the abandoned longliners took approximately 10 years. The Pago Pago Harbor experience illustrates the specific difficulties associated with the removal of grounded vessels once the threat of oil pollution has been removed – just one of the numerous vessel grounding challenges facing coral reef managers.

The experience in Pago Pago Harbor initiated a sequence of events that ultimately led to a draft resolution on grounded vessels that was put forth by the U.S. Coral Reef Task Force (U.S. CRTF) at its August 2000 meeting in American Samoa. In response to that resolution, the National Oceanic and Atmospheric Administration (NOAA) initiated the following three actions to address the issue:

1. NOAA, the Department of Justice (DOJ), and the U.S. Coast Guard (USCG), in consultation with the Pacific Island jurisdictions, formed an internal Grounded and Abandoned Vessel Working Group to review legal and financial mechanisms available for the removal of grounded and abandoned vessels from coral reef ecosystems.
2. NOAA, using funds from the coral appropriation, developed and conducted two workshops on vessel grounding issues in the U.S. Flag Pacific Islands, the summary of which is presented here.
3. NOAA, again with coral funding, is developing a database of grounded and abandoned vessels in coral reef ecosystems, and is consulting and coordinating with Pacific and Caribbean Island jurisdictions to prioritize abandoned vessels for possible joint removal.

II. GENERAL WORKSHOP SUMMARY

The NOAA Office of Ocean and Coastal Resource Management (OCRM) and the Office of Response and Restoration (OR&R), working with NOAA Ocean Service (NOS), NOAA Office of the General Counsel

(OGC), USCG, DOJ, Pacific Basin Development Council, and state and territorial partners, developed and conducted two workshops on a broad set of issues associated with vessel groundings and abandoned vessels in U.S. Flag Pacific Island coral reef ecosystems.

The workshops were held in Honolulu, Hawai`i, January 28 to 30, and Tumon, Guam, February 5 to 7, 2002. Over 90 participants representing four U.S. Flag Island jurisdictions, the Federated States of Micronesia, and five federal agencies took part in the two workshops. In response to the draft resolution of the U.S. CRTF, the workshops focused on the following four major vessel grounding topics: magnitude of the issue, legal frameworks, response and enforcement, and damage assessment and restoration.

Representatives from Hawai`i, American Samoa, the Commonwealth of the Northern Mariana Islands, and Guam each presented information on the status and magnitude of vessel grounding incidents and associated impacts in their respective jurisdictions, as well as on the legal framework under which such issues are addressed. Staff from the OR&R Damage Assessment Center, the Florida Keys National Marine Sanctuary (FKNMS), and the NOAA Office of the General Counsel also shared presentations on legal authorities, restoration, enforcement, and damage assessment. In addition, the National Park Service (NPS) discussed the Biscayne National Park Vessel Grounding Program, and representatives from the Western Pacific Regional Fishery Management Council (WPRFMC) outlined the vessel grounding management measures defined in the Draft Coral Reef Ecosystem Fishery Management Plan. The meeting in Guam featured an address by U.S. Congressman Robert Underwood of Guam.

General discussion centered on potential activities to further address and monitor the magnitude of the issues in each of the jurisdictions, including prevention measures, legal and technical assistance, and funding mechanisms. A summary of these discussions, including key considerations and priority action items, are found in the following two sections.

III. SUMMARY POINTS – KEY CONSIDERATIONS

The workshops resulted in participant identification of the following three coral reef ecosystem vessel grounding scenarios, each with a number of key considerations:

1. Existing abandoned vessels.

- State, territorial, commonwealth, and federal government agencies lack the funding and, in many cases, the specific authority to remove such vessels.
- In many cases, these vessels continue to damage coral ecosystems through crushing and scraping from storm-induced movement; breaking up and becoming lodged in reef crevices; leaving behind significant sources of iron that may create settling areas for invasive marine species; serving as dumping grounds for hazardous wastes; and entangling fish and wildlife, including endangered species, in gear and vessel components.

2. Vessels that will ground on coral reefs in the future, be cleaned of their oil, and left in situ.

- These incidents raise the issue of whether existing oil pollution authorities can allow for the removal of all vessels in this category and, if so, whether funds will be available to remove such vessels.
- Similar to existing abandoned vessels, in many cases, these vessels also continue to damage coral ecosystems through crushing and scraping from storm-induced movement; breaking up and becoming lodged in reef crevices; leaving behind significant sources of iron that may create settling areas for invasive marine species; serving as dumping grounds for hazardous wastes; and entangling fish and wildlife, including endangered species, in gear and vessel components.

3. **Vessels that will ground on coral reefs in the future but do not pose a risk of oil leakage.**
- These vessels either remain abandoned on reefs or are pulled off by salvors or other vessel operators.
 - Minimal monitoring and enforcement capabilities of the jurisdictions and little Coast Guard involvement, due to the absence of an oil pollution threat, most often means that these types of incidents go unreported. As a result, there is a lack of understanding about the magnitude and severity of this specific type of incident.
 - Jurisdictions lack the legal authority, aside from general admiralty law, to seek compensation for damages to coral reef ecosystems, vessel removal, and habitat restoration.

Other Important Summary Considerations:

1. Many vessel groundings occur as a result of typhoons or other coastal/ocean storms. As such, jurisdictions could benefit from better preparedness in the advent of storms.
2. Reported groundings in the Pacific are infrequent, averaging one to three incidents per jurisdiction per year; however, one grounding has the potential to cause significant damage to coral reef ecosystems.
3. General damage assessment and enforcement protocols would be useful tools for natural resource managers in the jurisdictions.
4. Economic values of coral reef resources need to be calculated in order to garner political support for removing vessels, augmenting assessment programs, and instituting legislative changes.
5. Jurisdictions generally lack the specific legislation/authority to address groundings; however, the underlying legislative framework varies from island to island. For example, Hawai'i has possible legislative avenues, while American Samoa has no related legislation.
6. Jurisdictions generally lack the financial resources required to take legal action against potentially responsible parties in situations that do not involve potential oil threats.
7. Many grounding incidents involve fishing vessels that lacked financial resources to pay for insurance to cover removal costs and, if necessary, environmental restoration. Oftentimes these vessels are so badly damaged from grounding that they are simply abandoned by their owners/operators.
8. Prevention activities, which have not yet been thoroughly explored to date, are an opportunity to minimize vessel grounding impacts.
9. Habitat damages and costs associated with vessel removal generally increase the longer the vessel remains in the ecosystem. For example, increased removal costs can result from illegal dumping in abandoned vessel hulks and increased difficulty in removing decaying vessel structures; and habitat damages can intensify as a result of iron enrichment and vessel incorporation into the reef structure.



Figure 2. Abandoned Vessel Removal, Guam

IV. SUMMARY POINTS – PRIORITY ACTION ITEMS

The priority action items from both workshops have been categorized based upon the vessel grounding scenario(s) addressed: 1) existing abandoned vessels, 2) vessels that will ground on coral reefs in the future, be cleaned of their oil, and left in situ, and 3) vessels that will ground on coral reefs in the future but do not pose a risk of oil leakage. To simplify the organization of this section, scenarios 2 and 3 have been combined into one category as both describe future vessel grounding impacts. Action items are further broken down under each scenario by national and island activities.

1. Existing abandoned vessels.

a. National Activities – federal agencies working with Island jurisdictions

- NOAA and USCG will work with Island governments to complete, ground truth, and verify the abandoned vessel database of historical groundings and develop a system for inputting future grounding information into the database.
- NOAA and USCG will work with Island governments to identify high-priority existing vessels for removal.
- DOJ and NOAA will work with Island governments to assess the feasibility of utilizing federal authorities and statutes to remove existing abandoned vessels by consulting with the “Federal Law Legal Flowchart.” (See C- Scannell - Authorities Flowchart)
- NOAA and USCG will work with Island governments to develop vessel removal plans, and seek out technical and financial resources to ultimately remove high-priority vessels.
- DOJ and NOAA will seek out opportunities or respond to requests to augment legal assistance to Island jurisdictions by developing communication networks or, if viable, through inter-personnel agreements or similar two-year contracts.
- Federal agencies will work with U.S. Flag Caribbean Islands to understand and document the scope and magnitude of issues in those islands.

b. Island Activities

All Islands

- Island governments will better document the scope and magnitude of impacts of new and existing vessel groundings and will share those findings with NOAA.
- Island governments, with assistance from NOAA and DOJ, will each develop a “Jurisdictional Law Legal Flowchart” to determine if existing abandoned vessels can be removed under current jurisdictional regulations. Local agencies will subsequently define legislative gaps in the current flowchart.
- Island governments will work with NOAA and USCG to identify high-priority existing vessels for removal, develop removal plans, and seek out resources to ultimately remove these vessels.

2. Vessels that will ground on coral reefs in the future, and either do not pose a risk of oil pollution or will be abated of their oil and left in situ.

a. National Activities – federal agencies working with Island jurisdictions

- NOAA and USCG will work with Island governments to identify and develop specific vessel-grounding training needs (e.g., damage assessment training) and include the topics in U.S. CRTF agency training agendas.
- NOAA and USCG will work with Island governments to complete, ground truth, and verify the abandoned vessel database of historical groundings and develop a system for inputting future grounding information into the database.
- USCG and NOAA will work with Island jurisdictions to ensure that proper contact names

and information are included in U.S. Coast Guard Area Contingency and Regional Response Plans.

- USCG and NOAA will provide Island government agency representatives with opportunities to participate in incident command training.
- DOJ and NOAA will seek out opportunities for providing legal assistance to Island jurisdictions by developing communication networks or, if viable, through inter-personnel agreements or similar two-year contracts.
- USCG and NOAA will provide assistance to jurisdictions to better mark reef channels and establish vessel moorings.
- NOAA and USCG will work with Island governments to explore vessel grounding prevention technologies, funding sources, and protocols to implement measures within local waters.
- NOAA and DOJ will work with jurisdictions during new incidents to attempt to get vessels removed under any applicable federal statute or admiralty law.
- USCG and Island governments will seek out opportunities for cooperation with salvors to encourage the notification of appropriate local agency officials when new groundings occur.
- NOAA and Island governments will convene a workshop to determine priority coral reef economic valuation needs in order to 1) demonstrate the significance of services provided by coral reefs, and 2) use in seeking compensation for vessel-grounding natural resource damages.
- Federal agencies will work with U.S. Flag Caribbean Islands to understand the scope and magnitude of issues in those islands.

b. Island Activities

All Islands

- Island governments will work with NOAA and USCG to complete, ground truth, and verify the abandoned vessel database of historical groundings and develop a system for inputting future grounding information into the database.



Figure 3. *F/V Paradise Queen II*, Kure Atoll, Hawaii

- Island governments will work to ensure better documentation of the scope and magnitude of impacts of new and existing vessel groundings.
- Island governments will work with USCG and NOAA to ensure that proper contact names and information are included in U.S. Coast Guard Area Contingency and Regional Response Plans.
- Island officials will explore the feasibility of changing local regulations and introducing a corals “no harm” clause into local legislation.
- Island governments will work with NOAA and USCG to explore new and existing vessel-grounding prevention technologies

and protocols to implement within local waters before 1) ships get grounded on reefs, and 2) abandoned moored vessels become grounded due to storm events.

- USCG and Island governments will seek out opportunities for cooperation with salvors to encourage the notification of appropriate local agency officials when new groundings occur.
- NOAA and Island governments will convene a workshop to determine high-priority coral reef economic valuation needs in order to 1) demonstrate the significance of services provided by coral reefs, and 2) use in seeking compensation for vessel-grounding natural resource damages.

- Island governments will work to develop an inter-island network of identified agencies within each jurisdiction to take the lead for enforcing the law and following through in the aftermath of a grounding incident.
- The State of Hawai`i and the Universities of Hawai`i and Guam will complete the coral reef economic valuation studies currently under way and share those results with federal agencies and other Island jurisdictions.
- Island governments will work with NOAA and USCG to identify and develop specific vessel-grounding training needs (e.g., damage assessment training) and include the topics in U.S. CRTF agency training agendas.

American Samoa

- American Samoa government will assess the feasibility of developing a memorandum of understanding (MOU) between various agencies (territory, NPS, Fagatelle Bay National Marine Sanctuary, etc.) for improving vessel grounding response-related activities, including enforcement and prosecution to remove vessels and/or recover damages.

Commonwealth of the Northern Mariana Islands (CNMI)

- The CNMI interagency group on vessel grounding will clarify agency roles and responsibilities with respect to prevention and management of vessel groundings.
- The CNMI and Guam will work to establish an MOU between the two jurisdictions and federal agencies responsible for responding to vessel groundings so that the knowledge of trained experts can be shared between the islands. Most of the experts are employed by the government agencies of these two islands.
- The CNMI interagency group on vessel grounding will develop a CNMI Vessel Grounding Action Plan for the prevention and management of future vessel grounding incidents.
 - Potential prevention measures may include, but are not limited to, typhoon contingency planning, improving aids to navigation, and reviewing regulations.
 - Future management actions may include, but are not limited to, conducting a marine resource valuation assessment, identifying an agency to take the lead on implementing preventative actions, and developing local authorities to address vessel grounding incidents.

Guam

- Guam and USCG will seek to better mark the jetties and the channels in the waters of Guam and establish corridors, including offshore banks.
- Guam and CNMI will work to establish an MOU between the two jurisdictions and federal agencies responsible for responding to vessel groundings so that the knowledge of trained experts can be shared between the islands. Most of the experts are employed by the government agencies of these two islands.
- The Universities of Guam and Hawai`i and the State of Hawai`i will complete coral reef economic valuation studies, currently under way, and share those results with federal agencies and other Island jurisdictions.

Hawai`i

- The State of Hawai`i and federal agencies with responsibility in the Northwestern Hawaiian Islands (NWHI) need to examine the need for actions to address groundings in that ecosystem.
- Hawai`i Department of Land and Natural Resources (DLNR) representatives will coordinate a group of expert biologists to be included as contacts in the U.S. Coast Guard Aea Contingency Plan.
- Hawai`i DLNR and the University of Hawai`i will look at the feasibility of developing an

MOU between various agencies, DLNR, and the University of Hawai'i for response-related activities and damage assessments.

- The State of Hawai'i and the Universities of Hawai'i and Guam will complete coral reef economic valuation studies, currently under way, and share those results with federal agencies and other Island jurisdictions.

V. RESPONSE TO THE GROUNDED VESSEL REMOVAL RESOLUTION PUT FORTH BY THE U.S. CORAL REEF TASK FORCE IN AUGUST 2000

The U.S. CRTF Draft Resolution on Grounded Vessel Removal highlighted the inability of federal, state, territorial, and commonwealth authorities to comprehensively address grounded and abandoned vessel issues and stated the need to further assess this situation:

- Vessel groundings on coral reefs can cause extensive environmental degradation from the spilling of oil to the grinding and scarring of coral reef habitat; and
- The current Oil Pollution Act of 1990 (OPA '90) sets up a response for oil and hazardous material removal but does not fund the removal of the vessel from the reef; and
- Studies have shown that leaving the wreck on the reef has the potential to cause further degradation of the reef ecosystem; and
- It has been difficult to collect money from the vessel owners to assist in the wreck removal, therefore vessels are left to break apart and scatter wreckage across the reef; and
- The recent cooperative efforts between the Federal agencies and the states and territories to deal with vessel removals in American Samoa and Hawai'i has set an important precedent for dealing with future groundings.

The resolution also called upon U.S. CRTF agencies to thoroughly explore the broad set of vessel grounding issues, and give specific consideration to the four potential management actions listed below. A summary response to each proposed action based on workshop discussions is also provided.

1. Require a bond for fishing vessels entering U.S. territorial waters for the purposes of conducting business at U.S. ports adjacent to coral reefs, as appropriate.

Feasibility – Legislative, Fiscal, and Practical Issues

- Federal legislation that only targets fishing vessels transiting near coral reefs may be unconstitutional.
- If pursued, this action would have to be raised as a priority by U.S. CRTF member agencies and Island jurisdictions, and would require new federal legislation.
- There is a need to document the severity of the problem, and then conduct a comprehensive analysis to determine feasibility, availability of bonds, cost, economic impact, and perverse incentives.
- This action may apply to vessels that are only a part of the problem, i.e., larger vessels that are normally required to be bonded represent infrequent grounding incidents, while smaller vessels, which may ground more frequently, would unlikely be able to afford the bond costs.
- Salvage insurance does not always guarantee removal, and thus new and additional liability provisions would also be needed.
- A bonding requirement only for fishing vessels will not insure against all potential groundings.

Possible Mechanisms and Activities

- Jurisdictions could require local port/harbor agents to carry larger securities/bonds for their vessels in order to address possible damages from coral reef groundings.
- If such a requirement were constitutional, a bonding requirement could be tied to fishing permits.

2. Make recommendations for additional legislation and funding mechanism in addition to the Oil Pollution Act.

Feasibility – Legislative, Fiscal, and Practical Issues

- Legislation is probably not a politically feasible alternative at this point in time if it involves new liability or a new federal funding requirement. A case for new legislation needs to be well substantiated, and Island jurisdictions and federal agencies need to work together to determine the severity of the vessel grounding problem in all U.S. waters.
- There is a potential for this action to cause a conflict between states' rights and federal legislation governing reefs in state/territorial waters.
- Assessment of existing federal authorities does contribute to the case that there is a gap in existing authorities. Future legislative alternatives would need to be thoroughly structured based on the gaps found.
- Legislative changes might be possible at the local level, but would be unfunded. This action would require directed, continuous federal funding.
- Funding to support emergency response infrastructure would need to be a component.
- New regulations would require incentives to guarantee federal and local cooperation.
- Potential funding solutions need to avoid taking funds from other high-priority coral reef appropriations.



Figure 4. Longliners abandoned on coral reefs in Pago Pago Harbor, American Samoa, after Hurricane Val

Possible Mechanisms and Activities

- Informal options between trustee partners could be created (e.g., MOUs for responding to groundings, agreed-upon protocols or guidances, etc.).
- Make amendments to existing Natural Resource Damage Assessment (NRDA) and OPA '90 requirements, e.g., lower vessel size for insurance (requires amending OPA '90) and augment NRDA to include non-oil damages, such as response-caused damages, damages indivisible between grounding and response, and damages caused by the decision to remove oil but leave the vessel.
- The Coral Executive Order asks federal agencies to protect coral reef ecosystems to the maximum extent possible under their authorities. One possible mechanism for improvement to existing regulations may be to see how U.S. CRTF agencies can expand their interpretation of existing laws under their authority, pursuant to the Coral Executive Order.
- Add a funding mechanism and change tonnage requirements under the Abandoned Barge Act.
- Add new coral protected areas to the National Marine Sanctuary System.

3. Establish a national legislation for coral reef damage assessment, including cultural losses, to serve as a guideline for both penalties and restoration costs.

Feasibility – Legislative, Fiscal, and Practical Issues

- Legislation is probably not a politically feasible alternative – NRDA is highly controversial.
- OPA '90-based NRDA protocols already exist, and coral-specific injury assessment protocols are used in the Florida Keys National Marine Sanctuary and have been applied to Puerto Rico groundings.

Possible Mechanisms and Activities

- Develop comprehensive economic valuations of coral reef ecosystem resources in each jurisdiction to quantify socioeconomic considerations.
- Develop, adapt, and/or transfer existing protocols as described above.
- Allow for local decision making/flexibility in the allocation of restoration monies (e.g., allow for restoration funds to be used to restore coral reef ecosystem habitats other than submerged coral reef structures).

4. Develop federal assistance protocols to augment the ability of islands to initiate rapid response for vessel damage assessment and removal, including training and prearranged access to Departments of Interior, Commerce, Transportation, and Defense assistance in the event of immediate and critical environmental damage.

Feasibility – Legislative, Fiscal, and Practical Issues

- Response to this action does not require significant political support.
- Work can be accomplished through existing area committees.
- Existing sources of funds can be used to develop projects and provide training.

Possible Mechanisms and Activities

- Utilize state experts to complete vessel grounding database.
- Update the U.S Coast Guard Area Contingency Plans in the Pacific jurisdictions.
- Increase prevention education, outreach, and/or warning systems – reef markers, Raycon beacons, etc.
- Develop networks and/or Memorandums of Understanding (MOUs) for response.

VI. CONCLUSION

Vessel groundings pose serious threats to coral reef ecosystems in the U.S.-affiliated Pacific Islands and other U.S. states, territories, and commonwealths; however, the severity of the problem is not well defined. The Oil Pollution and Clean Water Acts provide the resources needed to respond to the vast majority of vessel groundings that involve the threat of an oil spill or hazardous materials release. The most significant gap in authority for vessel removal occurs once the threat of an oil spill has been removed and the vessel is left grounded. The severity of the remaining threat still needs to be better defined, and NOAA, USCG, and Island governments are committed to documenting that threat.

There are clearly ways in which the existing response networks can be improved. Island jurisdictions working with USCG have agreed to work on making improvements through area committees. These improvements include ensuring that local expertise, particularly biological expertise, is included early in a response and that maximum use of response resources authorized under OPA '90 is made.

There is clear interest at the state, territorial, and commonwealth level to make better use of existing law and regulations to respond to vessel groundings that cause damage and are not covered under OPA '90. Similarly, there may be opportunities at the local level to develop new or amended legislation to provide appropriate authority. Many of those opportunities were discussed in the workshops and mentioned herein. There is also an opportunity for additional federal legal assistance and technical capacity building.

The efforts reported here can serve as first steps in improving the state, territorial, commonwealth, and federal response to grounded vessels. Further effort is clearly needed, and it is hoped that the action items identified in this report will facilitate that additional work.

VII. ACKNOWLEDGMENTS

The U.S. Flag Pacific Islands Vessel Grounding Workshops could not have achieved the success that they did without the support and participation of NOAA's Island and federal partners. Particular thanks go to the Hawai'i Division of Aquatic Resources; the American Samoa Department of Commerce; the CNMI Coastal Resources Management Office; the Guam Department of Aquatic and Wildlife Resources; the Hawai'i Department of Health; the Hawai'i Office of the Attorney General; the American Samoa Attorney General's Office; the CNMI Attorney General's Office; the Western Pacific Regional Fishery Management Council; the National Park Service; and the U.S. Coast Guard Hawai'i and Guam for their valuable contributions.

In addition, the efforts of Dr. Mike Hamnett of the University of Hawai'i, Doug Helton of the NOS Office of Response and Restoration, Pat (Nihi) Kauhane of the Pacific Basin Development Council, Cheryl Scannell of NOAA's Office of the General Council, Bob Currul of the FKNMS/Florida Fish and Wildlife Commission, and Lauri MacLaughlin of the FKNMS were instrumental in this accomplishment.

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This document was prepared by Ellen Sorensen of NOAA's Office of Response and Restoration, and Jonathan Kelsey of NOAA's Office of Ocean and Coastal Resource Management.



U.S Pacific Islands Vessel Grounding Workshops Hawaii and American Samoa

January 28-30, 2002
Pacific Beach Hotel
2490 Kalakaua Avenue
Honolulu, Hawai'i
808-922-1233

Agenda

JANUARY 28 - LEGAL ISSUES

8:00-8:30 Registration

8:30-9:00 Opening and Welcoming Remarks

9:00-9:30 Workshop Overview- Objectives and Expected Outcomes:

Objectives: Increase the capacity of the Island governments and Federal agencies to respond to vessel groundings and minimize the damage to coral reef ecosystems; as well as to identify gaps in federal and local laws and response capacity that inhibit an effective response to groundings.

Outcomes: a) Increase understanding of the biological, technical, and legal options currently available for the prevention of, response to, and restoration following ship groundings in the U.S. Islands; b) and identify technical and legal gaps in the Federal and Islands' capabilities for addressing these problems and develop strategies to meet needs.

9:30-10:30 Ship Groundings in the Pacific Islands- Hawaii and American Samoa Case Studies & Island Reports:

Francis Oishi, Chief, Hawaii Division of Aquatic Resources

Lelei Peau, Deputy Director, American Samoa Department of Commerce

- 1) Past Incidents and Experiences
 - a) Scope of the Problem in the Jurisdiction
 - b) Frequency of incidents
 - c) Types of incidents
 - i. Causes
 - ii. Scale of incident
 - iii. Status/response – removal, assessment, restoration, prosecution
 - iv. Measures that could have prevented the grounding
 - d) Existing management capacity – staff and infrastructure
 - e) Existing coordination of efforts/funding – state/territorial/federal/regional
- 2) Specific needs identified from jurisdiction experiences
 - a) Technical
 - b) Funding
 - c) Introduction to legal needs

10:30-10:45 Coffee and Tea Break

10:45-12:00 Local Laws and Vessel Groundings- Hawaii and American Samoa Presentations:
Kathy Ho, Deputy Attorney General, Hawaii Office of the Attorney General
Martin McCarthy, Assistant Attorney General, American Samoa Office of Legal Affairs

- 1) Local laws and existing legal frameworks - how they do/don't apply for:
 - a) Removal of vessel or ordering vessel removal;
 - b) Funding of/or recovery of cost of vessel removal;
 - c) Liability for environmental harm;
- 2) Options for tinkering with existing statutes or new legislation; and
- 3) Legal and technical assistance needs for local legislation.

12:00-1:30 Lunch

1:30-1:45 Vessel Groundings, Oil Spills, and Mitigation measures- The Western Pacific Fishery Management Council Fishery Management Plan for Coral Ecosystems in the Western Pacific: Kevin Kelly

1:45-3:15 Federal Law and Vessel Groundings: Cheryl Scannell, NOAA, Office of General Counsel

- 1) Federal Admiralty Law - why it's important, what the important general rules are;
- 2) Federal Statutory Law and how it does/doesn't allow for:
 - a) Removal of vessels or ordering vessel removal;
 - b) Funding of/or recovery of costs of vessel removal;
 - c) Liability for environmental harm;
- 3) Ways to amend existing statutes to achieve all/some of our goals;
- 4) Feedback from participants on needs, objectives of their constituents.

3:15-3:30 Coffee Break

3:30-4:00 How Other States/Territories Handle Vessel Groundings: Cheryl Scannell, NOAA, Office of General Counsel

4:00-5:00 Introduction to legal changes that might be possible at the federal level and at the local level: Advantages and disadvantages of either or both

5:00-5:15 Wrap Up

5:30-7:00 Social Gathering- Location TBA

JANUARY 29 - PRACTICAL LESSONS

8:30-9:30 Overview of Current Coast Guard Protocol for Vessel Grounding Response and Discussion: Captain Paula Carroll & Captain Terry Rice, U.S. Coast Guard Hawai'i

- 1) Protocols under the Oil Pollution Act (OPA) of 1990
- 2) How OPA '90 falls short of coral reef protection needs
- 3) Gaps in authority and resources authorized under OPA '90

9:30-10:45 Lessons from Florida Keys National Marine Sanctuary Vessel Grounding Response and Enforcement: Bob Currul, Florida Fish & Wildlife Commission/FKNMS

Response and Enforcement Issues;

- 1) Notification procedures;
- 2) Boarding authorities under the National Marine Sanctuary Protection Act (NMSPA) and State of Florida;
- 3) Investigation and case preparation for large vessel groundings on coral;
- 4) Investigation and case preparation for small (under ship size) groundings on coral; and
- 5) Prevention measures: Public Outreach and Education

10:45-11:00 Coffee Break

11:00-12:15 Possible Lessons from Natural Resource Damage Assessment (NRDA) and Damage Assessments in the Pacific Islands- Discussion: Doug Helton, NOAA, National Ocean Service (NOS), Office of Response and Restoration (OR&R), Damage Assessment Center (DAC)

- 1) Damage Assessment Methods
- 2) Resources Required
- 3) Documentation Requirements
- 4) Sampling Priorities
- 5) Sources of Financial Support

12:15-1:30 Lunch

1:30-3:00 Vessel Grounding Injury Assessment- Methods from the Florida Keys National Marine Sanctuary (FKNMS): Laurie MacLaughlin, NOAA, NOS, FKNMS

3:00-3:15 Coffee Break

3:15-5:00 Assess, Respond, Restore, and Recompense for Environmental Damage- Developing Standardized Protocol: Discussion

5:30-7:00 Social Gathering: Location TBD

JANUARY 30 - LOOKING TO THE FUTURE

8:30-10:30 Elements of a Protocol for Dealing with Vessel Groundings in the Pacific Islands

- 1) Activating a response
- 2) Situation assessment
 - a) OPA '90 Response
 - b) Non-OPA '90 Response
- 3) Need to remove vessel immediately
- 4) Notification procedures and investigation
- 5) Environmental damage assessment
- 6) Vessel removal
- 7) Vessel disposal
- 8) Environmental restoration
- 9) Environmental monitoring

10:30-10:45 Coffee Break

- 10:45-12:00** **Potential changes in legal authority and technical and financial capacity to effectively address vessel grounding in the US affiliated Pacific Islands**
- 1) Authority to take legal action against responsible party for vessel removal, environmental assessment, environmental restoration, and environmental monitoring.
 - 2) Funding for vessel removal when a responsible party cannot be found or is unable to pay.
 - 3) Federal assets that can be mobilized to supplement state, territorial, and commonwealth assets in vessel grounding response and environmental restoration.
- 12:00-1:30** **Lunch**
- 1:30-3:00** **Legislative strategies to meet needs for vessel grounding response and environmental restoration**
- 3:00-3:15** **Coffee Break**
- 3:15-4:30** **Final Wrap Up – Summarizing Workshop Follow-up Action Items**



Longliner grounded in Pago Pago Harbor, American Samoa

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Proceedings

JANUARY 28 - LEGAL ISSUES

WORKSHOP OVERVIEW- OBJECTIVES AND EXPECTED OUTCOMES

OBJECTIVES

MIKE HAMNETT, PACIFIC BASIN DEVELOPMENT COUNCIL (PBDC)

- Increase the capacity of the Island governments and Federal agencies to respond to vessel groundings and minimize the damage to coral reef ecosystems as well as to identify gaps in federal and local laws and response capacity that inhibit an effective response to groundings.
- Workshops like this one was a recommendation of the All Islands Plan.
- Assess the capacity of the federal, state, territorial, and commonwealth governments to handle vessel groundings and reduce the harm to coral reef ecosystems.
- Identify the gaps in legal authorities.
- In order to make changes to the current structure, we are going to have to make a good case locally and federally.
- During the next few days we need to better understand if a need for change exists and how to go about making such changes.
- What do we need on the books that will help to protect beyond OPA '90? Should we try to make a change through local legislature? Do we let the federal government take a shot at it? Is it even possible for the federal government to better extend a legal arm to address this issue?

OUTCOMES

JONATHAN KELSEY, NOAA, NATIONAL OCEAN SERVICE, OFFICE OF COASTAL RESOURCES MANAGEMENT (OCRM)

- Increase understanding of the biological, technical, and legal options currently available for the prevention of, response to, and restoration following ship groundings in the U.S. Islands; and identify technical and legal gaps in the Federal and Islands' capabilities for addressing these problems and develop strategies to meet needs.
- Bring folks from all agencies, that deal with vessel groundings, together to talk about experiences and share experiences to see where things in one area have worked and how we can adapt these successes elsewhere.
- This is an interactive workshop where we hope to build relationships among these jurisdictions and join together to address these issues.

VESSEL GROUNDINGS IN THE PACIFIC ISLANDS- HAWAII AND AMERICAN SAMOA CASE STUDIES & ISLAND REPORTS

HAWAII

FRANCIS OISHI, CHIEF, HAWAII DIVISION OF AQUATIC RESOURCES

Overview:

- It is estimated that 3-5 vessel groundings occur each year with a maximum of 10. This is much smaller compared to approximately 500 groundings in Florida.
- These numbers may not be reflective of all groundings that occur as not all are reported.
- In 1994 there were 3 significant groundings.
- Smaller vessels usually do not cause significant damage. Boats usually break up before removal can occur.
- Medium scale vessel groundings such as that of commercial fishing vessels are common in HI. Bulldozer effects can be significant as vessels bump along the reef structure leaving significant scars. Oil effects have not been documented to be significant.
- The vessel grounding of Swordman I cost about \$1.5 million to cleanup.
- Paradise Queen II- lobster fishing boat/longliner- ran aground on fringing reef on Kure Atoll in NWHI. Wreck removal was not plausible. This wreck was left exposed and in a year's time was broken up.
- 1989 Exxon Houston- 3,300 gallons of crude oil spilled. Removed vessel from the reef and it sold for scrap removal.
- Overall incident report for HI:
 - Generally wrecks are removed and in a few cases they are not.
 - Generally biological assessments are conducted.
 - No attempts to carry out restoration as a result of groundings.
 - There are no cases of owners being prosecuted for damaging coral reefs via a vessel grounding.

Capacity:

- Coast Guard, State Agencies, Private Industry.
- Wreck removal monies are provided by the vessel's insurance, in other incidents the National Pollution Funds such as in the case of the Swordman I.

Needs:

- Legal authority.
- Legal mandate to effect resource restoration.
- Financial ability to effect vessel removal.
- Standard techniques, investigation techniques, damage assessment, and legal prosecution.
- Need a comprehensive database.
- Preventative measures to remove abandoned moored vessels before they become an issue.

Priority removal list:

- High visibility: Paradise Queen II and Van Loi
- Feasibility: Sailboats off the coast of Maui

Q. In reading the Hawaii statutes, it seemed they were pretty strict. In your opinion, why isn't the statute strong enough to allow for the removal of wrecks?

A. The statute states that the wreck needs to be removed, but there are no funds and no preventative clause penalizing the owner.

Q. In your opinion do you think that poor aids to navigation contribute to vessel groundings?

A. Would be best to ask the Coast Guard. Don't think that aids to navigation are an issue. The Coast Guard replied that mostly autopilot and weather issues cause vessel groundings.

Q. In what percent of cases is OPA '90 triggered? Where isn't OPA '90 going to take care of these cases?

A. If there is no oil spilled, or no threat of oil being spilled then there is no potential to trigger OPA '90.

Q. Has there been an increase in groundings over the years? Is there a potential for increased groundings due to cruise ships?

A. Potential concern about the cruise line but not an imminent threat. 1) There were 2 cruise lines here for 20 years and no reports of any vessel groundings. 2) Norwegian recently arrived. They stated that they would not be using shallow water ports, only deep-water ports, which make groundings less of a probability. Other cruise lines coming in after Norwegian will probably follow suit. The number of long liners operating has gone down to 85. Fish and Wildlife Service believes that there will be an increased potential in the NWHI for vessel groundings.

Q. What do you do with the removed vessels?

A. Most are scuttled.

Q. Is the public interested in these cases?

A. High profile cases get press and media interest because of concern for Hawaiian monk seals and seabirds.

Q. How many unreported groundings do you think there are per year?

A. Not sure what this number may be. Perhaps best to ask private salvors.

Q. Why hasn't any restoration been done?

A. There is no specific statute stating that reefs should be restored. There is also no funding source for restoring reefs. If the owner has funds it barely covers the removal of the vessel.

Q. If restoration would be done, what kind would be appropriate in Hawaii?

A. Not sure, this is a big question. At times will do marine debris cleanup as a method to restore the reefs.

Q. Sometimes there does not have to be an authority to do restoration. At times a settlement will include restoration. Do you have any idea why there have not been any prosecutions?

A. This has to do with money and staff time. We do not have sufficient expertise to determine a dollar value for the damage that really is done. This has been a big hindrance in prosecuting these cases.

Q. What type of damage is done to reefs?

A. There are two substrates 1) limestone 2) compacted limestone since it has been exposed for years. Won't see the crushing effect because the substrate is so hard.

AMERICAN SAMOA

LELEI PEAU, DEPUTY DIRECTOR, AMERICAN SAMOA DEPT OF COMMERCE

- Periodic vessel groundings are approximately 3 groundings per 10 years. There are a small percentage of unreported incidents.

Pago Pago Harbor Vessel Groundings:

- 9 long-liners. Ran aground in Pago Pago Harbor due to Hurricane Val in 1991.
- No responsible parties could be located.
- \$6.9 million of "Fund" monies were used to remove the vessels.
- USCG removed oil and then declared that the long liners were not a navigation harm.
- 1992-1998 many agencies were asked for assistance. FEMA, ACOE, DOI, USEPA, DOC.
- Private assistance was offered, but this did not come to fruition.
- 1998, USCG discovered un-removed pollutants and committed to removing the pollutants.
- American Samoa requested assistance through the CRTF...NOAA, DOI, and American Samoa government as trustees applied for funding under OPA 90.
- 1998- NRDA and action plan was completed.
- 1999- causeways were constructed to get the equipment to the vessels.
- 2 vessels partly cut up and removed. See presentation.

Lessons learned:

- No local mandate for vessel grounding
- Limited federal authorities for oil/pollutants
- Local EPA does not have a mandate for removing grounded vessels
- No local infrastructure to respond to this type of situation

Existing coordination:

- Regional Response Team is located in Hawaii and response time is long.
- It would be beneficial to have a joint federal/American Samoa contractor on hand to help with consistency, costs, and efficiency in the case of a spill.

Needs:

Technical

- Assessment of value of coral reefs.
- Process for knowing whom to call when groundings occur.
- See presentation.

Financial

- Local/regional contingency fund may need to be established.
- Some way to track liability.
- Better access to OPA funding.

Legal

- Legislative solutions at both local and federal levels
- Process to identify responsible agencies

Priority vessels for removal:

- USS Chehalis, Navy Tanker sank in 1948
- Jui Man 3, longliner on reef since 1981

Local initiatives:

- Insure that American Samoa is better prepared to safeguard our interests against future groundings.
- Prevent unattended abandoned vessels in port by requiring vessels that enter to provide proof of financial responsibility to port officials.
- Proposed legislation.
- Community program and village cooperation strategies.

Q. Can you please describe the status of the Rose Atoll incident?

A. 100,000 gallons of fuel on board. This case is pending in front of Oil Spill Trust Fund. This has been a slow process. Debris has been cleaned up periodically. This is a National Wildlife Refuge. The cleanup has been done, but the money has not yet been released on this.

Q. Can you explain the restoration that has been done in Pago Pago?

A. Hard to tell yet how successful this has been. Much debate regarding to restore or not to restore. Some of the coral translation has not been successful.

Comments:

- Bigger question- what is an appropriate level to which a clean up happens? Also shows that monitoring has to occur in the aftermath of a spill response/removal.
- If one type of restoration is not capable of being done in the damaged area, then compensatory restoration can be conducted.
- Different environmental regimes. Wave action in the Pacific will play a large role in the success of restoration. We can control terrestrial inputs but not wave action.

Q. In the case of the longliners, doesn't the creation of the causeway cause additional damage to the reefs?

A. The local biologists did not support the causeway. The USCG came 3 times to remove the oil from these vessels and could not yet get it all. The Trustees needed to compromise in order to expedite cleanup.

Q. Wouldn't it have been better to remove the vessels initially?

A. Yes, it would have been better. They would probably have remained whole, not been broken into pieces and moved around through the years.

Comments:

- By leaving the remains of vessels, cyanobacteria modified algae can occur in these ecosystems. Large patches of this occurring in NWHI.
- The damage from the debris floating away from the vessel during those ten years could be very detrimental to the health of the reef.
- There are a lot of other materials on these vessels that are not removed under OPA '90. Sewage, refrigerants, polypropylene lines. Many concerns about non-oil spill impacts.

Q. Other than the impacts from vessels coming into the canneries, are there other recreational types of vessel groundings?

A. We don't have a database or tracking system of what they are

Q. Why isn't FEMA coming to the table to assist?

A. Need to look at the FEMA authorities. Typically it is very difficult to access these funds.

Comments:

- HI DLNR received funds from FEMA, but not sure under what authorities.
- Florida may have gotten funding from FEMA to get debris removed from canals.
- FEMA is triggered when the President declares an area a disaster area. Perhaps this definition needs to be broadened to cover coral reefs.
- FEMA regulations are very specific.
- Is there any way to broaden this by including the coral reef bed as part of the definition of a watershed?
- If looking to write new regulations/authorities, then perhaps should consider bringing FEMA to the table.

LOCAL LAWS AND VESSEL GROUNDINGS- HAWAII AND AMERICAN SAMOA PRESENTATIONS

HAWAII

KATHY HO, DEPUTY ATTORNEY GENERAL, HAWAII OFFICE OF THE ATTORNEY GENERAL

- Hawaii has a revolving fund of \$5 million, however this fund is not specific to vessel groundings.
- The fund is from the 5 cents an oil barrel tax. For this to be triggered, need to have an oil spill.
- Hawaii tends to rely on the federal government and partners with them to maximize funds and expertise in the case of a spill.
- Shortfalls include no money, no resources, and no expertise. Without federal counterparts Hawaii would not be able to get much done.
- State leads for OPA '90 are the Department of Land and Natural Resources and the Department of Health. For CERCLA the Department of Health has the lead.
- Fishing vessels are the most common type of grounding.

Q. What are the penalties for not removing a vessel?

A. Civil penalty with a maximum fine of \$10,000. These monies go to the general fund.

Q. Is there a regulation that a vessel must have \$100,000 of insurance?

A. Department of Health does not have such a rule.

Q. Can the reefs be considered State property?

A. Perhaps, but the State does not have an economist to translate the damage to dollars.

Q. Under response law, can you recover the cost of assessment?

A. Yes, the monies go back to the revolving fund. Need to expend the money to make the money back. There is not a separate account from which to pay for the prosecution. Thus, this can be problematic.

Q. Can you bring an admiralty claim against the boat owner?

A. Sometimes, but it takes being aggressive. These cases are not necessarily small cases. When the economic figures (from HCRI study) come in, it will show that any vessel grounding has a potential for a high price tag.

Comments:

- Fishing industry margins are so small and the money is just not there for them to remove vessel when grounded.

- The funds that the Department of Boating and Recreation receive do not go toward environmental restoration or mitigation.
- We need to be creative in working together to remove the nets, etc if the vessel can't be removed.
- Because property law is State specific, it is necessary for the State to determine the loss, not the Federal government.
- The State calls on the federal government experts to see if there is some loss.
- Hawaii Coral Reef Initiative (HCRI) is working on a valuation of coral reefs in Hawaii.
- There could be some type of IPA set up to allow for the federal government to bring their expertise to the states.
- This may not be a legal issue, the issue seems to be money, need money to remove the wreck, money to prosecute, money to do an assessment.
- Boat owners are not being held liable for the damage they do to the trust resources. Is there some way to go after these people? Take a page from the book of Florida.
- The recovery rate for coral in the NWHI is slow thus there needs to be some way to charge for damage to these precious resources.
- We need to look into establishing a fund for wreck removal when all else fails. But also think that there is a need for establishing a law, a very specific law to allow for the removal of derelict vessels. Using the Hawaii statute 128D is still a bit of a stretch.
- In a settlement context can do some creative issues i.e., compensatory damage. To do this, you need to bring a case.
- DOJ does not have its own cases. DOJ gets cases from the agencies. Need to work together. The state needs to talk to the federal agencies then can work with DOJ.

AMERICAN SAMOA

MARTIN MCCARTHY, ASSISTANT ATTORNEY GENERAL, AMERICAN SAMOA OFFICE OF LEGAL AFFAIRS

- No money, no laws, no personnel that would allow the territory to remove vessels.
- The only law on the book is regarding oil discharge or chemical discharge.
- There is no specific law on the books about removing a vessel.
- There is probably a couple hundred thousand dollars in their fund.

Pollution Response Fund:

- Administered by EPA of American Samoa.
- Limited in effectiveness in regards to vessel groundings. No clear means to remove vessels under this law.
- Hard to expand the definition of a pollutant to a grounded vessel.
- There is no history, no precedent, and no prosecution that has occurred.

Summary:

- Have considered the need for liability for vessel owners.
- The canneries are foreign owned, have foreign flag vessels supplying them, and haven't taken responsibility for their external accidents or for making their vessels liable for their actions.

Q. Are there any current cases?

- A. Local Coast Guard assesses fines, and enforces these issues.

Comments:

- Very difficult to work under the federal laws.
- No federal office in the territory.
- No district court, generally American Samoa has not been assigned to any federal district.
- In some cases, federal laws are assigned to particular courts i.e., High Court of American Samoa. Under OPA '90- these are sent to Hawaii District Court.

VESSEL GROUNDINGS, OIL SPILLS, AND MITIGATION MEASURES: THE WESTERN PACIFIC FISHERY MANAGEMENT COUNCIL FISHERY MANAGEMENT PLAN FOR CORAL ECOSYSTEMS IN THE WESTERN PACIFIC

KEVIN KELLY, WESPAC

- WESPAC is mandated under the Magnuson Act to manage the fisheries resources in the western region including, the Hawaiian Islands, CNMI, Guam, and the Pacific Remote Island Areas (PRIAs). FSM fisheries are not managed by WESPAC.
- Pacific fishing fleet: Hawaii has the greatest number of vessels permitted and CNMI has the least. The probability of a vessel grounding increases with an increase in the number of fishing permits.

Coral Reef Ecosystem Fishery Management Plan:

- Recently the Council created a Fisheries Management Plan for coral reef ecosystems in the Pacific. This plan is currently under review. The plan defines a coral reef ecosystem as all hard bottom surfaces out to 50 fathoms.
- Specifically, the Coral Reef Ecosystem Fishery Management Plan includes a vessel insurance requirement where *“All fishing vessels including those regulated by existing FMPs operating in or transiting a MPA must carry insurance to cover the cost of vessel removal and pollution liability in the event of a grounding. The insurance liability so required will be based on vessel category, permit type and fishing area.”*
 - This is only for fishing vessels in marine protected areas in the Pacific a) no take and b) low use which have to be designated under the fisheries management plans.
 - The last sentence is fairly vague for how much insurance is required. The fleets in these areas are very different and thus need different requirements.
 - If found to have no insurance, penalties could occur i.e., removal of a permit in perpetuity.
 - NWHI bottom fishing vessels would be regulated under this Plan.
 - The constitutionality of this requirement is being investigated. It is not clear if the Council can require vessels to have insurance in certain areas of the ocean.

Current Insurance:

- Currently, protection and indemnity insurance in the amount of \$500,000 has three tiers:
 1. Crew
 2. Property
 3. Environment
- In the case of an accident, insurance will first cover damages to the first tier, then the second and finally the third. Thus, the removal of a grounded vessel would not be plausible until the 3rd tier. At that point, there may not be funds available to cover these costs.
- Need to look at other options to better understand where the removal of the vessel can occur.
- WESPAC intends to develop a more overarching plan that would help better protect the Pacific islands. This could be implemented through either the FMP or other federal laws.

Comments:

- Perhaps there are 2 preemption issues relating to the WESPAC plan: 1) constitutional question of requiring insurance in particular areas which could infringe on Admiralty law, and 2) an inconsistency with OPA '90.
- There is also an issue of foreign flag vessels transiting through EEZ.

FEDERAL LAW AND VESSEL GROUNDINGS

CHERYL SCANNELL, NOAA, OFFICE OF GENERAL COUNSEL

SEE PRESENTATION: "C-SCANNELL – GROUNDING LEGAL AUTHORITIES"

Q. What defines a response?

A. Has to be a response undertaken by a federal or state agency.

Q. Does the action that results from the decision not to respond- have any legal standing under OPA?

A. The injury could be secondary or tertiary – does not have to be directly linked to oil.

Comments:

- Is no response considered a response action? If so can costs be able to be recovered for a lack of action?
- There is no essential habitat designated for the monk seal or green sea turtle.
- If a vessel is aground on critical habitat, then should be able to go to court and get the owner to remove the vessel.

Insurance:

- Not a likely practical or legal solution as there would likely be significant opposition and constitutional challenges.

Q. Could you require a vessel owner to have a contract with a cleanup company to respond if there is a spill or damage to a natural resource?

A. OPA would preempt this, as every carrier needs insurance under this legislation.

Comments:

- In Florida tried to enforce a recreational boating permit, but the State legislature did not accept this.
- WESPAC could say that the owner would have to buy insurance in order to get a permit. The insurance may be permissible if it is included in the cost of the permit.

Comments:

- Boating and fishing special use license and permits- in Florida this was vetoed by the Governor.
- Increase funding for the abandoned barge act- perhaps amend the act to be for vessels that are less than 100 tons. Perhaps allow the coast guard to keep these funds.
- Good to look into all statutes to see if there is a possible mechanism for money for vessel removal.
- There is a difference between a grounding in coral vs. coral reef ecosystems.
- If a boater grounds and gets itself off the reef, there is still damage:
 - There needs to be documentation before there can be a damage.

- In Hawaii the only groundings that are documented are the big ones. In Florida they document much more groundings because they are on the spot all the time watching. In Hawaii need more folks in the water.

HOW OTHER STATES/TERRITORIES HANDLE VESSEL GROUNDINGS

CHERYL SCANNELL, NOAA, OFFICE OF GENERAL COUNSEL

SEE PRESENTATION: “C-SCANNELL – STATE GROUNDING AUTHORITIES”

Q. Should you specify the type of substrate to be damaged?

A. Tricky question. Needs to be looked into more.

Q. Has any review of state regulations been completed to show how an owner can go about removing the vessel since the act of removal can cause more damage?

A. Mississippi is the only state that has restoration built into their statute. This specifically addresses environmental harm. Most are not environmental harm statutes.

Q. Isn't there a sanctuary law that states how the boat is to be removed?

A. The Act notes that the owner is responsible for the damage and if more damage is done in removing the vessel then they will be charged for that to. The Act recommends hiring a salver.

Q. Is there any way to increase criminal penalties?

A. States vary. Some go civil, some criminal. Knee jerk reaction in Hawaii was to go civil because prosecutors would not touch this environmental crime. Florida law is criminal.

INTRODUCTION TO LEGAL CHANGES THAT MIGHT BE POSSIBLE AT THE FEDERAL LEVEL AND AT THE LOCAL LEVEL

- Three to five vessel-grounding incidents a year is not that many, but it does necessitate a change in current structure.
- A reef, is not a reef, is not a reef and thus groundings on these reefs need to be looked at differently. There may be one grounding a year, but it could be on a very sensitive, unique ecological resource.
- Look to better identify vessel groundings by reporting on the currently unreported groundings and documenting the frequency and severity of incidents perhaps by enlisting a team of experts from various agencies.
- Although only 3-5 groundings, nothing has been done to clean up the current wrecks. There is a potential for a cumulative amount of damage.
- Need a comprehensive database of vessel groundings and input from all agencies. Perhaps set up a 24-hour hot-line number.
- Maybe an on-call Rapid Assessment Team should be created to assess damage.
- OR&R developing a database of all abandoned vessels. There is a website up and running at <http://restponse.restoration.NOAA.gov.dac/vessels>.
 - Work to sketch out the details of this database and the parameters that need to be inputted.
 - It is possible to e-mail OR&R updated information.
 - Suggest that Doug, Francis, and Dave discuss this in more detail.

Q. Do you want to think about trying to cover anchor damage under this type of law?

A. In the Dry Tortugas, anchor damage and chain damage was tremendous. Sanctuary emergency legislation was passed creating an extended area of protection- deemed the “area to be avoided” where no anchoring is permitted.

Comments:

- Should conduct a cost comparison of a quick reaction versus a drawn out process.
- Conduct a cost benefit analysis of waiting versus getting the job done right away.
- Have federal and state agencies report what their costs are associated with a grounding incident.
- There is little incentive to mount a case against a boat owner if none of the money is going to a particular case, but rather to a general fund.
- Look at a case history of where an RP paid right away versus a long drawn out process.

Needs:

- Technical help to assess the damage
- Training of local staff in response and assessment techniques
- Figure out a way for agencies to conduct a damage assessment i.e., funds
- Encourage Attorney General’s offices in states/territories to address grounding cases and issues
- Build public support through outreach and education on the issue of vessel groundings
- Add to NMFS agenda for boating training- vessel grounding issues
- Like Australians, add VMS to all boats to set off warning systems when getting close to reefs
 - This is tied to the permitting system
 - VMS is not enough, also need an alarm system connected
 - VMS may not work in Hawaii
 - Need accurate maps for VMS to work

Legal Authorities of State and Territories:

- Federal legislative solutions need administration’s support.
- Do we need U.S. Department of State support for foreign vessels?
- State/territorial permit to sell fishing products.
- Should legislative solution mirror NMSA to cover all injury, including liability and funds?
- Lack of motive, problems with seeking compensations from parties that lack money.
- American Samoa lacks a federal court, local laws and therefore needs federal support. In addition have unique foreign fleet considerations because of canneries and/or need to develop local statutes.
- Limited resources, funds, humans and therefore would need federal support from DOJ to move forth.

JANUARY 29 - PRACTICAL LESSONS

OVERVIEW OF CURRENT COAST GUARD PROTOCOL FOR VESSEL GROUNDING RESPONSE AND DISCUSSION

CAPTAIN PAULA CARROLL, U.S. COAST GUARD HAWAII

Oil Pollution Act of 1990:

5 scopes of the act

1. Prevention
2. Preparedness
3. Response
4. Liability/compensation
5. Research and technology

Prevention

Regulatory initiatives

- Double hull requirements
- Measures to reduce oil spills from single hull tank
- Access to driver records, prior to renewing licenses
- Enhancement to civil and criminal

Non-regulatory initiatives

1. **PTP- prevention through people.** 80% of marine casualties have a human error element. Systematic people focused approach to reducing pollution. Holistic view of assessing where the risks are and how to make them better. Look at training, work hours etc. This is a people focused approach to recognize that a balanced approach is the most effective. This is a cornerstone strategy to increase safety and environmental compliance.
2. **Risk based decision making-** making the best decisions for a given situation through weighing the costs and benefits of such an action. Focus on the probability that it could occur, and how to address it if it does.
3. **Stakeholder input-** Utilize a collaborative approach to this issue by seeking input into marine safety issues.

Results to date of this Act

- Average number of oil spills greater than 10,000 gallons dropped by about 50%.
- 50% decrease in gallons spilled per million gallons shipped.
- No spills over one million since 1991.
- Still getting spills, but the big ones just are not being seen anymore.

Preparedness

Area committees and area contingency plans- the Federal on-scene-coordinator must develop management plans that:

- Describe management system
- Define adequate plan to remove worst case discharge
- Describe area covered by plan
- Describe responsibilities
- List available resources (how much boom, response equipment)
- Describe procedures for decision on alternative technologies
- Describe how plan integrates with other plans such as in-situ burning plans

Vessel and Facility Response Plans

Vessels have to have a plan for how they will respond in the event that something happens while they are visiting a particular area. This applies to tankers, as this was the impetus of the Act after the Exxon spill.

Shipboard oil pollution and emergency plans (SOPEPS)

- Result of MARPOL
- Pertains to tanks ships greater than 150 gross tons and vessels greater than 400 gross tons

Exercises under OPA '90

Preparedness for Response Exercise Program (PREP)

- Developed to create a realistic exercise
- Internal exercises required by a facility and vessel response plan regulations
- This program is voluntary
- External exercises are large scale exercises for government, non-government, federal/state participants
- At times process drills occur- internal exercises to make sure that the protocols are in place and up to date. This validates the readiness of the response community

Spill of National Significance (SONS)

- Multi-state, multi nation program of an Exxon Valdez type of scale
- The incident severely impacts human health and or the environment
- Exceeds the capacity of one area

Response

Best response

- Response Management System- seeking to make the response more efficient.
- National Strike Force (NSF).
- Public Information Assist Team (PIAT).
- Response resources inventory RRI network.
- National oil spill removal organization (OSRO) classification program.
- Positioned equipment- booms, boats ready for response. Equipment located at 22 sites throughout the country.

Liability and Compensation

Oil Spill Liability Trust Fund (OSLTF)

National Pollution Funds Center (NPFC)

- Fiduciary agent for OSLTF
- Financial oversight for EPA superfund portion accessible to the coast guard
- Manage the Fund- Since 1977- handled over 4000 oil spill situations. 50 million emergency funds and the 950 million fund available to congress
- Certify the financial responsibility (CoFR) of vessel owners
- Manage major support activities- vessels over 300 gross tons
- Fund assessments of environmental damage assessments

Research and Development

- Coast Guard is the leader in cooperative research and development
- Significant improvements include:
 - Pre-positioned spill response equipment
 - Multi-agency team building enhancement system
 - Improved spill containment boom
 - Vessel of opportunity skimming system
 - On-scene command and control system

Current projects

- Pollution incident simulation, control and evaluation system (PICES)- input parameters and provide you with what some of the outcomes may be
- Waterways evaluation tool (WET)
- Cost modeling systems (PACE)- how do you assess the damages that may result
- Integrated navigation systems
- Human performance standards and safety
- Computer-based training

Summary:

- Reduction in spills
- Regulatory and non-regulatory strategies
- Preparedness at all-time high
- Better response systems
- Refined funding mechanisms
- Need a tool box with a lot of tools

Q. When can we use the fund to get vessels off of reefs?

A. It all comes back to oil. The U.S. Coast Guard is willing to be flexible and creative in accessing the fund, but the issue is oil. You can't always pull the vessels off of the reef.

Q. Given immigrant vessels, would homeland security monies cover this?

A. Not sure yet where the priorities fall for homeland security.

Q. Does the Coast Guard have the responsibility for removing wrecks?

A. No, this is an Army Corps of Engineers issue if it is in the path of navigation.

Q. If a ship runs onto a reef, breaks up, and sinks causing oil to spill, you are now left with sediment contamination. Could the OPA Fund be utilized to remove the vessel so that sediment cleanup could occur?

A. This could be pushing the envelope. It is typically up to the regional coordinator.

Q. How often do you come up against the OPA regulations and can't address the issue of vessel grounding impacting the reef?

A. More often than not the vessel is left there while the oil is removed from the vessel.

Comments:

- In American Samoa as well as Hawaii, there are a lot of grounded vessels that get grounded that are not reported because the owners typically get them off the reef.
- Notification is important, but there are so many remote locations that it is difficult to be notified of all incidents.
- The Coast Guard deploys crews as quickly as possible and reports incidents to the necessary folks as indicated with area contingency plans.
- In the FSM, there is no direct process to deal with vessel groundings. The U.S. Coast Guard can only be brought in with an advisory role. There is no funding or authority to address these incidents under OPA.
- There is no international policy of how the U.S. should respond to these types of spills.

Q. How much does the Executive Order help to push OPA '90?

A. OPA is used to the maximum extent that it can be implemented.

Q. Do you feel restricted in your authority?

A. Each of us would like to do as much as we can to have a clean environment. Each of us has policy and statutory guidelines to which we have to adhere.

Q. Is there some way to have a standard interagency team available to go out and do an initial assessment?

A. The area command does just this.

Q. If there is an example where there is a legitimate threat of a discharge, and you can either remove the oil and leave the vessel or remove the vessel with the oil, isn't it a policy decision about which method to pursue?

A. The tasking under OPA '90 is to remove the oil.

Comments:

Q. Is there a better way to get funding or special appropriations for certain vessels?

A. This would mean going to legislation. Currently the Abandoned Barge Act is an unfunded mandate that requires the coast guard to remove barges. If there were a potential to get special appropriations then the U.S. Coast Guard would probably be pushing this more. It is the OSC's call as to which approach should be implemented and most OSCs will push the envelope as far as possible. With many cases, the cost of returning to remove the oil again and again may be more than removing the vessel initially.

LESSONS FROM FLORIDA KEYS NATIONAL MARINE SANCTUARY VESSEL GROUNDING RESPONSE AND ENFORCEMENT

BOB CURRUL, FLORIDA FISH & WILDLIFE COMMISSION/FKNMS

History of the Florida Keys National Marine Sanctuary:

- 2900 square miles in the sanctuary
- 1990 established the sanctuary following 3 groundings in 16 days
- Bans off-shore drilling
- Areas to be avoided
- Management plan finalized in 1997

Authorities:

- Mini-312- recovers the cost of restoration and response but the case does not require bringing in DOJ. Keep this at a NOAA level
- Summary settlement is a citation, which is issued, in order to deal with a smaller case without involving a large number of people/lawyers

Enforcement:

- NOAA and the State of Florida Fish and Wildlife Conservation Commission (FFWCC) have a partnership for sanctuary enforcement. The State of Florida has the ability to withdraw from the partnership at any time.
- NOAA and the State of Florida Fish and Wildlife Conservation Commission (FFWCC) have boarding authority to search, inspect, and seize any vessel suspected of violating the National Marine Sanctuaries Act.
- Sanctuary regulations prohibit a vessel from striking or injuring coral, seagrass or other immobile organism. Sanctuary violations are generally civil.

- State of Florida investigates boating accidents and boards vessels engaged in fishing. Violations are either civil or criminal, but are mostly criminal.
- Most groundings in the Florida Keys are due to negligence.

Grounding totals 1997 to 2001	
Year	Number of vessels grounded
1997- 1998	507
1998-1999	549
1999-2000	581
2000-2001	660
*About 3-5% are coral groundings	

Notification and response:

- The initial notice of an event is received at a FFWCC dispatch center. This computer aided dispatch system is where all the groundings are recorded whether they cause damage or not
- Calls are received from marine salvors, the Coast Guard, the boat operator, general public, Sanctuary staff, patrol officers, and aircraft pilot from FFWCC
- If in a coral area, there is damage to the resource, and the vessel is over 30 feet, then the Sanctuary Lieutenant is notified
- If officer is in doubt, calls in a marine biologist
- At times the damage assessment is begun when the grounding occurs, if not then wait until the ship is removed

Q. Are the officers' trained biologists?

A. No.

Q. Does this matter in court?

A. No.

Q. How does the officer assess the scene?

A. They mark it, eyeball it, and make a preliminary assessment. There are so many groundings that the officers have to come up with a quick assessment approach.

Fines:

- Coral- \$100 plus \$75 per square foot up to 10 square feet.
- Sea grass- \$100 plus \$75 per square yard of seagrass.
- In FY2001, 121 sea grass cases and 14 coral cases.
- The money collected from summary settlements goes back into the Sanctuary - can be used by the Sanctuary Superintendent as they see fit.
- Most fines are above summary settlement parameters, and all damage action funds go to restoration.

Removal:

- Officers monitor vessel removal. In coral try to expedite this process so as to reduce further damage.
- Vessel removal is limited to high tide and engine use is limited. If complicated, then a removal plan is developed and its use is strongly suggested.
- Since 1997 only seven vessels have not been removed by the responsible party.
 - USCG- removed 1.

- NOAA- removed 2.
- Florida Derelict Vessel- removed 4 (Florida derelict law states that you can't leave a vessel in a wrecked condition on the state resources).

Large Vessels Groundings:

Damage is considered the following

- Coral- anything over 10 square feet
- Seagrass-anything over 10 square yards

Case statistics

- 33% of large groundings are vessels between 41 and 50 feet
- Recreational 74%, Commercial 26%
- Power vessels 78%, Sailing vessels 22%

Case preparation

- Officer has to be aware of what the responsibilities are of the prudent mariner, and:
 - Takes photographs on arrival
 - Checks the bridge to see that no navigation is turned off and documents the readings
 - Seizes, logs, charts, electronics - need a warrant to download information from the electronics
 - Interviews operators and observers
 - Documents all navigation equipment and whether it was in use
 - Documents charts in use
 - Ensures the position is fixed
 - Processes evidence
 - Completes the report
- If an officer is in doubt, calls in a marine biologist

Small/Medium Vessel Groundings:

Damage is considered the following

- Coral- anything less than 10 square feet
- Seagrass-anything less than 10 square yards

Case preparation

1. Biological assessment

- Similar to a ship case preparation but on a smaller scale
- No “marine casualty enforcement check list”
- Officer physically marks site for the biologist
- Once assessed, cases are processed as damage actions or penalty actions depending on the extent of damage and the restoration required

2. Summary settlement cases

- Method of getting rid if a small case without involving a large number of lawyers.
- Officer measures damage.
- Issues a citation and an information sheet.

Two types of “Mystery groundings”:

1. Site without a boat
2. Damaged boat but no idea where it went- interview the operator to determine where it has gone

Success rate:

- a. No court cases lost
- b. No court cases since 1993
- c. All ship cases are paid expect one
- d. 97% collection on closed assessment cases
- e. 95% collection on summary settlement cases

Q. Is drinking involved in any of these?

- A. At times, but not often.

Prevention:

Direct intervention

- Team OCEAN- stopping a boat before it runs aground, distributes information at high usage sites

Local outreach and education (contact Bob if interested in any of these materials)

- Protecting Paradise video, pamphlets, video- to boat rental facilities to play before renting a boat. 8 minutes. How not to run aground and what to do if you do.
- Public service announcement- running for past 10 years.
- Grounding prevention presentations.
- Waterways- TV show on public television.
- Monthly brochure route- distributed educational materials to about 400 businesses in Florida keys and south Miami.
- “Keeping your bottom off the bottom” brochure.
- Sticker that goes on all rental boats in the Florida keys- this has helped to reduce the number of rental boats running aground.

National and International Outreach

- National publications.
- Area to be Avoided on US nautical charts- reduced the number of ship groundings on reef.
- About to be designated a “Particularly Sensitive Sea Area” by IMO- only 3rd one in the world.

Improved channel and reef marking

- Raycon beacons installed to mark channels and since installation, no ship groundings

Conclusion:

- Regardless of prevention and outreach, vessel groundings in both seagrass and coral ecosystems, are increasing or remaining stable. In the Keys, over 2000 groundings have occurred since 2000.

Q. Where does the money come from?

- A. Some from budget, some from advertising, some from grants.

Comments:

- Biologists play an extensive role in the FKNMS process.
- A multi-disciplinary response/assessment team, as appropriate, is important.
- In Hawaii the USCG is the first to be notified.
- When the Coast Guard gets notified, this goes to the National Response Center and they should be distributing the information to the correct agencies accordingly.

- This may be where things are falling through the cracks. Currently the national response center sends a fax. Perhaps if there was a pager or a direct contact number then a biologist could more immediately respond to the incident? Faster oral notification is needed.
- Mooring buoy system- tropical fish industry had to pay a licensing fee these monies went to pay for the portion of this program. State has been able to find creative ways to help fund different initiatives.

Q. How many enforcement officers are there in Hawaii and American Samoa?

A. In Hawaii the enforcement officers are charged with patrolling lands and water. In addition, safety regulations demand that there are 3 to 5 officers on each enforcement boat. In American Samoa there is 1 Sanctuary officer and 4 or 5 DMWR officers, but they also enforce hunting and land issues.

Q. Does the FKNMS have a citation authority?

A. Yes, it is a Sanctuary regulation. The State has coral regulation but there is no seagrass regulation.

Q. In terms of area response plans is there something that can be handed to boat owners that states what a responsible party can and can't do in the event of a grounding?

A. In the Florida Keys, we hand them a booklet of their rights and responsibilities as a responsible party.

Q. In American Samoa, who is the first responder?

A. American Samoa, EPA.

Q. In the Team Ocean program, how are the boats funded?

A. These were donated by the State of Florida, as they were too slow for enforcement.

Q. How many summary settlements do you have a year?

A. 14 coral, 120 seagrass. If is a commercial vessel than raise it to a higher level.

POSSIBLE LESSONS FROM NATURAL RESOURCE DAMAGE ASSESSMENT (NRDA) AND DAMAGE ASSESSMENTS IN THE PACIFIC ISLANDS- DISCUSSION

DOUG HELTON, NOAA, NATIONAL OCEAN SERVICE (NOS), OFFICE OF RESPONSE AND RESTORATION (OR&R), DAMAGE ASSESSMENT CENTER (DAC)

The application of OPA:

- One of the goals of the Oil Pollution Act of 1990 (OPA) is to ensure that the polluter pays the cost of the incident. Claims can be made for both vessel removal and natural resource damage assessment.
- Due to the *Gatlin* decision the only damages that are recoverable are those caused by: 1) oiling 2) the threat of oil or 3) the result of response actions.
- OPA has a strong response authority and is a potential source of funding for grounded vessels.
- Under OPA, oil related impacts are compensable.
- Physical impacts are compensable if they are the result of a response action.
- Preliminary assessment costs are recoverable.
- OPA can be used if there is concern about lost uses i.e., vessel groundings may result in beach closures and the loss of recreational opportunities and it is possible to argue that these lost uses are a result of a response action.

Q. If a beach is closed in response an oil spill, than this opens the door for OPA?

A. Yes, this does.

Natural Resource Damage Assessment (NRDA):

- May be a tool for vessel removal and restoration but the costs of initiating this process could outweigh the recoverable damages for small incidents
- Further this process is time consuming and requires much staff to conduct properly

General advice for initiating NRDA under OPA:

- Proceed carefully
- Accomplish as much as possible under emergency response
- Consult with counsel early regarding legal strategies
- Initiate preliminary assessment to collect ephemeral data
- Pre-incident planning is critical, especially for remote incidents
 - Identify response team both technical and legal
 - Establish prompt notification protocols
 - Coordinate with co-trustees and response agencies
 - Develop rapid assessment methods
 - Acquire appropriate equipment, funding and contract support
 - Train personnel

Fundamental concepts of Damage Assessment:

- Goal is to restore the environment back to the baseline.
- NRDA actions should not interfere with the primary goal of an effective response.
- NRDA actions are separate from and supplementary to response actions.
- Injury caused by the response is compensable.
- Not all spills warrant a NRDA- may have to accept some loss of resources in the cases where the costs of the assessment outweigh the benefits of recovery. Typically the Damage Assessment Center only responds to spills greater than 10,000 gallons.
- NRDA actions are compensatory and not punitive- not conducting an assessment to punish someone just trying to restore the damage that was done to the resource.

NRDA Process:

1. Preliminary assessment

- Scoping exercise
- Takes place during response

2. Restoration planning

- Restoration under OPA is very broad
- Conduct injury studies
- Develop reasonable range of restoration alternatives
- Develop restoration plan

3. Restoration implementation

- Settle or litigate
- Implement and monitor projects

Injury Assessment Overview:

OPA does not mandate specific injury assessment methods but requires that

- Procedures that you choose need to be based on sound science
- Additional cost of more complex procedures must be reasonably related to the incident

- Procedure must be reliable and valid for the particular incident

Context

1. What you will do in one region is very different in what you would do in another region
2. Need to justify why you took actions and why the action was appropriate for this particular case

Judgment

- Best professional judgment of experts is always needed- may need to justify actions in a court of law and will need to defend the actions that are taken
- Local knowledge of resources of risk is essential to implementing the best strategy

Range of Procedures

- In most spills rely on a wide range of approaches; data modeling, laboratory analyses, expert judgment, peer review, field surveys. Need to document as carefully as possible how you reached your conclusions
- These procedures can be used alone or in any combination
- Simplified approaches are not necessarily less rigorous or less valid than the field and laboratory studies
- The additional precision and accuracy of more complex procedures may not be warranted given the limited precision implicit in many types of restoration—costs need to be considered
- Most assessments use a combination of assessment tools
- Not all spills warrant an extensive field assessment and models may be utilized

OPA restoration requirements

- Funds recovered must be spent on restoration.
- Plans shall be developed and implemented only after adequate public notice.
- No double-recovery of claims.
- Nexus to the injury- some logical connection to the injury in the field.

Emergency restoration

- Reattachment of corals, or debris and rubble removal.

Primary restoration

- Goal is to return injured resources and services to baseline conditions i.e., restoration of a reef framework, planting of sapling trees for a forest fire, restore reef framework.

Compensatory restoration

- Compensating for interim losses from the date of the injury until recovery of injured resources and services. This allows for a larger number of alternatives i.e., creating access to water or creating trails, removing wrecks and fishing nets from reefs, or seeking to prevent future groundings or incidents.

Funding

- Monies from the National Pollution Funds Center can be used to initiate a damage assessment, fund injury studies, and implement restoration

Conclusions:

- Trustee should try to accomplish as much as possible during the response
- OPA based NRDA is appropriate for oil injuries, response injuries, and non-divisible injuries
- Preassessment funding options should be considered

Q. During the Tesoro spill, there were some carcasses of endangered species. There was much argument about the exact number of birds killed.

A. NOAA does count listed species. But don't always need to typically do an exact count. They can get a general idea.

Comments:

- In coral situations, it depends on what the species is and where you are trying to measure.
- Need to look at the methods available and determine which is the most important to implement.
- This was written in this way to justify more simple methods.

Q. Has NOAA ever gotten a group of scientists together to discuss methodologies to use in coral areas?

A. Many folks in Florida Keys were involved in a workshop with Florida Park Service to standardize the methods to a degree, but they are not very far along with that yet.

DATABASE OF GROUNDED AND ABANDONED VESSELS IMPACTING CORAL REEFS

DOUG HELTON- NOAA, NOS, OR&R, DAMAGE ASSESSMENT CENTER

<http://response.restoration.NOAA.gov.dac/vessels>

- Database funded using NOAA/NOS Coral Reef Conservation monies.
- Seeks to inventory abandoned vessels in U.S. waters.
- Utilized various sources to find abandoned vessels, spoke with Coast Guard, State of Florida, State of Hawaii, Guam, CNMI, American Samoa, and the NOAA navigation database.
- Currently the database has 1,400 entries, most in the Atlantic, and most have only partial information filled out:
 - This database was designed based on the Coast Guard database.
 - For each vessel there are about 40 fields for data including: General information on the vessel, size, condition, location, owner, the incident, date, response action, legal status, endangered species, general threats that the vessel poses to the environment, and a contact section- to whom you should talk about the wreck.
- Range of abandoned vessels in some areas because there is not yet validation that the vessel is still there.
- The goal is to get a list of all the vessels, determine which ones need more information gathered, and prioritize the vessels that are causing the most amount of damage.
- Doug will pass around information sheets and ask each jurisdiction to try and fill out more information for each vessel in their area.

Q. Is there any information available on the restoration techniques that were implemented in vessel groundings in coral reef ecosystems in the Florida Keys?

A. Some more information in the Wellwood paper, which was written by employees of the Florida Keys National Marine Sanctuary.

Comments:

- Telephone wire laying companies pay up front cost of mitigation to pay for the damage that they do in laying lines. In addition, they are currently talking with the State of Florida regarding the mitigation of sites where no restoration has been conducted.
- There is a need to have local training so that responders are prepared.

- Some major progress has been made toward a rapid ecological assessment protocol. The completion of such protocols could fit well under the OCRM coral grants and be beneficial to the jurisdictions.

VESSEL GROUNDING INJURY ASSESSMENT- METHODS FROM THE FLORIDA KEYS NATIONAL MARINE SANCTUARY (FKNMS)

LAURIE MACLAUGHLIN, NOAA, NOS, FKNMS

Current events in Florida Keys National Marine Sanctuary:

1. Three shrimp trawlers grounded in late December and early January causing extensive damages to coral and seagrass ecosystems.
2. A damage assessment was recently completed which assessed the extent of injury resulting from the placement of un-permitted artificial lobster habitats. Vessel grounding monies were utilized to salvage these habitats.
3. During the past 8 years there have been several documented cases of the devastating impacts of boat anchor to coral reef ecosystems.

Injury Assessment in the Florida Keys National Marine Sanctuary:

Categories of Injury

Large/Catastrophic Vessel Groundings

- Section 312 of the National Marine Sanctuaries Act is the authority that the Sanctuary has available to them to assess the damage to the reefs and conduct restoration. Full damage assessments are conducted when these groundings occur.

Medium Vessel Groundings

- Are handled through a mini-312 program. Some minimal restoration is conducted, but mostly compensatory restoration is conducted.

Small Vessel Groundings

- Officers many times assess these areas themselves. Must be less than either 10 yards of seagrass or 10 square acres of coral. Officers take still pictures and estimate damage.

Response

- Immediate response is critical not only to the response but also to the damage assessment
- Conduct damage assessment while the response is occurring
- Collect video photography of the damage
- Advise salvagers of a potential exit route for the vessel to help minimize further damage to the habitat
- Mark sites with buoys or stakes, also take GPS coordinates so that biologists can return to the site
- Biologists assist salvagers with the response by removing debris from the area

Types of Assessed Injuries

- Parking lot effect- when a vessel plows into the bottom and bulldozes the area- aerial photography is used to depict damage
- Blow holes- created by boats trying to lift themselves off the area
- Burms- material expelled from blow holes

Assessment

Large and Catastrophic Vessel Groundings

- Use high-resolution aerial photography with a fixed wing aircraft that will take true vertical photography with a 90-degree angle to the water. This technique is very dependent on the viability of the defendant as it is costly. Further analysis is also needed.
- Permanent markers are placed in grounding areas. GPS reference coordinates are taken at all stakes.
- Video photography is taken.
- Boundary markers and sometimes bricks are used to define the injured area for purposes of aerial photography.
- A north arrow is placed on the substrate for scale as well as a point of reference.
- Aerial imagery is placed in ArcView or another type of software then the square footage of damage is calculated.

Medium/Small Vessel Groundings

- Map the area of injury by walking the perimeter. GIS based software allows staff to produce images of the damage, and this is very defensible.
- Where both coral and seagrass damage is done then two different methodologies are used and added together.
- Recently begun using a video transect technique to determine percent cover damaged
- With all these techniques, ground truthing also occurs. For details see the paper by Goodwin and Hudson that was circulated at the workshop.
- All groundings are treated as a crime scene. Look for boat paint. Collect chips of the bottom paint. Look for bottom paint skid marks. Collect as much evidence as possible.

Volunteer Efforts:

Reef medics

- A volunteer program that creates a sense of stewardship. This is a 3-tier program, which includes response, injury assessment, and restoration.
 1. **Response**- these people are the watchdogs who look for the groundings.
 2. **Injury assessment**- reporting and investigating-helping sanctuary staff.
 3. **Restoration**- triage, going out to help with the restoration of the areas.
- One of the drawbacks of this program is that there is great liability in having divers dive off of NOAA boats. This reduces the number of volunteers who can dive at the site, as volunteers have to be trained. There is a limited amount of work that can be done snorkeling.

Q. Does this hold up well in court?

A. This injury is clear as well as causation is very clear. This has held up well.

Q. If the seagrass beds are destroyed, how quickly do they come back?

A. Depends on the hydrology. Sometimes grow back. In a low energy area, the grass probably would recover. In Belize, all the damage in seagrass has never recovered in 40 years.

Q. Has the concept of establishing a perimeter been used in the coral?

A. Yes, the contractor wore a helmet with the GPS unit on it diver with an antennae on the surface. And worked similarly to seagrass.

Q. Are you still doing percent for partially and totally destroyed coral?

A. Trying to just denote the totally destroyed area.

KAREN BATTLE, DOI, NATIONAL PARK SERVICE, DAMAGE ASSESSMENT PROGRAM

- Civil and criminal penalties exist under the National Park System Damage Assessment Program.
- Criminal violation has a restitution schedule- Must pay the restitution amount depending on the extent of damage which is considered property damage.
- The Park system has been successful in both civil and criminal process.
 - In a criminal fund the money goes to the general fund.
 - In 19JJ the restitution money should go to the particular park for restoration.
- In the long run- criminal is faster and cheaper but the burden of proof is higher.
- Biscayne National Park has authority over salvers. Salvors must have a permit, photo id; sticker on the boat, each crew member registered, each boat registered, each one must follow the particular protocol of the park. Salvors come in once a year for a meeting. Talk about removal techniques. If can't get an authority over them- try to get them into a meeting to discuss the issues.
- Biscayne National Park created a vessel-grounding document that is particular to the site, but there may be elements that can be transferred from one area to another.
- Biscayne has a five-year database on vessel groundings. Is there a way to combine all of these databases?

Q. Who gets the money from these cases?

A. In Biscayne and Everglades, DOI owns the property and gets the money. In Dry Tortugas not sure who owns the land.

Q. In the manual, if a Good Samaritan causes damage then they too are responsible for any damage that they may cause. Is this a good approach?

A. All salvors in Biscayne are about a 30-minute boat ride from any incident site. So within a park, it is best to get an expert involved. In other areas that are more remote/spread out, it will be difficult to have such a quick response time.

**ASSESS, RESPOND, RESTORE, AND RECOMPENSE FOR ENVIRONMENTAL DAMAGE-
DEVELOPING STANDARDIZED PROTOCOL: DISCUSSION**

Working within the current structure:

- Areas of better coordination between federal and state agencies seem like a plausible solution to improving the current situation.
- Need to work with Doug Helton to further the database that he has been working on. Help to ground truth and verify the data.
- Work with the area response teams to become better involved with the response process.
- Who is going to work with the response team to try and tweak the system so that initial response gets accomplished?
- Need someone who is in a better position to get all the folks to the table. Need to shake the tree to get all the players to the table.
- Seems to be an opportunity with the CRTF.
- Need to identify a counterpart to work with Cheryl on these issues to define a protocol in both Hawaii and American Samoa.
- American Samoa cannot rely on Hawaii response, as it is so far away need to build their own capacity.
- The needs of Hawaii and American Samoa are very different and need to be handled differently.

- In the sanctuary there is always a sanctuary person involved with the incident. In Hawaii it is a Coast Guard show, they liter the fuel, do what they do and go home. In Florida it is not a Coast Guard show, but a Sanctuary show where the threat of oil is not the primary concern. In Florida they have a funded mandate and they have a government structure in place.
- In an emergency response situation the Coast Guard has a presence. They are the responsible Federal Agency.
- Area contingency plans- need to make sure that they are specific about who should be contacted in each area.
- In Hawaii many people carry beepers or cell phones. If there is a list of primary biologists who could respond then they could go and do some initial assessments...currently none of this is being assessed. This would be a simple matter of changing the current area response manual.
- For what purposes are you assessing? Prevent loss of critical habitat and mitigate since we cannot yet prosecute under Hawaii law.
- In Hawaii there is a co-trusteeship between DLNR and the Department of Health.
- Perhaps should get a list of personnel resources together so that it is known who has what employees and expertise throughout various state and federal agencies.
- It seems that the state expertise needs to be represented at the response. Need to attend such meetings in order to make this voice heard.
- Need to outline how to get specific people involved in this issue.
- State agencies are stretched, are at incident response then have to do natural resource damage assessment. Perhaps the state needs to hire on contractors.
- NOAA getting notified of >10,000 gallons spill. Out of about 200 each year, NOAA only can go after the top 6. Perhaps it is best to go after the bigger cases and try to hit the low hanging fruit.
- In Florida between 1990 and 1997 only 2 seagrass groundings were addressed...it takes time to build momentum.

Food for thought:

- What can we do now with little effort i.e., databases?
- What can we do under existing authorities?
- What could we do with some help from the federal government?
- What could we do under OPA 90 area contingency plans?
- What can we do to change state level legislations?
- Do we need to change federal statutes?
- Are there issues that we want to take to the Task Force given the current plan of action?
- What is the end goal that each jurisdiction is hoping to obtain?

JANUARY 30 - LOOKING TO THE FUTURE

ELEMENTS OF A PROTOCOL FOR DEALING WITH VESSEL GROUNDINGS IN THE PACIFIC ISLANDS

Existing Grounded Ships:

High priority issues

- Need to know what you are dealing with before you begin
- Have to know full vitals on all before you can begin to prioritize as you are not sure which are posing a threat to coral reef ecosystems
 - Look at existing grounded vessels
- This has the makings of a working group to carry on after this workshop is over--- get together with jurisdictional representatives to figure out what is missing.

- Does the current abandoned vessel inventory have the correct fields listed in it?
- Get all federal agencies to have some responsibility for helping

Priority Vessels

American Samoa

- There are more vessels than the *Chaellis*. A couple of grounded boats are out there and it is not certain who owns them. They do not seem to be an oil pollution threat.
- There are at least 3 other vessels in American Samoa.
- Need to make a distinction between grounded vessels and sunken vessels because there are different threats.
- However, there is still a cultural aspect. In some circumstances, it is not safe for fishing and swimming and therefore hard to promote an appreciation for the coral ecosystem if you are not able to swim/fish there.

Hawaii

- *Van Loi* is a problem. Sits on a fringing reef in the main Hawaiian Islands. This is not a pollution threat, but there are perhaps monk seals and sea turtles present.

Q. What should ideally happen with these existing ships in American Samoa?

A. Determination of who owns the vessel, once that is ascertained, need to know if there is an oil threat, identify a funding source.

Q. Is there a way to tap into OPA monies using the research and technology mechanism?

A. Probably not.

Comments:

- Not sure if removing a wreck is R&T in and of itself, but there are aspects of R&T in this. Are their benefits of partial removal/total removal? Monitoring would also have to be involved in these removals so that you can better understand what is occurring. If don't get money to remove the vessel could monitor to see what damage is being done?
- State submerged lands are still considered state lands. What is the process for removing an abandoned car, perhaps this same process could be applied to these cases, and this would give the state the authority to remove the vessel.
- There is a phone tree that exists for each jurisdiction. If there is concern then this could be ironed out today. This is present in the area contingency plans.

Next Steps

- Get salvors more involved with these workshops.
- Address questions raised at the Task Force meetings.
- Hawaii and American Samoa to review the abandoned vessel database and provide Doug Helton with updated fields.
- Take each case and run it through the legal framework spreadsheet to see which laws are applicable.
- Encourage feds to assist states and territories to build capacity.
- Need to identify the need to justify legislation, need to put together an effective case.
- Next steps: need to better define the problem.

Q. Is there a potential for the Coast Guard to be a Trustee in these cases?

A. While it may be beneficial to have the Coast Guard as a Trustee, there are a number of impediments to having co-guard being a trustee.

Q. Could biologists be sent from the State to help with the initial response?

A. In Hawaii when a command center is set up, all response activities are used to assist with a natural resource damage assessment and then a suit. This happens, biologists from the state are sent in.

Q. If changes in the area contingency plans need to be made then how can American Samoa and Hawaii get involved?

A. Area committee is really where people need to get involved. Are the right people getting notified? The jurisdictions are allowed to bring anyone to these meetings that they like.

Comments:

- In American Samoa- one person handled this and now that person is gone. Working to get someone up to speed and more involved.
- In Hawaii, would like to see a broader range of biologists involved with these committees. Francis will have Dave Gulko coordinate a group of experts and then collect all input and report back to the area committee.
- May be beneficial to develop a written protocol for each area's particular biological issues.
- How do we go about getting a biological rapid assessment complete? The lead biologist needs to make sure that these concerns are raised in the area contingency plans.
- If the trustees have a particular concern than it can be placed in the area contingency plan.

New Un-reported Groundings:

- Those that get reported to federal agencies but not the state or territory
- Those that get a salvage operator involved but are not reported to government
- Those that get reported to no one

Comments:

- Investigate state/territory boater accident and or grounding notification laws- new or existing.
- Implement a 24 hour dispatch to receive calls.
- Perhaps call a meeting of the salvors. Institute a way for the salvors to report groundings to the state.
- Outreach is critical to making this effort successful i.e., getting divers involved with such an initiative.
- Many times there are no state/federal enforcement folks on the water.
- Establish an incident reporting system. If a citizen-reporting program is begun then there needs to be a way to follow up on these reports. The preliminary issue is helping to define the initial problem. The next step would be to garner support and get enforcement folks on the water.
- Could establish an MOU between the State and University of Hawaii. Such a plan could utilize the dive program at the University to help complete profile assessments of the abandoned vessel database.
- Need to produce a state level flow chart similar to the one that Cheryl created at the federal level. Then need to see what legislation would be needed that may also be plausible.
- Have State Attorney General sit down with DOJ and NOAA Counsel.
- States to include breakage in their definition of grounding.
- Prevention and education are the key issues.
- The cost for Radar systems in the NWHI could be shared with all partners up there. The question then becomes, how do you enforce this?

Q. Are there any salvagers in the area?

A. Not many.

Coral Reef Task Force resolution on vessel groundings:

- 1. Require a bond for fishing vessels entering U.S. territorial waters for the purposes of conducting business at U.S. ports adjacent to coral reefs, as appropriate:**
 - Raises constitutional questions due to creation of new legislation.
 - May be appropriate as a last resort, should focus on #2 first.
 - Need to document the severity of the problem that would warrant the development of this approach.
 - Perhaps could be tied on to a port fee.
 - Must be raised as a priority by: USCRTF, USCRTF member agencies and jurisdictions.
 - Lack of deep pockets that might make such a program sustainable.
- 2. Make recommendations for additional legislation and funding mechanism in addition to the oil pollution act**
 - A case for new legislation needs to be well documented, as in #1 above.
 - Potential for states rights conflicts with federal legislation governing reefs in state/territory waters.
 - May need to first use existing authorities to build case and address problem, with new legislation on the horizon.
- 3. Establish a national legislation for coral reef damage assessment, including cultural losses to serve as a guideline for both fine and restoration costs**
- 4. Develop federal assistance protocols to augment the islands ability to initiate rapid response for vessel damage assessment and removal including training, prearranged access to DOI, DOC, DOT and DOD assistance in the event of immediate and critical environmental damage.**
 - Utilize state experts to complete vessel grounding database.
 - Update the area contingency plans.
 - Prevention education, outreach, and or warning systems –reef markers, Raycon beacons.
 - Develop networks for response/MOUs.

Next Steps:

- Continue (and expand?) abandoned vessel database.
- Develop ongoing groundings database to determine scope of problem - web-based interface for grounding registry (include public in ability to report?).
- Need to make enforcement more responsive and/or complete the prosecution.
- Work to develop cooperation on involving state/territory staff in USCG responses.
- Look at existing cases, to be documented in database, for a greater federal hook.
- Assess the existence of local hooks and develop local legal flowcharts.
- Look at feasibility in American Samoa of an MOU between various agencies (territory, NPS, FBNMS, etc) on response.
- State of Hawaii to examine feasibility of actions to address groundings in NWHI.
- Local and/or regional examination of opportunities to educate user groups.
- Participation in incident command training - HI and American Samoa.

- Jurisdictions examine building incident/damage reporting systems.
- Explore local changes in American Samoa to coral regulations, introducing greater harm clause. Look at legislative changes in Hawaii.
- Look at including vessel grounding priority in National Strategy.
- Explore prevention technologies (reef markers, Raycon).
- Train biologists in damage assessment, chain of custody, etc.
- Legal technical assistance (IPA, etc.).

**Honolulu Vessel Grounding Workshop
January 28-30, 2002
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U.S. Pacific Islands Vessel Grounding Workshops Guam and the Commonwealth of the Northern Mariana Islands (CNMI)

**February 5-7, 2002
Guam Marriott Resort
627B Pale San Vitores Road
Tumon, Guam
(671) 648-1608**

Agenda

FEBRUARY 5 - LEGAL ISSUES

8:00-8:30 Registration

8:30-9:00 Opening and Welcoming Remarks

9:00-9:30 Workshop Overview- Objectives and Expected Outcomes:

Objectives: Increase the capacity of the Island governments and Federal agencies to respond to vessel groundings and minimize the damage to coral reef ecosystems; as well as to identify gaps in local and federal and local laws and response capacity that inhibit an effective response to groundings.

Outcomes: a) Increase understanding of the biological, technical, and legal options currently available for the prevention of, response to, and restoration following ship groundings in the U.S. Islands; b) and identify technical and legal gaps in the Federal and Islands' capabilities for addressing these problems and develop strategies to meet needs.

9:30-10:30 Ship Groundings in the Pacific Islands- Guam and CNMI Case Studies & Island Reports:

Guam TBA

Jack Salas, Acting Director, CNMI Coastal Resources Management Office

- 1) Past Incidents and Experiences
 - a) Scope of the Problem in the Jurisdiction
 - b) Frequency of incidents
 - c) Types of incidents
 - i. Causes
 - ii. Scale of incident
 - iii. Status/response – removal, assessment, restoration, prosecution
 - iv. Measures that could have prevented the grounding
 - d) Existing management capacity – staff and infrastructure
 - e) Existing coordination of efforts/funding – state/territorial/federal/regional
- 2) Specific needs identified from jurisdiction experiences
 - a) Technical
 - b) Funding
 - c) Introduction to legal needs

10:30-10:45 Coffee and Tea Break

10:45-12:00 Local Laws and Vessel Groundings- Guam and CNMI Presentations:

Guam TBA
CNMI TBA

- 1) Local laws and existing legal frameworks - how they do/don't apply for:
 - a) Removal of vessel or ordering vessel removal;
 - b) Funding of/or recovery of cost of vessel removal;
 - c) Liability for environmental harm;
- 2) Options for tinkering with existing statutes or new legislation; and
- 3) Legal and technical assistance needs for local legislation.

12:00-1:30 Lunch

1:30-1:45 Vessel Groundings, Oil Spills, and Mitigation measures- The Western Pacific Fishery Management Council Fishery Management Plan for Coral Ecosystems in the Western Pacific: John Gourley

1:45-3:15 Federal Law and Vessel Groundings: Cheryl Scannell, NOAA, Office of General Counsel

- 1) Federal Admiralty Law - why it's important, what the important general rules are;
- 2) Federal Statutory Law and how it does/doesn't allow for:
 - a) Removal of vessels or ordering vessel removal;
 - b) Funding of/or recovery of costs of vessel removal;
 - c) Liability for environmental harm;
- 3) Ways to amend existing statutes to achieve all/some of our goals;
- 4) Feedback from participants on needs, objectives of their constituents.

3:15-3:30 Coffee Break

3:30-4:00 How Other States/Territories Handle Vessel Groundings: Cheryl Scannell, NOAA, Office of General Counsel

4:00-5:00 Introduction to legal changes that might be possible at the federal level and at the local level: Advantages and disadvantages of either or both

5:00-5:15 Wrap Up

5:30-7:00 Social Gathering: Location TBA

FEBRUARY 6 - PRACTICAL LESSONS

8:30-9:30 Overview of Current Coast Guard Protocol for Vessel Grounding Response and

Discussion: Captain Rob Lorigan, U.S. Coast Guard Hawai'i

- 1) Protocols under the Oil Pollution Act (OPA) of 1990
- 2) How OPA '90 falls short of coral reef protection needs
- 3) Gaps in authority and resources authorized under OPA '90

9:30-10:45 Lessons from Florida Keys National Marine Sanctuary Vessel Grounding Response and Enforcement: Bob Currul, Florida Fish & Wildlife Commission/FKNMS
Response and Enforcement Issues;

- 1) Notification procedures;

- 2) Boarding authorities under the National Marine Sanctuary Protection Act (NMSPA) and State of Florida;
- 3) Investigation and case preparation for large vessel groundings on coral;
- 4) Investigation and case preparation for small (under ship size) groundings on coral; and
- 5) Prevention measures: Public Outreach and Education

10:45-11:00 Coffee Break

11:00-12:15 Possible Lessons from Natural Resource Damage Assessment (NRDA) and Damage Assessments in the Pacific Islands- Discussion: Doug Helton, NOAA, National Ocean Service (NOS), Office of Response and Restoration (OR&R), Damage Assessment Center (DAC)

- 1) Damage Assessment Methods
- 2) Resources Required
- 3) Documentation Requirements
- 4) Sampling Priorities
- 5) Sources of Financial Support

12:15-1:30 Lunch

1:30-3:00 Vessel Grounding Injury Assessment- Methods from the Florida Keys National Marine Sanctuary (FKNMS): Laurie MacLaughlin, NOAA, NOS, FKNMS

3:00-3:15 Coffee Break

3:15-5:00 Assess, Respond, Restore, and Recompense for Environmental Damage- Developing Standardized Protocol: Discussion

5:30-7:00 Social Gathering- Location TBD

FEBRUARY 7 - LOOKING TO THE FUTURE

8:30-10:30 Elements of a Protocol for Dealing with Vessel Groundings in the Pacific Islands

- 1) Activating a response
- 2) Situation assessment
 - a) OPA '90 Response
 - b) Non-OPA '90 Response
- 3) Need to remove vessel immediately
- 4) Notification procedures and investigation
- 5) Environmental damage assessment
- 6) Vessel removal
- 7) Vessel disposal
- 8) Environmental restoration
- 9) Environmental monitoring

10:30-10:45 Coffee Break

10:45-12:00 Potential changes in legal authority and technical and financial capacity to effectively address vessel grounding in the US affiliated Pacific Islands

- 1) Authority to take legal action against responsible party for vessel removal, environmental assessment, environmental restoration, and environmental monitoring.
- 2) Funding for vessel removal when a responsible party cannot be found or is unable to pay.
- 3) Federal assets that can be mobilized to supplement state, territorial, and commonwealth assets in vessel grounding response and environmental restoration.

12:00-1:30 Lunch

1:30-3:00 Legislative strategies to meet needs for vessel grounding response and environmental restoration

3:00-3:15 Coffee Break

3:15-4:30 Final Wrap Up – Summarize Workshop Follow-up Action Items



M/V Charito: Saipan, CNMI

U.S. Pacific Islands Vessel Grounding Workshops Guam and the Commonwealth of the Northern Mariana Islands (CNMI)

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Proceedings

FEBRUARY 5 - LEGAL ISSUES

WORKSHOP OVERVIEW- OBJECTIVES AND EXPECTED OUTCOMES

OBJECTIVES

MIKE HAMNETT, PACIFIC BASIN DEVELOPMENT COUNCIL (PBDC)

- Overview of the agenda for the workshop
- Where are the gaps in the current ability to respond i.e., technical, legal, and monetary

OUTCOMES

JONATHAN KELSEY, NOAA, NATIONAL OCEAN SERVICE, OFFICE OF COASTAL RESOURCES MANAGEMENT (OCRM)

- Issue of vessel groundings raised by All Islands working group as an issue.
- It is our goal to report back to the CRTF the outcomes of this workshop and the workshop in Hawaii.
- Proceedings will be made available via CD.
- The goal of the workshop is to engage in good conversations and raise the issues of concern to the jurisdictions.
- Introductions of all participants.
- This week the Local TV station will be filming a documentary on vessel groundings.
- Representative Robert Underwood will be coming to address the workshop participants at lunchtime today.

VESSEL GROUNDINGS IN THE PACIFIC ISLANDS- GUAM AND CNMI CASE STUDIES & ISLAND REPORTS

GUAM

GERRY DAVIS, GUAM DEPARTMENT OF AQUATIC AND WATER RESOURCES

Overview:

- Migrant ships running onto the beach are one of the main causes of vessel groundings on Guam.
- Biggest issue is that it is difficult to find a responsible party to pay for the removal and cleanup of the wreck.
- Existing federal and local laws do not specifically address vessel groundings.

- The valuation of socio-cultural impacts resulting from the harm to a coral reef area has not been determined.
- Vessel grounding prevention measures have not been identified or implemented. Hope to identify as many of these options as possible and begin to implement them.
- Money is a limiting factor to removal.
- Guam has approximately 1.5 significant reef damaging vessel groundings per year.
- Typhoons are a major event that can lead to vessel groundings.
- The scale of severity is different from location to location around the island.

Causes:

- Illegal immigration
- Unfamiliar waters
- Typhoons
- Negligence

Prevention:

- This is probably the strongest tool that could be used to help to address many of these causes

Response:

- The United States Coast Guard and Guam EPA are the first to respond. They then contact The Division of Aquatic and Wildlife Resources (DAWR)

Capacity:

- There are boat and monitoring staff in agencies throughout Guam, but they all have other full time jobs and their primary purpose for being on the water is not related to vessel groundings.

Needs:

- Implement prevention strategies.
- Establish specific legislation that allows agencies to respond to vessel groundings.
- Determine an acceptable valuation process to adequately address recovery.
- Establish federal trust funds for vessel groundings.
- Define a damage assessment and monitoring protocol.
- Reevaluate state and local laws that could be utilized.

Q. Where did the funding come from to remove the vessel grounded by immigrants?

A. The boat was ashore on the National Wildlife Refuge and money was found to remove the vessel. This took about a month to find the money and by that time the vessel had been broken apart and caused more damage.

Q. Of all the vessels that have hit Guam reefs how many have been removed?

A. Most of them have been removed or scuttled. Scuttling a vessel in these waters however, is not conducive to building an artificial reef.

Q. How accurate are the current navigational charts?

A. These are pretty good. With the current GPS units most captains are doing ok.

Q. Are the vessels that ground mostly U.S. or foreign flag?

A. We see a mix of both.

Q. From a cost/benefit viewpoint, are there any ships grounded in Guam where the best method for proceeding would be to leave them?

A. The choice not to move the vessel means that you are delaying the damage to another day. The area will not recover until the vessel is gone. Guam can't afford to give up any portion of the current reef area, therefore in no situation would it be more cost effective to simply leave the vessel.

Q. How will we go about preventing the catastrophic vessel grounding that has not yet occurred? How do we deal with the 100-year groundings?

A. One of the jobs that we have to do is to convince the governments that this is a problem. Economic valuation studies need to be conducted. The cultural component also needs to be evaluated and factored into this. We will not be able to prevent such an event without further support (monetary, regulations) from local/state/federal governments.

Q. You mentioned the Guam's offshore banks, are there anchoring issues there?

A. Yes this is an issue especially since many of the banks cannot be seen from shore. Some big ships anchor offshore and there is also smaller boat damage in these areas. It is hard to always note this damage.

CNMI

JOHN STARMER, CNMI COASTAL RESOURCES MANAGEMENT PROGRAM (CRMP)

Overview:

- There are currently 11 vessels that are on the reefs in the CNMI.
- Because there is such a diversity of coral coverage throughout the CNMI it is difficult to determine the economic value of the reefs.
- The priority vessels to remove are those located in Saipan because 1) future typhoons could move them around and cause further damage and 2) these vessels are an eye sore.
- There is no clear and specific regulation to require vessels to implement strict prevention measures.

Existing management capacity:

- All groundings are coordinated by the CNMI area contingency plan
- If dealing with large vessels then need response equipment

Coordinating efforts:

- Activate the CNMI contingency plan
- Notify the Coast Guard

Prevention:

- Implement a policy that mandates vessels of a certain size to have typhoon contingency plans when entering territorial waters
- Identify an agency that will have enforcement authority to administer the law and follow through in the aftermath of a grounding

Needs:

- Training for those responding to grounded vessels
- Training in assessing environmental damage
- Training in developing preventative measures
- See presentation

Q. Does the CNMI require all boats in a harbor to submit a typhoon contingency plan?

A. CNMI does not have the authority to force a boat to create one.

Comments:

- Many boats are coming into port without any notification and there are currently no mooring areas for the boats to utilize.
- Foreign vessels are the ones who are impacting the area the most yet it would be the local fishermen who are going to be negatively impacted by the establishment of any of these types of laws.
- More secure moorings would perhaps be the best preventative measure. There currently are no adequate measures for storm conditions.
- In the designation of the Florida Keys National Marine Sanctuary there were many small working groups established that were composed of fishermen and other interested folks. These groups are still functional and provide a good avenue for interested parties to raise their concerns.

Q. Is there any recognition on the part of the public that this is a problem? Is there any public support?

A. In Guam when there are one-way immigration vessels grounded on the shore, there is some short-term concern including the damage to the reefs. In the CNMI there is some concern about these issues, but it seldom becomes a number one priority with the public.

Obstacles:

- In the FSM one of the biggest challenges of removing vessels from the reefs is funding. Currently the FSM is trying to implement a national level fund that would be established and eliminate the money barriers.
- Removal is a big obstacle that needs to be overcome then there are others. Monitoring needs to be established as well as prevention methodologies.

LOCAL LAWS AND VESSEL GROUNDINGS

CNMI

STACEY CONNER, CNMI ATTORNEY GENERAL'S OFFICE

Overview:

- CNMI has authorities to address releases and discharges, but does not have the regulations to specifically remove and or address a grounded vessel
- There are some statutes that the agencies can use to try to address the issue
- The exception is the jurisdiction that the port authority has

General Authorities:

Marine Sovereignty Act of 109

- Established sovereignty of CNMI and defined archipelagic waters.

Submerge Land Act

- Submerged lands are all lands between the ordinary high water mark and the outer limit of the exclusive economic zone

Agencies with jurisdiction

- Mariana public lands authority – submerged lands leases
- Division of Environmental Quality
- Coastal Resource Management Agency
- Commonwealth ports authority- ports and adjacent waters to extend to the territorial sea

CNMI Authorities Over Releases:

Nuclear and Chemical Free Zone Act

- Forbids dumping of listed wastes or any chemical toxic into the ocean
- Covers a deliberate act but also includes gross negligence

Environmental Protection Act

- The Division of Environmental Quality has the authority to implement this act
- Authorizes regulation of pollution discharge
- Not talking about accidents, but deliberate or negligent acts
- Because this Act implements water quality standards, then if the water quality is being impacted the removal of a vessel can be ordered

Harbor Vessel – see presentation

- No clear authority outside of ports to remove vessels

Solid Waste Management Act

- Unlawful to place any solid waste on public property
- Solid waste is deemed a discarded material
- Possible authority to order removal as a mitigating measure

Water Quality Standards

- Mitigating measure for spill or threat of a spill

Coastal Resources Management Act

- Jurisdiction extends seaward to the extent of territorial waters
- Permit program for specific releases- this is really not talking about accidents
- It may be a stretch to say that a grounded vessel is an unpermitted occurrence

Harbor Rules and Regulations

- Undefined terms in the regulation—object, shore waters
- The limits of this authority are unclear

Comments:

- In the CNMI, there is currently no legislation on the books that addresses natural resources damage assessments
- Fines and enforcement are not always the first route to go
- Need access to funds that are easy to access and optimally refundable

Q. Could the CNMI Nuclear and Chemical Free Zone Act be used to address the issue of algae growth caused after the grounding of a vessel?

A. The statute really refers to deliberate dumping.

Q. If the Water Quality Standards Act was used to remove a vessel, could monitoring following a removal also be funded with these fines?

A. The statute does allow the CNMI to recover funds for significant damage done to the environment.

Q. Does the CNMI have a natural resource damage assessment process?

A. As far as I can tell, there are no regulations that would allow for this.

Comments:

- CNMI did recover some funds from one vessel grounding. The lawyer came back and said that you do not have the authority to do this. Then the settlement decreased from \$1 million to \$100K.
- Need some other laws to allow the agency not to be pushed around.
- The All Islands Working Group has been asking for an all inclusive coral reef act that protects all the corals of the U.S.

Q. In the development of any of the MPAs in CNMI, is there any statute that would allow for enforcement and vessel grounding removal?

A. In CNMI, the regulations are currently being developed. There is a law that gives the agency the authority to develop rules and regulations. The goal is to ultimately come up with a law that not only covers the MPA but also all of CNMI.

Q. In CNMI, who has the trust authority to handle funds?

A. In CNMI, could be the public lands office or the Coastal Resources Management Office.

Comments:

- When talking about the need for a fund, not talking about millions of dollars. In CNMI, could use about \$50K to begin to address the issue of removal.
- However, even if funds were available, there is still no clear authority to remove a vessel.

VESSEL GROUNDINGS, OIL SPILLS, AND MITIGATION MEASURES: THE WESTERN PACIFIC FISHERY MANAGEMENT COUNCIL FISHERY MANAGEMENT PLAN FOR CORAL ECOSYSTEMS IN THE WESTERN PACIFIC

JOHN GOURLEY, WESPAC

- WESPAC is mandated under the Magnuson Act to manage the fisheries resources in the western region including, the Hawaiian Islands, CNMI, Guam, and the Pacific Remote Island Areas (PRIAs). FSM fisheries are not managed by WESPAC.
- Pacific fishing fleet: Hawaii has the greatest number of vessels permitted and CNMI has the least. The probability of a vessel grounding increases with an increase in the number of fishing permits.

Coral Reef Ecosystem Fishery Management Plan:

- Recently the Council created a Fisheries Management Plan for coral reef ecosystems in the Pacific. This plan is currently under review. The plan defines a coral reef ecosystem as all hard bottom surfaces out to 50 fathoms.
- Specifically, the Coral Reef Ecosystem Fishery Management Plan includes a vessel insurance requirement where *“All fishing vessels including those regulated by existing FMPs operating in or transiting a MPA must carry insurance to cover the cost of vessel removal and pollution*

liability in the event of a grounding. The insurance liability so required will be based on vessel category, permit type and fishing area.”

- This is only for fishing vessels in marine protected areas in the Pacific a) no take and b) low use which have to be designated under the fisheries management plans.
- The last sentence is fairly vague for how much insurance is required. The fleets in these areas are very different and thus need different requirements.
- If found to have no insurance, penalties could occur i.e., removal of a permit in perpetuity.
- NWHI bottom fishing vessels would be regulated under this Plan.
- The constitutionality of this requirement is being investigated. It is not clear if the Council can require vessels to have insurance in certain areas of the ocean.

Current Insurance:

- Currently, protection and indemnity insurance in the amount of \$500,000 has three tiers:
 1. Crew
 2. Property
 3. Environment
- In the case of an accident, insurance will first cover damages to the first tier, then the second and finally the third. Thus, the removal of a grounded vessel would not be plausible until the 3rd tier. At that point, there may not be funds available to cover these costs.
- Need to look at other options to better understand where the removal of the vessel can occur.
- WESPAC intends to develop a more overarching plan that would help to better protect the Pacific islands. This could be implemented through either the FMP or other federal laws.

Future Actions:

- Fishing vessels need accurate maps of shallow sea maps in Guam, CNMI, American Samoa, and the NWHI. The availability of these maps will decrease groundings.
- Mooring buoys.
- Consultations with non fishing operations within the coral reef ecosystem.
- Need to determine appropriate criteria for mitigation measures.
- Area-specific regulations for vessels.
- Environmental assessments of differing threats to essential fish habitats.

Q. Do you have any understanding of what foreign boats are coming into this area?

A. In CNMI, there are no legal foreign fishing rights. They can only come in and refuel and get provisions. There are about 300 boats under foreign flag coming in a year, which increases the potential for accidents especially because fringing reefs and seamounts are difficult to maneuver if you are not familiar with them.

Q. If you were to remove a vessel in CNMI or Guam, would a permit be required?

A. Yes, permits would be required from local agencies. In Guam if it was an emergency then some of the permits would be waived but permits would be required. In CNMI, it is on a case-by-case basis. CNMI works closely with the Coast Guard and all the agencies involved with the area contingency plan.

FEDERAL LAW AND VESSEL GROUNDINGS

CHERYL SCANNELL, NOAA, OFFICE OF GENERAL COUNSEL

SEE PRESENTATION: “C-SCANNELL – GROUNDING LEGAL AUTHORITIES”

Q. Where does the money come from to remove the vessel?

A. From the owner of the boat. Since a 1996 amendment, there is no requirement to prove fault.

Q. Has either of the jurisdictions ever challenged the army corps of engineers to remove boats, which impede navigation?

A. This has not occurred in either Guam or the CNMI.

Comments:

- Lawyers and law professors write articles stating that many of these laws are unconstitutional and thus someone needs to bring a suit against them in court.
- The Coral Reef Executive Order asks the federal agencies to the maximum extent possible to protect coral reef ecosystems. One possible mechanism for improvement to these regulations may be to see how agencies can expand their interpretation of the laws.

Q. Can the states simply remove these vessels?

A. This may be a possibility.

Q. Does OPA 90 provide for any provisions pertaining to the cost of natural resource recovery?

A. Under OPA, restoration costs are recoverable for natural resource injuries resulting from discharge or threat of discharge or from response action. Also under OPA '90 initiation costs of natural resource damage assessment can be recovered. This covers the cost of restoration to establish if OPA '90 should be triggered.

Q. Wouldn't the action of not removing a vessel be considered an action that would cause harm to coral reef resources?

A. Yes, in essence the Coral Reef Executive Order that agencies should not interpret their statutes narrowly if corals are involved.

Comments:

- Encourage trying to utilize removal of vessel and restoration of reefs. Some costs are condensable.
- It would have cost less on Rose Atoll to simply remove the vessel than to wait for so long to remove and remediate and restore that area. As natural resource trustees, we need to keep these legal questions in mind and work through them.
- There is concern that the trust fund is a limited amount of money. If we spend all this money, it is not clear if congress would re-establish the tax to reinstate the fund money.
- Did the fund money start out as 1 billion? Hasn't this fund made some money? If you took a more aggressive approach to protect coral reef resources- how much money would this deplete the fund by?
- **Point of clarification:** 54% recovery rate on the Fund. 46 cents for every dollar is not recovered for response actions.

Q. In what situations could FEMA funds be used for removal?

A. First the area would need to be designated as a federal disaster. In Samoa (Pago Pago-longliners) this was tried but was unsuccessful. In Guam this was also tried, but tree debris couldn't be cleared from the reef, as this was not harming the peoples ability to collect food and their way of life. These monies are mostly allocated in freshwater areas.

Q. If this happened in Tumon Bay and there was a direct economic impact to the area could FEMA funds be applied?

A. There is no hard fast yes and no on FEMA funds, but there does need to be a declared disaster in order for there to be a potential. Perhaps this is an area to explore further.

Comments:

- Florida was successful in leveraging funds from FEMA after Hurricane Andrew. These monies were used to remove vessels that were blocking flood control channels.
- Unless the grounding occurred in an area that was engineered or built then it probably would not apply.
- Perhaps the definition of abandoned and derelict should be added to the language of the Coral Reef Conservation Act.

HOW OTHER STATES/TERRITORIES HANDLE VESSEL GROUNDINGS

CHERYL SCANNELL, NOAA, OFFICE OF GENERAL COUNSEL

SEE PRESENTATION: "C-SCANNELL – STATE GROUNDING AUTHORITIES"

- Many states define abandonment as >30 days
- Florida has a coral penalties provision- civil penalties for damage to coral resources by any cause
- It may be helpful to look at these state examples in crafting and or amending state, territory, or commonwealth regulations

Q. After 30 days do states have an ownership clause?

A. Most states give themselves the authority to remove vessels and state that owners lose ownership after a certain number of days.

Q. Would the situation be different if you had a sunken vessel that was owned by the United States Government?

A. No, you cannot sue or seize the United States government under Admiralty and the Public Vessel Law.

Comment:

- Worried about the state becoming the owner of the vessel. If so, then the public could sue the state for not removing the wreck.

INTRODUCTION TO LEGAL CHANGES THAT MIGHT BE POSSIBLE AT THE FEDERAL LEVEL AND AT THE LOCAL LEVEL

CNMI:

- Close the gaps, define abandonment, define which agency is responsible for vessel groundings.
- Fines.
- Conduct a complete economic assessment of the coral reef ecosystems to better understand the value of damage.
- Not sure if CNMI wants to become responsible for abandoned vessels.
- Do not have the capacity or the money to currently remove the vessels.
- The problem is with state and local laws- need to be stricter about the requirements of who enters the port- small vessels are able to slip through the gaps in the current laws.

- How to prevent vessels from snapping their moorings in the event of a typhoon. Perhaps some type of preventative law that would help allow the agencies to ensure that some of the smaller boats are well tied down before a typhoon- the law would have to say that CNMI was not liable for any damage that may ensue- this is a police power issue- the owner would still be liable.
- Need to look towards preventing damage from occurring.

Guam:

- Environmental Trust Fund has removed one vessel
- Guam has an abandoned vehicle fund but this gets raided for other causes, if an abandoned vessel fund was established would have to work to separate these two funds
- If Guam becomes responsible for these vessels the issue of disposal becomes another issue

Draft Wreck Removal Convention

- This international law is currently being negotiated and has some promise to impact foreign flag ships
- This law is probably 5 to 10 years away from being promulgated but could be very useful

Hazard Mitigation Grants Programs

- In developing a hazards mitigation plan, if moorings were a part of these plans then they could be funded

FSM:

- In most cases need to fine tune the current laws
- The customary law is still very strong
- When a ship is aground the government has a response team, but there is a conflict because most of the reef properties are owned by people
- People claim that whatever is up on their reef belongs to them
- The government needs a lot of support to remove the reef
- There are anchoring problems that need to be addressed
- Local government reports describe the need for reef assessments
- Set out teams to assess the damage of the reef properties
- When ships are running aground- there is not much public involvement
- The biggest issue is ownership- it is not certain who owns the vessels as the owner changes hands often
- The typhoons are not a problem in FSM

FEBRUARY 6 - PRACTICAL LESSONS

OVERVIEW OF CURRENT COAST GUARD PROTOCOL FOR VESSEL GROUNDING RESPONSE AND DISCUSSION

CAPTAIN ROB LORIGAN, U.S. COAST GUARD HAWAI'I

Oil Pollution Act of 1990:

5 scopes of the act

1. Prevention
2. Preparedness
3. Response

4. Liability/compensation
5. Research and technology

Prevention

Regulatory initiatives

- Double hull requirements
- Measures to reduce oil spills from single hull tank
- Access to driver records, prior to renewing licenses
- Enhancement to civil and criminal

Non-regulatory initiatives

1. **PTP-** prevention through people. 80% of marine casualties have a human error element. Systematic people focused approach to reducing pollution. Holistic view of assessing where the risks are and how to make it better. Look at training, work hours etc. This is a people focused approach to recognize that a balanced approach is the most effective. This is a cornerstone strategy to increase safety and environmental compliance.
2. **Risk based decision making-** making the best decisions for a given situation through weighing the costs and benefits of such an action. Focus on the probability that it could occur, and how to address it if it does.
3. **Stakeholder input-** Utilize a collaborative approach to this issue.

Results to date of this Act

- Average number of oil spills greater than 10,000 gallons dropped by about 50%.
- 50% decrease in gallons spilled per million gallons shipped.
- No spills over one million since 1991.
- Still getting spills, but the big ones just are not being seen anymore.

Preparedness

Area committees and area contingency plans- the Federal on-scene-coordinator must develop management plans that:

- Describe management system
- Define adequate plans to remove worst case discharge
- Describe area covered by plan
- Describe responsibilities
- List available resources (how much boom, response equipment)
- Describe procedures for decisions on alternative technologies
- Describe how plan integrates with other plans such as in-situ burning plans

Vessel and Facility Response Plans

Vessels have to have a plan for how they will respond in the event that something happens while they are visiting a particular area. This applies to tankers, as this was the impetus of the Act after the Exxon spill.

Shipboard oil pollution and emergency plans (SOPEPS)

- Result of MARPOL
- Pertains to tanks ships greater than 150 gross tons and vessels greater than 400 gross tons

Q. Where would fishing vessels fall within these guidelines?

A. The regulations do not pertain to these types of vessels.

Q. Do smaller vessels need contingency plans?

A. No, but an area contingency plan could seek to address these issues.

Q. Could a harbormaster require boats to have a contingency plan if they come in the harbor?

A. There does not seem to be a problem with them doing this.

Exercises under OPA '90

Preparedness for Response Exercise Program (PREP)

- Developed to create a realistic exercise.
- Internal exercises required by a facility and vessel response plan regulations.
- This program is voluntary.
- External exercises are large scale exercises for government, non-government, federal/state participants.
- At times process drills occur- internal exercises to make sure that the protocols are in place and up to date. This validates the readiness of the response community.

Spill of National Significance (SONS)

- Multi-state, multi nation program of an Exxon Valdez type of scale
- The incident severely impacts human health and or the environment
- Exceeds the capacity of one area

Q. OPA '90 requires that tankers have resources in case of a spill. Must also the states have some response resources to address a spill? Not sure if CNMI has the resources to properly address an oil spill. Is there any liability to the Commonwealth?

A. The commonwealth is not liable, the spiller is. If the area does not have the proper response equipment then this would be written into the area contingency plan.

Response

Best response

- Response Management System- seeking to make the response more efficient.
- National Strike Force (NSF).
- Public Information Assist Team (PIAT).
- Response resources inventory RRI network.
- National oil spill removal organization (OSRO) classification program.
- Positioned equipment- booms, boats ready for response. Equipment located at 22 sites throughout the country.

Q. Could you talk about when you decide to respond and when you don't?

A. In any oil spill threat area they respond. If there is grounding we will be there. If there is anything on that vessel that can get in the water and make a sheen then we will be there.

Liability and Compensation

Oil Spill Liability Trust Fund (OSLTF)

National Pollution Funds Center (NPFC)

- Fiduciary agent for OSLTF
- Financial oversight for EPA superfund portion accessible to the coast guard

- Manage the Fund- Since 1977- handled over 4000 oil spill situations. 50 million emergency funds and the 950 million fund available to congress
- Certify the financial responsibility (CoFR) of vessel owners
- Manage major support activities- vessels over 300 gross tons
- Fund assessments of environmental damage assessments

Q. Does the statute allow the Coast Guard to reduce the CoFR limit? Could this include vessels under 300 gross tons?

A. Not familiar with reducing these limits.

Q. Is there any international regulation for insurance?

A. This is mostly done on a country-by-country basis.

Research and Development

- Coast Guard is the leader in cooperative research and development
- Significant improvements include:
 - Pre-positioned spill response equipment
 - Multi-agency team building enhancement system
 - Improved spill containment boom
 - Vessel of opportunity skimming system
 - On-scene command and control system

Current projects

- Pollution incident simulation, control and evaluation system (PICES)- input parameters and provide you with what some of the outcomes may be
- Waterways evaluation tool (WET)
- Cost modeling systems (PACE)- how do you assess the damages that may result
- Integrated navigation systems
- Human performance standards and safety
- Computer-based training

Summary:

- Reduction in spills
- Regulatory and non-regulatory strategies
- Preparedness at an all-time high
- Better response systems
- Refined funding mechanisms
- Need a tool box with a lot of tools

Q. On the prevention side, can the Coast Guard pay for aids to navigation mechanisms?

A. The aid could be suggested and then a prioritization would be assessed. There may ultimately be some money available if the priority is high enough.

Q. What type of recommendation would you make for the disposal of a vessel?

A. Need to understand the situation and what the desired outcome is.

LESSONS FROM FLORIDA KEYS NATIONAL MARINE SANCTUARY VESSEL GROUNDING RESPONSE AND ENFORCEMENT

BOB CURRUL, FLORIDA FISH & WILDLIFE COMMISSION/FKNMS

History of the Florida Keys National Marine Sanctuary:

- 2900 square miles in the sanctuary
- 1990 established the sanctuary following 3 groundings in 16 days
- Bans off-shore drilling
- Areas to be avoided
- Management plan finalized in 1997

Enforcement:

- NOAA and the State of Florida Fish and Wildlife Conservation Commission (FFWCC) have a partnership for sanctuary enforcement. The State of Florida has the ability to withdraw from the partnership at any time.
- NOAA and the State of Florida Fish and Wildlife Conservation Commission (FFWCC) have boarding authority to search, inspect, and seize any vessel suspected of violating the National Marine Sanctuaries Act.
- Sanctuary regulations prohibit a vessel from striking or injuring coral, seagrass or other immobile organism. Sanctuary violations are generally civil.
- State of Florida investigates boating accidents and boards vessels engaged in fishing. Violations are either civil or criminal, but are mostly criminal.
- Most groundings in the Florida Keys are due to negligence.

Grounding totals 1997 to 2001	
Year	Number of vessels grounded
1997- 1998	507
1998-1999	549
1999-2000	581
2000-2001	660
*About 3-5% are coral groundings	

Authorities:

- Mini-312- recovers the cost of restoration and response but the case does not require bringing in DOJ. Keep this at a NOAA level.
- Summary settlement is a citation, which is issued, in order to deal with a smaller case without involving a large number of people/lawyers.

Notification and response:

- The initial notice of an event is received at a FFWCC dispatch center. This computer aided dispatch system is where all the groundings are recorded whether they cause damage or not.
- Calls are received from marine salvors, the Coast Guard, the boat operator, general public, Sanctuary staff, patrol officers, and aircraft pilot from FFWCC.
- If in a coral area, there is damage to the resource, and the vessel is over 30 feet, then the Sanctuary Lieutenant is notified.
- If officer is in doubt, calls in a marine biologist.
- At times the damage assessment is begun when the grounding occurs, if not then wait until the ship is removed.

Fines:

- Coral- \$100 plus \$75 per square foot up to 10 square feet.
- Sea grass- \$100 plus \$75 per square yard of seagrass.
- The money collected from summary settlements goes back into the Sanctuary - can be used by the Sanctuary Superintendent as they see fit.

Removal:

- Officers monitor vessel removal- in coral try to expedite this process so as to reduce further damage.
- Vessel removal is limited to high tide and engine use is limited. If complicated, then a removal plan is developed and its use is strongly suggested.
- Since 1997 only seven vessels have not been removed by the responsible party.
 - USCG- removed 1.
 - NOAA- removed 2.
 - Florida Derelict Vessel- removed 4 (Florida derelict law states that you can't leave a vessel in a wrecked condition on the state resources).

Large Vessels Groundings:***Damage is considered the following***

- Coral- anything over 10 square feet
- Seagrass-anything over 10 square yards

Case statistics

- 33% of large groundings are vessels between 41 and 50 feet
- Recreational 74%, Commercial 26%
- Power vessels 78%, Sailing vessels 22%

Case preparation

- Officer has to be aware of what the responsibilities are of the prudent mariner, and:
 - Takes photographs on arrival
 - Checks the bridge to see that no navigation is turned off and documents the readings
 - Seizes, logs, charts, electronics - need a warrant to download information from the electronics
 - Interviews operators and observers
 - Documents all navigation equipment and whether it was in use
 - Documents charts in use
 - Ensures the position is fixed
 - Processes evidence
 - Completes the report

Small/Medium Vessel Groundings:***Damage is considered the following***

- Coral- anything less than 10 square feet
- Seagrass-anything less than 10 square yards

Case preparation**1. Biological assessment**

- Similar to a ship case preparation but on a smaller scale
- No "marine casualty enforcement check list"
- Officer physically marks site for the biologist

- Once assessed, cases are processed as damage actions or penalty actions depending on the extent of damage and the restoration required

2. Summary settlement cases

- Officer measures damage
- Issues a citation and an information sheet

Two types of “Mystery groundings”:

1. Site without a boat
2. Damage boat but no idea where it went- interview the operator to determine where it has gone

Success rate:

- No court cases lost
- No court cases since 1993
- All ship cases are paid for except one
- 97% collection on assessment cases
- 95% collection on summary settlement cases

Prevention:

Direct intervention

- Team OCEAN- stopping a boat before it runs aground, distributes information at high usage sites

Local outreach and education (contact Bob if interested in any of these materials)

- Protecting Paradise video, pamphlets, video- to boat rental facilities to play before renting a boat. 8 minutes. How not to run aground and what to do if you do.
- Public service announcement- running for past 10 years.
- Grounding prevention presentations.
- Waterways- TV show on public television.
- Monthly brochure route- distributed educational materials to about 400 businesses in Florida keys and south Miami.
- “Keeping your bottom off the bottom” brochure.
- Sticker that goes on all rental boats in the Florida keys- this has helped to reduce the number of rental boats running aground.

National and International Outreach

- National publications.
- Area to be Avoided on US nautical charts- reduced the number of ship groundings on reef.
- About to be designated a “Particularly Sensitive Sea Area” by IMO- only 3rd one in the world.

Improved channel and reef marking

- Raycon beacons installed to mark channels and since installation, no ship groundings

Conclusion:

- Regardless of prevention and outreach, vessel groundings in both seagrass and coral ecosystems, are increasing or remaining stable

Q. Do you think the groundings are really going up or are there more people?

A. Both, more recreational boaters.

POSSIBLE LESSONS FROM NATURAL RESOURCE DAMAGE ASSESSMENT (NRDA) AND DAMAGE ASSESSMENTS IN THE PACIFIC ISLANDS- DISCUSSION

DOUG HELTON, NOAA, NATIONAL OCEAN SERVICE (NOS), OFFICE OF RESPONSE AND RESTORATION (OR&R), DAMAGE ASSESSMENT CENTER (DAC)

The application of OPA:

- One of the goals of the Oil Pollution Act of 1990 (OPA) is to ensure that the polluter pays the cost of the incident. Claims can be made for both vessel removal and natural resource damage assessment.
- Due to the *Gatlin* decision the only damages that are recoverable are those caused by: 1) oiling 2) the threat of oil or 3) the result of response actions.
- OPA has a strong response authority and is a potential source of funding for grounded vessels.
- Under OPA, oil related impacts are compensable.
- Physical impacts are compensable if they are the result of a response action.
- Preliminary assessment costs are recoverable.
- OPA can be used if there is concern about lost uses i.e., vessel groundings may result in beach closures and the loss of recreational opportunities and it is possible to argue that these lost uses are a result of a response action.

Natural Resource Damage Assessment (NRDA):

- May be a tool for vessel removal and restoration but the costs of initiating this process could outweigh the recoverable damages for small incidents.
- Further this process is time consuming and requires much staff to conduct properly.

General advice for initiating NRDA under OPA:

- Proceed carefully
- Accomplish as much as possible under emergency response
- Consult with counsel early regarding legal strategies
- Initiate preliminary assessment to collect ephemeral data
- Pre-incident planning is critical, especially for remote incidents
 - Identify response team both technical and legal
 - Establish prompt notification protocols
 - Coordinate with co-trustees and response agencies
 - Develop rapid assessment methods
 - Acquire appropriate equipment, funding and contract support
 - Train personnel

Fundamental concepts of Damage Assessment:

- Goal is to restore the environment back to the baseline
- NRDA actions should not interfere with the primary goal of an effective response
- NRDA actions are separate from and supplementary to response actions
- Injury caused by the response is compensable
- Not all spills warrant a NRDA- may have to accept some loss of resources in the cases where the costs of the assessment outweigh the benefits of recovery. Typically the Damage Assessment Center only responds to spills greater than 10,000 gallons

- NRDA actions are compensatory and not punitive- not conducting an assessment to punish someone just trying to restore the damage that was done to the resource

NRDA Process:

1. Preliminary assessment

- Scoping exercise
- Takes place during response

2. Restoration planning

- Restoration under OPA is very broad
- Conduct injury studies
- Develop reasonable range of restoration alternatives
- Develop restoration plan

3. Restoration implementation

- Settle or litigate
- Implement minor projects

Injury Assessment Overview:

OPA does not mandate specific injury assessment methods but requires that

- Procedures that you choose need to be based on sound science
- Additional cost of more complex procedures must be reasonably related to the incident
- Procedure must be reliable and valid for the particular incident

Context

- What you will do in one region is very different in what you would do in another region
- Need to justify why you took actions and why the action was appropriate for this particular case

Judgment

- Best professional judgment of experts is always needed- may need to justify actions in a court of law and will need to defend the actions that are taken
- Local knowledge of resources of risk is essential to implementing the best strategy

Range of Procedures

- In most spills rely on a wide range of approaches; data modeling, laboratory analyses, expert judgment, peer review, field surveys. Need to document as carefully as possible how you reached your conclusions.
- These procedures can be used alone or in any combination.
- Simplified approaches are not necessarily less rigorous or less valid than the field and laboratory studies.
- The additional precision and accuracy of more complex procedures may not be warranted given the limited precision implicit in many types of restoration—costs need to be considered.
- Most assessments use a combination of assessment tools.
- Not all spills warrant an extensive field assessment and models may be utilized.

OPA restoration requirements

- Funds recovered must be spent on restoration
- Plans shall be developed and implemented only after adequate public notice
- No double-recovery of claims

- Nexus to the injury- some logical connection to the injury in the field

Emergency restoration

- Reattachment of corals, or debris and rubble removal

Primary restoration

- Goal is to return injured resources and services to baseline conditions i.e., restoration of a reef framework, planting of sapling trees for a forest fire, restore reef framework

Compensatory restoration

- Compensating for interim losses from the date of the injury until recovery of injured resources and services. This allows for a larger number of alternatives i.e., creating access to water or creating trails, removing wrecks and fishing nets from reefs, or seeking to prevent future groundings or incidents.

Q. When you are in an emergency situation do you need to worry about a permit?

- A. When in an emergency phase, this can happen fairly expeditiously, would have to get permits.

Q. Are land-based oil pollution discharges that impact coral reefs covered under OPA?

- A. Not sure what circumstances would trigger OPA, perhaps if the discharge is ongoing. A chronic scenario is more difficult to make the case to utilize OPA.

Funding

- Monies from the National Pollution Funds Center can be used to initiate a damage assessment, fund injury studies, and implement restoration

Conclusions:

- Trustee should try to accomplish as much as possible during the response
- OPA based NRDA is appropriate for oil injuries, response injuries, and non-divisible injuries
- Preassessment funding options should be considered

Q. Who gets to decide which restoration option is chosen?

- A. Two steps are taken. First, the Trustee agencies give input to the restoration options. Second, a document is written which explains the chosen restoration option and all the other options that were considered. This document is posted for the public to comment on the options that were chosen.

Q. Could reducing land-based pollution be considered compensatory damage?

- A. It definitely could. The real challenge is in scaling the injury and understanding how such an option could compensate for a different injury.

VESSEL GROUNDING INJURY ASSESSMENT- METHODS FROM THE FLORIDA KEYS NATIONAL MARINE SANCTUARY (FKNMS)

Laurie MacLaughlin, NOAA, NOS, FKNMS

Current events in Florida Keys National Marine Sanctuary:

1. Three shrimp trawlers grounded in late December and early January causing extensive damages to coral and seagrass ecosystems.
2. A damage assessment was recently completed which assessed the extent of injury resulting from the placement of un-permitted artificial lobster habitats. Vessel grounding monies were utilized to salvage these habitats.

3. During the past 8 years there have been several documented cases of the devastating impacts of boat anchor to coral reef ecosystems.

Injury Assessment in the Florida Keys National Marine Sanctuary:

Categories of Injury

Large/Catastrophic Vessel Groundings

- Section 312 of the National Marine Sanctuaries Act is the authority that the Sanctuary has available to them to assess the damage to the reefs and conduct restoration. Full damage assessments are conducted when these groundings occur.

Medium Vessel Groundings

- Are handled through a mini-312 program. Some minimal restoration is conducted, but mostly compensatory restoration is conducted.

Small Vessel Groundings

- Officers many times assess these areas themselves. Must be less than either 10 yards of seagrass or 10 square acres of coral. Officers take still pictures and estimate damage.

Response

- Immediate response is critical not only to the response but also to the damage assessment
- Conduct damage assessment while the response is occurring
- Collect video photography of the damage
- Advise salvagers of a potential exit route for the vessel to help minimize further damage to the habitat
- Mark sites with buoys or stakes, also take GPS coordinates so that biologists can return to the site
- Biologists assist salvers with the response by removing debris from the area

Types of Assessed Injuries

- Parking lot effect- when a vessel plows into the bottom and bulldozes the area- aerial photography is used to depict damage
- Blow holes- created by boats trying to lift themselves off the area
- Burms- material expelled from blow holes

Assessment

Large and Catastrophic Vessel Groundings

- Use high-resolution aerial photography with a fixed wing aircraft that will take true vertical photography with a 90-degree angle to the water. This technique is very dependent on the viability of the defendant as it is costly. Further analysis is also needed.
- Permanent markers are placed in grounding areas. GPS reference coordinates are taken at all stakes.
- Video photography is taken.
- Boundary markers and sometimes bricks are used to define the injured area for purposes of aerial photography.
- A north arrow is placed on the substrate for scale as well as a point of reference.
- Aerial imagery is placed in ArcView or another type of software then the square footage of damage is calculated.

Medium/Small Vessel Groundings

- Map the area of injury by walking the perimeter. GIS based software allows staff to produce images of the damage, and this is very defensible.

- Where both coral and seagrass damage is done then two different methodologies are used and added together.
- Recently begun using a video transect technique to determine percent cover damaged.
- With all these techniques, ground truthing also occurs. For details see the paper by Goodwin and Hudson that was circulated at the workshop.
- All groundings are treated as a crime scene. Look for boat paint. Collect chips of the bottom paint. Look for bottom paint skid marks. Collect as much evidence as possible.

Volunteer Efforts:

Reef medics

- A volunteer program that creates a sense of stewardship. This is a 3-tier program, which includes response, injury assessment, and restoration.
 1. **Response**- these people are the watchdogs who look for the groundings.
 2. **Injury assessment**- reporting and investigating-helping sanctuary staff.
 3. **Restoration**- triage, going out to help with the restoration of the areas.
- One of the drawbacks of this program is that there is great liability in having divers dive off of NOAA boats. This reduces the number of volunteers who can dive at the site, as volunteers have to be trained. There is a limited amount of work that can be done snorkeling.

Q. Do you keep a database of all the volunteers you put through training?

A. Yes, there is a database.

DATABASE OF GROUNDED AND ABANDONED VESSELS IMPACTING CORAL REEFS

DOUG HELTON- NOAA, NOS, OR&R, DAMAGE ASSESSMENT CENTER

<http://response.restoration.NOAA.gov/dac/vessels>

- Database funded using NOAA/NOS Coral Reef Conservation monies.
- Seeks to inventory abandoned vessels in U.S. waters.
- Utilized various sources to find abandoned vessels, spoke with Coast Guard, State of Florida, State of Hawaii, Guam, CNMI, American Samoa, and the NOAA navigation database.
- Currently the database has 1,400 entries, most in the Atlantic, and most have only partial information filled out:
 - This database was designed based on the Coast Guard database.
 - For each vessel there are about 40 fields for data including: General information on the vessel, size, condition, location, owner, the incident, date, response action, legal status, endangered species, general threats that the vessel poses to the environment, and a contact section- to whom you should talk about the wreck.
- Range of abandoned vessels in some areas because there is not yet validation that the vessel is still there.
- The goal is to get a list of all the vessels, determine which ones need more information gathered, and prioritize the vessels that are causing the most amount of damage.
- Doug will pass around information sheets and ask each jurisdiction to try and fill out more information for each vessel in their area.

Q. Are Florida abandoned vessels incorporated in the database?

A. Yes, but it is only a snapshot as of late November. Working on a way to incorporate updated information from the Florida database on a more regular basis.

Q. How do you define an abandoned vessel?

A. Looking primarily at vessels that have been abandoned in the past ten years. Those that are still a potential pollution threat.

Q. Which vessels are potential threats in and around the harbors?

A. CNMI and Guam will forward this information to Doug by the end of the month.

Comments:

- Seems that while building this information should also try and document those incidents where vessels are no longer there yet some damage has already occurred.
- In addition, it seems that a third portion needs to be included, setting up a database for ship groundings from today on.
- In Hawaii there was a strong interest in identifying those vessels that are abandoned on moorings that have not yet hit the reef.
- May be a good idea to raise this to the Coast Guard. If there was a designated point of contact per region in the Coast Guard then perhaps could begin to build this project forward.
- Terry Rice agreed to talk to regional representatives about setting up a database to document those vessels that are grounded from this point forward.
- Thought we were looking for a tool to demonstrate that this is a significant problem. To do this need to look to history. The future cannot prove this for us.
- Need to demonstrate the damage that these vessels may cause.
- If there was a better record of some of the problems then we would be better armed to look for ways to go about solving this issue.
- Another portion of this issue that needs to be looked at is those boats that are abandoned (perhaps on moorings or at docks) that are wrecks waiting to happen.
- Points of Contact for the region are: CNMI- Becky Lizama; Guam- Gerry Davis; Coast Guard- LT James Borders.
- Is there something on the books that would allow the territory and commonwealth to seize a vessel? Need an authority then will look for funds.
- It seems like it is a better option to scuttle these vessels than to try to dispose of them somewhere due to the solid waste issue.
- Even if there is an authority there is no fund to remove these vessels.
- Coast guard can remove oils under OPA and hazardous wastes under CERCLA.
- These can be removed and then taken out to sea and sunk but how much money would be needed to remove such dangerous ships? This could take a lot of money. This is not going to be cheap.
- There was a situation in Rota where a vessel could not be moved because the owner was defunct. The owners were given notice to remove the vessel. When they refused, the vessel was seized because it posed a danger to navigation, removed, and then CNMI filed in federal court for reimbursement of funds.

**ASSESS, RESPOND, RESTORE, AND RECOMPENSE FOR ENVIRONMENTAL DAMAGE-
DEVELOPING STANDARDIZED PROTOCOL: DISCUSSION**

- When there are natural resource damages, there are plenty of options for doing more than just putting seagrass and coral back to the way they were. Prevention is key and actions such as the mooring installations are quite plausible.

- The feasibility and appropriateness of restoration in the Pacific is still in question. To try to recreate a reef that is so diverse is difficult, and perhaps even impossible to successfully accomplish. This is probably not cost efficient either.
- Perhaps in the Pacific, the focus should be on prevention instead of restoration.

FEBRUARY 7 - LOOKING TO THE FUTURE

ELEMENTS OF A PROTOCOL FOR DEALING WITH VESSEL GROUNDINGS IN THE PACIFIC ISLANDS

Activating a response:

- Safety is the most important aspect
- Set up an incident command
- Start response by notifying the area contacts

Guam

- Response can be improved by seeking to get biologists and scientists on site more efficiently to assess the damage.
- Island scientists could easily be added to contact lists so that they are called to respond when a vessel grounds.
- One of the questions that will be asked is what are the resources at risk. Hopefully in the operations planning side this will be raised.

CNMI

- Agencies and environmental experts are generally involved with the response.

Situation Assessment:

- Try to force the Coast Guard to define a policy for applying the Fund to these circumstances.
- From an All Islands perspective, much of the economic valuation work that is being conducted is helping to identify the costs and benefits associated with a removal.
- Not comfortable with forcing the Coast Guard to remove these vessels. This puts the Coast Guard in an awkward position. This could cause them to significantly draw down on their Fund monies.
- When the word gets out that the Fund is open, this can cause a swarming effect for contractors.
- Need some type of advisory paper to be a product of these workshops. Critical that we don't corner the Coast Guard but rather maintain a partnership in this initiative.
- We will take these notes and work to synthesize a cohesive paper of the results.
- We need to take the scenarios in the area plan and cost out what the cost of leaving the vessel versus not leaving the vessel may be.
- Based on past case studies, it would be possible to assess if it would be cheaper or not to remove the vessel from the beginning or wait some time.
- Our next steps are to also include the Caribbean in some formal response to the Coral Reef Task Force.
- This is going to be an iterative process- we need to get input from the group before putting recommendations of the Task Force.
- Seems like we are placing all our eggs in one basket, we need to prioritize or standardize some type of ship assessment. Need to not only assess the damage that has been done but also the

potential damage that could be done. By prioritizing groundings could then approach the Coast Guard with this list.

- In some cases, pulling a vessel off the reef rather than leaving it there can cause more damage.

Notification and Investigation Procedures:

- Are there opportunities to do some training with the Florida Keys?
- Probably will find that video transecting and other types of monitoring approaches being used in the Pacific and that Guam and CNMI have some expertise using these techniques.
- Would be helpful to have a standardized form so that all the groundings could be evaluated on the same level.
- Protocols for response and damage assessment should prescribe a minimum standard as well as for the collection of evidence and documenting the incident.
- Maybe need to have training for other folks so that there is more depth in each of the jurisdictions.
- We could also establish an MOU between CNMI and Guam so that the knowledge of trained experts can be shared between the islands. Most of the experts exist between the government agencies of these two islands.

Vessel removal:

- In Guam there is the capacity to remove a vessel.
- The CNMI, can handle the removal of smaller vessels. If a larger vessel were needed then assistance would have to be sought from Guam. There are no commercial salvors in CNMI. Funding can be a limiting factor.
- CNMI and Guam have emergency drop sites. This raises the question of whether it is better to leave the vessel on the reef or scuttle it in deeper water.
- The cost of towing a vessel off the reef to a dumping site may prohibit even emergency disposal in CNMI.
- In CNMI there is a high degree of turnover experts/scientists. There is a need for incentives for local folks to get trained and stay involved. One example could be to develop a certificate program at the University of Guam or CNMI Community College.

Restoration and monitoring:

- The best coral reef restoration can take compensatory dollars away from other more effective sources of remediation/restoration.
- In the FKNMS when the injury is a high visibility profile reef it is often the public sentiment for direct rebuilding of the physical structure of the damaged areas.
- One concern for restoration in Guam is that this might give the public the misconception that corals can be replaced and restored back to whole easily.
- Just because primary restoration cannot occur does not mean that compensatory restoration cannot be implemented. Restoration under OPA is broadly defined and alternative restoration is permissible.
- The major issue involved in restoration is to stabilize the bottom of the reef to allow for regrowth.
- In CNMI all of the sites of coral transplantation have experienced nearly 100% mortality, and the cause is unknown.

Prevention:

CNMI

- Workshop to discuss, with all vested agencies, the needs and how best to launch a public campaign

- In CNMI ports, mariner navigation training may be the best method for preventing harm from smaller shallow draft vessels—basic safety and navigation requirements generally do not apply to smaller foreign fishing vessels

Guam

- Mark the jetties and the channels in the waters of Guam.
- Establishing corridors including offshore banks. Southern tip of Guam has a high incidence of vessel impacts.
- High incidences in Guam are small, nighttime or fishing vessels, there may be some regulations to address these.
- Any VMS should include these areas.
- Data collection and analysis of areas of high concern.
- Training of people from various local agencies.
- All fishing vessels have an agent. Placing business regulations on agents may be an option.

Capacity issues for responding to grounded vessels in the Freely Associated States:

- Once the crew and fish are taken care of and the oil is removed from the vessel, then if the vessel is fiberglass or wooden, then it is burned on the reef.
- Would like to get a list of local area salvors that could be called in the case of a grounding. Note: Coast Guard has these lists.
- Protocols for damage assessments would be helpful.
- Need for biological guidance/protocols to prevent further damages e.g. ballast and burning issues.
- Harbor pilot training and program development. Note: Coast Guard may be able to provide technical assistance and or information on this issue.
- Need assistance in better marking the reef channels and establishing boating moorings.

Comments:

- Basic safety navigation requirements generally do not apply to smaller foreign flag fishing vessels.
- March GCRMN meeting in CNMI may be an opportunity to raise some of these issues.

POTENTIAL CHANGES IN LEGAL AUTHORITY AND TECHNICAL AND FINANCIAL CAPACITY TO EFFECTIVELY ADDRESS VESSEL GROUNDING IN THE US AFFILIATED PACIFIC ISLANDS

CNMI:

- Development of mooring systems is needed as well as regulations and enforcement for use
- Require visiting vessels to register with the port
- Need to look at all regulations locally to fill gaps and develop a more comprehensive coverage
- Need economic valuation of reef resources and some way to quantify the extent of damage
- More support and emphasis on monitoring and enforcement is needed
- Law for typhoon mooring ability—does not seem necessary to establish extra laws and regulations for something that occurs approx 1.5 times a year

Guam:

- One of the big hurdles is having the authority to develop a program.
- There is currently on law that will allow DAWR Guam to 1) pull a vessel off the reef and 2) conduct a natural resource damage assessment.

- However, most natural resource damage assessments fall into the jurisdiction of Guam EPA.

COMMENTS ON THE U.S. CORAL REEF TASK FORCE RECOMMENDATIONS FROM THE AMERICAN SAMOA RESOLUTION:

1. **Require a bond or surety for all fishing vessels entering U.S. territorial waters for the purposes of conducting business at U.S. ports adjacent to coral reefs, as appropriate.**
 - Is emphasis on fishing vessels appropriate? It is probably not legal.
 - Would require a new federal law, could not be done locally.
 - Insurance will not always guarantee removal.
 - Salvage insurance would not solve the problem, liability would also be needed.
 - Could be attached to the permit (as in the FSM) for foreign flag vessels fishing in the EEZ.
 - Could Ports Authorities require agents to have or require this coverage?
 - Comprehensive analysis would be required to determine feasibility - availability of bonds, cost, economic impact, and perverse incentives.
2. **Make recommendations for additional legislation and a funding mechanism in addition to the Oil Pollution Act to broaden the ability to remove grounded vessels as needed.**
 - Add funding and change tonnage for abandoned barge act.
 - Legislative changes might be possible at local level, but would be unfunded. Would require directed, continuous federal funding.
 - Emergency and capacity/response funding structure.
 - New funding would need to provide a return on the investment.
 - New regulations would require incentive to cooperate.
 - NRDA and OPA requirements - lowering vessel size for insurance, adding NRDA for non-oil damages.
 - Potential funding solutions need to avoid robbing Peter to pay Paul.
 - More informal options (e.g. MOU for dealing with vessels) between trustee partners - agreed upon protocol/guidance.
3. **Establish national legislation for coral reef damage assessment, including cultural losses, to serve as a guideline for both fines and restoration costs.**
 - Ability to convert socio economic considerations into economic value is in the works - tool being developed.
 - Allow for local decision-making/flexibility to allocate restoration monies.
 - Legislation probably not a politically feasible alternative.
 - If OPA-based then it already exists.
4. **Develop federal assistance protocols to augment the Islands' ability to initiate rapid response for vessel damage assessment and removal including training, prearranged access to DOI, DOC, DOT and DOD assistance in the event of immediate and critical environmental damage.**
 - Working through area committees

**Guam Vessel Grounding Workshop
February 5-7, 2002
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Experience with Ship Groundings - American Samoa



Past Incidents & Experience

Scope of the problem in Am. Samoa

- Periodic vessel groundings occur in the Territory, primarily by longliner fishing boats. Coral reefs are damaged, pollutants are released, and vessel removal is often very slow or never accomplished. To solve the problem we have technical, funding, and legal needs.

Frequency of incidents

- Average 3 per 10 years excluding 1991 storm event (9 vessels)

There is a small percentage of unreported incidents that can cause significant damage to coral reefs during grounding and removal.

A case study of 1991 grounding in American Samoa

- i) Cause
- ii) Scale of incident
- iii) Status / Response
- iv) Measures that could have prevented the grounding



- Nine Abandoned vessels landed on the reef in Pago Pago Harbor which occurred as a result of Hurricane Val(1991)

- Removal took 10 years and cost over \$6.9 million from Oil Pollution Act (OPA) fund, excluding USCG cost of removal of pollutants.

- No Prosecution
- “Corporate Shell” owners incorporated in Asia had declared bankruptcy 2 weeks before the hurricane & left vessels unattended

- Individual owners could not be located. Therefore, no responsible parties could be identified for the vessels



■ Initial Response after Hurricane Val:

- ◆ USCG removed pollutants including 10,000 gal. of petroleum products
- ◆ USCG determined wrecks were not a hazard to navigation. Therefore, no further action required by them

■ ASG actions 1992 – 1998:

- ◆ ASG requested assistance for removal of vessels from Federal Agencies:
 - FEMA, ACOE, DOI, USEPA, DOD / US Navy
 - Federal response: no jurisdiction / no funding
- ◆ US Congressional Visit in 1997 did not result in commitments for assistance

■ *Private Assistance was offered*

- ◆ Several off-island contractors offered to remove vessels at costs ranging from \$2 million to \$17 million
- ◆ One contractor offered to remove at no cost if allowed to sell the scrap metal, but withdrew offer due to drop of price for scrap metal

■ *Long term response*

- ◆ In 1994 small oil spills appeared near wrecks
- ◆ In 1998 USCG discovered un-removed pollutants including petroleum products and many ammonia cylinders, and committed to removing the pollutants
- ◆ ASG requested assistance through the new US Coral Reef Initiative. NOAA, DOI, & ASG as Trustees applied for funding from the National Pollution Funds Center via OPA 90

■ *The Process (1998)*

- ◆ National Resource Damage Assessment (NRDA), EIA, and Action Plan completed
- ◆ NRDA enabled access to Oil Spill Liability Trust Fund
- ◆ Trust Fund allowed for restoration of resources damages/injuries by USCG during removal of pollutants

■ **USCG / NOAA
Removal Actions
(1999)**

- ◆ Access to vessels established (enhanced / constructed causeways)
- ◆ Pollutants removed (18,000 gal petroleum products, asbestos, and ammonia)





- ◆ 2 vessels partly cut up, dragged off reef, re-floated and disposed of at sea
- ◆ 6 vessels cut apart by heavy equipment and removed

■ 1 vessel had broken up prior to 1999 and no pollutants remained onboard. Therefore, the vessel was not eligible for Oil Spill Liability Fund

- ◆ DOI provided some funds
 - allowed partial removal
 - a few small pieces still remain on reef



■ **NOAA Restoration Actions**

- ◆ Documented impacts to reef
- ◆ Documented recovery of reef
- ◆ Documented restoration efforts (coral transplantation)



Lessons Learned

Existing management capacity

- Staff: Limited, not specific to groundings
 - ◆ Federal: USCG
 - ◆ Local: ASEPA
- Infrastructure: Limited, not specific to groundings (oil spill related)

Existing coordination of efforts / funding

- Regional Response Team (delay time in response)
- Took a Trustee relationship established for Val incident
 - ◆ USCG / DOI / DOC / ASG

Specific needs identified from Am. Samoa experience

Technical needs

- Assessment of value of all coral reefs (social, biological, cultural, economic)
- Process to follow if groundings occur
- Determine jurisdictional, health and safety and reef damage issues
- Established removal protocols

Funding needs

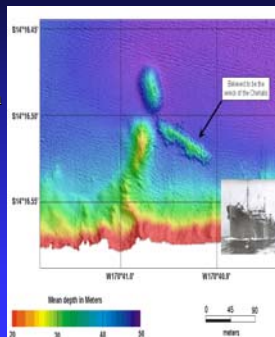
- Local / Regional contingency fund (locally generated)
- Federal contingency fund other than Oil Pollution Act (OPA)

Legal needs

- Legislative solutions at both local and Federal levels
- Process to identify responsible agencies

Priority vessels for removal:

- USS Chehalis: Navy tanker sunk near port (1948). Leaking oil?
- Jui Man #3: longliner on the reef in Amouli (grounded 1981)
- Young Kwang #1 and Unknown Vessel #1259: Longliners (2) on the reef in Aunu'u (grounded 1985 and ?)



Local Initiatives

- Am. Samoa is undertaking efforts to insure we are better prepared to safeguard our interests against future groundings
- Prevent unattended “abandoned” vessels in port by requiring vessels that enter to provide proof of financial responsibility to Port Officials
- Proposed legislation (supported by Gov. Tauese)
- ASEPA community program (village cooperation strategies)

Fa’afetai Lava ma Tofa Soifua



USGS / NOAA web site that details incident available at:

www.incidentnews.gov/incidents/incident_2htm

The web site is the source of the wreck photos in this presentation

Laws Pertaining to Vessel Pollution/Grounding in American Samoa

The Territorial laws of American Samoa do not address either the problem of sunken or grounded vessels, or compensation for damages to natural resources after a grounding or pollution event. Existing laws address only possible penalties and cleanup responsibility for pollutant discharges caused by vessels in territorial waters. These authorities are summarized as follows:

1) Harbor Pollution Discharges, A.S.C.A. § 20.1116. Under this provision, the Director of Port Administration may order the person(s) responsible to remove or clean up the discharge at the responsible party's expense, but only if a spill or discharge occurring in Pago Pago Harbor is deemed an "emergency" by the director. Responsible persons may be summarily fined for discharges or charged with a crime pursuant to A.S.C.A. § 20.1115 and § 20.1714.

2) Harbor Cleanup Fund, A.S.C.A. §§ 20.1117, 20.1118. These statutes authorize the Executive Secretary of the Environmental Quality Commission (currently the director of ASEPA) to spend Marine Pollution Account funds to abate discharges caused by *unknown* vessels throughout the *waters of American Samoa*. Unfortunately, the language appears to restrict expenditures to pollutant discharges (not grounded vessels themselves) and seems to require an "unknown" violator before funds may be spent. Further, the statute(s) do not expressly authorize the Secretary to bring suit in the name of the fund to recover monies spent responding to a discharge when the violator becomes known after the discharge and cleanup are complete.

3) Public Health Act, A.S.C.A. § 25.0109, authorizes the director of Public Health to order a responsible party to abate a "public health nuisance" or personally take action to abate the nuisance at the responsible party's expense. Unfortunately, if a grounded vessel did not present a sufficiently serious pollution threat, and, accordingly, did not rise to the level of a public health nuisance, it is unclear whether the director of Health would have jurisdiction to order abatement of the pollutant discharge, or to order removal of a wrecked vessel.

In sum, these statutes provide various agencies of the American Samoa Government with limited authority to respond to vessel pollution events, but none authorize the government to tackle removal of a wrecked vessel from territorial waters. Also notably absent are any statutory provisions relating to recovery of natural resource damages for oil pollution discharges or vessel grounding events.

Legislation Addressing the Vessel Grounding Problem

Because the laws of American Samoa do not address the problem of vessel groundings, existing legislation must be amended or new legislation enacted. One possible approach would be to expand the existing territorial oil response clean-up fund provisions (A.S.C.A. § 20.1117 and 20.1118) to include removal of wrecked vessels. In addition, the legislature might invest the director of Port Administration with authority to

remove or scuttle a vessel wrecked on the reefs in territorial waters under A.S.C.A § 20.1116. A more effective approach, however, might involve special legislation targeting removal of vessels causing harm to valuable natural resources when the vessel owner fails to claim the vessel or otherwise commence removal within a certain time frame. In each circumstance, however, care must be taken to insure that the chosen approach will not directly invade the specialized field of federal admiralty law to avoid possible federal preemption problems.

Additionally, to ensure that vessel owners are at least financially responsible for their vessels in local waters, legislation modeled on OPA § 1016 could require small commercial vessels (less than 300 gross tons)¹ to provide proof of financial responsibility to Port Administration officials. Such proof might include documentation showing marine pollution insurance, letter of credit, a surety bond by a local bonding agent or other guarantees from local businesses--like the Starkist Samoa and COS Samoa Packing tuna canneries. In the event that a vessel could not produce the required proof, Port officials could deny entry to the undocumented vessel, or detain and seize said vessel pending receipt of a proper Certificate of Financial Responsibility (COFR) from the Coast Guard or its ASG equivalent. In the event of a grounding, the territory could file suit in the High Court of American Samoa against the surety or the vessel owner to recover its response costs.

Finally, a more distant solution might involve modifications to federal laws. It is possible, for example, that the Rivers and Harbors Act could be amended to require the Secretary of the Army to protect coral reefs, marine sanctuaries, marine protected areas and like “navigable waters” from significant harm caused by grounded vessels engaged in interstate commerce. Or, the OPA² and federal Clean Water Act’s summary response authority might be stretched to include provisions relating to grounded vessels or the lowering of the financial responsibility threshold for vessels using U.S. ports under the OPA § 1016.³ The 2000 Coral Reef Protection Act could also be modified to require removal of grounded vessels posing a threat to the health and viability of coral reefs. But these “federal fixes” are beyond what can be accomplished locally, without the consensus and lobbying efforts of the states in Congress.

Undoubtedly, local legislative approaches will need the assistance and expertise of policy analysts from various federal agencies to ensure that the legislation will work within existing federal environmental laws and admiralty principles. Additional funding may also be needed for the Territory, in the event that local response and removal funds for wrecked vessels are established to protect precious reef ecosystems and other natural resources.

¹ Vessels less than 300 gross tons and not transporting oil are exempt from OPA section 1016’s financial responsibility requirements, and are therefore not checked by our local U.S. Coast Guard detachment.

² Another OPA problem for American Samoa is that jurisdiction is reposed in federal district court in Hawaii. Local courts lack jurisdiction. It is possible the Act could be amended to vest the High Court with jurisdiction.

³ Such statutory amendments may be less feasible, owing to the focus of the OPA on responding to discharges of oil and hazardous substances from large, ocean voyaging transport vessels.

Hawaii Department of Health



Hazard Evaluation & Emergency Response

HRS 200-6 Limitation of private use of ocean waters and navigable streams

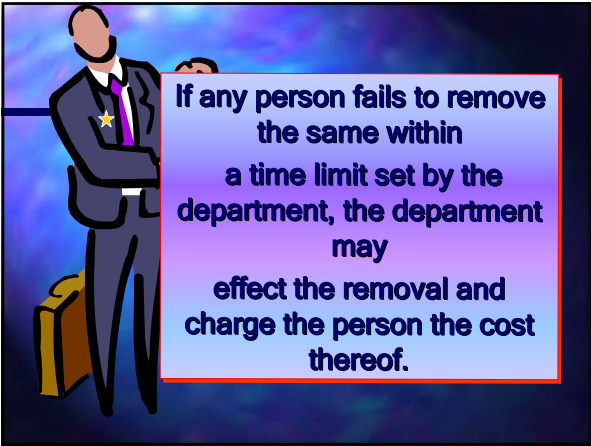


No person shall erect or place any structure or similar object, or sink any type of water craft or other sizable object . . . on or within the ocean waters or navigable streams of the State without a written permit from the department.

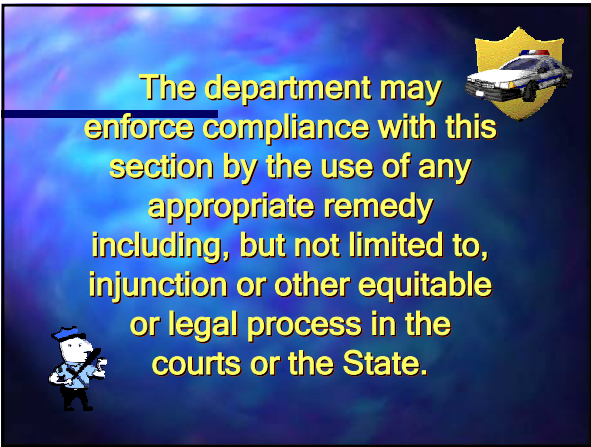
HRS 200 - Ocean Recreation and Coastal Area Programs

The Department may require any person violating this section to remove any structure, . . . on or within the ocean waters or navigable streams of the State.



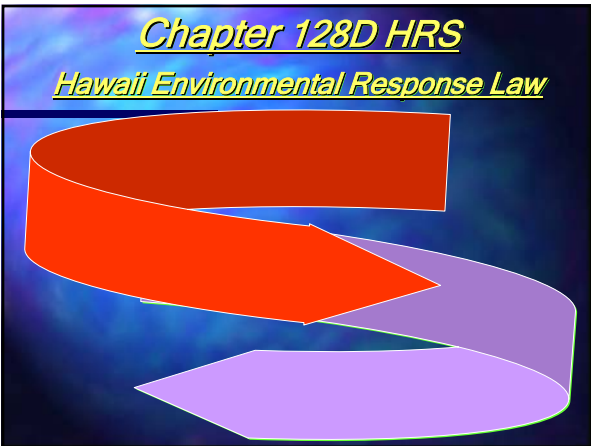




If any person fails to remove the same within a time limit set by the department, the department may effect the removal and charge the person the cost thereof.





The department may enforce compliance with this section by the use of any appropriate remedy including, but not limited to, injunction or other equitable or legal process in the courts or the State.

Chapter 128D HRS
Hawaii Environmental Response Law



 **"Hazardous substance"** includes any substance designated pursuant to section 311(b)(2)(A) of the Clean Water Act; any element, compound, mixture, solution, or substance designated pursuant to section 102 of CERCLA; any hazardous waste having the characteristics identified under or listed pursuant to §3001 of the Solid Waste Disposal Act; any toxic pollutant listed under section 307(a) of the Clean Water Act; any hazardous air pollutant listed under section 112 of the Clean Air Act, as amended (42 U.S.C. §§7401-7626); any imminently hazardous chemical substance or mixture regulated under section 7 of the Toxic Substances Control Act, as amended (15 U.S.C. §§2601-2671), oil, trichloropropane, and any other substance or pollutant or contaminant designated by rules adopted pursuant to this chapter. 





"Oil" - means oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, oil mixed with wastes, crude oil or any fraction or residue. 

"Pollutant or Contaminant" means any element, substance, compound, or mixture, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring.

§128D-4 State Response Authorities; Uses of Fund.

(a) Whenever any hazardous substance is released or there is a substantial threat of such a release into the environment, or there is a release or substantial threat of such release into the environment of any pollutant or contaminant that may present a substantial danger to the public health, welfare, or the environment, the director is authorized to act

...

The Director may:

Issue an administrative order or conduct any other enforcement or compliance activities . . .

Solicit the cooperation of responsible parties . . .

Undertake investigations . . .

Perform any necessary removal or remedial actions so as to abate any immediate danger to the public health or welfare or to the environment . . .

Tanker Casualties - Hawaii Zones

Star Connecticut - November 6, 1990 - Grounding one mile off Barber's Point light
250,000 barrels onboard, Crude, 10 inch hole in hull Vessel re-floated without spillage

Exxon Houston - March 2, 1989 - Broke single point mooring Barber's Point, spilled 16,800 gallons of crude from parted SPM hose and 8,400 gallons fuel oil from ruptured fuel tank, 3.8 million gallons crude onboard



Tanker Casualties - Hawaii Zones Cont.

Omni Yukon - October 28, 1986 - Explosion and loss, Southeast of Midway after offloading 550,000 barrels of crude at Barbers Point three days prior

Irenes Challenge - January 17, 1977 - 237,600 barrels, Crude, 50 miles north Lisianski Island

Hawaiian Patriot - February 25, 1977 - 715,000 barrels, Crude, 120 miles south of Necker Island

Austin - February 6, 1976 - 9.5 million gallons, Crude, Lost power approaching Honolulu Harbor, "a small amount of product spilled"

Fishing Vessel Casualties

Sun Myong Y

February 2, 1994

2,000 gallons diesel

Grounding,

Kakaako Beach Park

Oahu



Fishing Vessel Casualties



Paradise Queen II

October 17, 1998

20,000 gallons diesel capacity

Beach Grounding

Kure Atoll

Honolulu Advertiser

Fishing Vessel "Van Loj"

Wreck threatens beach




Wreck Fumes force guests to relocate

... fumes force guests to relocate ...

"BEACH CLOSED"


"Diesel Fuel Spill"

Van Loi
April 12, 1999
6-8,000 gallons diesel capacity
Beach Grounding
Kauai



Swordman
Long liner
40,000 - 60,000 gallons diesel

Grounded on Laysan Island
no spill, costly removal



Ince Express
Bulk Freight

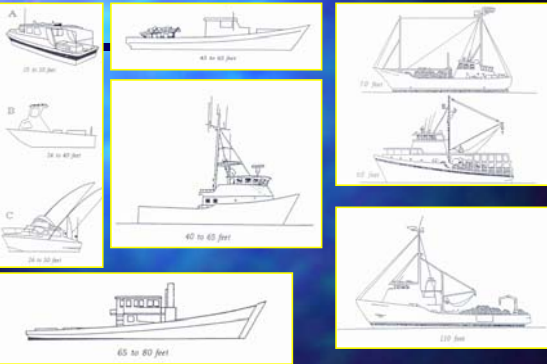
Storm Damage to hull
Copper Sulfate - Cargo
Repaired offshore
Honolulu Harbor Anchorage
Oahu



Sea Tiger
Reef Sinking
Offshore Walkiki
Oahu



Vessel types found in Hawaiian Waters



the END...

Case Study of Vessel Groundings in Hawaii

Francis G. Oishi
State of Hawaii
Department of Land and Natural Resources
Division of Aquatic Resources

Introduction

- Past Experience: 1982 to present.
- Department representative to oil spills, pollution events, ship groundings.
- Covered most of the major reported groundings.
- Case history not all inclusive.

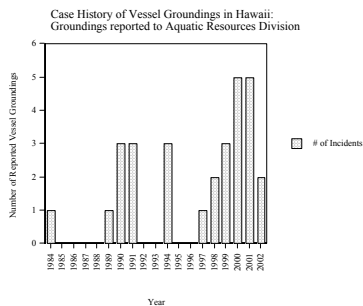
Scope of the Problem

- Hawaiian archipelago stretch >1,500 miles.
- Main Hawaiian Islands have 750 miles of coastline (4th longest in the nation).
- Hawaii has 85% of U.S. Coral Reefs.
- More than 14,400 registered recreational vessels in Hawaii ('95-'96).
- Commercial vessels that traverse Hawaii's waters: fishing, military, container, oil tankers, cruise ships, bulk cargo, etc..

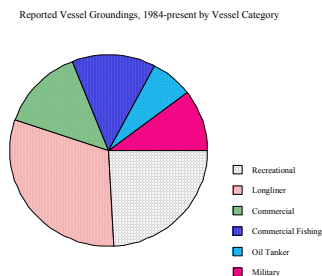
Frequency of Incidents

- Estimated average: 3-5/year, max. = 10.
- (Florida: Year: 2001, 500 groundings.)
- Caveats: Reported groundings are not all inclusive.
 - Groundings of recreational vessels are likely underrepresented.

Number of Reported Incidents by Year



Reported Vessel Groundings, 1984-present by Vessel Category



Causes of Groundings

- Human error: fatigue, inexperience, lack of training, misjudgement, judgement-impaired, unfamiliarity.
- Weather: Strong winds, Kona (southern) storms, hurricanes.
- Equipment: defective, faulty.

Incident Scale: Small Recreational Boats

- Size Range: 25-60 feet
- Fuel Capacity: < 500 gallons
- Impacts:
 - Physical: grounding scars
 - Vessel debris and litter

Vessel, “Native” 5/31/00, Kahala, Oahu



Incident Scale: Medium Commercial Fishing

- Size Range: 60-95 feet
- Fuel Capacity: 10,000-16,000 gallons
- Impacts:
 - Physical: grounding scars (scrapes, gouges, breakage)
 - Debris: vessel, fishing gear, litter
 - Oil: ?

Vessel, “Swordman 1” 6-5-00, Pearl & Hermes Reef, NWHI









Vessel, "Paradise Queen II"
10-16-98, Kure Atoll, NWHI









Incident Scale: Large Oil Tanker

- Size Range: 800 feet
- Cargo Capacity: 490,000 Barrels
- Impacts:
 - Physical: grounding scar (plow lines, breakage, salvage efforts)
 - Oil: Intertidal biota
 - Debris: ?

Vessel, "Exxon Houston" 3-2-89, Barbers Point, Oahu

Oil comes ashore as tanker spills load off Barbers Point



Storm rips powerlines, tips trees
Winds pull the roof from one home and drop it nearby

By Mark Allen

It was a day of chaos and destruction as a powerful storm hit the Hawaiian Islands, ripping power lines and toppling trees. The storm's winds pulled the roof from one home and dropped it nearby.

The storm hit the islands on Tuesday, March 2, 1989, bringing with it heavy rain, strong winds, and a large amount of debris. The damage was extensive, with power lines downed and trees uprooted. In some areas, the wind was so strong that it pulled the roof off a house and dropped it nearby.

The storm hit the islands at a time when many people were still recovering from the damage caused by a previous storm. The new storm made things even worse, as it hit the islands at a time when many people were still recovering from the damage caused by a previous storm.

The storm hit the islands at a time when many people were still recovering from the damage caused by a previous storm. The new storm made things even worse, as it hit the islands at a time when many people were still recovering from the damage caused by a previous storm.

Right to spill the 200-foot Exxon tanker, loaded with a total of 490,000 barrels of oil, off Barbers Point, Oahu, Hawaii, on Tuesday, March 2, 1989. The tanker spilled 117,000 gallons of oil on the island.



Incidents' Status/Response

- Removal: generally yes; a few, no.
- Assessment: generally yes; a few, no.
- Restoration: No
- Prosecution: No

Preventative Measures

- Vessel Monitoring System: possible but expensive.
- Education: cheaper.
 - Training.

Management (Existing) Capacity

- Staff: Agencies and private industry.
- Infrastructure: USCG, CIC, federal, state
- Coordination: Oil spill response network (NRC, CG, DOH, agency network, other)
- Funding: Vessel's insurance, agency special fund, pollution fund, or none.

Specific Needs

- Legal authority to effect vessel removal.
- Legal mandate to effect resource restoration.
- Financial ability effect vessel removal (where other alternatives fail).
- Database on groundings.
- Better notification, investigation, damage assessment and prosecution.

Priority Removal List

- Hi-visibility: Paradise Queen II, Van Loi.
- Feasible: Lahaina sunken sailboats
 - Large containers, Lanai north shore
- Preventative: “abandoned” (problems awaiting, eg. Lahaina)

Draft

Vessel Groundings in Hawai'i: Threats and Impacts to Nearshore Coral Reef Ecosystems

D. A. Gulko¹

Abstract The vast majority of US coral reef resources are found within the Hawaiian Archipelago; while efforts have been made to minimize vessel grounding impacts (other than those associated with oil spills) on reef resources elsewhere in the US, little has been done in Hawai'i. Groundings that may involve oil spills are well-handled under the existing US Coast Guard Incident Command structure, the problem lies with non-oil spill groundings or with grounded vessels once the oil has been removed. Major gaps exist in regards to structural and ecological damage to reefs both in terms of assessment of such damage, and in regards to mechanisms for holding the vessel operators/owners responsible for the non-oil spill damage to these unique natural resources. Review of recent vessel groundings indicates that many incidents involved no in-water investigation, and those few that did often did not focus on potential ecological damage associated with the specific type of grounding incident or the type of vessel involved. Strategies for altering the status quo are presented along with information to assist managers and scientists in better incorporating ecological concerns into their assessment and monitoring of such incidents.

Keywords Vessel grounding, Coral reef, Restoration, Assessment, Economic valuation

Introduction

Approximately 85% by area of all U. S. coral reef habitat occurs within the Hawaiian Archipelago (Miller & Crosby, 1998). The reefs that make up this region stretch over 2,400 km and contain a majority of the reef types seen throughout the Pacific. Coral reefs in Hawai'i are characterized by their isolation from other Pacific reefs and high endemism across most phyla. The Archipelago consists of two distinct regions (Fig. 2): the Main Hawaiian Islands (MHI) made up of populated, high, volcanic islands with non-structural reef communities and fringing reefs directly abutting the shorelines, and the Northwestern

Hawaiian Islands (NWHI) consisting of mostly uninhabited atolls and banks accounting for the majority (~ 70%) of U.S. reefs (Gulko *et al.*, 2001).

Globally, the world's coral reefs are thought to occupy an area equivalent to less than one-tenth of one percent of the world's oceans. Recent estimates of living coral reef cover have shown it to be up to ten times less than previous estimates (Spalding *et al.*, 2001). The vast majority of the world's coral reefs are deteriorating at an alarming rate. While global warming plays a significant role in this deterioration in almost all areas, Hawai'i's impacts are almost entirely locally-generated.

Such a situation as outlined above, raises the need for greater attention to the threats to Hawaiian reefs from vessel groundings. Along with this comes a realization that just as different types of coral reefs may require different grounding responses, so too do different types of vessels that may go aground (Table III).

Fig. 1 Physical reef damage caused by a vessel grounding (Photo: J. Maragos, USFWS).



Until the late 1990s, vessel grounding response in Hawai'i did not strongly include concerns much beyond those of containing or limiting the associated oil/fuel spills and removing derelict gear (usually fishing line, traps and hooks) that might entangle endangered seals, turtles and seabirds. The situation today involves a wide range of ecological concerns,

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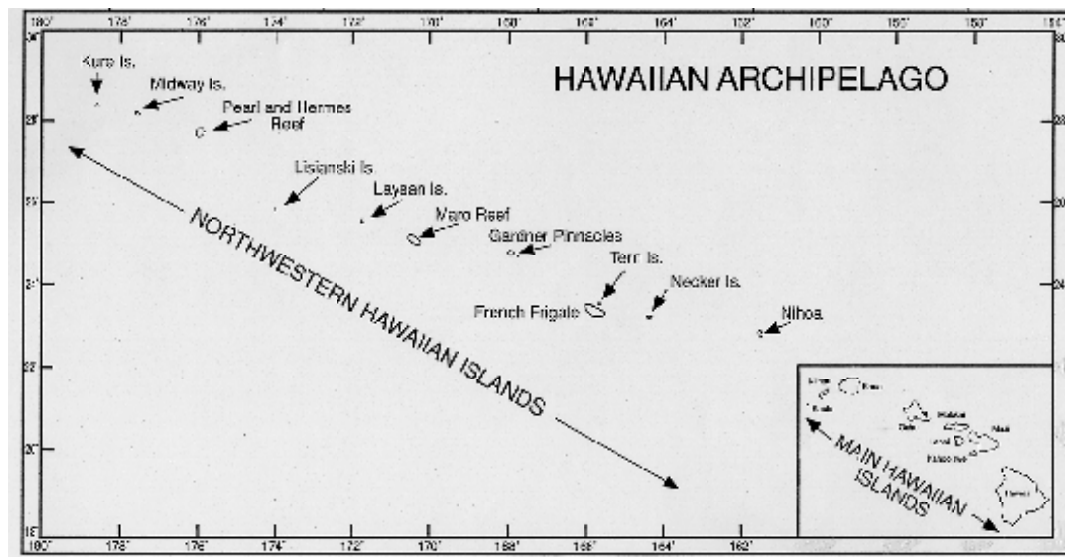
though these concerns exist without statutory authority or funds to implement assessment/restitution/monitoring beyond that provided for federally under OPA '90. In fact, though federal guidance states that delaying restoration may significantly increase restoration costs, increase recovery time, and decrease likelihood of full recovery (Hoff, 2001), no standardized non-oil spill response protocols exist for damaged reef scenarios in the Hawaiian Islands.

Despite growing threats to Hawaiian coral reef and associated ecosystems, posed by an ever increasing range of vessel activity, concrete steps have yet to be taken to implement effective preventive measures,

active (non-oil spill) response and standardized in-water assessments. Legally, no efforts are currently being made to make the responsible parties provide restitution for non-oil spill damage to reefs resulting from a grounding incident.

The purpose of this paper is to discuss the impacts of recent vessel groundings on the coral reef ecosystems found throughout the Hawaiian Archipelago, to assess gaps in such assessment and in the resulting actions by resource trustees, and to provide concrete suggestions for modifying the existing response system.

Fig. 2 The Hawaiian Archipelago.



Existing Mechanisms to Deal with Vessel Groundings

OPA '90:

The Oil Pollution Act of 1990 (OPA '90), U. S. C. 2701 *et seq.*, was designed to make amends for injuries to the environment and the public in regards to damage to natural resources or services from an incident involving a discharge, or substantial threat of a discharge, of oil (French, 1996). The regulations governing such action are under the Natural Resource Damage Assessments (NRDA) process which allows resource trustees to:

- Identify damage to natural resources and services resulting from an incident.
- Provide for a restoration of the damaged resources and services to a baseline level;

this includes compensation for interim losses.

- Encourage and assist the public in this process.

The major problem with OPA '90 is that if there is no threat of oil discharge, or if the oil threat has been removed, OPA '90 cannot be easily used to provide funds for following up on a grounding incident or for seeking restitution. Precedent for expanding the traditional use of OPA '90 was recently provided by the USCG's removal of abandoned fishing vessels which had been grounded atop reef flats in American Samoa for up to a decade.

The Coast Guard Incident Command Structure in Hawai'i:

In Hawai'i, OPA '90 and NRDA actions are facilitated through the USCG 14th District's Marine Safety Office (MSO), located in Honolulu. The system that has evolved, involving the MSO, resource trustees and response agencies, has been extremely productive and reactive to both concerns and incidents covered under OPA '90. Major inroads have been made over the last couple years in regards to this group's approach towards coral reef-related damages (outside of endangered species and seabird issues). As mentioned above, due to OPA '90 limitations, it's been difficult up to now to get this successful approach involving the USCG's Incident Command adapted for non-oil spill incidents that affect coral reef resources in Hawai'i.

Federal Wildlife Refuges and Marine Reserves:

Groundings that occur in designated federal wildlife refuges (such as the FWS refuges in the NWHI, waters of National Parks and certain National Marine Sanctuaries) can be removed under restorative authority provided to the Federal agencies that manage such refuges; such action may occur in concert to, or outside of actions available under, OPA '90. Interestingly, the Hawaiian Humpback Whale National Marine Sanctuary, which encompasses coastal waters throughout much of the MHI, may be able to remove grounded vessels under the restorative provisions of its charter, but to date this action has not been attempted (J. Walters, pers. comm.).

Presidential Executive Order 13089 on Coral Reef Protection (1998):

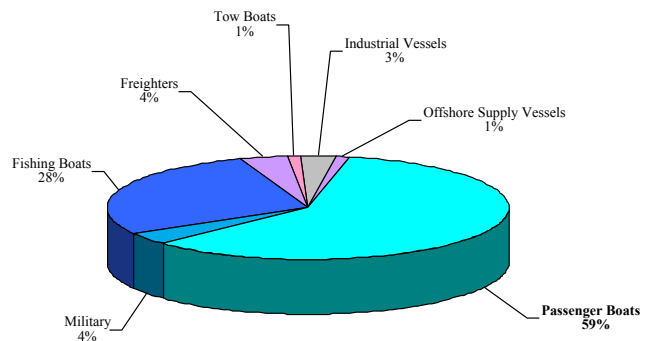
In June of 1998, President Clinton signed Executive Order 13089 titled Coral Reef Protection. This Executive Order mandated that "All federal agencies whose actions may affect U.S. coral reef ecosystems shall: (a) identify their actions that may affect U. S. coral reef ecosystems; (b) utilize their programs and authorities to protect and enhance the conditions of such ecosystems; and (c) to the extent permitted by law, ensure that any actions they authorize, fund, or carry out will not degrade the conditions of such ecosystems." To assure implementation of the Executive Order, the U. S. Coral Reef Task Force (USCRTF) was created. The USCRTF has taken up the issue of vessel groundings in regards to exploring options for enhancing rapid ecological assessments, restoration of reef habitats and, through the Department of Justice, legal actions against responsible parties.

The Situation in the MHI

Over 16,000 commercial and recreational vessels are registered in the State of Hawai'i. When the transient commercial and recreational vessels are considered, over 18,500 ships ply the nearshore waters of the MHI annually (Gulko *et al.*, 2001). Given the close proximity of coral reefs to harbors, marinas and channels, groundings are a persistent concern. The majority of these events in the MHI involve small recreational boats (Fig. 3); and are often caused by broken moorings, inexperienced boaters, or faulty equipment. The situation with grounded recreational boats is compounded by a lack of coordination and timely notification between the primary notification agencies and the resource trustee which often results in no assessment for environmental damage.

Additionally, while groundings involving large vessels are extremely well-handled by the existing USCG Incident Command structure, incidents involving smaller recreational vessels or those involving only structural damage to the reef often suffer from lack of notification, assessment response, and pursuit by trustee agencies to make the responsible party make restitution. As a result of limited communication between agencies (and individuals) receiving grounding reports and the resource trustees and assessment experts who might be able to investigate such occurrences, the majority of ecological damage being caused to Hawaiian reefs by vessel groundings may be hidden from view and therefore not dealt with at all.

Fig. 3 Breakdown of vessel groundings in the main Hawaiian Islands by vessel type, 1993 - 2000. Note: 'Passenger Boats' include both commercial marine tourism and traditional recreational vessels (Gulko *et al.*, 2001).



Ship Groundings in the MHI Between 1993 - 2000

Table I. Chronology of reported vessel groundings and disposition in the NWHI (from Des Rochers 1992, Green 1997, Clark & Gulko 1999, B. Kananaka *pers. comm.*).

<u>Year</u>	<u>Vessel Type</u>	<u>NWHI Location</u>	<u>Removal</u>
1969	Fishing	Laysan	No
Late 1970's	Fishing	Kure	No
1980	Cargo	French Frigate Shoals	Yes
1981	Fishing	French Frigate Shoals	No
1989	Cargo	Pearl & Hermes	No
pre-1992	Fishing	Kure	No
1998	Fishing	Kure	No
2000	Fishing	Pearl & Hermes	Yes

On another scale, the projected increase in large cruise ship traffic to the MHI poses a new suite of potential vessel grounding concerns. Hawai'i currently has one inter-island cruise ship company which recently ordered two new larger cruise ships (3000 passenger capacity) and until recently² made over 312 port calls in the MHI a year. A new international company has stationed a large cruise ship (3000 passenger capacity) in the Hawaiian Islands and is planning to station an additional large cruise ship seasonally in the MHI next year. Other international cruise ships made 97 port calls in 1998. While there is no history in Hawai'i of grounding-related environmental damage from such vessels, this industry had been projected to at least triple in the next couple years (Clark & Gulko, 1999). With limited port facilities and the desire to have ports of call throughout the islands, concerns exist regarding anchoring areas for these huge ships in close proximity to coral reefs on many of the neighbor islands (Gulko *et al.*, 2001). One result of this anchoring strategy for these "megaships" is the need to ferry their thousands of passengers to shore on small vessels. Strong concerns exist over the possibility of repetitive groundings by these smaller ferrying vessels.

The Situation in the NWHI

Ship groundings that occur in the NWHI raise special concerns due to the extremely remote location, the often pristine nature of the habitat, the exceptionally high numbers of marine endangered or protected animals present, and the effects on coral reef habitats that may be extremely slow to recover. In addition,

² The cruise company recently filed for bankruptcy protection and ceased operations in the MHI. The company plans to resume operations in the MHI with two new larger ships within three years.

ship groundings in the NWHI (Table I) provide added concerns due to the extreme costs involved in assessing the damage, controlling spills, removing the vessel, and follow-up mitigation (Gulko *et al.*, 2001). This situation is further compounded by management of the NWHI being shared amongst Federal and State agencies with differing missions. The creation of the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve (NWHICRER) has provided a mechanism for protecting coral reef resources in Federal waters (> 3 nautical miles from any emerged point of land).

Fig. 4 Unidentified vessel remains atop reef flat at Kure Atoll, NWHI. (Photo: NOWRAMP Expedition 2000).



The most recent groundings in the NWHI (and a 1999 grounding on Kaua'i of a ship headed to the NWHI) have involved commercial fishing vessels whose permits were issued by agencies without resource trustee status for the waters in which the groundings occurred.

Recent Case Histories

A review of recent reported vessel groundings in Hawai'i (Table II and Appendix I) shows that most of the reported ship groundings in the last three years have been either commercial fishing vessels, recreational sailboats or military vessels. What's not shown is the large number of temporary groundings that cause reef damage but escape reporting. It is noteworthy that the majority of this data came not from databases kept by the USCG, DLNR or some other management agency, but through searching of newspaper archives. As such, a key weakness to dealing with this issue is the lack of information gathered and reported by both response and resource trustee agencies on vessel groundings in the Hawaiian Archipelago.

Review of the limited data presented in Table II shows some obvious trends:

- No follow-up monitoring is being done to look at secondary and long-term impacts from vessel groundings in Hawai'i.
- No effort has been made by the State of Hawai'i to make the responsible parties pay any restitution towards the damages they've caused to coral reefs resources.
- Most reported groundings occur on the island of O'ahu where the vast majority of the commercial, recreational and military boating activity occurs.
- Most vessels involved in reported groundings need to be assisted in extracting themselves from the reef. Such a situation suggests that assessment opportunities were not limited by extremely short time to respond (in fact, in-water assessments could have been done even after the vessel was extracted from the reef).
- Few groundings resulted in abandoned wrecks on the reefs; though at least one of the ones that did break-up is thought to have caused secondary impacts with long-term effects.

USN Vessel Grounding in Kane'ohe Bay, O'ahu, 1999

In almost all cases, few detailed measurements and ecological assessments were done of the impact sites from recent groundings (Table II). The one major exception to this was the USN vessel which ran aground on a small patch reef in Kane'ohe Bay, O'ahu in 1999 (See Case History #4, Appendix I).

In this case, detailed measurements of damage were taken, ecological associations were documented, secondary impacts were investigated and potential economical impacts were described.

Specifically, direct destruction of reef habitat was caused by an impact scar roughly rectangular in shape and measuring 21 m x 14 m at its shortest lengths, resulting in a direct impact area conservatively estimated at 296 m². Investigation of the area within this scar showed it was comprised of pulverized coral skeleton and rubble; with minimal, if any, living coral fragments. The direct damage from the impact extended down the eastern reef slope to a depth of 7 m. Numerous dead mollusc shells were found within this area suggesting a die-off of cryptic fauna shortly after the event as the shelter habitat was removed, exposing them to predation. Presumably this fauna included other coral reef inhabitants such as echinoderms, annelids, crustaceans and possibly small fish. At the time of the impact, the vessel "bulldozed" the living reef veneer forward and onto the reef flat creating a rubble berm roughly 1 m in height atop the reef flat (J. Maragos, pers. comm.). Subsequent investigation suggested that this berm had decreased in height slightly with various tidal exchanges. A large adjacent area consisting of overturned coral colonies, dislodged rubble fragments and displaced sediment occurred on all sides of the impact scar, but extended for some distance towards the south, suggesting that as the vessel pulled itself off the patch reef it either bounced over, or pushed rubble over, living coral reef directly south of the impact scar. Living coral coverage was estimated at around 50% outside of the scar, in undamaged areas north along the reef crest and slope; coral coverage dropped considerably to the south of the scar, and was practically non-existent within the impact scar area itself.

There are roughly 60 patch reefs in Kane'ohe Bay, each comprising a unique, independent, living coral reef ecosystem. Kane'ohe Bay is the only major place in the MHI where these types of living reefs are found. It's estimated that an undamaged patch reef in this portion of Kane'ohe Bay could be expected to have relatively high coral coverage along its reef slopes and crest (J. Maragos, pers. comm.). This was in line with the high coral coverage that was observed directly north of the impact scar.

Insert Table II Here

From an economic perspective, this small patch reef was important to a wide variety of user groups in Kaneʻohe Bay. It was being used at the time of the incident by a glass bottom boat company due to the abundance of marine life on and around it, and its close proximity to Heʻeia Boat Harbor where the tourist vessel would off-load and pick-up passengers. This reef was used by members of the tropical fish industry for the collection of the featherduster worms for the aquarium trade; Kaneʻohe Bay serves as the major source of these animals for the national marine ornamental industry. This patch reef was also used for a long-term recruitment study on corals by researchers at the Hawaiʻi Institute of Marine Biology; in addition, these patch reef resources as a whole were used by other HIMB researchers on a continuing basis for a wide variety of research and investigative studies. DLNR also had information suggesting that many of these patch reef habitats were being fished for a variety of resources by the large recreational fishing community found within the Bay. Data available at the time was inconclusive as to the use of this particular patch reef by threatened green sea turtles (*Chelonia mydas*), though these sea turtles are known to use many of the patch reefs in Kaneʻohe Bay extensively for resting sites (Gulko, 2001b).

Concerns were raised by DLNR regarding this incident serving to promote invasive alien algae (*Kappaphycus striatum* or *Gracillaria salicornia*) infestations. Once either alga gained a strong foothold on this patch reef, it would contribute significantly to the cost of restoring the coral reef habitat to its pre-grounding condition.

Given the conservative figure of 296 m² measured for the direct damage from the grounding, and putting aside any damages to the adjacent reef resources caused by movement of material or the ship as it bounced free of the patch reef, Gulko and Maragos estimated the incurred damages to the reef resources to be worth around \$838,568³ at a minimum.

An interesting hypothetical exercise would involve trying to determine the conservative amount of damage (in US\$) to the reef resources of Hawaiʻi from the eleven reported incidents over the last three years (Table II). Obviously, since detailed assessments were not taken in all but one of the

events, one cannot do this with any strong degree of confidence; but suppose we were to use the damage measurements taken for the USN incident (Case History #4, Appendix I) as a hypothetical standard. Assuming that each vessel in Table II causes a field of damage proportional to its overall length, and that the comparative habitat value of the differing grounding sites was roughly equal, we can apply the ratio from the USN event (i.e. ship length/measurement of direct impact area) to each of the other case histories to get projected direct impact area measurements. As these projections are only for direct impact area (i.e. the impact scar, not the adjacent impacted areas), we can consider them to be rather conservative. Summing these numbers, one comes up with a total area of 2,666 m² of coral reef directly impacted by these eleven documented groundings. Applying the reference amount⁴ of \$2,833/m², one can project that the State of Hawaiʻi conservatively experienced over \$7,500,000 in damages from these eleven reported grounding events over the three year period; and, as shown in Table II, recovered not a single penny from the responsible parties towards damage caused to these unique coral reef resources.

Where do we go from here?

1. While Hawaiʻi hasn't recently experienced groundings from many of the types of vessels that are commonly found in Hawaiian waters; increased population, military activities and business interests combined with a wide variety of vessel-specific impacts (Table III), call for a more active response and vessel type-specific education and/or prevention programs
2. There is recognition that there is a need for the creation and maintenance of a database on all grounding incidents within the Hawaiian Archipelago. Such a database needs to specifically include non-oil spill groundings and temporary groundings (bounces) where the vessel causes structural damage to a reef but spends less than an hour entrapped on a reef structure. The obvious agency to create and maintain such a database would be the USCG MSO, though this would also require a more active and timely notification of coral reef trustees and rapid assessment individuals then currently occurs for non-oil spill groundings.
3. There is a need to expand the range and assessment of ecological impacts in a grounding incident. Both resource trustees and response

³ Based on the \$2,833 per-square-meter calculation applied in Florida to a ship grounding atop a coral reef (Matson & DeFoor, 1985). This figure has been widely used in relation to economic values of U. S. coral reefs and has been applied to a damage incidents in the US Pacific (C. Birkeland, pers. comm.).

⁴ Matson & DeFoor, 1985.

Table III. Types of vessels operating in Hawai‘i along with associated concerns specific to coral reef resources

Vessel Type (size)	Primary Locations (near reefs) ⁵	Specific Concerns (other than oil spills)
Commercial Fishing Vessels (some > 80')	All islands (including NWHI).	<ul style="list-style-type: none"> • Grounding Scars (Large Ships) • Lost Gear (Traps, Lines, Hooks) • Rotting Bait or Catch⁶ • Chemicals (Refrigerants)
Recreational Vessels (most < 60')	All islands.	<ul style="list-style-type: none"> • Lack of Incident Reporting • Inexperienced Operators⁷ • Shallow Reef Flat Operation • Bounce Impacts • Alien Algae Introduction⁸
Commercial Tour Boats (some > 100')	All islands (though focal points include Kane‘ohe Bay, O‘ahu; East O‘ahu; Waiana‘e, O‘ahu; South Maui; Molokini MLCD,; Kona Coast, Hawai‘i).	<ul style="list-style-type: none"> • Constant Reef Site Use (7 days/wk) • Grounding Scars (Large Ships) • Lack of Incident Reporting • Shallow Reef Flat Operation • Bounce Impacts • Grey Water Concerns⁹ • Sewage Spill¹⁰
Commercial Dive Tour Boats (most > 60')	South Maui; Molokini MLCD,; Kona Coast, Hawai‘i; East O‘ahu.	<ul style="list-style-type: none"> • Constant Reef Site Use (7 days/wk) • Grounding Scars (Large Ships) • Lack of Incident Reporting • Shallow Reef Flat Operation • Bounce Impacts • Grey Water Concerns⁹ • Sewage Spill¹⁰
Military Vessels (many > 100')	Kane‘ohe Bay, O‘ahu; Kailua Bay, O‘ahu; East O‘ahu; Kawaihae, Hawai‘i.	<ul style="list-style-type: none"> • Grounding Scars (Large Ships) • Shallow Reef Flat Ops/Transit • Bounce Impacts • Hazmat/Chemicals from Cargo • Artificial Radionuclides • Sewage Spill¹⁰
Inter-Island Barges (some > 100')	All Islands.	<ul style="list-style-type: none"> • Grounding Scars (Large Ships) • Rotting Food⁶ • Chemicals (Refrigerants) • Chemicals (Organochlorides) • Alien Algae Introduction⁸ • Bulk Acids/Bases

⁵ Does not necessarily exclude other MHI areas.

⁶ Poses disease and nutrient concern.

⁷ May cause additional damage in trying to extract vessel; more likely to ground atop a reef due to lack of experience.

⁸ Possible for groundings on neighbor islands after transit from S. Maui or O‘ahu where alien algae are a problem.

⁹ Wide variety of chemical pollutants (boat cleaning solutions, varnishes, soaps, etc.).

¹⁰ For those vessels designed to carry large volumes of people and store sewage for later disposal.

(Table III cont.)

Vessel Type (size)	Primary Locations (near reefs)	Specific Concerns (other than oil spills)
Large Freighters ¹¹ (> 100')	East O'ahu	<ul style="list-style-type: none">• Grounding Scars (Large Ships)• Lost Cargo• Chemicals (Refrigerants)• Chemicals (Organochlorides)• Bulk Acids/Bases (Caustic Soda, Ammonia, etc.)
Cruise Ships (Some > 300')	All Islands	<ul style="list-style-type: none">• Grounding Scars (Large Ships)• Anchor Damage• Continuous (7 days/wk) Transit Amongst Neighbor Islands• Large Increase in # & Size of Ships in Hawai'i• Large Passenger Capacity = Large # of Ferrying Skiffs Between Ship and Shore• Alien Algae Introduction⁸• Sewage Spill¹⁰
Research Vessels ¹²	NWHI; Kane'ohe Bay, O'ahu.	<ul style="list-style-type: none">• Grounding Scars (Large Ships)• Anchor Damage• Bounce Impacts• Small Skiff Operations in Lagoons or Atop Reef Flats• Lack of Incident Reporting
Thrill Craft (most < 30')	Kane'ohe Bay, O'ahu; South O'ahu.	<ul style="list-style-type: none">• Lack of Incident Reporting• Shallow Reef Flat Operation• Bounce Impacts

¹¹ Includes Oil Tankers.

¹² While groundings involving large research ships have not been reported in Hawai'i, the University of Miami's RV 'Columbus Iselin' did run aground atop Looe Key in 1994 causing extensive physical damage to the coral reef; research vessels of similar size (or larger) operate in close vicinity to NWHI & MHI reefs. Strong concerns exist regarding small research skiffs operating in shallow reef waters in Hawai'i.

agencies need to move beyond oil spills to consider other impacts when assessing vessel groundings (Table IV).

4. Coral Reef Emergency Response Team (CRERT): After the fishing vessel groundings of 1998 and 1999 (along with some other shore-based incidents), the idea of a multi-agency rapid response ecological assessment team was proposed and various resource trustee and response agencies explored the possibility of forming such a team. Problems occurred with funding for equipment, coordination and training. Creation of such a multi-agency team¹³ would go a long way towards providing the required background data and evidence to make those responsible pay restitution and to focus limited resources on ecological impacts.
5. There is a need to increase awareness amongst recreational boaters, commercial vessels, business interests, and policy makers as to the range and extent of ecological impacts caused by such groundings and what can be done to better prevent them.
6. There is a strong need for the State of Hawai'i to vigorously pursue restitution by the responsible parties in grounding incidents affecting coral reef resources. To date this has not been pursued, even though the State of Hawai'i Constitution appears to provide for such action¹⁴. Other States have made use of Public Trust doctrine and even explored using Victims Rights Acts to pursue damage claims against responsible parties in grounding cases (Mattson & DeFoor, 1985). Given the enormous economic value of reef resources in the State of Hawai'i to both commercial business interests and tourism in general, the reluctance by the State of Hawai'i to pursue such actions is perplexing at best. Additional concerns include lack of experience in such legal actions, lack of Departmental incentive to pursue such cases, and finally, realization that if a legal award is granted, the monies will probably disappear into the State's General Fund and not into compensating either the natural

resource damaged, the natural resource agency involved, or the legal costs to the Attorney General's office for prosecuting such cases.

The State of Florida has far more experience than Hawai'i in pursuing vessel grounding cases. Working in conjunction with Federal agencies under guidelines for the Florida Keys National Marine Sanctuary, groundings involving large ships often are legally pursued through impounding of the vessel and requirement of a bond to be issued to cover restorative costs. Such action frequently involves an injury survey with accompanying damages using economic models to determine market value costs, lost use values and habitat equivalency (Jaap, 2000). Such an approach has usually resorted in out-of-court settlements. In part, due to large vessel monetary settlements in such grounding cases, insurance companies in Florida appear to be taking a more proactive approach in immediately assisting with injury assessment and restitution-related costs.

NWHI:

Difficulties in patrolling and enforcing regulations throughout the 1600 km (1000 miles) length of the NWHI pose a problem in encouraging compliance from the various types of vessels (fishing, research and eco-tourism) currently in the area and the large number of vessels expected to enter the area in the future. Already in 2001 we have seen a dramatic increase in the number of research expeditions operating in shallow NWHI waters over that of the previous year. Creation of an automated Vessel Monitoring System (VMS), with a transmitting unit required on all vessels operating in the NWHI, and which automatically notifies both the ship in question and the appropriate enforcement and resource trustees of approach to protected or off-limits areas would go a long ways towards effectively solving this problem given the large distances and the extremely limited resources available to the USCG and the resource trustees (Gulko *et al.*, 2001).

In recognition that most of the vessels operating adjacent to shallow water coral reef areas in the NWHI are research-focused, a formal mechanism is required for communicating concerns and proposed operation plans between the expedition planners/leaders, the resource trustee agencies (USFWS, NWHICRER, DLNR), and the primary response agency (USCG), early in the planning stages and continuing throughout the expedition and its aftermath. Recently, a draft 'NWHI Decision Tree for Research Expeditions' document was produced and circulated for comment to try to facilitate such interaction and awareness (Gulko

¹³ The CRERT would be complimentary to, and under the control of, the existing USCG Incident Command, but would also be able to assess many of the temporary groundings that are not handled currently by the USCG.

¹⁴ Article XI, Section 1 of the Hawai'i State Constitution clearly states that for the benefit of present and future generations, the State and its political subdivisions shall conserve and protect Hawaii's natural beauty and natural resources. In essence, all public natural resources are held in trust by the State for the benefit of the people.

2001a). Products such as this serve to make planners aware of rules of operation for specific areas of the NWHI and may assist in limiting groundings.

Recent efforts by NOAA NOS to create more accurate and geo-referenced coral reef maps for the NWHI may assist in limiting potential grounding incidents.

Other efforts by NOAA in the Gulf of Mexico to get No-Anchoring Areas designated with the International Maritime Organization around unique coral reef areas (Johnson & Schmahl, 2000) may also serve as a model for many areas of the NWHI (and perhaps some areas in the MHI).

Table IV. Types of non-oil spill vessel grounding impacts to coral reef resources, with proposed rationale for ecological assessment. Many of these factors may play a role in helping to determine economic impacts.

Grounding Impact	Ecological Rationale	Suggested Assessment Measures ¹⁵
Habitat destruction or modification	Many reef organisms are specialists, relying on specific concentrations of benthic species for shelter, food and territorial interactions. Loss of key locations for cleaning stations for fish or sea turtles.	Measure grounding scar and debris field through direct field measurements or through aerial photography; videodocument damage; document % coral, fleshy algal, coralline algal cover; document adjacent areas for comparison.
Loss of Three-Dimensional Substrate	Removal of 3D substrate results in a direct loss of shelter habitat for a wide variety of fish and invertebrates. For most reefs, amount of 3D substrate is directly correlated to number of fish and degree of biodiversity.	Videodocument damaged and surrounding area; measure rugosity; measure mean colony height.
Bioaccumulation	Metal from a grounded ship's hull or cargo (including lead ballast) will become over grown with algae (fleshy, filamentous and calcareous). Bioaccumulation of heavy metals within the polysaccharide cell walls of fleshy algae can affect herbivorous organisms that directly feed upon such algae (C. Smith, pers. comm.). Additionally, certain other herbivorous organisms (urchins, parrotfish and some surgeonfish) will feed on this algae by biting/scraping into the substrate upon which it grows, thereby ingesting heavy metals directly. Over time, these metals will concentrate and work their way up the food chain.	Videodocument wreckage in water and take precise GPS its locations; sample any algal growth and associated fish bite marks on wreckage for identification; videodocument adjacent live rock and stony corals for absence/presence of algae and fish bite marks; sample herbivorous fish for heavy metals
Disease, Nutrification, Pollution	Nutrient enrichment of waters directly surrounding grounding sites from release of bait or catch (fishing vessels), or food products, sewage or fertilizer (freighters or other large vessels) upon break-up of the grounded vessel.	Sample waters for nitrates/phosphates; measure chlorophyll; videodocument grounding site and surrounding area for algal cover, amount of algal interaction with coral colonies, bleaching, etc.
	Nutrients and pollutants may settle into lagoonal or other reef-associated sediments where their presence after a grounding may be difficult to detect with standard water quality monitoring; strong wave action or storms may re-suspend these substances at later dates thereby creating secondary events related to the original grounding incident.	Sample sediments and analyze for nutrient/pollutant content; videodocument with turbidity reference cards, secchi disc.

¹⁵ Many of these assessment methods should only be done by authorized personnel or under the direct guidance of resource trustees.

Table IV (cont.)

Grounding Impact	Ecological Rationale	Suggested Assessment Measures
	Unknown as to whether a wide range of pollutants can cause or exasperate tumor formation on corals, sea turtles or reef fish.	Videodocument both sessile and mobile organisms to look for the presence of tumors; histological or pigment (coral) / blood (vertebrates) analysis may be necessary to confirm.
	Hydrocarbons can cause cell disruption or pigment extraction in a variety of indigenous algae (C. Smith, pers. comm.) and corals (Hoff, 2001).	Videodocument algal and sessile animal cover and note any signs of poor health; specifically note pigmentation/bleaching in organism samples; Fluorometer measurement of algae.
Turbidity	High turbidity caused by release of materials from the vessel or the impact itself will result (over the time of its suspension) in decreased photosynthesis by reef algae, coralline algae and living corals (possibly resulting in bleaching in the latter).	Sample sediments and analyze for nutrient content; videodocument with turbidity reference cards, secchi disc.
Old Growth Coral Species	Relatively slow growth rates of massive Hawaiian corals means a much slower recovery rate to damaged colonies than in other geographic areas. It also suggests that many of these colonies are the equivalent of "Joshua Trees", representing an important historical living resource.	Establish growth rate/age through isotope/banding analysis of rubble pieces from incident; measure colony size/area.
Small Cryptic Species	Impact of the vessel with the reef and destruction of reef habitat often expose a wide range of small adult and juvenile organisms that inhabit these areas resulting in intensive predation.	Document freshly broken or clean shells or exoskeletons; videodocument feeding bouts on exposed organisms.
Mobile Reef Species	Grounding incidents, loss of habitat, turbidity and water quality changes may all effect both the short-term and long-term presence of mobile animals that either inhabit or transit through an effected reef area. Territorial markers may have disappeared during a grounding incident; such site modifications may result in large changes in trophic dynamics.	Videodocument fish assemblages; note unusual concentrations, behaviors; map and describe species with limited home ranges, territories or unique shelter habitat (ex. octopus burrows) that might have been affected.
Non-Coral Benthic Sessile Species	Many other organisms create habitat on, or adjacent to, coral reefs. Examples include indigenous red, brown and green algae, seagrasses, sponges, bryozoans, annelids, molluscs, zoanths, anemones, etc. These organisms are often as important as living coral to a coral reef ecosystem's health and viability. Like coral, each of these organisms can be directly and indirectly impacted by a vessel grounding.	Measure grounding scar and debris field through direct field measurements or through aerial photography; videodocument damage; document % live/damaged cover; document adjacent areas for comparison; note obligate organisms that inhabit, or are associated with each benthic, sessile species.
Fertilization Success, Sex Reversal and Deformities	Barring a major low tide, coral colonies themselves might be protected from buoyant oil, fuel, chemical spills from a grounded vessel, or the surface dispersant chemicals used to treat such spills. The coral eggs, sperm and larvae released during a spawning event however will all reside near the surface where they can easily be impacted by any pollutants in the water at that time. Often these coral spawnings represent the major reproductive output for colonies on that section of reef for the entire year.	Set out settlement plates; videodocument settlement on exposed hard natural surfaces; carefully note corals in area and compare with published spawning information to see if grounding (and the response efforts) are occurring near annual spawning period.

Table IV (cont.)

Grounding Impact	Ecological Rationale	Suggested Assessment Measures
	<p>Depressed fertility, un-natural sex reversals and deformities/cancer can occur in a wide range of marine organisms due to interactions from organochlorines (pesticides, PCBs, dioxins, chlorine industrial compounds) in cargo released by a grounded vessel. Some organochlorines are thought to mimic estrogens and interfere with hormonal pathways in exposed animals (including humans). Depressed fertility and sex reversals have been observed in aquatic organisms exposed to these substances (Colborn <i>et al.</i>, 1997; Thorne-Miller, 1999). Bioaccumulation of these materials can occur throughout the coral reef food web, including fish and invertebrates eaten by humans.</p>	<p>Sample organisms for presence of organochlorines. Videodocument sex reversals, unusual sex ratios (note many reef fish are harem).</p>
Larval Survival	<p>Synthetic organic chemicals such as polycyclic aromatic hydrocarbons (PAHs), by-products of industry and the combustion of fossil fuels, may become chemically-modified in the presence of solar UV (at levels found in Hawaiian surface waters). These modified PAHs have been shown to be deadly to a range of larval and planktonic organisms (Peachey & Crosby, 1995).</p>	<p>Document and sample surface/subsurface slicks of synthetic and organic matter.</p>
Threats to Endangered Species	<p>Physical damage or pollution of sleeping/foraging/mating areas used by endangered sea turtles (greens and hawksbills) and/or monk seals may strongly affect already limited populations or imprint them away from areas necessary for their survival.</p>	<p>Videodocument impacts and contact NMFS.</p>
Threats to Organisms at the Species Level	<p>Because of relatively high endemism (~25%) for Hawaiian coral reef organisms, many Hawaiian species have no other geographical area from which to restock a damaged reef. Some endemic species (such as certain corals and native algae in Kane'ohē Bay) are so restricted in their range, that single grounding events have the potential to threaten an entire species with extinction.</p>	<p>Resource trustee agencies must carefully document impacts to these species. Care should be taken to keep fragments alive and possibly remove them to a proper facility for recovery.</p>
Enhancement of Cyanobacteria	<p>It's been shown that ferrous metal from grounded vessels promote the growth of cyanobacteria (that can then displace calcareous algae and corals atop reef flats) in remote, oceanic areas such as Rose Atoll in American Samoa (Green <i>et al.</i>, 1997). The shredding of established benthic algae by the grounding event itself can also enhance substrate upon which epiphytic organisms such as cyanobacteria can settle. Observations during the NOWRAMP 2000 expedition suggest that this may be occurring to a limited extent at grounding sites at Kure and Pearl & Hermes atolls (Maragos & Gulko, 2002).</p>	<p>Videodocument wreckage in water and take precise GPS its locations; sample any fine algal growth for identification; videodocument adjacent live rock and stony corals for absence/presence of cyanobacteria; measure area of coverage if cyanobacteria found and note its location relative to wreckage or wreck site.</p>
Enhancement of Fleshy Algae	<p>The shredding of established benthic algae by the grounding event itself can cause asexual propagation of fleshy algae which then can settle and establish dominant cover on exposed or damaged benthic substrate.</p>	<p>Videodocument wreckage and take precise GPS data; sample algal growth for identification; videodocument adjacent live rock and corals for absence/presence of fleshy algae, measure area of coverage found and note its location relative to wreckage.</p>

Table IV (cont.)

Grounding Impact	Ecological Rationale	Suggested Assessment Measures
Alien Species Introduction	Removal of live coral (via grounding scar) opens up settlement space for invasive algae. Once a large enough “beachhead” is established, some of these alien algae can successfully displace adjacent live coral colonies. Alien algae and other organisms also may be introduced into a reef ecosystem upon release from a grounded vessel’s hull or bilge upon break-up.	Videodocument and measure fleshy algal concentrations; sample any algal growth for identification; videodocument adjacent live rock and stony corals for absence/presence of algae.

Conclusions

It’s clear by the lack of databases, assessment efforts, legal action and restitution programs/policies, that neither the State of Hawai‘i nor the federal government have adequately dealt with the problem of vessel groundings on coral reefs in Hawai‘i in regards to the non-oil spill impacts (both short-term and long-term) to the ecosystems themselves.

It is hoped that the descriptions of recent Hawaiian groundings, the concerns expressed regarding specific impacts associated with different types of vessels, and the in-depth ecological concerns put forward regarding grounding impacts in this paper will serve to initiate new discussions and especially, new actions, to deal with this recurring problem.

Acknowledgements This effort was supported by the Division of Aquatic Resources, State of Hawai‘i Department of Land & Natural Resources. Comments provided by Celia Smith, Francis Oishi and Chuck Birkeland are extremely appreciated. NOAA NOS provided background information on federal vessel grounding initiatives. Kimberley Lowe (DLNR) provided the Hawaiian Islands graphic. Microfiche and web-based archives of the following newspapers: the Honolulu Advertiser, the Honolulu Star Bulletin, and the Maui News, were searched for reports of groundings and to assist in the creation of figure 3.

List of Abbreviations

AAV	Amphibious Assault Vehicles (MCBH)	NMFS	National marine Fisheries Service (NOAA)
CRERT	Coral Reef Emergency Response Team	NOAA	National Oceanic and Atmospheric Administration
DAR	Division of Aquatic Resources (DLNR)	NOS	National Ocean Service (NOAA)
DLNR	Hawai‘i Department of Land and Natural Resources	NRDA	Natural Resource Damage Assessments
DOFAW	Division of Forestry and Wildlife (DLNR)	NWHI	Northwestern Hawaiian Islands
DOH	Hawai‘i Department of Health	NWHICRER	Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve (NOS)
LCU	Landing Craft – Utility (USN)	OPA '90	Ocean Pollution Act of 1990 (federal)
MCBH	Marine Corps Base Hawai‘i (Kane‘ohe)	USCG	US Coast Guard
MLCD	Marine Life Conservation District (no-take MPAs, State of Hawai‘i)	USCRTF	US Coral Reef Task Force
MHI	Main Hawaiian Islands	USFWS	US Fish & Wildlife Service
MPA	Marine Protected Areas	USMC	US Marine Corps
MSO	Marine Safety Office (USCG, 14 th District)	USN	US Navy

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Appendix I: Recent Vessel Grounding Case Histories in the Hawaiian Archipelago..

1. The USMC Amphibious Assault Vehicles, O'ahu, July 1998.

During the middle of July 1998, a convoy of six to eight amphibious assault vehicles (AAVs) set out from the Kane'ohē Marine Corps Base (MCBH) for Bellows Air Force Station to practice a shore assault. As the convoy transited the ten to fifteen foot deep waters between the town of Kailua and two small offshore islets, at least one of the vehicles grounded atop the living reef roughly 400 yards offshore of one of the islets. The Marines used one of the other AAVs to pull the grounded AAV off of the reef. A survey by DLNR personnel on July 22, 1998 documented numerous freshly broken small massive coral heads (*Porites* sp.) as evidenced by bright white exposed skeleton. Unknown whether multiple breaks (characteristic of tread damage from these vehicles as they periodically come in contact with the bottom substrate) around grounding site were caused by the grounded AAV itself or by efforts by other AAVs to dislodge it. No formal measurements or follow-up monitoring occurred. No damage reparations were provided by the responsible party (A. Miyasaka, pers. comm.).

2. The Longliner 'Paradise Queen II', Kure Atoll, NWHI, October 1998.

On October 16, 1998, an 80' longline fishing vessel, the 'Paradise Queen II', ran aground directly atop the coral reef facing Green Island at Kure Atoll in the Northwestern Hawaiian Islands (Fig. 5). The crew was safely removed and evacuated to Midway Atoll and response teams from the USCG along with the 'American Islander' salvage vessel were sent to the scene some 1500 nautical miles away from Honolulu.

Fig. 5 'Paradise Queen II' aground at Kure Atoll, October 1998 (Photo: M. Cripps, DOH).



7000 gallons of diesel fuel (out of 11,000 originally estimated to be on board) were removed through salvage efforts, roughly 4000 gallons was estimated to have been released to the nearshore environment and 500 gallons of lubricants/petroleum products were thought to have been left aboard.

By October 30th, all tanks aboard the vessel were thought to have been breached by heavy wave action at Kure. At this point the Coast Guard called a halt to all response actions as there was no longer a pollution issue under existing OPA '90 regulations as interpreted at that time by the USCG (but see 'Swordman I' Case History below). As a result, the majority of the money available for clean-up of the ship and its contents was suspended. As the vessel was not within a federal wildlife reserve (the vast majority of the rest of the Northwestern Hawaiian Islands), no additional federal action was available to assist in vessel removal.

Over time, daily storm waves broke the vessel into chunks, which may have acted as small bulldozers as they were pushed shoreward over the living reef flat by wave action (Fig. 6).

Assessments conducted at the time of the grounding focused primarily on locating lobster traps and fishing gear washed into the surrounding reef area. No formal measurements of grounding scars, damaged reef area or dislodged coral structures could easily be performed. No environmental economic analysis was conducted. The estimated cost at that time to remove the ship off the reef and dump it directly offshore topped \$1,000,000 due to the extreme isolation of the area and the difficulty of removing a large, breached ship from the reef. The State of Hawai'i had no monies available for such an effort, and the vessel was left on the reef at the whim of the waves.

Recently conducted surveys (NOWRAMP, 2001) at Kure Atoll detected the presence of cyanobacteria in areas adjacent to the grounding site of the 'Paradise Queen II'. Concerns exist over metal from the abandoned vessel serving as an establishment substrate for the large scale introduction of this organism onto reefs where it can compete with corals and coralline algae.

Fig. 6 The 'Paradise Queen II', months later, after breaking up atop the reef at Kure Atoll (Photo: US Coast Guard).



3. The Longliner 'Van Loi', Kaua'i, April 1999.

Sometime after midnight on Saturday, April 10, 1999, the 95' longliner 'Van Loi', on its way to the NWHI, ran aground off Kapa'a, Kaua'i. It then tried to head back out to sea but lost power when the engine room flooded. The vessel did not have an anchor and its crew would have been powerless to stop it from hitting the reef (Fig. 7) once the engine room flooded. 16,000 gallons of diesel fuel spilled from the fishing boat after it ran aground. After five days of battering by the surf, little of the 95-foot boat remained above water. State officials had put the cost of removing the wreckage of the grounded fishing vessel 'Van Loi' from Kapa'a reef at somewhere between \$500,000 and \$1 million, depending on which of several methods would be used (Honolulu Star Bulletin, 4/29/99).

Fig. 7 The 'Van Loi' aground off Kapa'a, Kaua'i (Photo: US Coast Guard).



As with other groundings, the vast majority of the insurance money from the grounded vessel was not available towards non-oil spill clean-up costs. In the case of the 'Van Loi', this included two drums, each containing 40 miles of monofilament fishing line and thousands of hooks on leaders that posed a threat to seals, turtles and other marine life. The major

remains of the vessel were eventually pulled off the reef by Sea Engineering, Inc.

A local newspaper summed it up as follows: "After the initial assessments of damage to Kapa'a Reef from the fishing vessel 'Van Loi', who is going to monitor the long-term effects? The answer: No one. The reason: There isn't any money. Virtually all of the coral reefs in Hawaii belong to the state. Even though fish-watching -- snorkeling and scuba diving -- is a major tourist attraction, the state has no budget for monitoring damage to the reefs from ships running aground or spilling fuel or cargo" (Honolulu Star Bulletin, 4/19/99).

4. US Navy Landing Craft (LCU), Kane'ohe Bay, O'ahu, June 1999.

Early on the morning of June 28, 1999, a large USN landing craft (LCU) operated by a Navy driver and carrying U. S. Marines and their equipment ran aground atop a patch reef in Kane'ohe Bay while traversing the marked Ship Channel on its way to the MCBH. The LCU lodged aground atop the patch reef and required the off-loading of personnel and equipment prior to it being able to float free with a higher tide. The Environmental Protection & Compliance Department at the MCBH launched an inspection team to initially survey the damage. Follow-up in-water assessments for reef damage were conducted by Dave Gulko (DLNR) and Jim Maragos (USFWS). These assessments represent one of the few examples in Hawai'i of in-depth ecological assessments of non-oil spill coral reef damage associated with a grounding incident.

There are roughly 60 patch reefs in Kane'ohe Bay, each comprising a unique, independent, living coral reef ecosystem. Kane'ohe Bay is the only major place in the State of Hawai'i where these types of living reefs are found. Maragos estimated that an undamaged patch reef in this portion of Kane'ohe Bay could be expected to have relatively high coral coverage along its reef slopes and crest. This was in line with the high coral coverage that was observed directly north of the impact scar.

From an economic perspective, this small patch reef was important to a wide variety of user groups in Kane'ohe Bay. It was currently being used by a glass bottom boat company due to the abundance of marine life on and around it, and its close proximity to He'eia Boat Harbor where the tourist vessel would off-load and pick-up passengers. This reef was used by members of the tropical fish industry for the collection of the featherduster worm for the aquarium trade; Kane'ohe Bay serves

as the major source of these animals for aquarium industry. This patch reef was also used for a long-term recruitment study on corals by researchers at the Hawai'i Institute of Marine Biology; in addition these patch reef resources as a whole were used by other HIMB researchers on a continuing basis for a wide variety of research and investigative studies. DLNR also had information suggesting that many of these patch reef habitats were being fished for a variety of resources by a large recreational fishing community found within the Bay. Data available at the time was inconclusive as to the use of this particular patch reef by threatened green sea turtles (*Chelonia mydas*), though green turtles are known to use many of the patch reefs in Kane'ohe Bay extensively for resting sites (Gulko, 2001b).

Concerns were raised by DLNR regarding this incident serving to promote invasive alien algae (*Kappaphycus striatum* or *Gracillaria salicornia*) infestation on this patch reef. Once this algae gains a strong foothold on this patch reef, it would contribute significantly to the cost of restoring the coral reef habitat to its pre-grounding condition. The DLNR also pointed out in correspondence to the responsible parties that immediate assistance to DLNR could perhaps save living coral rubble and toppled large coral colonies that resulted from the incident. This did not occur.

Given the conservative figure of 296 m² measured for the direct damage from the grounding, and putting aside any damages to the adjacent reef resources caused by movement of material or the ship as it bounced free of the patch reef, Gulko and Maragos estimated the incurred damages to the reef resources to be worth around \$838,568¹⁶ at a minimum. As with all other non-oil spill groundings that have occurred in Hawai'i during recent times, the responsible party was not made to pay any restitution for damage incurred.

5. The Longliner 'Sunflower III', O'ahu, July 1999.

On July 9, 1999, the longline fishing vessel 'Sunflower III' ran aground off Point Panic, Kewalo Basin on the island of O'ahu. In actuality, the vessel ran aground twice, as the vessel struck the reef, freed herself, then grounded itself a second

time. The vessel had 4,000 gallons of fuel but did not leak and eventually made it into the harbor at Kewalo Basin. Though documented positions (latitude/longitude) existed for the two reef sites where the vessel struck, in-water assessments were not conducted immediately after the incident (F. Oishi, pers. comm.). No documentation of physical damage occurred, nor did the responsible party pay towards any environmental restitution or mitigation..

6. Wooden Sloop 'Mariah' Sinks Off Ma'alaea Harbor, Maui, Jan 17, 2000

The 28' sloop 'Mariah' sank to a depth of approximately 60 feet on the reef adjacent to Ma'alaea Harbor on the island of Maui.. The 'Mariah' had no engine and was only powered by sails. No natural resource impact assessment was conducted and the responsible party was not made to pay any damages.

7. Fishing Vessel 'Shaman II' Runs Aground Off Kewalo Bain, O'ahu, February 19, 2000.

The 80-foot fishing vessel 'Shaman II' ran aground on the reef just off Kewalo Basin around 8 pm while returning to its slip at the harbor. Efforts by a private vessel to pull the boat off the reef were unsuccessful when a tow line broke. A private salvage vessel had to be brought in to remove the fishing boat from the reef. No natural resource impact assessment was conducted and the responsible party was not made to pay any damages.

8. Sailboat 'Native' Grounds on Reef Off Diamond Head, May 31, 2000.

The 40-foot sailing vessel 'Native' grounded shortly after midnight on the reef east of Diamond Head on the island of O'ahu. The vessel was found to be hard aground 250 yards off of Black Point. Because the vessel had washed over the outside reef towards shore, it was in calm sea conditions, and was not taking on water. The vessel's diesel fuel was removed prior to the boat being pulled off the reef. No natural resource impact assessment was conducted and the responsible party was not made to pay any damages.

¹⁶ Based on the \$2,833 per-square-meter calculation applied in Florida to a ship grounding atop a coral reef (Matson & DeFoor, 1985). This figure has been widely used in relation to economic values of U. S. coral reefs and has been applied to a damage incidents in the US Pacific (C. Birkeland, pers. comm.).

9. Sailboat ‘Nooner’ Runs Aground in Ala Wai Channel, Island of O‘ahu, June 1, 2000.

A 70-foot concrete sailboat ran aground in the Ala Wai channel at about 7 p.m. on June 1, 2000 as it was approaching the harbor. The vessel, "Nooner" had approximately 15 people aboard at the time of the incident. No natural resource impact assessment was conducted and the responsible party was not made to pay any damages.

10. The Longliner ‘Swordman I’, Pearl & Hermes Atoll, NWHI, June 2000.

On June 5, 2000 at 0738 h the longline fishing vessel ‘Swordman I’ out of Honolulu ran aground on the eastern end of Pearl & Hermes Atoll in the NWHI. The vessel was spotted by a NMFS field crew conducting research on the atoll and reported as being firmly atop the reef crest; this was later confirmed by a USCG overflight of the area. Vessel monitoring system (VMS) information from the USCG showed that the vessel made a straight, uninterrupted tract for Pearl & Hermes; initial interviews with the crew suggested that no one was at the wheel at the time of the grounding.

Pearl & Hermes Atoll is unique amongst the five atolls found in Hawai‘i as it contains a highly complex assemblage of patch reefs and reticulated reefs within its lagoon, as such, the coral reef habitats found there may be considered extremely robust and biodiverse when compared with other NWHI atolls. Pearl & Hermes represents extremely important seabird nesting habitat and pupping habitat for the endangered Hawaiian monk seal. Sea turtles are prevalent in this area. Most coral reef ecologists and managers familiar with this area consider it relatively pristine in its representation of a complete coral reef atoll ecosystem. At the time of year that this grounding occurred a number of seabird species were fledging and monk seal pups were present. The annual coral spawning for some of the species present at this atoll was thought to take place the week following the grounding.

Early reports listed the vessel carrying somewhere around 9500 gallons of fuel (of which 1000 gallons were thought to have been released to the sea), various gallons of lube and hydrolic fluids, 5000 lbs of fish (in the hold), 230 20 lb. cases of bait, lines, hooks and 70 miles of longline on two reels on deck. The vessel had visible cracks and was initially listing 20° to port. By June 9, 5000 gallons of fuel had been removed from the vessel by response teams under the control of the USCG.

In response to the vessel grounding posing an imminent danger to the environment, and with the expressed concerns related to the USCG Marine Safety Office (MSO) by the USFWS, DAR and NMFS, Captain Kanazawa (MSO Commanding Officer) made the decision on June 9, 2000 to divert the ‘American Salvor’¹⁷ to Honolulu and then to Pearl & Hermes to remove the vessel off the reef and dispose of it offshore in waters deeper than 1000 m. \$1 million was budgeted for the entire operation¹⁸; the grounded vessel had been insured for \$300,000, but since the boat had been declared a total loss, this money was thought to go to the owner. Additional insurance was being used to pay for claims against the owner by the crew with the possibility of \$100,000 being available for gear removal from the ship (longlines, hooks, etc.); no mention was made of insurance monies being available to pay for vessel removal or environmental mitigation.

Fig. 8 The ‘Swordman I’ grounded atop the reef at Pearl and Hermes Atoll, NWHI. (Photo: US Coast Guard).



On Saturday, June 10, 2000 a joint field team composed of a DAR aquatic biologist, a DOFAW veterinarian, a USFWS coral reef biologist and a USFWS endangered species biologist flew to Midway en route to conducting an in-water assessment of the impact site. On arriving at Midway the field team was informed that the only boat available for transport to Pearl & Hermes was broken. By Monday, June 12, 2000 an additional 2500 gallons of fuel had been found in a fuel compartment no one knew about. Concerns were raised in the press about the fact that the vessel was carrying over 10,000 gallons of fuel but did not

¹⁷ This was one of the only vessels powerful and large enough to conduct wreck removal operations in the U. S. Pacific. Estimated cost was \$20,000/day from the time the ship was diverted.

¹⁸ Costs for this operation eventually reached \$1.5 million.

have the additional insurance required when carrying that much fuel.

By June 16, 2000 the field team was on-site conducting a limited assessment. Sea conditions at the site were good, but the wind was shifting over to northeast trades and the surf started to increase by late in the week. By July, the 'American Salvor' had arrived on the scene. The vessel was cleaned and then successfully pulled off the reef on July 28, 2000; it was then dumped at sea more than three miles offshore. By almost all measures¹⁹ this was truly a successful operation in terms of mitigating coral reef ecosystem damage (especially as compared to the almost identical grounding of the 'Paradise Queen II' at Kure Atoll two years earlier where the vessel wasn't removed). One last point: as with all other groundings in Hawai'i, no attempts were made by the State of Hawai'i to hold the responsible party liable for the physical/ecological damages caused to the reefs of Pearl & Hermes Atoll.

11. Sailboat 'Zaca', Kaunakakai, Moloka'i, July 1, 2000.

On July 1, 2000 a Haleiwa boat captain got disoriented, thinking Molokai was Maui, and ran his 38-foot sailboat aground at night on the reef off Kaunakakai (Fig. 4). The vessel's owner and two passengers tried to get the boat off the reef but were unsuccessful, the vessel was removed off the reef at a later date. No natural resource impact assessment was conducted and the responsible party was not made to pay any damages.

Fig. 9 The 'Zaca' aground off Kaunakakai, Moloka'i. (Photo: Honolulu Star Bulletin).



12. Ammonia Explosions on Fishing Boat, Honolulu Harbor, Oct. 7, 1999²⁰.

The Coast Guard responded to an ammonia explosion that occurred at Pier 13 on the commercial fishing vessel 'Icy Point'. The incident involved two 150-lb cylinders of ammonia aboard the ship; one cylinder exploded and leaked and blew a second cylinder onto the pier.

¹⁹ Attempts to re-survey the grounding site during the recent NOWRAMP expedition were unsuccessful due to inclement weather conditions.

²⁰ OK, this last one isn't a grounding, but it's a good example of some of the non-oil spill hazards to coral reefs associated with some of these vessels.

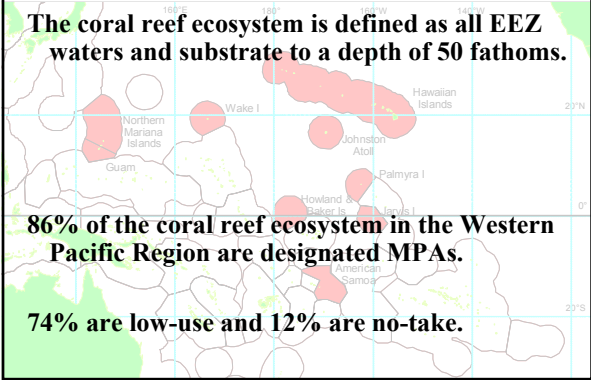
Fishery Management Plan for Coral Reef Ecosystems of the Western Pacific Region



Requirements for vessels operating
in Marine Protected Areas

What is a marine protected area

The coral reef ecosystem is defined as all EEZ waters and substrate to a depth of 50 fathoms.



86% of the coral reef ecosystem in the Western Pacific Region are designated MPAs.

74% are low-use and 12% are no-take.

Limitations on protective measures of the Fishery Management Plan for Coral Reef Ecosystems

- All vessels are allowed free passage in US waters, including through MPAs
- Magnuson-Stevens Act only regulates fishing vessels
- Depth-sensing VMS and vessel alarm systems, proposed as preventative technology, are less effective given the topography in the western Pacific
- Requiring bonds or insurance for vessels operating in the coral reef ecosystem is possibly unconstitutional...

FMP insurance requirement

“All fishing vessels, including those regulated by existing FMPs, operating in or transiting an MPA must carry insurance to cover the cost of vessel removal and pollution liability in the event of a grounding. The insurance liability so required will be based on vessel category, permit type, and fishing area.”

Make-up of the Western Pacific Fishing Fleet

Hawaii

- 85 longline vessels
- 12 NWHI bottomfish vessels
- 3-4 NWHI lobster vessels
- ~200 charter vessels
- ~10,000 personal vessels

American Samoa

- ~54 alia trollers (< 50 foot)
- ~66 longline vessels (37 < 50 ft, 29 > 50 ft)

CNMI

- 4 Northern Islands bottomfish vessels
- ~150 skiffs (14 – 25 foot)
- 4 vessels (29 – 50 foot)

Guam

- ~60 charter/party boat vessels
- ~300 skiffs (14 – 25 foot)

Vessels directly impacted by proposed regulations

- NWHI bottomfish vessels
- Charter vessels operating from Midway
- A few Kauai trolling and/or charter vessels

Needs of Fishing Vessels and Fisheries Management

- Accurate maps of shallow seamounts and banks in Guam, CNMI, American Samoa and the NWHI
- Availability of these maps for all vessels
- Overarching policy similar to OPA90 as originally proposed by the Coral Reef Task Force

Future Actions

- **Mooring Buoys away from sensitive habitats**
- **Consultations with non-fishing vessels operating in the Coral Reef Ecosystem**
- **Create habitat and location specific criteria to determine appropriate action for a given vessel grounding**
- **Work with States, Territories and Federal Agencies for full protection of coral reefs for vessel groundings**

Needs to determine appropriate criteria for mitigation measures

- Environmental assessment including analysis of potential damage caused by vessel removal
- Threat to endangered species
- Threat to essential fish habitat
- Cost of emergency response and/or tug

Grounded and Abandoned Vessels in the Commonwealth of the Northern Mariana Islands

February 05, 2002

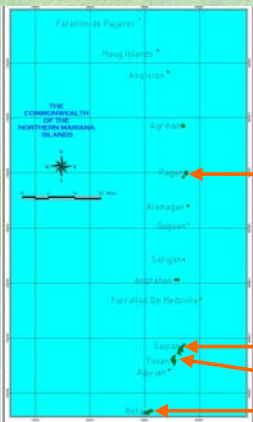


Presentation Outline

1. Inventory of grounded vessels
2. Past incidents & Experiences
3. Causes, Status/Response, Assessment, Restoration, Prosecution,
4. Scope of problems within the CNMI
5. Existing Management Capacity
6. Existing Coordination of Efforts
7. Existing Needs for Funding
8. Measures that could have prevented groundings.
9. Specific needs identified from CMNI experiences

Inventory of Grounded Vessels

There are 11 grounded vessels in the Northern Mariana Islands.




1 in Pagan


3 in Saipan


2 in Tinian

5 in Rota


SAIPAN GROUNDED VESSELS

- 

M/V Charito
- 



M/V Nago 15
- 

M/V Samala



SAIPAN


1.

Name: M/V CHARITO / 50' Steel Hull
 Grounded in August 1997 caused by Typhoon Winnie. Located in Tanapag Lagoon.

ACTION TAKEN
 CRMO made several attempts issuing enforcement notice to the Owner to remove the vessel.

DAMAGE TO ENVIROMENT
 Corals were damaged from this grounding





SAIPAN

Status: Vessel still at the current location


2.

M/V NAGO 15 / 50' / Fiberglass Hull


This vessel was grounded during a typhoon and is now located in shallow water in the Tanapag Lagoon.

ACTION TAKEN
 The contractor hired by the local agent unsuccessfully tried to free the vessel
 No record of Damage Assessment for this incident.



SAIPAN



Status: Vessel still in current location

3. 

M/V Samala


There is no record on the date, cause of grounding or of any damage assessment related to this vessel.

CRMO made attempts to find the owner to remove the vessel.

Status: Vessel is still in current location

1. **M/T SHOGUN**
57.4m long / steel hull



Poor communications between the bridge team members and the helmsman resulted in grounding at West Harbor channel on Rota in Nov.1997


Action Taken
The owner was fined \$100,000.00

Damage Assessment
The survey report indicated over 850 m2 reef was damaged.



Status: Vessel was successfully freed from the strand

ROTA VESSEL GROUNDING



• UNKNOW CAUSE OF GROUNDING

• UNKNOW DATE OF GROUNDING

• NO RECORDS OF ACTION TAKEN

• VESSELS STILL AT SITE.

• THESE VESSELS ARE BADLY CORRODED

• NO RECORD OF DAMAGE ASSESSMENT BEING CONDUCTED

PAGAN VESSEL GROUNDING

M/V Nago16 / 50' Fiberglass Hull



Status: Vessel sank at the site



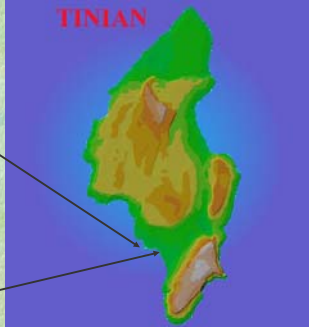
Due to rough water this vessel broke its anchor line while anchored west from Pagan Island in 1997. This resulted in the vessel being slammed onto the rocky shoreline.

ACTION TAKEN The owner posted \$10,000.00 bond to be used to assess the damage on Pagan.

DAMAGE ASSESSMENT

An assessment was conducted on June 1997. The CNMI agencies involved were CRMO, DEQ, and DFW. Based on the preliminary survey and assessment conducted by the CNMI Marine Monitoring Team, no immediate coral damage was observed.

TINIAN GROUNDED VESSELS



UNKNOWN NAME, CAUSE, AND DATE OF GROUNDING. # 1 IS AT THE MARINA. #2 AT THE SHORELINE.

PRIORITY VESSELS FOR REMOVAL



- POTENTIAL WATER POLLUTION FROM OIL SPILL
- FUTURE STRONG TYPHOON MAY PUSH VESSEL ONTO ADJACENT CORAL COLONIES
- EYESORE

Scope of Problems within the CMNI

1. No clear & specific regulation to require vessels to implement strict prevention measures when bad weather is imminent.
2. No clear & specific regulation to give CNMI Agencies legal authority to impose civil fines when vessels are grounded due to failure to implement some kind of typhoon contingency plan.
3. There is no Vessel Grounding Prevention Awareness established to educate vessel owners.

Existing Management Capacity

1. All past vessel groundings are coordinated by activation of the CNMI Area Contingency Plan by the Emergency Management Office.
2. If dealing with large vessels the needed response equipment such as tug boats are obtained by the responsible party. If RP has no financial resources, the CNMI may not be able to remove grounded vessels due to lack of funding to pay charges when requesting assistance from private companies for tug boats and other equipment.
3. Training is a major need for all CNMI agencies involve in responding to vessel grounding incidents.

Existing Coordination of Efforts

DURING AN INCIDENT THE CNMI EMERGENCY MANAGEMENT OFFICE

1. ACTIVATES THE CNMI CONTINGENCY PLAN
2. MAKES NOTIFICATION TO THE APPROPRIATE CNMI AND FEDERAL (USCG) AGENCIES.
3. USES THE RESPONSE PLAN TO ORGANIZE THE MITIGATION EFFORTS TO TAKE CORRECTIVE MEASURES.

Existing needs for funding

FUNDING IS NEEDED FOR SPECIFIC TRAINING IN RESPONDING TO AND PREVENTING VESSEL GROUNDINGS.

TRAINING SHOULD BE AVAILABLE TO THE AGENCIES RESPONDING TO GROUNDED VESSEL ON ASSESSMENT, RESTORATION, AND DETERMINATION WHETHER REMOVAL WILL RESULT IN MORE DAMAGE TO THE ENVIRONMENT (INCLUDING CORAL REEFS).

MEASURES THAT COULD HAVE PREVENTED GROUNDINGS

- IMPLEMENT LEGISLATION/POLICY TO REQUIRE MANDATORY COMPLIANCE ON CERTAIN SIZE VESSELS TO HAVE TYPHOON CONTINGENCY PLAN WHEN ENTERING TERRITORIAL WATERS OF THE CNMI
- IDENTIFY AN AGENCY THAT WILL HAVE ENFORCEMENT AUTHORITY TO ADMINISTER THE LAW.
- THE IDENTIFIED CNMI / FEDERAL AGENCY SHOULD BE PRO-ACTIVE IN PREVENTING GROUNDINGS.
- ESTABLISH GROUNDING PREVENTION MEASURES

SPECIFIC NEEDS FROM CNMI EXPERIENCES

- SPECIFIC TRAINING IN RESPONDING TO GROUNDED VESSELS IN DETERMINING PROPER REMOVAL METHOD TO MINIMIZE FURTHER DAMAGE TO THE CORAL REEFS/ENVIRONMENT.
- TRAINING IN ASSESSING ENVIRONMENTAL DAMAGE IN TERMS OF \$\$\$S DUE TO GROUNDINGS.
- TRAINING IN DEVELOPING GROUNDING PREVENTION MEASURES.
- SHARING OF POLICIES/LAWS FROM OTHER JURISDICTION HAVING SUCCESSFUL PREVENTION MEASURES.

**Overview of Statutes and Regulations Related to
Vessel Groundings in the
Commonwealth of the Northern Mariana Islands**

I. Overview/Significant Challenges

- A. No specific legal/regulatory framework to address vessel grounding. Problem may fall under several general programs, but would require application of programs to new situation where authority is not firm.
- B. General authority to address spills, threat of spills exists. Problem is removal of the vessel itself, and any damage to the reef and lagoon environment.

II. Relevant CNMI Statutes – Jurisdictional and Substantive

- A. Marine Sovereignty Act of 1980, 2 CMC §§ 1101, *et seq.*
 - 1. Creates and delineates archipelagic waters, internal waters, territorial sea, exclusive economic zone and contiguous zone of the CNMI based on archipelagic baselines.
 - a. Archipelagic waters (2 CMC § 1113(a))
 - i. Waters enclosed by baselines drawn pursuant to 2 CMC § 1121
 - ii. Baselines – straight lines that join the outmost points of the outermost islands and drying reefs of the Commonwealth
 - iii. Internal waters – subset within archipelagic waters (2 CMC § 1122)
 - b. Territorial waters – 12 miles measured from the archipelagic baselines (2 CMC § 1123)
 - c. Exclusive economic zone (EEZ)
 - i. Boundary of territorial sea out 200 miles from archipelagic baselines (2 CMC § 1124)
 - ii. Contiguous zone – within the EEZ from outer limit of territorial sea out 24 miles from the baselines
 - 2. Claims jurisdiction and sovereignty over these areas consistent with international law
 - a. Sovereignty of Commonwealth extends to internal waters, archipelagic waters, and territorial sea
 - b. Commonwealth has sovereign rights in EEZ for purpose of exploring, exploiting, conserving and managing natural resources
 - c. Within contiguous zone Commonwealth will exercise control necessary to prevent infringement of customs, fiscal, immigration or sanitary regulations
 - d. Right of innocent passage through archipelagic waters, excluding internal waters, and territorial sea recognized (2 CMC § 1132)
 - 3. Authorizes civil and criminal penalties for violations of its provisions

- B. Submerged Land Act, 2 CMC §§ 1201, *et seq.*
 - 1. Submerged land includes all lands below the ordinary high water mark extending seaward to the outer limit of the exclusive economic zone (2 CMC § 1213(k))
 - 2. The Marianas Public Lands Authority is responsible for the management, use and disposition of submerged lands in the CNMI
 - a. Authorized to grant exploration licenses, development leases for all uses, and extraction permits (2 CMC § 1221)
 - b. Authorized to adopt rules and regulations consistent with Act
 - 3. Prohibits any person from engaging in exploration, development, water or non-water dependent uses of submerged lands, or extraction of petroleum deposits or mineral deposits located in submerged lands without obtaining an approved license, lease or permit for such activity from the Secretary (2 CMC § 1222)
 - 4. All leases, licenses or permits must be approved by law after public hearing (2 CMC § 1223)
 - 5. Substantial enforcement authority provided (2 CMC § 1231)

- C. Nuclear and Chemical Free Zone Act, 2 CMC §§ 1301, *et seq.*
 - 1. Establishes a nuclear and chemical free zone that is the same as the exclusive economic zone (2 CMC § 1313)
 - 2. Forbids any person from dumping nuclear or chemical wastes in the zone as defined by the Act
 - a. Chemical wastes definition (2 CMC § 1312(a)).
 - i. Listed wastes
 - ii. Any chemical toxic to animal or plant life of the ocean
 - b. Nuclear waste – any material capable of emitting subatomic particles (2 CMC § 1312(d))
 - 3. Forbids any person from dumping “crude oil, fuel oil, heavy diesel oil, lubrication oil, hydraulic fluid, or any mixture or any petroleum based product containing any of these” in the zone.
 - 4. Dumping – not a strict liability statute
 - a. Deliberate disposal, depositing, managing, unloading or other placing in the sea. (2 CMC §1312(c))
 - b. Deliberate acts include acts that are done willfully, intentionally or purposefully, or are caused by gross negligence.
 - 5. Enforcement responsibility vested in CRMO and DLNR (2 CMC § 1321)
 - a. Provides for criminal and civil penalties.
 - b. Person who violates Act may be fined in an amount of not more than one million dollars (2 CMC § 1323)

- D. CNMI Environmental Protection Act, 2 CMC §§ 3101, *et seq.*
 - 1. Jurisdiction – air, land, water, wetlands, and submerged lands of or which appertain to the Commonwealth, including the EEZ (2 CMC § 3113)
 - 2. Implemented by the Division of Environmental Quality (DEQ)

3. Authorizes regulations that establish and implement programs, which may include permits, prohibitions, or standards to regulate activities including:
 - a. The discharge of pollutants anywhere within the Act’s jurisdiction;
 - b. Transport, storage, use and disposal of solid wastes, sewage, hazardous substances;
 - c. Earthmoving, including the disturbance or alteration of the surface or subsurface area of the land, sea floor, lagoon bottom or coral reef (2 CMC § 3122)
 - d. Numerous regulatory programs implemented pursuant to this authority, but none specifically address vessel groundings
 4. Authority to issue any order necessary to enforce Act, regulations
 - a. May require violator to cease and desist or take mitigating measures
 - b. Substantial penalty authority of up to \$25,000 per day of violation for each violation of any provision of the Act, regulation issued pursuant to the Act, or order issued under the Act (2 CMC § 3131)
 - c. Penalty may include any amount expended by Commonwealth in taking necessary action to reduce “any significant adverse effect of the violation”
- E. Solid Waste Management Act, 2 CMC §§ 3511, *et seq.*
1. Unlawful for any person to place, or allow to be placed, any solid waste on the roads or any public or private property contrary to the provisions of law (2 CMC § 3518)
 - a. Solid waste is discarded material (2 CMC § 3513(j))
 - b. Grounded vessel may not qualify
 2. Implemented via the Solid Waste Management Regulations through permitting program
 3. Authority to issue any order to enforce provisions of the Act, including mitigating measures and \$ 1000 civil fine (2 CMC § 3519)
- F. Coastal Resources Management Act, 2 CMC §§ 1501, *et seq.*
1. Establishes a coastal resource management program with jurisdiction extending seaward to the extent of the territorial waters of the CNMI and to all land areas of the Commonwealth (2 CMC §1513)
 2. Authorizes six CRM Agencies to establish and operate a permit program for major projects in the CNMI and all projects within areas of particular concern (2 CMC § 1531)
 3. Does not specifically address accidents/vessel grounding.
 4. Authorizes civil penalties up to \$10,000 per day that a person violates the Act, or any regulation or order issued under the Act (2 CMC § 1543)

III. CNMI Regulations

- A. Division of Environmental Quality (DEQ)
1. Overview
 - a. Implements specific programs under authority of EPA and other acts

- b. No program directly addresses ship grounding/accidents on the coral reef
 - 2. Water Quality Standards
 - a. Set enforceable standards applicable to all natural waters of the CNMI including fresh, brackish or marine waters and wetlands.
 - b. Requires a § 401 certification for all activities that may result in a discharge into waters of the United States
 - c. Applies only if the water quality is affected in a way that violates the standards, does not address damage to the coral reef
 - 3. Earthmoving and Erosion Control Regulations
 - a. Requires a permit for all earthmoving activities in the CNMI
 - i. Earthmoving activities include any construction or other activity which disturbs or alters the surface of the land, a coral reef, or bottom of a lagoon, or ocean floor.
 - b. No provision addresses accidental disturbance of the coral reef by a grounded vessel
- B. Coastal Resources Management Office
 - 1. Regulations create a permit program for major sitings and minor projects with an Area of Particular Concern
 - 2. Possible authority to order vessel removal as an “unpermitted” project
- C. Commonwealth Ports Authority
 - 1. Harbor Rules and Regulations section 3.28
 - a. Applicability of the provision – “ports of Saipan, Tinian and Rota”
 - i. Ports means all publicly owned sea ports together with all lands and facilities a part thereof and adjacent waters to the extent of 12 miles in the Commonwealth (2 CMC § 2112(b))
 - b. Definition of “object,” “navigable waters,” and “shore waters”
 - 2. Harbor Rules and Regulations provide that every vessel, which enters a port of the CNMI, is liable for the cost of cleanup of any spill of oil or other petroleum product

IV. Conclusion

- A. Does authority currently exist to order removal of vessel from reef or shoreline?
 - 1. If spill/threat of spill could be a part of “mitigating measures” for violation of DEQ’s water quality regulations
 - 2. Maybe if “discarded,” but designating vessels as discarded may be a problem under maritime law
 - 3. Authority not clear and direct
- B. Authority does not exist for “natural resources damages” or recovery for damage to the reef
 - 1. Requires legislation with a clear liability provision – strict liability v. fault based liability

VESSEL GROUNDINGS GUAM



SCOPE OF VESSEL GROUNDING PROBLEM ON GUAM

Most vessel groundings are by financially limited owners. No potential to bill responsible party.

Existing federal and local laws do not specifically address this issue.

The valuation of socio-cultural impacts resulting from the loss of coral reef area has not been addressed.

Prevention measures have not been implemented.

Guam has 1.5 significant reef damaging vessel groundings every year. (Based on last 20 years)

The greatest vessel grounding risks are immigrating illegal aliens on derelict vessel, typhoons and small commercial longline fishing vessels.

Significant Vessel Groundings Since 1980

- Agat: Bile Bay-Container Ship
- Agat: Gaan Pt. Cargo Vessel
- Agat: Risol Beach Cargo Vessel
- Apra Harbor: Steel Longliner (13)
- Apra Harbor: Steel Longliners (6)
- Apra Harbor: Sailboats (2)
- Apra Harbor: Tugboats (4)
- Apra Harbor: Food Supply Ship
- Apra Harbor: Cargo Barges (2)
- Cocos Island: Fiberglass Japanese Longliner
- Glass Breakwater: Fiberglass Longliner
- Pete's Reef: Sailboat
- Ritidian Point: Cargo vessel
- Tumon Bay: French bathymetry ship



Causes of Groundings

1. Illegal Immigration
2. Unfamiliar with waters
3. Typhoons
4. Negligence



Scale of Incident

1. The most common groundings are small commercial longliners in Apra Harbor. Reef damage is generally small and often the vessel can pull free under its own power.
2. Scale is also relevant to total amount of resource. Guam is very small.
3. Western Pacific reefs are species rich and this also changes the scale of effort to assess and to restore.
4. Scale of severity is also site specific.

VESSEL GROUNDING RESPONSE PROTOCOL

First responders are the USCG and GPD
(GEPA would be contacted and they would contact DAWR)

- Address safety first
- Look at vessel risk (damage, capsize, removal of fuel, vessel removal.
- Plan of approach.
- Resource damage assessment.
- Recovery plan
- Prosecution (requires valuation)
- Ongoing monitoring program.



PREVENTION MEASURES

1. VESSEL CORRIDORS
2. NAVIGATIONAL AIDS
3. VESSEL MONITORING SYSTEMS
4. REQUIRE STEVEDOR SERVICES
5. WELL DEFINED LEGAL PROVISIONS TO PROTECT RESOURCE
6. VESSEL ALARMS OR SOUNDING BEACONS
7. BONDING/INSURANCE



CAPACITY TO RESPOND TO VESSEL GROUNDINGS

GPD HARBOR UNIT : Boats and rescue personnel (8)

GEPA: Boat and 2 monitoring staff, two water sampling personnel (Other staff would get involved in a catastrophic wreck.

DAWR: Boats and 8 biological staff.

Unless OPA-90 federal funds can be tapped or a responsible party can be identified, there are no sources of funding to pay for assessment and restoration.

NEEDS

•Implement prevention strategies

•An accepted valuation process to adequately address recovery

•Specific Legislation to respond to vessel groundings

•Establishment of a federal trust for vessel grounding

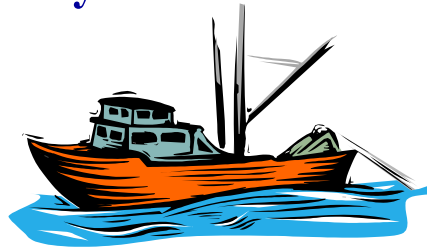


What's Wrong With This Picture?



Grounded & Abandoned Vessels: Legal Authorities

**Cheryl L. Scannell
NOAA,
Office of the General Counsel
January/February 2002**



Background-NRDA programs, including sanctuary groundings cases
-also involved in many projects of legal research and interpretation,
-MA in marine biology before law school

Talk- largely summarizes the legal authorities paper

Disclaimer- paper reviewed and comments on by several DOJ lawyers, several attorneys at USCG, 2 DOI solicitors.

- conclusions, opinions, suggestions are mine

- caveats-- especially important regarding potential solutions and all ideas need a lot of kicking around by stakeholders and practitioners, weighting of the pros and cons.



Goal of the paper and talk is to present an overview of all reasonable existing legal tools applicable- also to represent the background legal information for determining what legislative changes may be feasible.

Admiralty backdrops—explains why some abandoned vessel issues are difficult and sets some important limits for any new legislations, constitutionality, preemption

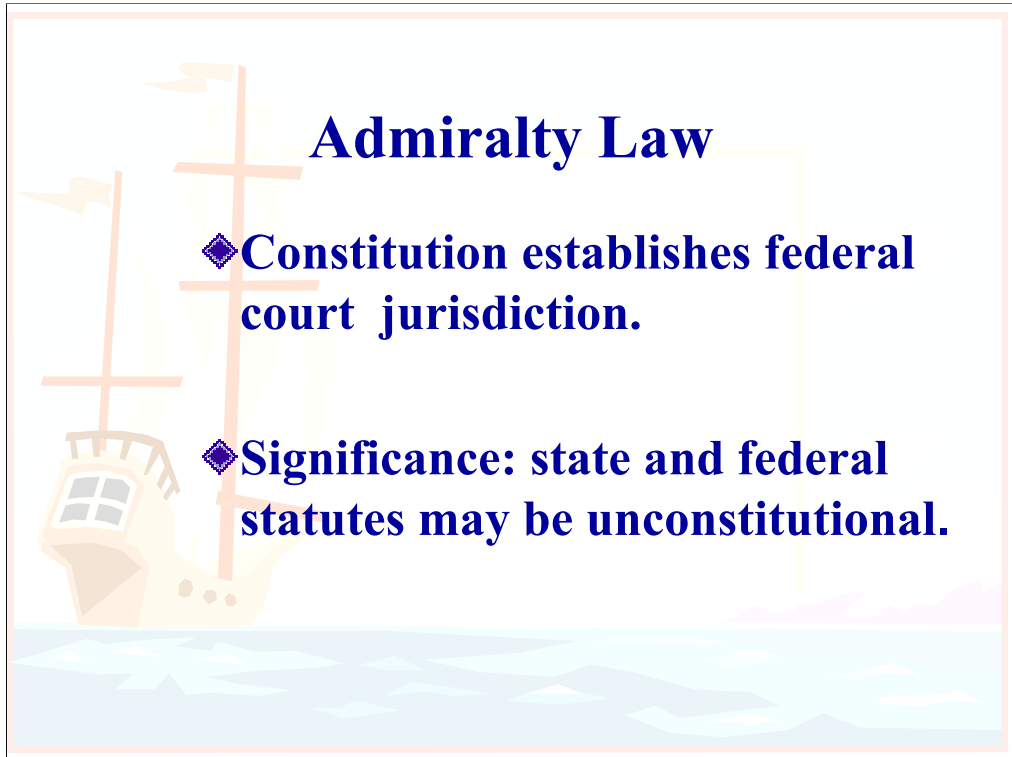
Next, briefly review available legal actions to remove vessels, the threshold requirements, benefits and limits

-both admiralty law and federal statutory actions

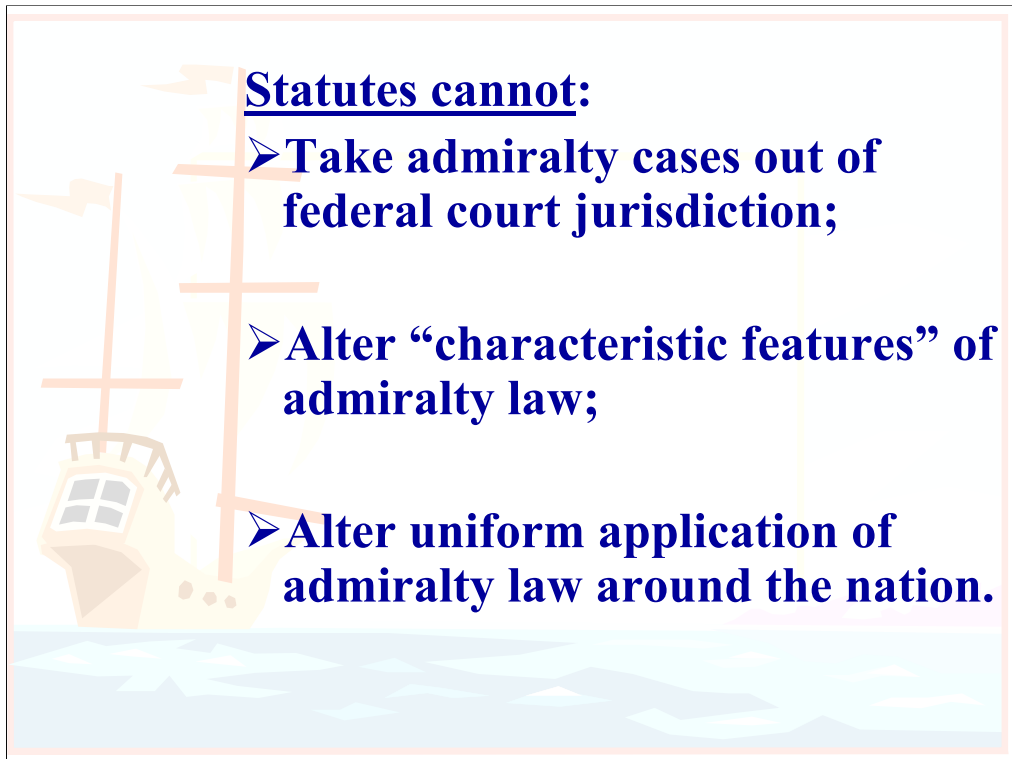
briefly identify sources of funding

Discuss case examples or hypotheticals- I've developed a highly summarized legal flow sheet

Discuss my brainstorming of possible legislative chances, and my ideas of next steps.



- Arose to govern navigations, maritime commerce
 - so important to fledgling U.S. in the 18th century
 - consists mainly of c/l judge-made law going back to pre-revolutionary English case law
- Only subject matter of law treated in the U.S. Constitution- reserve administrative cases to federal courts
- Constitutional status results in limits on what federal or state statutes can do and be constitutional
- If no federal statutes cover circumstances, an admiralty case law claim may be available, but special administrative rules of law apply.



3 General limits to the constitutionality of federal, state statutes that touch admiralty matters.



Cases Typically Tried In Admiralty:

◆ Cases involving the “relationship of vessels, plying the high seas and our navigable waters, and their crews;”

◆ Groundings are “an occurrence unique to maritime law;”

more....

Typical admiralty cases

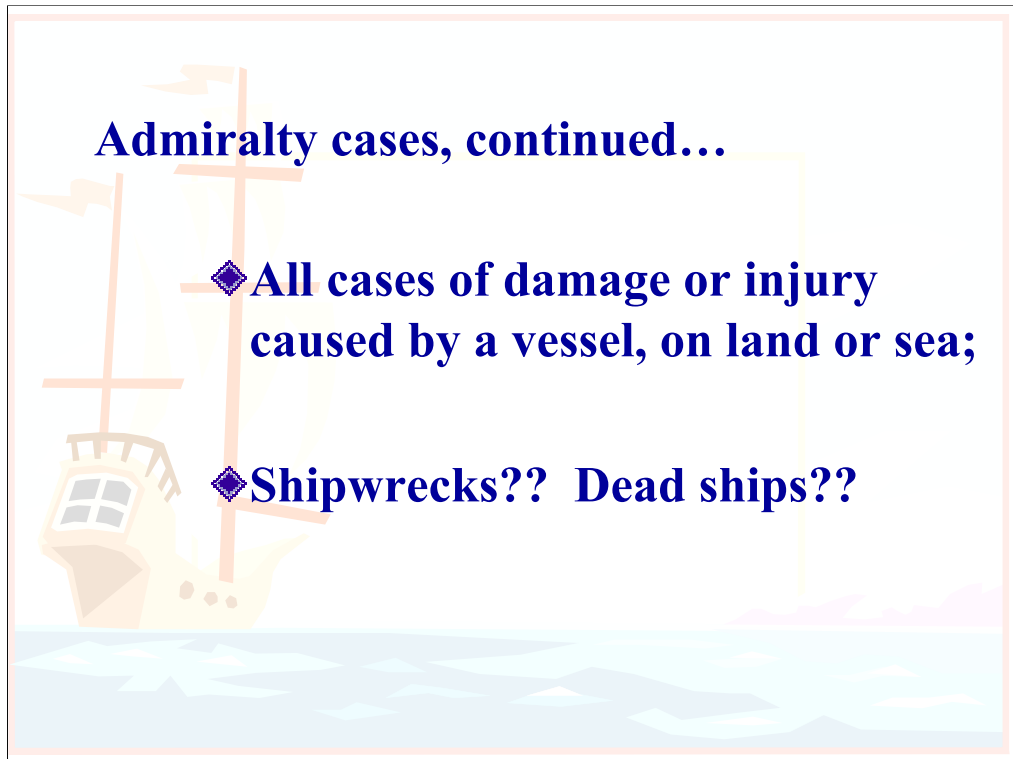
- meaning they are the subject for which admiralty rules will apply, and the cases will generally have to be tried in federal court,

- and subjects for which any new legislations has to meet admiralty-constitutionality requirements

A stylized illustration of a sailing ship with two masts and a yellow hull, sailing on a blue sea with white-capped waves. The background is a light blue sky with a faint yellow sun or moon. The entire scene is enclosed in a thin orange border.

Admiralty cases, continued...

- ◆ **Cases whose resolution would have potentially disruptive impacts on maritime commerce;**
- ◆ **Claim issue closely related to activities traditionally subject to admiralty law;**



Two possible, but not probable bases for arguing that grounded vessels shouldn't be covered by admiralty laws and rules

Shipwrecks: especially if very, very old and long lost— some courts say the framers of the constitutional couldn't have intended – nothing to do with maritime commerce

Dead ships: in certain limited circumstances a ship isn't considered a ship (e.g., dry dock) –rarely applied to recently grounded vessels

Bottom line: if no statute applies, cases of grounded vessels are going to be covered by admiralty laws and rules- rules that may not be able to be changed by new federal, state statutes.



Characteristic Features of Admiralty Law

◆ **Fault-based liability (not strict);**

◆ **Proportionate liability (not joint & several);**

◆ **Limitation of vessel owner's liability;**

more....

So, what are these admiralty law rules—

Fault-based— negligence, recklessness

Proportionate— multiple actors

Limitation of liability - goes back to early English c/c

- desire not to put

shippers, merchants out of business

- if vessel owner is not

negligent or otherwise responsible for a maritime casualty,

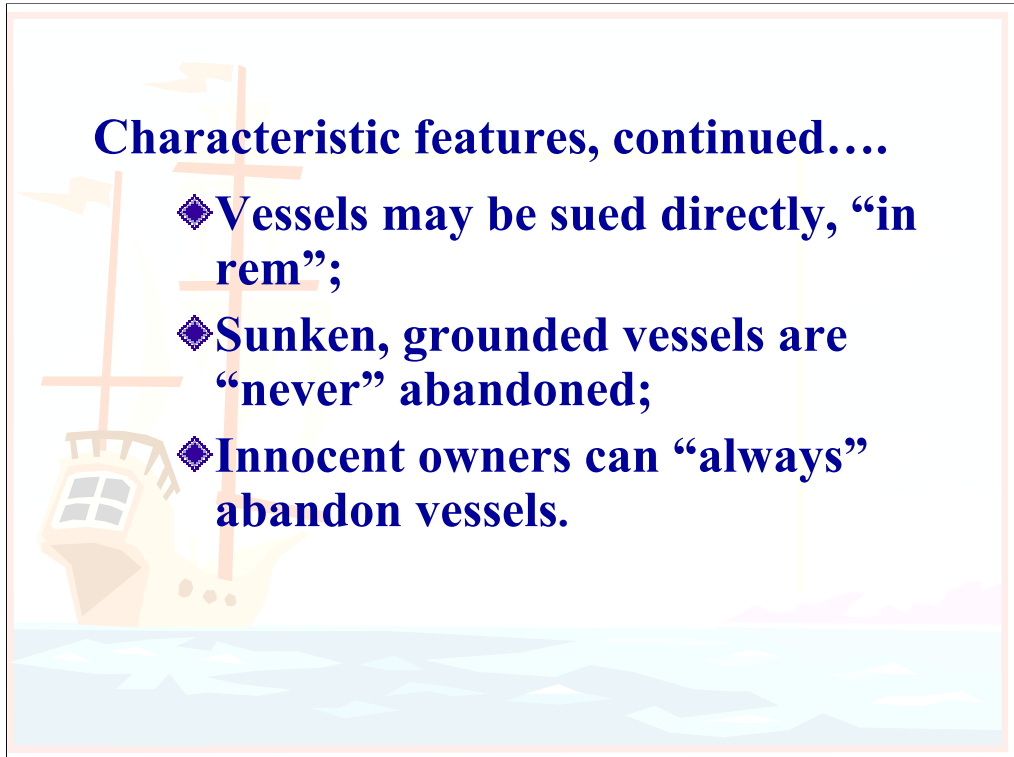
owner's, liability for the casualty is

limited to the value of the vessel and its cargo after

casualty

- codified in a federal

statute in the 1860s



In rem- can sue a vessel as well as the owner, operator

- always in federal court

- must “arrest” the vessel (warrant-court, U.S. Marshall)

- vessel has to be maintained, guarded. May have to set a bond for costs

- if party wins lawsuit, e.g., for property damage, damages are paid out of proceeds of a judicial sale of the vessel a forfeiture

Abandonment- very significant concept in admiralty law

- a loaded legal term, means relinquishment of all legal title

- only an owner can abandon vessel and cargo abandoned separately

Admiralty fiction- never abandoned; requires more than evidence that the owner hasn't returned

Innocent owners- can always abandon sunken, grounded vessel without liability



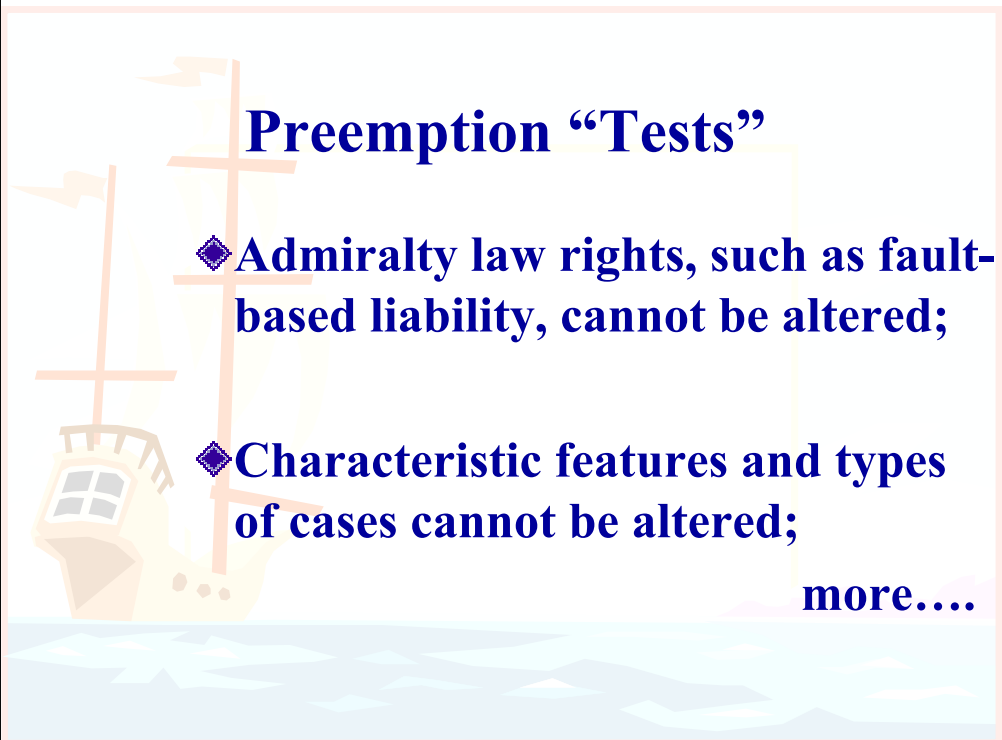
Admiralty law may preempt state, even federal statutes --

“...it would be idle to pretend that the line separating permissible from impermissible state regulation is readily discernible in our admiralty jurisprudence, or indeed is entirely consistent *within* our jurisprudence.”
J. Antonin Scalia, 1994

The Questions is when does Admiralty law preempt?

Scalia quote:

Point: very difficult to predict how courts will rule when looking at whether federal, state statutes unconstitutionally affect admiralty law

An illustration of a three-masted sailing ship on a blue sea. The ship is yellow and white, with three masts and a small cabin. The sea is depicted with light blue and white waves. The entire illustration is enclosed in a thin black border.

Preemption “Tests”

- ◆ **Admiralty law rights, such as fault-based liability, cannot be altered;**
- ◆ **Characteristic features and types of cases cannot be altered;**

more....

With the caveat that courts are very inconsistent, and there seem to be exceptions to every rule, there are some general rules for new statutes to be constitutional:

A stylized illustration of a sailing ship with two masts and a yellow hull, sailing on a blue sea with white-capped waves. The ship is positioned on the left side of the slide, with its masts extending upwards. The background is a light blue gradient.

Preemption Tests, continued...

- ◆ **Congress may modify admiralty law based on changes in experience and circumstances;**

- ◆ **Admiralty cannot swallow the police power of the states;**

more....

A stylized illustration of a sailing ship with three masts and a yellow hull, sailing on a blue sea with white-capped waves. The background is a light yellow sky with a faint horizon line.

Preemption Tests, continued...

- ◆ **States may supplement remedies available to enforce federal rights;**
- ◆ **Congress can expressly reserve, or expressly refuse to preempt, state regulation.**



Two Constitutionality Cases

◆ **Federal statute –
Abandoned Shipwreck Act, 1991
case.**

◆ **State statute –
Maryland v. Kellum, 1995 case.**

Two examples of statutes that have raised constitutional questions

1. Abandoned Shipwreck Act: automatically gave title to wrecks to states, thus negated admiralty concept of salvage, challenged as unconstitutional, case decided on other grounds
2. Maryland v. Kellum- very important – describe case

Summary point thus far: if case involves a grounded vessel it will either be covered by admiralty law and admiralty rules, or a federal statute, or fall through the cracks and there are serious constitutional tests for new statutes.



Admiralty Common Law Claims

◆ **Likely in federal district court;**

◆ **Must bring a lawsuit to seek recovery, relief;**

more....

Federal court due to constitutional reservation

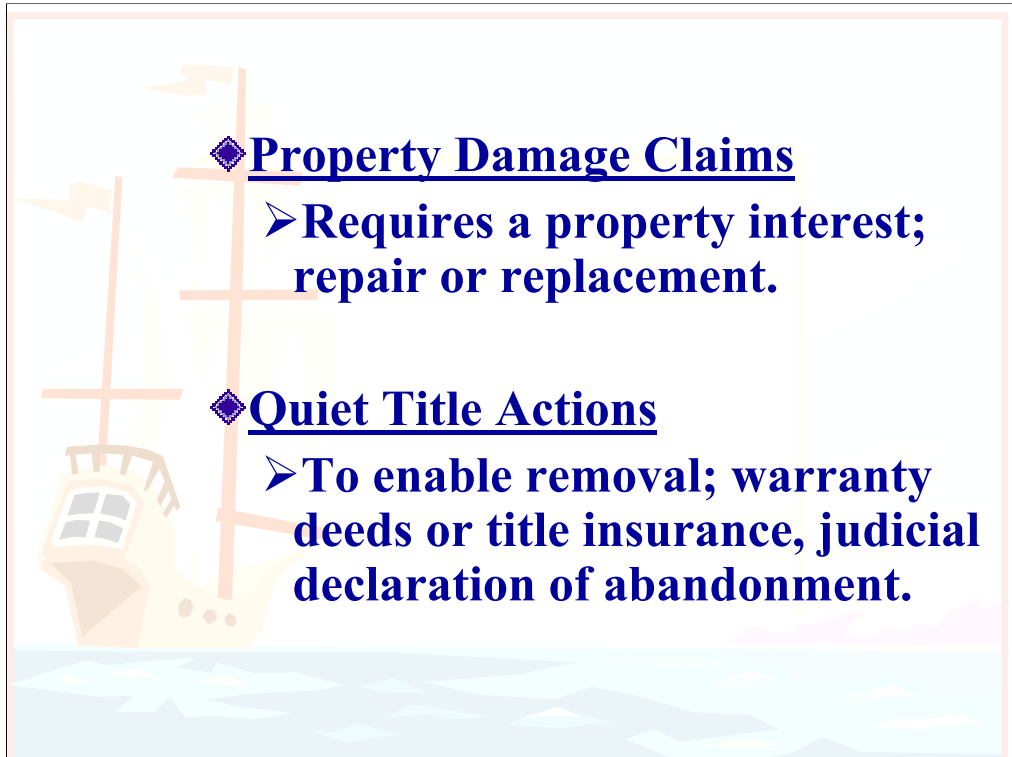
-lawsuit first: no self help, no up front funding (have to have the funds and time)

(remember, these are the claims that you can try and bring if none of the federal statutes fit your case)

C/L claims, continued...

- ◆ **Admiralty principles apply –**
 - **Limitation of liability;**
 - **Fault-based liability;**
 - **Vessels can be, or never are, abandoned;**
 - **Vessels have to be arrested.**

Imagine the impact of these principles on a lawsuit to either get a vessel removed or get an award of the costs removal.



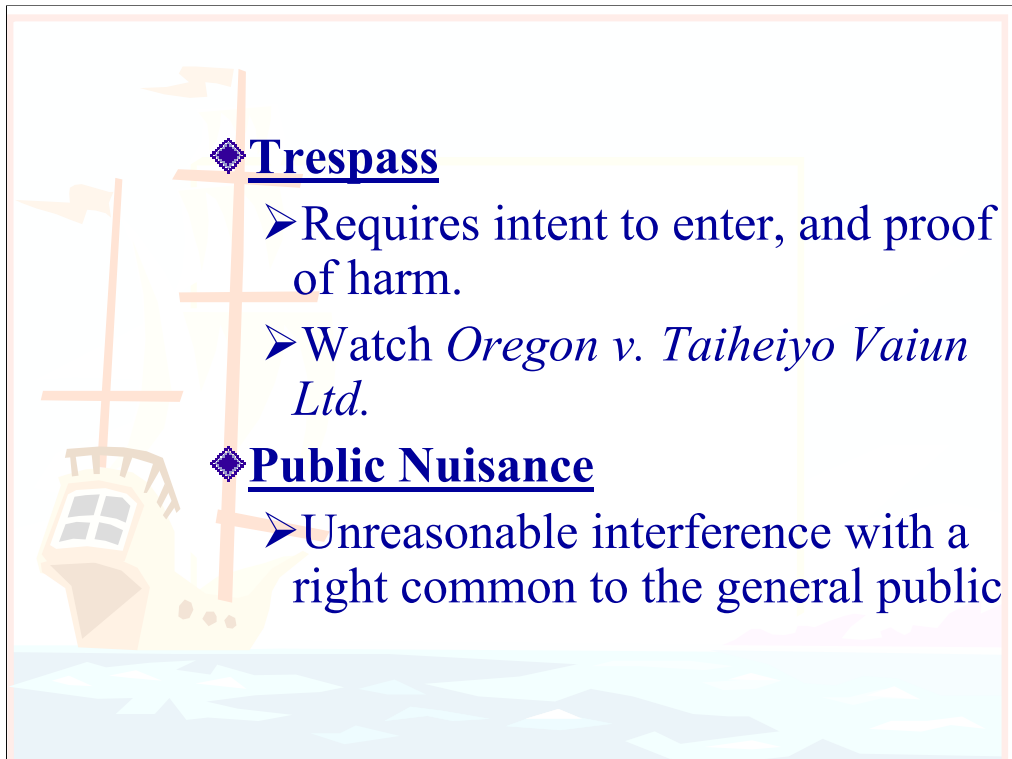
Property- states own most coral reefs, very little federal ownership and management authority isn't a property interest

-is a good claim, but limitation of liability and the ability to abandoned may prevent recovery of any money from the vessel owner

Quiet title- if you have money and just want to legally remove a vessel

Owner known- warrant and deed/title insurance- protection against lien holders

Declaration of abandonment- title would pass to you. Proof of abandonment is more than just that the owner hasn't returned- time, location, difficulty of returning, fees, affordable technology, vessel insured, owner claimed are all criteria for declaring a vessel abandoned.



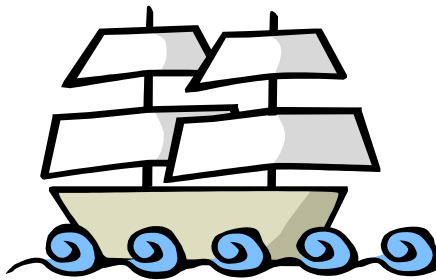
Trespass-property claim, requires property interest

New Carissa case- since writing paper, owner has answered state's trespass claim, raising admiralty defenses including limitation of liability act

Public nuisance-last ditch

FEDERAL STATUTES

(expressly addressing removal, abandonment)



Limited to express treatment because—

-highly inadvisable to infer authority to remove, seize or destroy vessel from generic statutory language (any necessary response because:

- Vessel property can't take w/o due process, compensation
- Property interest heightened a given admiralty concept that vessel are never abandoned
- Congress has expressly defined abandoned vessels in some statutes, has granted authority to remove in some statutes
- Congress knows how to provide the authority when it means to



The “Wreck Act”

Rivers & Harbors Act §409-415

- ◆ ACOE, USCG.
- ◆ Protects navigation.
- ◆ Prohibits sinking, moorings, anchorings that obstruct, threaten navigation.
- ◆ Owners, operators, lessees – duty to mark & remove.

....more

Wreck Act, continued...

◆ **Failure of owner to remove in 30 days = abandonment to U.S.**

- **U.S. can remove, recover costs;**
- **U.S. *must* remove actual obstructions.**

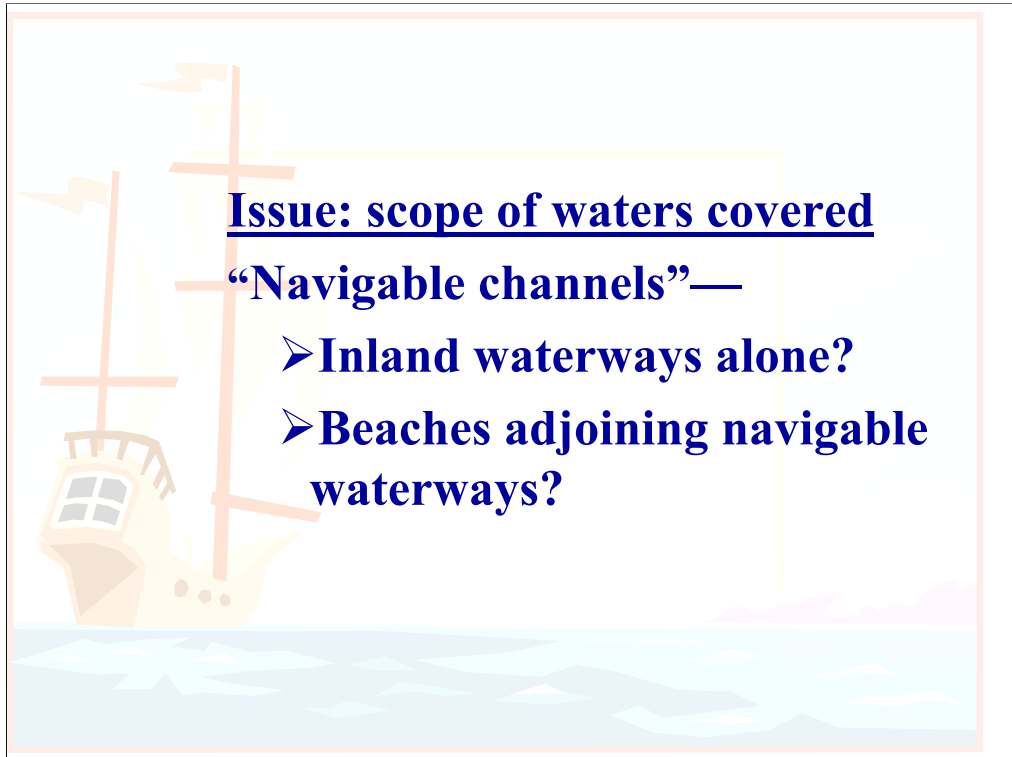
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- Act establishes abandonment- full title passes to the United States
- ACOE can't keep the removal costs they recover-they go to the Treasury
- ACOE has to establish in court that a removed vessel was an actual or threatened hazard to navigation before it can recover its costs

Wreck Act, continued...

- ◆ **Vessels liable in rem to U.S.**
- ◆ **Violation = criminal misdemeanor, fines to \$25,000/day, jail of 30 days to 1 year;**
- ◆ **No Fund.**

-penalties recovered also go to the Treasury

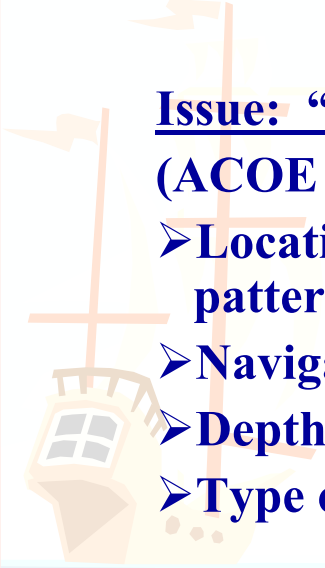


2 Issues: that coral reef managers may want to explore with this Act

1st: whether Act is being applied too narrowly geographically

- Act references navigational channels
- one court: in the land water ways only

- another court: vessel a ground on pacific ocean beach south of san Francisco was covered- could break up, move



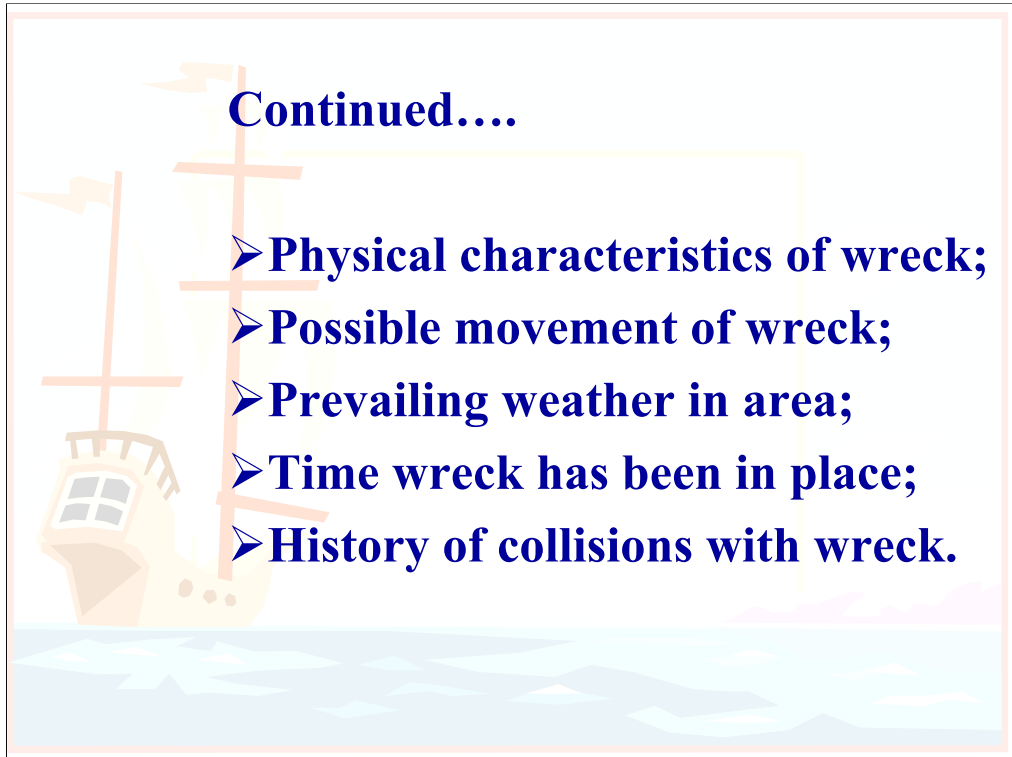
Issue: “Hazards” to Navigation
(ACOE reg.s, 33 CFR § 245.20)

- **Location, relative to navigation patterns;**
- **Navigational difficulty in vicinity;**
- **Depth of water over wreck;**
- **Type of, density of vessel traffic;**

more....

2nd: related case is whether vessels grounded on coral reefs should be removed under this act because of their potential to break up, move, impact vessel's in navigation

-ACOE has promulgated regulatory criteria for assessing a vessels' threat to navigation—a case-by-case, don't have to meet all –relative to coral?



In practice, NOAA hasn't had any receptivity from ACOE, USCG in trying to have this Act applied to coral groundings

Lastly, this Act doesn't cover harm to the environment caused by abandoned vessels, so only removal of vessel threatening navigation

An illustration of a yellow barge with two masts and a cabin, floating on blue water. The text is overlaid on the right side of the image.

Abandoned Barge Act

- ◆ **USCG.**
- ◆ **Vessels > 100 gross tons.**
- ◆ **Unlawful to abandon, to leave unattended for > 45 days.**

more....

1992 Act

Impetus was abandoned barges in places like Mississippi river being used as dumping places for drums of hazardous wastes.

A stylized illustration of a barge on water. The barge is yellow with a white cabin and a tall mast with a crossbar. The water is light blue with white waves. The background is a light yellow gradient.

Abandoned Barge Act, continued...

◆ No actual or threatened obstruction of navigation required;

◆ No pollution discharge or threat required;

more....

Abandoned Barge Act, continued...

- ◆ **USCG permitted, not required to remove—**
 - **Costs recoverable;**
 - **Civil penalties available, to \$1,000/day.**
- ◆ **Injunctive relief available.**
- ◆ **No Fund.**

Like Wreck Act, USCG can't retain the costs and penalties recovered from vessel owners- go to the Treasury

Injunctive relief is available- Coast Guard can go to court to request a judicial order directing the owner, operator or lessee to remove the vessel

-No fund

-No liability for environmental harm

-Coast Guard is maintaining a database of abandoned barges under this Act

An illustration of a shipwreck. The ship is partially submerged in the water, with its masts and rigging visible above the surface. The water is depicted with light blue and green waves. The background is a light yellowish-orange color.

Abandoned Shipwreck Act

◆ **DOI.**

◆ **“Abandoned” & “embedded” vessels.**

- **“Abandoned” = admiralty law principles;**
- **“Embedded” = firmly affixed in the submerged lands”; tools of excavation required.**

more....

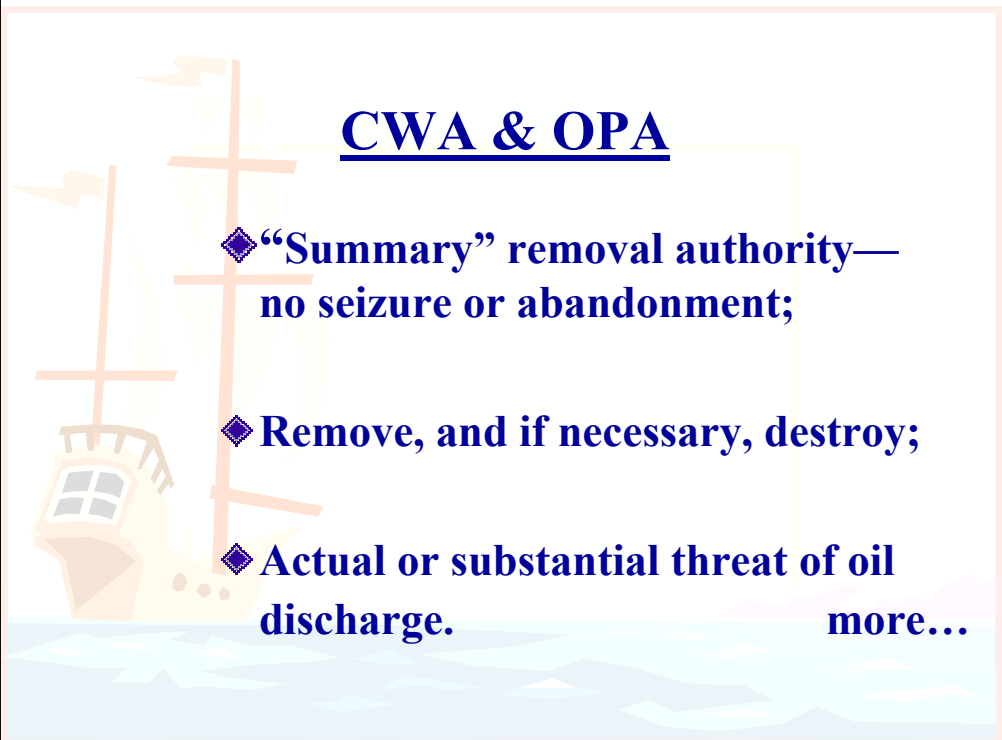
Abandoned Shipwreck Act, continued...

- ◆ **U.S. takes title if listable on National Register of Historic Places;**
- ◆ **Else, state takes title;**
- ◆ **No costs, no restoration, no Fund.**
- ◆ **Removal?? Utility of Act??**

Significance of the Act equals a transfer of title

Question= whether state can remove and dispose of vessel they come to own?

- Act was intended to cover historic wrecks, and encourages states to manage them or their artifacts as historic resources
- But not all “abandoned and embedded vessels will be historic
- Even if state can remove and dispose, there is no cost recovery, no fund



CWA & OPA

- ◆ **“Summary” removal authority—
no seizure or abandonment;**
- ◆ **Remove, and if necessary, destroy;**
- ◆ **Actual or substantial threat of oil
discharge. more...**

Oil Pollution Removals

Express authority to remove as a response raises the Question of whether removals can be done for restoration

-- Clearly abandonment would have to be established to remove vessel as restoration



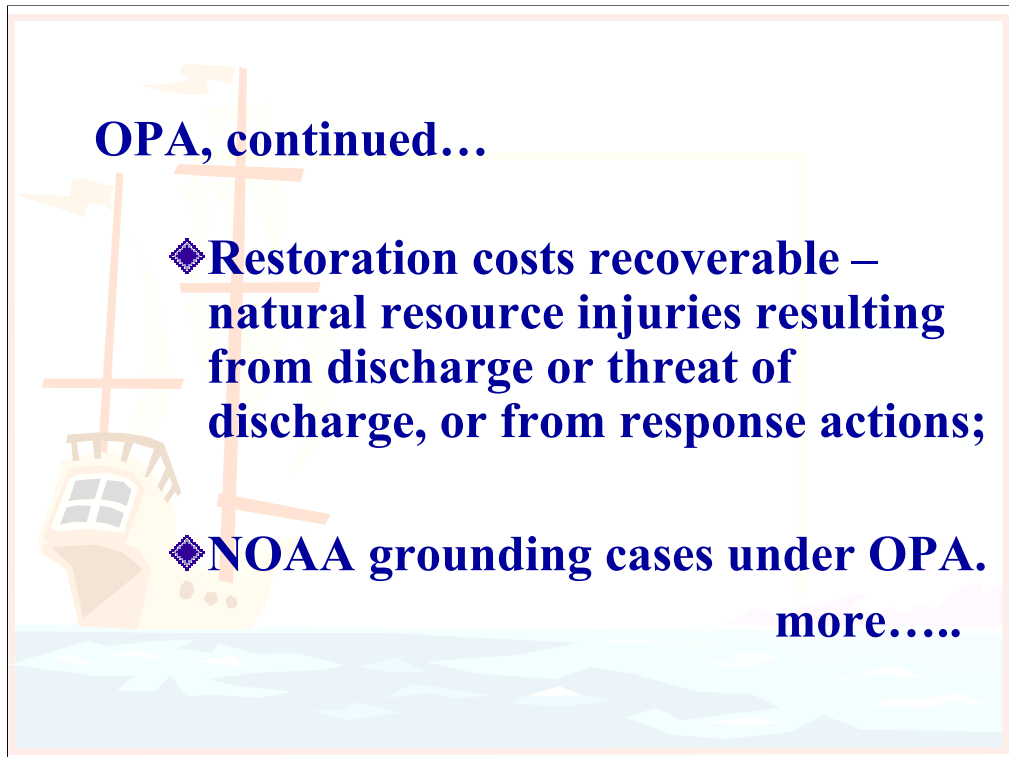
OPA has a broad range of removal costs that can be paid from the federal fund as claims—including state removal costs under stat oil response laws

Big issue: for coral reef managers: when will Coast Guard remove vessels on coral reefs using OPA and the OPA fund

- law says may remove to respond to an actual or substantial threat of diesel
- CG policy include an additional requirement that removal of the vessel be necessary to abate-

I don't believe that leaving vessels after removing the oil is generally good law or policy– think it's a legal confrontation waiting to happen:

- OPA doesn't require a response action to be necessary
- States could pass on interpret their oil statutes to authorize removal of vessels to abate threats and present these claims to the fund
- Urge coral reef managers and USCG to work on this issue, maybe consider an MOU under the auspices of the CRTF



OPA restoration for coral groundings

-1999 case makes recovery of damages to restore physical injuries to reefs harder under OPA

-Threshold: injuries have to result from the discharge, threat or from response actions

-witness Samoa longliners

I encourage coral reef managers to make the broadest available use of OPA for groundings, based on NOAA's experience:

1. Initiation actions and costs
2. Response caused injuries
3. Restoration after Coast Guard removes oil and leaves vessel—
decision not to remove results in injuries that removal would result.

A stylized illustration of a ship with two masts and a cabin, sailing on a blue sea under a light sky. The ship is positioned on the left side of the frame. The text is overlaid on the right side of the image.

OPA, continued....

- ◆ **Fund pays claims if RPs won't;**
- ◆ **Limitation Act preempted, additional state liability not preempted.**



Intervention Act

- ◆ **USCG.**
- ◆ **Implements 2 international treaties.**
- ◆ **Applies to foreign flag vessels of party states.**
- ◆ **Vessels actually or threatening to discharge covered substances, oil.**

more....



Intervention Act, continued....

- ◆ **“Grave and imminent danger to coastline or related interests.”**
- ◆ **Any measures necessary and proportionate to threat.**
- ◆ **Notice & consultation procedures – State Dept.**
- ◆ **“Intervention” costs recoverable from OPA Fund.**

Act has a higher trigger standard and has very broad range of response available



Endangered Species Act

- ◆ **NOAA, USFWS.**
- ◆ **Actual or threatened “take.”**
- ◆ **Injunctive relief.**
- ◆ **Warrantless seizure, forfeiture.**
- ◆ **Penalties.**
- ◆ **No Fund.**

Possible utility: if vessels are grounded on coral that is designated critical habitat for a listed species

- good but untested legal argument that destruction of critical habitat is a take, should be able to get an injunction to get vessels removed.

A stylized illustration of a ship with two masts and a cabin, sailing on a blue sea under a light sky. The ship is positioned on the left side of the slide, with its masts extending upwards. The text is overlaid on the right side of the illustration.

National Marine Sanctuaries Act

◆ **NOAA.**

◆ **Actual or threatened harm to
“sanctuary resources.”**

◆ **Seizure, forfeiture – no summary
removal.**

◆ **No definition of abandonment.**

more....

Interesting issue here equals cope of definition of a sanctuary resources, and whether resources/habitats adjacent to sanctuaries might be covered

-Vessels which might discharge into, or break up and move into sanctuaries should be covered

-What if the adjacent habitat is an important foraging area for resources that move in and out

Act authorizes seizure and forfeiture—arrest of vessel, sale after trial and if NOAA wins

Importance of Act’s language equals it appears to legally preclude removal without seizure particularly because the Act does not define abandonment, only forfeiture

NMSA, continued....

- ◆ **Injunctive relief.**
- ◆ **Vessels liable in rem.**
- ◆ **Response costs, NRDA lawsuits.**
- ◆ **Strict, joint & several liability.**
- ◆ **Preempts Limitation Act.**
- ◆ **No Fund.**

Several useful provisions in NMSA:

Injunctive relief seems like such a useful tool...never used?

Reality equal if vessels had value, the owner or salver would remove
-if not remove, owner likely does not have any money and an injunction might not be enforceable



Park System Resource Protection Act

- ◆ **DOI, NPS.**
- ◆ **Actual or threatened harm to “park system resources.”**
- ◆ **Forfeiture available.**
- ◆ **No summary removal, no definition of abandonment.**

more....

PSRPA, continued....

- ◆ **Vessels liable in rem.**
- ◆ **Response costs, NRDA lawsuits.**
- ◆ **Strict, joint & several liability.**
- ◆ **Preempts Limitation Act.**
- ◆ **No Fund.**





Coastal Zone Management Act

- ◆ NOAA, states.
- ◆ No express authority to remove.
- ◆ Grants to states for broad resource management purposes.
- ◆ Grants *could* be used to remove, if
 - state has its own removal authority.

And a definition of abandonment

Can't bootstrap CZMA language of resource protection and management into state authority to remove and destroy private property.

Public Vessels

- ◆ **Can't seize or sue U.S. vessels.**
- ◆ **Can only sue U.S. in personam.**
- ◆ **State-owned vessels – 11th Amendment issue?**
- ◆ **OPA Fund pays claims for oil discharges, threats caused by public vessels.**

A word or two about government owned vessels.

- Since you can't seize or sue US vessels, you can't remove them.
- Can only sue U.S. for damages, but U.S. can raise any defense a private vessel wonder could raise including limitation.



Insurance

- ◆ **Not a likely solution.**
- ◆ **Expect heavy lobbying, constitutional challenges against attempts to levy insurance requirements.**
- ◆ **Expect broad lack of compliance if insurance requirements imposed.**
- ◆ **Insurance won't prevent abandonment.**

- Insurance is not a likely solution due to practical and legal reasons.
- Constitutional arguments could be raised against applying insurance requirements to vessels only in certain areas-makes admiralty law non uniform.



Funding Sources

- ◆ **OPA Fund.**
- ◆ **Federal grants & aid to states –**
 - **CZMA;**
 - **Land & Water Conservation Fund;**
 - **Federal Aid to Wildlife Restoration;**
 - **Aquatic Resources Trust Fund;**
 - **Sportfish Restoration Account.**

Not a lot to say about funding today. This areas needs much further investigation

Funding, continued....

- ◆ **Increase Abandoned Barge Act funding.**
- ◆ **Boating, fishing, special use fees, licenses, permits.**
- ◆ **Charitable grants?**

It seems that a compelling case could be made to congress regarding an increase of funds for the Abandoned Barge Act.

It also seems plausible, but political will could be lacking.

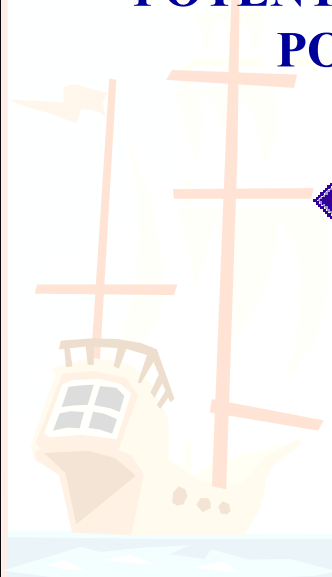
Charitable grants- just threw this out there, might be a source for a specific vessel or area.

Case Examples & Hypotheticals



R/V Karma
F/V Paradise Queen
Other?

POTENTIAL LEGISLATIVE OR POLICY CHANGES

An illustration of a yellow and orange ship with three masts, sailing on a blue and green sea. The ship is positioned on the left side of the slide, partially overlapping the text area.

◆ OPA --- reach agreement
on removal of vessels
grounded on coral
resources and posing a
threat of a discharge;

more...

Caveat again is that this is my brainstorming and it has not been vetted by all affected parties for practicality, workability, budget impacts, political feasibility, etc.

A stylized illustration of a ship with a yellow hull and a white cabin, sailing on a blue sea under a light sky. The ship is positioned on the left side of the slide, with its mast and rigging visible. The background is a soft, light blue gradient.

◆ Coral Reef Conservation Act ---

- **Definition of abandoned, derelict V's;**
- **Authority to remove, sell, use, junk;**
- **Cost recovery, penalties?;**
- **Injunctive relief;**
- **Restoration costs;**
- **State authority to implement;**
- **Fund?**



◆ **Abandoned Barge Act ---**

- **V's less than 100 gross tons;**
- **Authorize states, other federal agencies to implement & recover costs;**
- **Allow U.S. retention of costs, penalties recovered;**
- **Seek more funding to implement.**



◆ **Abandoned Shipwreck Act** ---

- **Define abandoned “derelicts”;**
- **Allow states to remove and destroy non-historical abandoned derelicts.**

A stylized illustration of a ship with two masts and a cabin, sailing on a blue sea under a light sky. The ship is positioned on the left side of the slide, with its masts extending upwards. The sea is depicted with simple, flat colors and a few whitecaps.

◆ NMSA, PSRPA ---

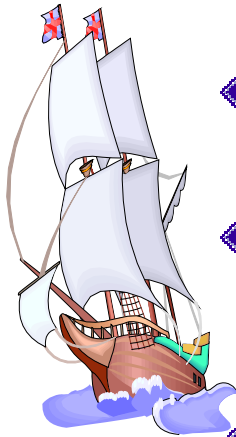
- Define abandoned, derelict vessels and add authority to remove, sell, use, junk;
- Add Funds?
- Designate new sanctuaries, parks?

A stylized illustration of a ship's mast and rigging on the left side of the slide, set against a light blue and green background representing the sea and sky. The ship is depicted in a simplified, geometric style.

◆ “Abandoned & Derelict Vessel Act”?

- **Cover all vessels, all impacted resources;**
- **Removal and restoration authority;**
- **Injunctive relief, penalties;**
- **Feds and states to implement;**
- **Funding source.**

NEXT STEPS



◆ **Evaluate existing laws.**

◆ **Compile detailed information to support new laws.**

◆ **Canvas all affected jurisdictions.**

Need concrete case histories of problems applying, or gaps in existing laws.

-Conversely , we may find out that the range of existing laws covers most, or the most important vessel situations

-In this analysis, must distinguish between the lack of authority and the lack of funding

-If gaps in laws seem significant you should compile a detailed database that presents a compelling picture of the need for new laws, or new funding.

-Mentioned on page 2 of paper:

- Number and types of vessel groundings and abandonment

- Ownership and insurance status of vessels

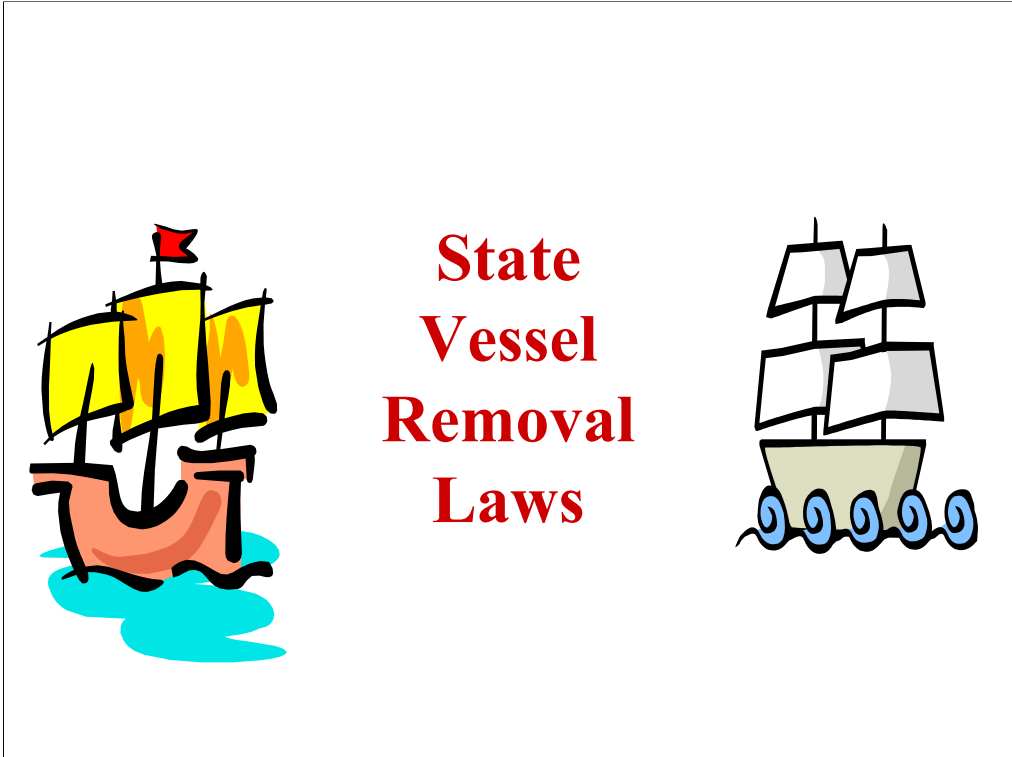
- Existence of vessel salvage equipment and expertise in the jurisdiction

- Any information on the facts of past removals

- Types of natural resources affected, nature of the impacts, particularly if you can monetize the damage. In kind costs of restoration and the lost use or value

- Availability and cost of restoration techniques to address the impacts

- Political and legislation challenges, opportunities for new legislations at either state or federal level.



Caveat regarding expertise not in state law or researching state laws.

Alaska



- ❖ Defines abandonment (>30 days) & derelict;
- ❖ Unlawful to leave derelicts, or abandon;
- ❖ Removal if derelicts threaten navigation or environment;
- ❖ Notice procedures after removal, before sale or disposal;
- ❖ Criminal penalties, removal costs recoverable.

California



- ❖ Defines abandoned (>30 days);
- ❖ Unlawful to abandon;
- ❖ Last registered owner responsible for abandonment;
- ❖ Fines, removal costs;
- ❖ Abandoned Watercraft Abatement Fund – grants to local agencies.

Connecticut



- ❖ **Defines abandoned (24 hours or more);**
- ❖ **Unlawful to abandon;**
- ❖ **Last registered owner responsible for abandonment;**
- ❖ **Removal, storage costs = lien on vessel.**

Florida, Coral Penalties



❖ **Civil penalties for damage to coral resources, by any cause -**

➤ **To \$1,000 /m² plus up to \$250,000 per incident for aggravating circumstances.**

Florida, Vessel Removal



- ❖ **Unlawful to leave derelicts, or abandon vessels;**
- ❖ **No definition of “abandoned?”**
- ❖ **State vessel removal grant program to local agencies.**

Georgia



- ❖ Vessel left for 12 mo. = forfeited, anyone can salvage;
- ❖ Abandoned = 30 days at repair business or 5 days on public property, waters;
- ❖ Owner, operator, lessee, all lien holders potentially liable;
- ❖ Removal, storage, notice costs = lien on vessel.

Hawai'i



- ❖ **Unlawful to sink or abandon (leave unattended > 30 days);**
- ❖ **Defines derelict as sunk or in danger of sinking, or unidentifiable;**

more....

Hawai'i, continued....



- ❖ State may order removal, seek injunction;
- ❖ Notice required after state removal, before sale or destruction; allows repossession;
- ❖ Special boating fund.

Massachusetts



- ❖ State must remove wrecks > \$100 left on state property, may remove wrecks < \$100;
- ❖ Owner, any interest holder liable for state removal costs;
- ❖ Insurers not responsible for removal or costs;
- ❖ **! Authorizes state to apply to U.S. for reimbursement of costs which 'might properly have been paid by the U.S.'

Mississippi



- ❖ Covers coastal wetlands & connecting canals;
- ❖ Abandoned & derelict = left > 90 days;
- ❖ Any owner, operator liable for removal *and restoration*;
- ❖ If state removes, restores, liability = double the costs;
- ❖ Injunctive relief available;
- ❖ Derelict vessel fund.

Useful Elements in New State Removal Statutes



- ❖ State laws cannot preempt federal laws, including Admiralty common law;
- ❖ E.g., state laws cannot preempt the Vessel Owners' Limitation of Liability Act.
- ❖ Question: what are limits of abandonment definitions of less than 30 days?

Useful provisions, continued...



- ❖ **Define abandoned and/or derelict, to cover both vessels left unattended for a prolonged period of time and vessels that are falling apart and are desirable to remove before abandonment period runs;**

Provisions, continued...



- ❖ **Include a public notice procedure to allow lien holders to come forward after removal and before disposal, but allow for waiver of lien holders' interests if they don't respond to notice;**

Provisions, continued...



- ❖ **Make abandonment unlawful to facilitate civil or criminal penalties – must have an administrative penalty adjudication process;**
- ❖ **Make owners, operators, lessees, and all lien holders liable for state costs;**

Provisions, continued...



- ❖ **I.D. the state entities that can exercise removal authority, hold them harmless for any damage to the vessel;**
- ❖ **Provide for summary removal authority if vessel is a serious hazard to navigation, the environment;**

Provisions, continued...



- ❖ **Include injunctive relief;**
- ❖ **Provide authority to sell, take title to, or dispose of removed vessels;**
- ❖ **Provide for deposit of fines & costs in revolving fund, available w/o legislature's appropriation;**
- ❖ **State that law isn't intended to be interpreted as conflicting w/federal law.**

Oil Pollution Act of 1990

U.S. Coast Guard
Captain Rob Lorigan

Prevention

- **Regulatory Initiatives**

- Double Hull Requirement for Tank Vessels
- Operational Measures to Reduce Oil Spills from Existing Single-Hull Tank Vessels
- Access to National Drivers Register and Criminal Records Review
- Enhancements to Civil and Criminal Penalty Provisions

Prevention

- **Non-Regulatory Initiatives**

- Prevention Through People (PTP)

Prevention

- **Non-Regulatory Initiatives**
 - Prevention Through People (PTP)
 - Risk-Based Decision Making

Prevention

- **Non-Regulatory Initiatives**
 - Prevention Through People (PTP)
 - Risk-Based Decision Making
 - Stakeholder Input

Prevention

- Average number of spills over 10,000 gallons dropped by ~ 50%
- 50% decrease in gallons spilled per million gallons shipped
- No spills over one million gallons since 1990
- Total volume tank ship oil spills has remained below 200,000 gallons

Preparedness

- **Area Committees and Area Contingency Plans:**
 - Describe management system
 - Are adequate to remove worst-case discharge
 - Describe area covered by plan
 - Describe responsibilities
 - List available resources
 - Describe procedures for decision on alternative technologies
 - Describe how plan integrates with other plans

Preparedness

- **Vessel and Facility Response Plans:**

Preparedness

- **Vessel and Facility Response Plans:**
 - Coordinate RPs with FOSCs and response strategies
 - Ensure required resources planned for and available for use

Preparedness

- **Shipboard Oil Pollution and Emergency Plans (SOPEPs)**
 - Result of MARPOL 73/78
 - Pertains to T/S >150GT and vessels >400GT

Preparedness

- **Exercises under OPA 90**
 - Preparedness for Response Exercise Program (PREP)
 - Satisfies requirements of CG, EPA, RSPA, MMS
 - Internal exercises (required by facility/vessel response plan regulations)
 - Voluntary program
 - External exercises (include large scale exercises for both industry/government)
 - Validates readiness of response community

Preparedness

- **Exercises under OPA 90**
 - Spill of National Significance (SONS)
 - Incident severely impacts human health and/or environment
 - Exceeds response capabilities of regional assets

Response

- “Best Response”
 - Response Management System

Response

- “Best Response”
 - Response Management System
 - National Strike Force (NSF)
 - Public Information Assist Team (PIAT)
 - Response Resources Inventory (RRI) Network
 - National Oil Spill Removal Organization (OSRO) Classification Program
 - Prepositioned Equipment

Response

- “Best Response”
 - Response Management System
 - National Strike Force (NSF)
 - First Aid Response Equipment

Response

- “Best Response”
 - Response Management System
 - National Strike Force (NSF)
 - First Aid Response Equipment
 - District Response Advisory Teams (DRAT)

Liability and Compensation Oil Spill Liability Trust Fund (OSLTF)

- National Pollution Funds Center (NPFC)
 - Fiduciary agent for OSLTF
 - Financial oversight for EPA Superfund portion accessible to Coast Guard

Liability and Compensation Oil Spill Liability Trust Fund (OSLTF)

- National Pollution Funds Center (NPFC)
 - Manage the Fund
 - Fund Removal Actions

Liability and Compensation

Oil Spill Liability Trust Fund (OSLTF)

- National Pollution Funds Center (NPFC)

- Manage the Fund

- Fund Removal Actions
- Compensate Claimants

Liability and Compensation

Oil Spill Liability Trust Fund (OSLTF)

- National Pollution Funds Center (NPFC)

- Manage the Fund

- Fund Removal Actions
- Compensate Claimants
- Fund Assessments of Environmental Damage

Liability and Compensation

Oil Spill Liability Trust Fund (OSLTF)

- National Pollution Funds Center (NPFC)

- Manage the Fund

- Fund Removal Actions
- Compensate Claimants
- Fund Assessments of Environmental Damage
- Recover Costs

Liability and Compensation

Oil Spill Liability Trust Fund (OSLTF)

- National Pollution Funds Center (NPFC)
 - Manage the Fund
 - Certify Financial Responsibility of Vessel Owners
 - Major Support Activities
 - Harnessing Technology
 - Interagency Collaboration

Research and Development

- Coast Guard is leader in cooperative research and development
- Cooperative R&D efforts show promise
- Coast Guard led advances in response and prevention resulting in fewer medium and major oil spills
- Coast Guard funded 30+ initiatives over past 12 years

Research and Development

- Significant Improvements
 - Pre-positioned Spill Response Equipment
 - Multi-agency Team Building Enhancement System
 - Improved Spill Containment Boom
 - Vessel of Opportunity Skimming System
 - On-scene Command and Control System

Research and Development

- **Current projects**

- Pollution Incident Simulation, Control and Evaluation System (PISCES)
- Waterways Evaluation Tool (WET)
- Cost Modeling Systems (PACE)
- Integrated Navigation Systems
- Human Performance Standards and Safety
- Computer-based Training

Summary Points

- Oil spills reduced by 50%
- Regulatory/non-regulatory strategies for prevention
- Preparedness at all-time high
- Better response systems
- Refined funding mechanisms
- Active partnerships have advanced oil spill technology



Enforcement Response to Vessel Groundings

- History
- Response Protocol
- Vessel Removal
- Case Preparation
- Actions to Eliminate Vessel Groundings

Good Morning I'm Lt Bob Currul of the Florida Fish and Wildlife Conservation Commission and the Florida Keys National Marine Sanctuary

This morning I'd like to talk to you about Law Enforcement Response to Vessel Groundings. **CLICK**

I'll start with a very brief history of the Florida Keys National Marine Sanctuary and the grounding events that take place within it. **CLICK**

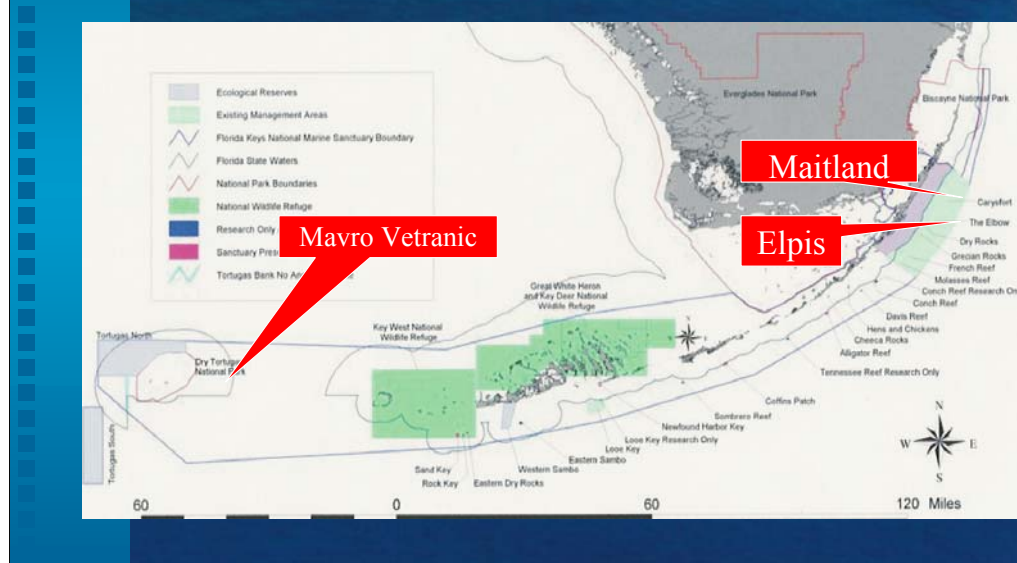
Discuss the Enforcement response protocol **CLICK**

Discuss how we have handled vessel removal. **CLICK**

Talk about Case Preparation. **CLICK**

And finally go over some of the methods used to eliminate vessel groundings.

Florida Keys National Marine Sanctuary



This is the Florida Keys National Marine Sanctuary (*Orient on Map*)

>The Sanctuary encompasses approximately 2900 square miles, 62% of which lies within the State of Florida (*Show state boundaries*)

>The Sanctuary is managed jointly by NOAA and the State of Florida.

>The Straits of Florida which lies just south and east of the Keys is one of the most heavily trafficked shipping lanes in the world. Northbound traffic stays off shore in order to take advantage of the Gulf Stream, southbound traffic tries to hug the reef line in order to avoid the Gulf Stream.

>The Sanctuary was established in 1990 immediately following three large vessel groundings on the reef which occurred within a 16 day period. **Click, Click, Click.**

>As part of the Act Congress:

>Established an Area to be Avoided by tank vessels and other vessels over 50 meters, requiring them to remain outside of a line which roughly follows the 600ft contour line.

>Banned offshore drilling within the boundaries of the Sanctuary.

>And tasked Sanctuary personnel with developing a management plan and set of regulations to govern the Sanctuary.

>>These regulations were finalized and became effective July 1, 1997

Partnership

- Sanctuary Enforcement is a Partnership Between NOAA and the State of Florida



My position and the eight other Sanctuary enforcement positions are the result of the partnership between NOAA and the State of Florida

>We are employed by the State of Florida's Fish and Wildlife Conservation Commission, however, my salary and most of the costs associated with my position are paid for by NOAA.

>This partnership has been ongoing for 25 years and has traversed various state agencies from the now non-existent Department of Natural Resources, to the Department of Environmental Protection, and finally to the Florida Fish and Wildlife Conservation Commission in 1999.



Florida Fish and Wildlife Conservation Commission Provides

- Established Marine Enforcement Patrol Organization
- Authority to Enforce All State Laws with Access to State Criminal System
- Patrol Vehicles.

The Florida Fish and Wildlife Conservation Commission Provides

CLICK


>An established marine enforcement patrol organization which includes, hiring, training, administrative support and a privacy secure 800MHz radio system.

CLICK

>Authority to enforce all state laws with access to the State criminal court system. This includes capital crimes to traffic tickets.

CLICK

>Some Patrol vehicles.



NOAA Provides

- Authority to Enforce NMSA, MMPA, ESA, Magunson Act, with Access to Federal Criminal and Civil Court Systems
- Investigative Support via Special Agents of NOAA's Office of Law Enforcement
- Patrol Vessels
- Funding for Enforcement Positions and Operations.

NOAA Provides:

Authority to enforce the National Marine Sanctuaries Act, the Marine Mammal and Protection Act, The Endangered Species Act and the Magnuson Fishery Conservation and Management Act, with access to Federal criminal and civil court systems. **CLICK**

>Investigative support via Special Agents of NOAA's Office of Law Enforcement. **CLICK**

>Patrol vessels. **CLICK**

>And most importantly funding for the enforcement positions and operations.

Boarding Authority

- National Marine Sanctuary Act
 - US Code Title 16 chap 32 section 1437
 - Board, Search , Inspect and seize any vessel suspected of violating this chapter.
- State of Florida
 - ◆ FS 327 - Investigate Boating Accidents
 - ◆ FS 370 - Board vessels engaged in Fishing

CLICK

Authority to board comes from The National Marine Sanctuary Act US code Title 16 Chapter 32 section 1437 which gives authority to board, search , inspect and seize vessels suspected of violating Sanctuary regulations. It does have limits concerning foreign vessels and we contact National Marine Fisheries Service who in turn contacts the State Department for approval prior to boarding a Foreign vessel. CLICK

>State of Florida gives specific boarding authority under FS 327 to conduct accident investigations (a grounding by definition is a boating accident) and under FS 370 to board vessels engaged in fishing.

>Other state boardings may be conducted pursuant to the Florida rules of criminal procedure.

>Sanctuary Violations are civil in nature

> On the State side a person can be charged criminally for a boating accident which results from the violation of a Navigation Rule such as failure to maintain a proper look out.

Sanctuary Regulations

- Illegal Take of Sanctuary Resources
- Safety
- Damage to Resources
 - ◆ Alteration of Seabed
 - ◆ Deposit of Illegal Materials
 - ◆ Vessel Operation

The rules which govern behavior within the Sanctuary became effective July 1st 1997.

>Sanctuary regulations deal with: **CLICK**

>Illegal take of Sanctuary Resources, **CLICK**

>Safety **CLICK**

>and Damage to Sanctuary Resources Through:**CLICK**

Alteration of the seabed **CLICK**

Deposit of Illegal materials **CLICK**

Vessel Operation; or more precisely, Vessel Groundings.

15 CFR 922.163 (a)(5)(i) - Vessel Operation Prohibited Activity

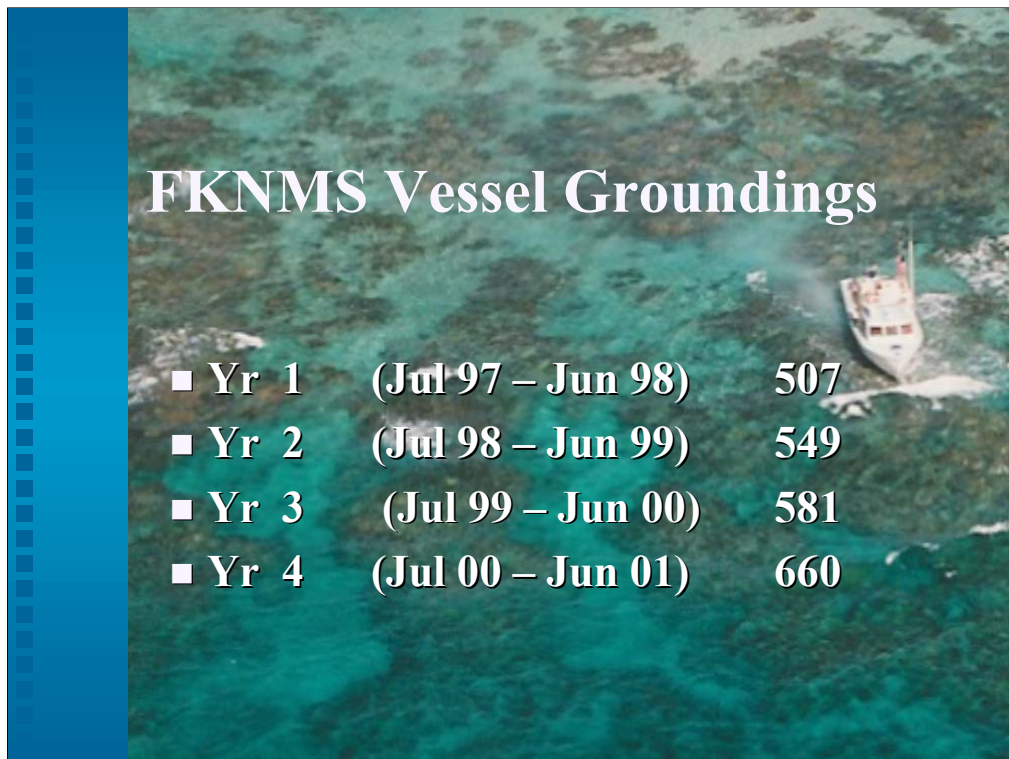
- Operating a vessel in such a manner as to strike or otherwise injure coral, seagrass, or any other immobile organism attached to the seabed, including, but not limited to, operating a vessel in such a manner as to cause prop-scarring.

The Sanctuary regulation which deals with vessel groundings is 15 CFR 922.163 (a)(5)(i) which prohibits **Read Slide**.

> So why do we need regulations

> Damage actions are very expensive and are really only appropriate where a great amount of damage has been done.

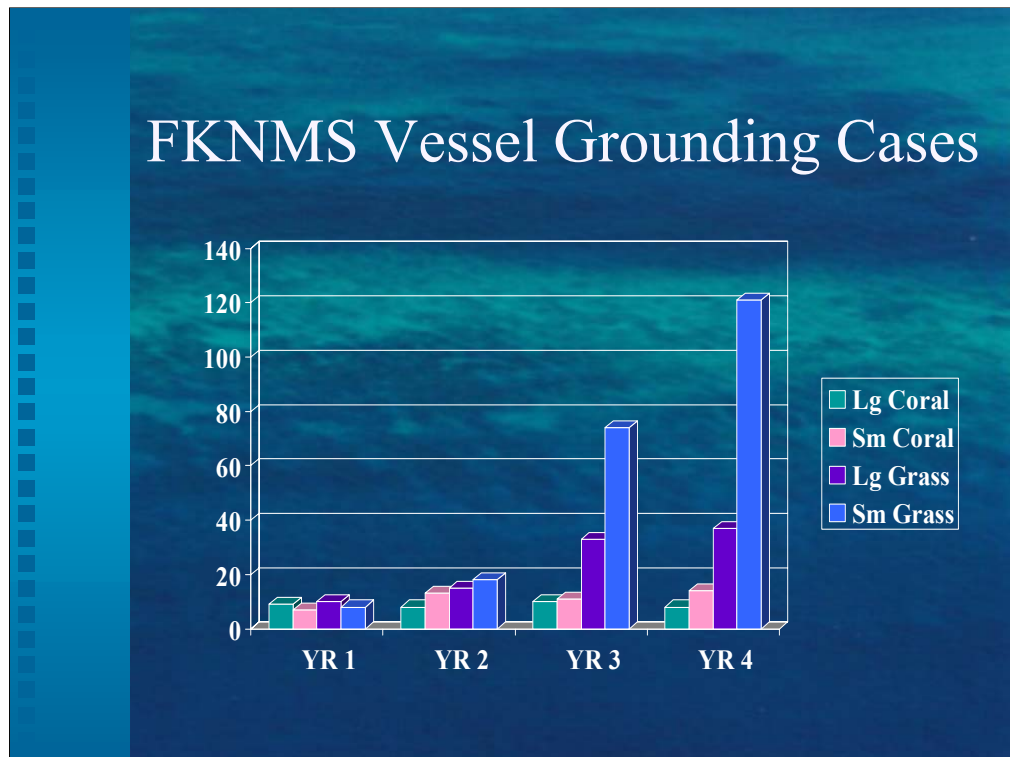
> Penalty actions punish bad behavior and although the penalty is based on the amount of damage, does not involve, monitoring, cost recoupment and other costs associated with a damage action. Most of our cases are penalty actions.



These are our vessel grounding totals for the past four years. The numbers of vessel groundings shown here represents “reported” vessel groundings, in other words those groundings which required assistance in getting free. Groundings where the vessel can pushed off by hand or powered off generally remain unreported.

As you can see total vessel groundings have been increasing steadily.

We attribute this to both increased boating activity and increased reporting.



Written grounding cases have also gone up, with the percentage of cases per grounding total rising from 6.5% in yr 1 to 27.3% in yr 4.

>The dividing line between large and small coral groundings is 10 square feet.

>The dividing line between large and small grass groundings is 10 square yards.

Large Case Statistics

- 33% of Large Grounding Cases Involve Vessels between 41' and 50'
- Recreational Vessels 74% - Commercial 26%
- Power Vessels 78% - Sailing Vessels 22%
- Keys Residents 25%
Other Florida Residents 42%
Out of State Residents 33%

A breakdown of our large case category, over 10sq feet coral and over 10 sq yds of sea grass for a 3 yr period reveals that: **Click**

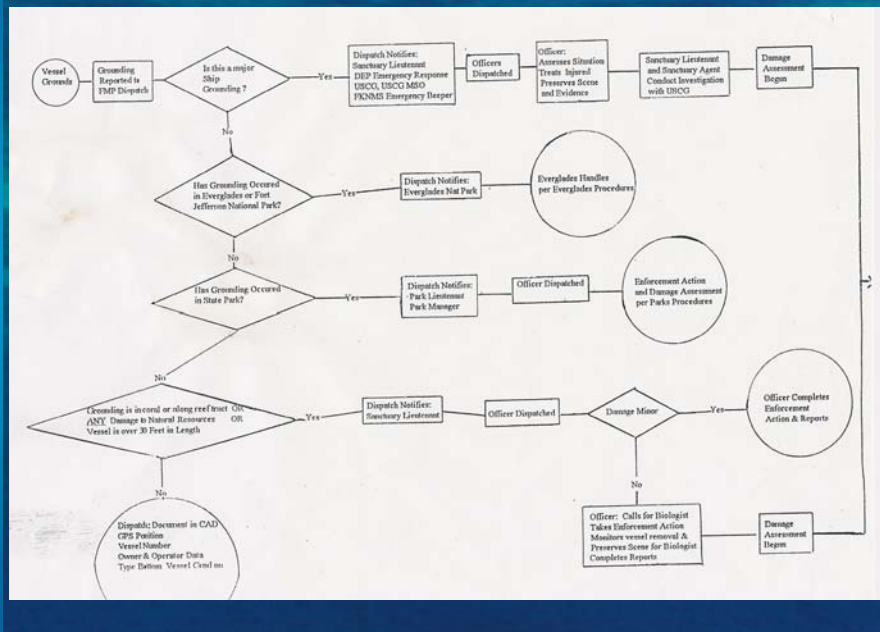
33% of large grounding cases involve vessels between 41 and 50 feet. **Click**

Recreational vessels accounted for 74% of large groundings versus 26% for commercial vessels **Click**

Power vessels accounted for 78% of large groundings versus 22% for sailing vessels **Click**

Keys residents accounted for 25% of large case groundings, other Florida residents accounted for 42% and out of state residents accounted for 33%.

Notification & Response



HAND OUT FLOW CHARTS

This flow chart is part of the FWC Special Enforcement Area grounding policy which was written in 1997. The text is a bit dated but the flow chart accurately reflects the Enforcement Response Protocol in use within the Florida Keys National Marine Sanctuary today.

>Our dispatchers have a myriad of scenarios that they react to. This flow chart was designed to keep things as simple as possible for them.

>Please follow along on the flow chart I handed out: going through the chart is probably the easiest way to understand the protocol.



The protocol involves **CLICK**

Notification **CLICK**

Response **CLICK**

Scene Assessment **CLICK**

Enforcement Action **CLICK**

Case Preparation **CLICK**

Damage Assessment or initiation of Damage Assessment.

>The sequence of how these elements are initiated within the protocol varies widely and is totally dependent upon the given situation. About the only thing that is a given from case to case is that the initial notification of the event is first.

Initial Notification

Initial Notification of Grounding Event is Received by the FWC Dispatch Center from:



- Marine Salvors
- USCG
- Grounded Vessel
- General Public
- Sanctuary Staff
- Patrol Officers
- Aircraft

Initial notification of a grounding event is received by the FWC dispatch center located in Marathon FL which operates 24/7.

The sources of information are: **CLICK**

Marine Salvors who are responding to a call for assistance **CLICK**

USCG who has received a call for assistance **CLICK**

Calls directly from the grounded vessel **CLICK**

The General Public who have come across grounded vessels or who have witnessed a grounding event **CLICK**

Sanctuary Staff who have been informed of the incident by the general public or who have come across or witnessed a grounding. **CLICK**

Patrol Officers who have come across grounded vessels while on patrol. **CLICK**

And, Aircraft, especially our FWC pilot who finds grounding events on a regular basis.

Ship Grounding--YES

- Notify-Sanctuary Lieutenant, USCG, USCG MSO, DEP Emergency Response, FKNMS Emergency Beeper, SEA Major
- Dispatch Officers



If the answer to the first question is yes, A Ship grounding has occurred, **CLICK**

Notifications to the Sanctuary Lieutenant, USCG, USCG MSO, DEP Emergency Response, FKNMS Emergency Beeper, and The Special Enforcement Area Major are made immediately. **CLICK**

> Officers are immediately dispatched to the scene as is the FWC aircraft if available

>As soon as the Sanctuary Lieutenant is notified he notifies the Sanctuary Superintendent and the local NOAA Office of Law Enforcement Special Agent.

>The Sanctuary Agent position referred to in the flow chart no longer exists.



Ship groundings offer the possibility of an oil or pollutant spill and **CLICK**
Coast Guard assumes command of the situation. **CLICK**

>Sanctuary and Captain of the Port Miami, have a working agreement
whereby Sanctuary has input into the recovery plan to protect resources to
the greatest extent possible.



Officer Response to Scene

CLICK

If Coast Guard is already on scene officers assist Coast Guard as directed.

If Officer is first on scene he: **CLICK**

Assesses the Situation for safety **CLICK**

Treats injured if any. **CLICK CLICK**

Preserves the scene, makes sure navigation equipment is left as is, looks for indications of impairment. **CLICK**

Relays information to FWC dispatch and the Sanctuary

Lieutenant

Ship Grounding—YES

Sanctuary Lieutenant and NOAA OLE
Special Agent Conduct Investigation with
USCG

Ship Removed

Damage Assessment Begun



CLICK

Commencing with the Columbus Iselin grounding in August of 1994 the Sanctuary Lieutenant and NOAA Special Agent have conducted joint ship grounding investigations with USCG.

>The investigations are conducted under the cognizance of the Coast Guard shipboard commander and are secondary to other activities involving preservation of the ship and prevention of a spill. **CLICK**

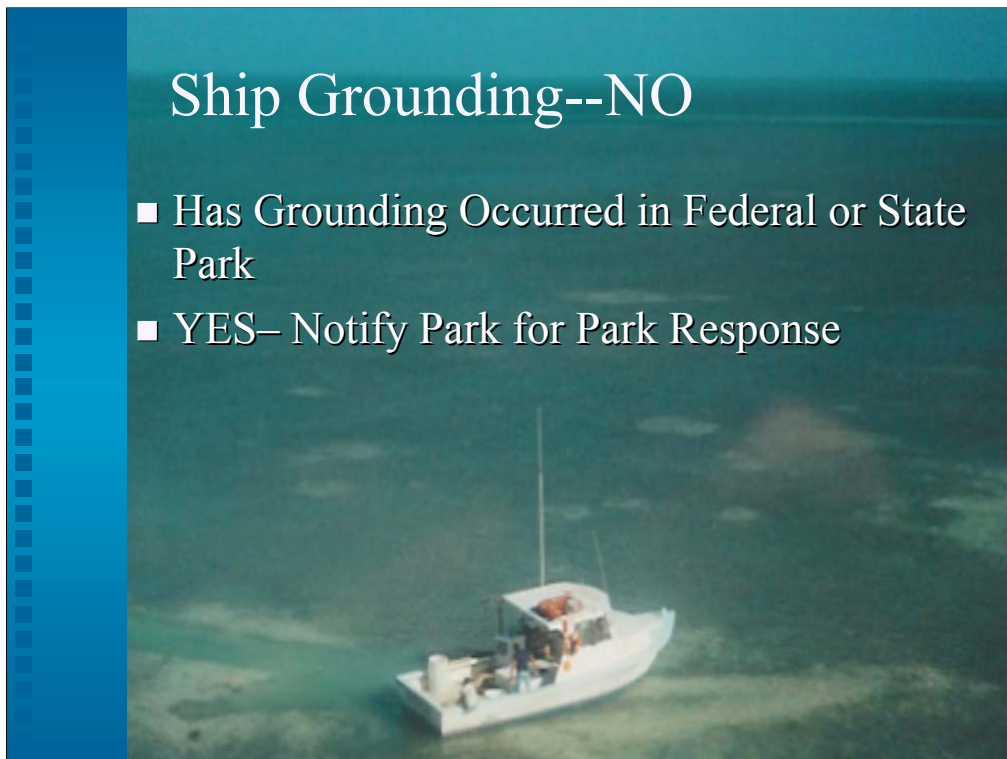
The ship is removed according to plan approved by Coast Guard with Sanctuary input. **CLICK**

After the ship is removed the damage assessment is begun.

>Although in many instances such as the Houston grounding at Maryland Shoal in February of 97, the damage assessment and restoration was begun simultaneously with the investigation and before the removal of the ship.

Ship Grounding--NO

- Has Grounding Occurred in Federal or State Park
- YES– Notify Park for Park Response



If the grounding is not a ship, **CLICK**

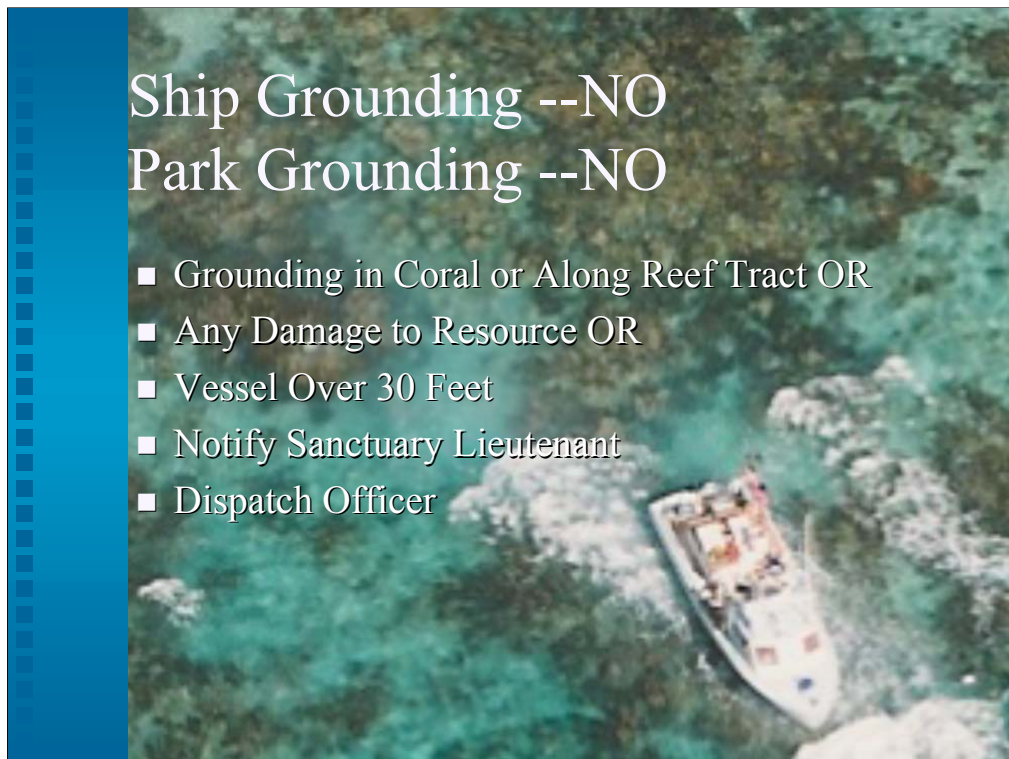
Has grounding occurred in a National Park or within a Florida State Park?

>We have borders with Everglades and Biscayne National Parks and we have a number of State parks which are contained within the Sanctuary.

CLICK

If yes, we forward the information to the appropriate park for action.

>We assist with LE or assessment personnel when requested and in the case of State Parks the Park Patrol Officers are also dispatched by the FWC dispatch center.

An aerial photograph showing a white boat with a red stripe on its side, grounded on a coral reef. The water is clear, revealing the intricate structures of the coral and the sandy bottom. The boat is positioned diagonally across the frame, with its bow pointing towards the bottom right. The surrounding reef is a mix of light and dark patches, indicating different types of coral and sand.

Ship Grounding --NO

Park Grounding --NO

- Grounding in Coral or Along Reef Tract OR
- Any Damage to Resource OR
- Vessel Over 30 Feet
- Notify Sanctuary Lieutenant
- Dispatch Officer

If it's not a ship grounding or has not occurred in a State or Federal Park
CLICK

Has Grounding occurred in coral or along the reef tract or **CLICK**

Has any damage occurred to Sanctuary resources or **CLICK**

Is the vessel over 30 feet in length.

If the answer is yes to any **CLICK**

the Sanctuary Lieutenant is notified and **CLICK**

an officer is dispatched. Based on what the officer finds on arrival Sanctuary Staff may be or may not be called out.

>If an officer is not available the Sanctuary Lieutenant decides whether or not to call out an officer immediately or wait until an officer is available.

>Although we have set parameters for officer response, over time we have progressed to the point where we respond to over 95% of all reported groundings.



CLICK As the officer arrives he assesses the scene for immediate danger
>Drug runners have been known to run aground in the Keys and weather conditions are sometimes adverse

CLICK

He checks and treats for injuries or may initiate rescue if applicable

>We've had persons injured during groundings and Officers have been required to rescue people from boats breaking up on the reef. **CLICK**

The Officer does a survey of resource damage, if the damage looks minor he enters water and measures the damage.

>Officers have received training from staff biologists in recognizing and measuring damage to both coral and sea grass.

Damage Minor—YES, Officer:

- Monitors Removal
- Measures Damage
- Issues Summary Settlement
 - ◆ Coral -\$100 plus \$75 per sq foot up to 10 sq feet.
 - ◆ Sea Grass- \$100 plus \$75 per sq yard up to 10 sq yards.
- If Officer is in Doubt as to Extent of Damage the Grounding is Treated as Major and a Staff Biologist is Requested for Assessment

If the Officer finds minor damage:

under 10sq ft coral

under 10 sq yds of seagrass Officer: **CLICK**

HeMonitors Removal. **CLICK**

Measures the damage **CLICK**

And issues a summary settlement citation on the spot. The fine for striking coral is \$100 plus \$75 per square foot of damage : for sea grass its' \$100 plus \$75 per square yard.

> During the last year Sanctuary Officers issued 14 Summary Settlements for coral damage and 121 for sea grass damage **CLICK**

If the officer is in doubt as to the extent of damage the grounding is treated as major and a staff biologist is requested for assessment.

An aerial photograph showing a white boat with a blue stripe in shallow, clear water. The boat is positioned near a coral reef, which appears as a darker, textured area on the seabed. The water is a vibrant greenish-blue. The text is overlaid on the left side of the image.

Damage Minor—NO Officer:

- Calls for Biologist to Assist in Removal if Necessary
- Monitors Vessel Removal
- Takes Enforcement Action

Biologists are normally notified of coral groundings as soon as it becomes apparent that they might exceed Summary Settlement parameters. Immediate response by a biologist is contingent on the circumstances of the grounding and availability of a biologist. **CLICK**

If the officer has any question about the removal route or method of recovery a biologist is called immediately.

>We've had the superintendent out there when no one else was available. **CLICK**

The Officer Monitors vessel removal insuring that method used is least damaging to resource. We limit removals to high tide, Pull out the same route vessel went in and limit use of the grounded the vessels engines.

>On coral we encourage as speedy an extraction as possible if there is danger of the vessel breaking up.

>If the extraction is technical in nature our biologists work out a plan with a salvor or approve the salvor's plan.

CLICK

The Officer takes enforcement action by investigating circumstances of the grounding and writing the citation. **CLICK CLICK**



Damage Minor – NO

- Marks Site for Biologist
- Completes Investigation & Reports
- Forwards Report to Biologist

He marks the site for the Biologist including any inbound or outbound tracks.
CLICK

He completes investigation and reports by:

>Interviewing witnesses

>Processing evidence and

>Putting the Law Enforcement report into final format. **CLICK**

He forwards to biologist doing damage assessment.

>In many cases a quicky report is sent first which gives the biologist enough information to start the assessment and the final report is sent when complete.

Ship Grounding—NO
Park Grounding—NO
Vessel in Coral or on Reef Tract
Damage to Sanctuary Resources
Vessel Over 30'—NO

- Or Officer Finds No Damage
- Dispatch Documents Incident in CAD

If the answer to all questions on the flow chart is no, **CLICK**
Or the officer finds no damage. **CLICK**

The Dispatcher documents all pertinent data in the Computer Aided Dispatch system. We include GPS position, Vessel ID, Owner & Operator data and type bottom grounded on.

>As I stated earlier however we are now sending officers to almost all reported groundings.

>If the grounding occurs when there are no officers available, we send an officer as soon as one is available.

>We have a working relationship with most of the Salvors in the Keys so that they collect the pertinent information for us and they also mark the site if no officer is available. We have no legal basis to require reporting by salvors although we are working towards a permitting system that will require reporting.

>All of our reported groundings are documented in the CAD and then fed into a Sanctuary Grounding Database which is currently under development.



Vessel Removal

Removal of grounded vessels has not been a huge problem in the Keys.

CLICK

Over 99% have been removed by the Responsible Party or the RP's Insurance.

>Occasionally we have been delayed on removal by an insurance company which balks at the price quoted by the salvage company. (This can result in the vessel breaking up which increased the damage to coral, increased the salvage fee and ultimately the cost paid by the company for restoration, fortunately the Insurance companies realize this and are working more closely with us).

>One other problem we run into mostly involving commercial fishing vessels or shrimp boats is that the responsible party doesn't have insurance and he tries to effect the removal by a like type vessel. We have found that for coral groundings the vessels are not equipped nor does the vessel operator have the knowledge to effect a timely or efficient salvage operation. We try to strongly convince the RP that it is in his best interest to contract with commercial salvage.

>We feel vessel removal is not as big a problem as other places because Federally, judges have ruled damage from a grounding is a matter of "strict liability", and on the state side the Derelict Vessel law provides for criminal sanctions as well compensation.

Removal By Other Agencies

Since 1997 only seven vessels have not removed by the responsible party.

- United States Coast Guard - 1
- NOAA - 2
- Florida Derelict Vessel - 4

Since January of 1997 only 7 vessels were not removed by the responsible Party.

Of these: **CLICK**

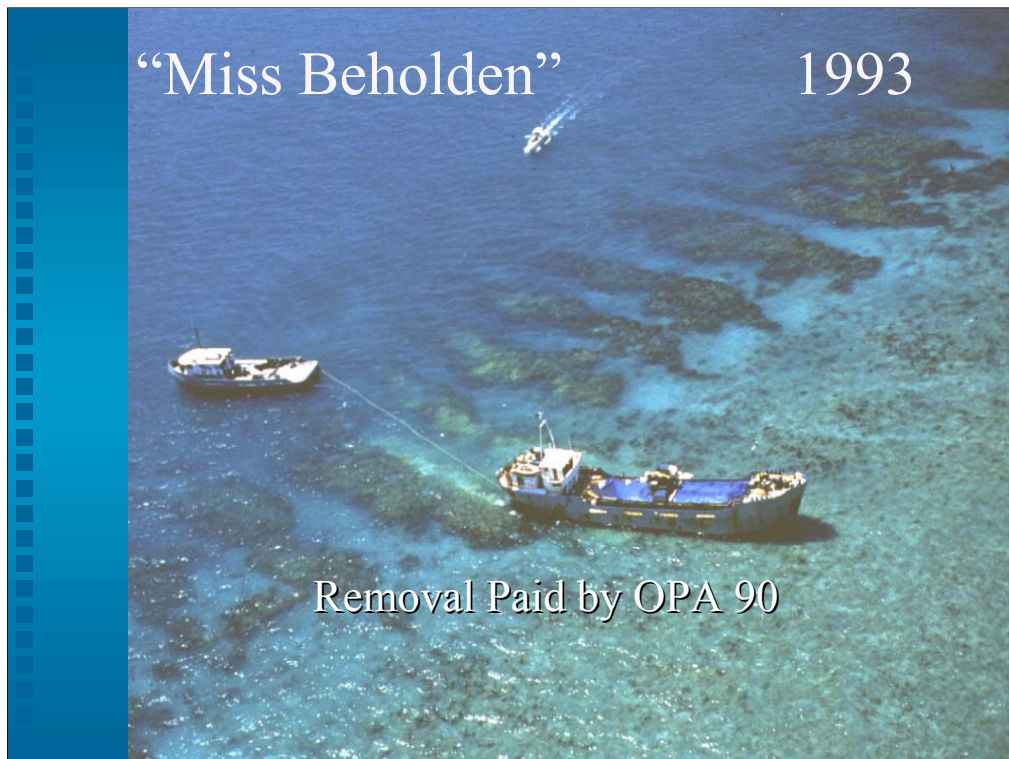
USCG removed one, The Cotoma a Cuban vessel which was allegedly hijacked from Cuba and subsequently returned to Cuba. **CLICK**

NOAA paid for removal of two. We recovered \$2500 as part of a penalty action on one and the other had a totally non-viable RP. **CLICK**

The Florida Derelict Program removed four.

Of those four, three owners were charged with leaving a vessel in wrecked condition on the waters of the state and went to court. One repaid \$20,000 in clean up, another paid \$12,874, the third was found innocent by a jury. (Figure that one)

We haven't been able to locate the fourth to charge him.



The only ship that has not been removed by the owner was the “Miss Beholden” a 147’ freighter which grounded on Western Sambo Reef in 1993. **CLICK**

Removal was paid by the Superfund. In this case the owner/operators fled and could not be located.

Case Preparation



Absent an act of God, all groundings are the result of negligence. Some mariner did not exercise the due care expected of the normally prudent mariner. **CLICK,**

The owner/operator of this vessel stated he was following the channel markers when he went aground. **CLICK,**

A bridge intern entered a position one full degree off when changing from a Gulf to Atlantic chart. No one caught the error and a turn was made well south of where it should have been. When I entered the bridge the GPS was displaying the ships exact position.

CLICK, This boat was in a race from Ft Lauderdale to Key West and was right on its' plotted course when it went aground. **CLICK**

This one's only chart covered from Georgetown South Carolina to Jamaica. As the Captain approached Key West he had no way of knowing of the Rock Key Sanctuary Preservation Area where he grounded.

>These Grounding cases are not generally a difficult proposition for Law Enforcement.

>You have a vessel sitting in the midst of destroyed Natural Resources, once the vessel is removed it is a matter of documentation.

> The most important part of case preparation, and we forget this in the Sanctuary because because of the strict liability associated with the NMSA, is for the officer to know what behavior is expected of the normally prudent mariner and to convey how that mariner deviated from that expectation to the damage or prosecution attorney.

Ship Case Preparation

- Photographs on Arrival
- Checks Bridge to See that no Navigation Equipment is Turned off or on and Documents Readings
- Seizes Pertinent Logs, Charts & Electronics
- Separates and Individually Interviews Bridge Occupants
- Separates and Interviews Other Witnesses

Due to close proximity of shore to reef we have always been able to have a response to a ship grounding before removal. **CLICK**

First officer on scene takes photographs as he arrives. We also try and get aerials as soon as possible. **CLICK**

He checks bridge and sees that no navigation equipment is turned on or off and documents readings on all functioning equipment. **CLICK**

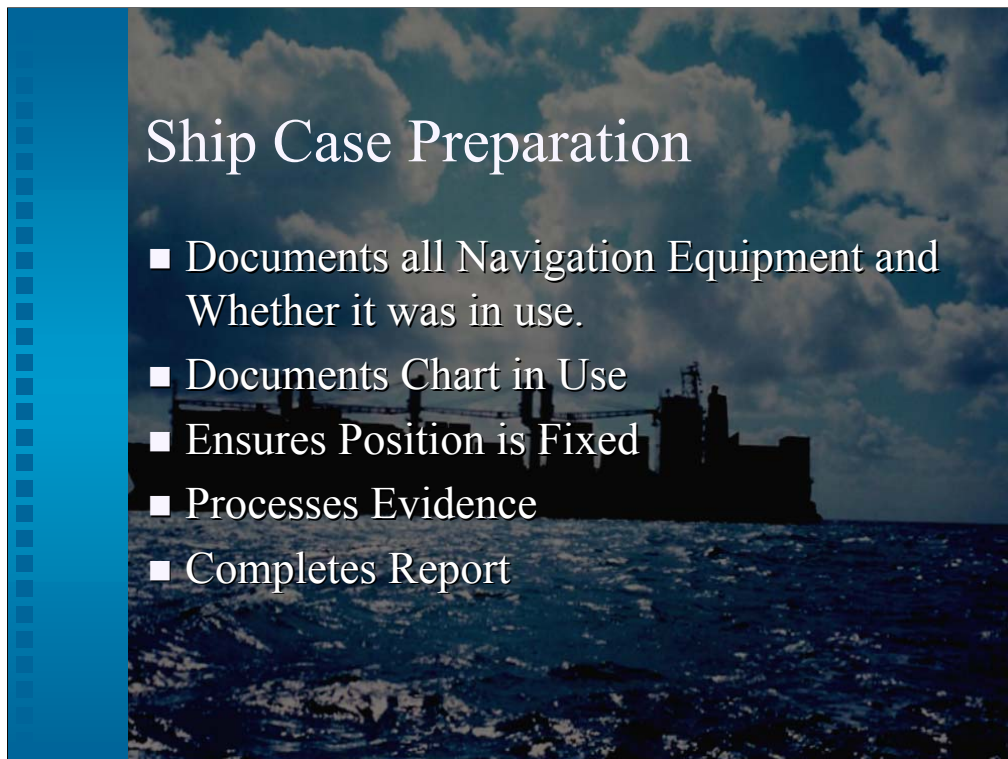
Seizes pertinent logs and charts and electronics.

>In addition to storing routes some electronics may be downloaded to give actual track information. Search Warrant Required. **CLICK**

Separates and individually interviews bridge occupants.

CLICK

Separates and individually interviews other personnel. **CLICK**



CLICK

Documents all navigational equipment and it's use during grounding event.

CLICK

Documents chart in use and whether it is current and of appropriate scale.

> Also checks "Notices to Mariners" if indicated by event. **CLICK**

Ensures ships position has been fixed. In many cases we take GPS positions at Bow and stern for report. This is in addition to the position indicated on the ships' electronics. In the case of a ship grounding biologists are usually on scene prior to removal and also fix position of damage.

CLICK

Processes evidence **CLICK**

Completes Reports.

> Every law enforcement agency has it's own evidence processing procedures and reports. In addition to the FWC "Citation" and NOAA "Offense Incident Report" we complete a "Marine Casualty Enforcement Checklist" and a state "Accident Investigation Report" is required if any injuries have occurred or \$500 damage has been done to the ship.

> One thing that should always be documented is the Ships local agent and the insurance company.



Small as used here means anything smaller than a ship. **Click**

Two Types. **CLICK**

Those requiring a Biological Assessment **Click**

And Summary Settlement cases where coral damage is less than 10 square feet and Sea Grass Damage or hardbottom damage is less than 10 square yards.

Biological Assessment

- Same as Ship Case Preparation Except on Smaller Scale
- No “Marine Casualty Enforcement Check List”
- Officer Physically Marks Site for Biologist
- Once Assessed, Cases are Processed as Damage Actions or Penalty Actions Depending on the Extent of Damage and the Restoration Required

CLICK

Assessment cases are handled the same as a Ship cases except they are on a smaller scale. **CLICK**

We usually don't do the “Marine Casualty Enforcement Check List” although an accident report may still be required. **CLICK**

The Officer Physically marks site with a stake or buoy so the biologist can locate the damage. In some cases the marking is accomplished by the salvor if removal commences before an officer arrives. **CLICK**

Once Assessed, cases are processed as Damage Actions, or Penalty Actions depending on the extent of damage and the restoration required.

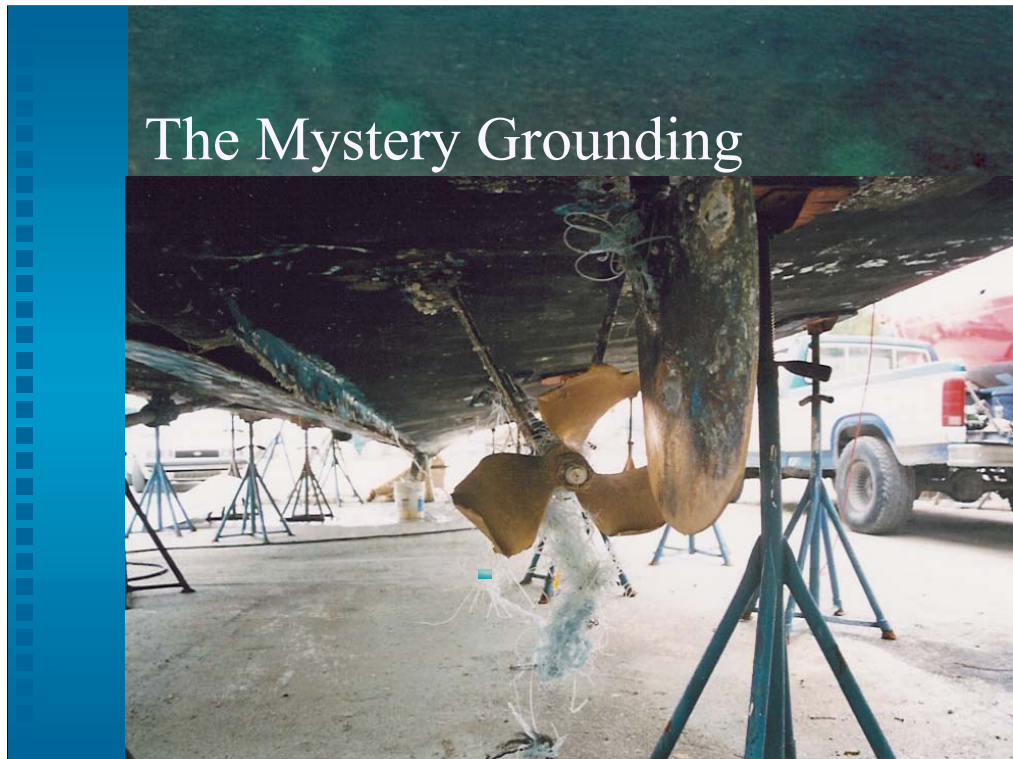


The Summary Settlement case is very simple. **Click**

The Officer Measures the damage. **Click**

And issues the citation with penalty amount on the spot. He also issues a "Summary Settlement Explanation Sheet" which gives instructions on how to pay the penalty.

>There is one other type grounding.



The Mystery Grounding

We have two types, one like this where we have damage without a vessel and

CLICK

One like this with damaged vessel and no site. **CLICK**

Our pilot found this site in the Marquesas Keys about eighteen miles west of Key West. This is quite large with dual prop inbound and outbound tracks and a large blow hole. There was no evidence at the site, or any clue indicating what vessel might have grounded. On mystery coral sites we can sometimes find pieces to match to a vessel if we can locate one.

CLICK

We have made a number of these type cases. In one case a witness reported seeing a particular vessel ground in the area of White Banks reef. Officer Scott LaRosa investigated and found that the owner was enroute from Miami with two props. He did a grid search and found damaged coral with a piece of false keel. He then went back, dove under the suspect vessel and matched the false keel to a missing section on the vessel.

>We have also collected paint chips but lab results have not been definitive. The best we get is "appears consistent". Paint on vessel bottoms is usually layered and we usually don't get all the layers on a transfer.

Success Rate

- No Court Losses
- All Ship Cases Paid Except One
- 97% Collection on Assessment Cases
- 95% Collection on Summary Settlements

So how successful have we been with our cases? **CLICK**

We've had no court loses. In fact we have not had a case go to court since 1993. Our attorneys have presented the cases in a manner that results in settlements rather than trials. **CLICK**

We've collected on all Ship cases except Miss Beholden where the owner Operators disappeared. **CLICK**

We've Collected on 97% of closed assessment cases **CLICK**

And we've collected on 95% of Summary Settlement cases.



As you can see the Sanctuary is experiencing a serious loss of habitat due to vessel groundings, and although we have effective enforcement and restoration programs the bottom line is we lose a little bit more habitat each year. The only answer is prevention. The Sanctuary has employed a number of strategies to reduce vessel groundings, including **CLICK**

Direct Intervention **CLICK**

Local Outreach and Education **CLICK**

National and International Outreach and Education **CLICK**

Improved Reef and Channel Marking

Direct Intervention

- Enforcement Officers



Direct Intervention is the stopping of a vessel before it runs aground. This is accomplished by **CLICK CLICK**

enforcement officers on patrol and by **CLICK CLICK CLICK**

Direct Intervention

- Team O.C.E.A.N.



Team Ocean Volunteers.

>Team Ocean is one of our education programs which takes civilian volunteers and puts them in Sanctuary vessels for the purpose of dispensing information to visitors at reef sites during periods of high use.

From 1995 to 1999 Team Ocean prevented 118 vessels from running aground on the various reefs throughout the Sanctuary.

Local Outreach and Education

- Protecting Paradise Video
- Public Service Announcements
- Grounding Prevention Presentations
- Waterways
- Brochure Route

Our Education and Out Reach Staff has put out a number of products to reduce vessel groundings. **CLICK**

The Protecting Paradise Video available in English and Spanish is an 8 minute video which instructs boaters in how not to run aground and what action to take if they do run aground. It is distributed to all boat rental companies along with video players if needed. It is also distributed to marinas and is used in USCG AUX and Power Squadron classes. **CLICK**

Public Service Announcements have been run for about 10 years on local radio, using a multitude of different approaches in order to keep the information fresh. **CLICK**

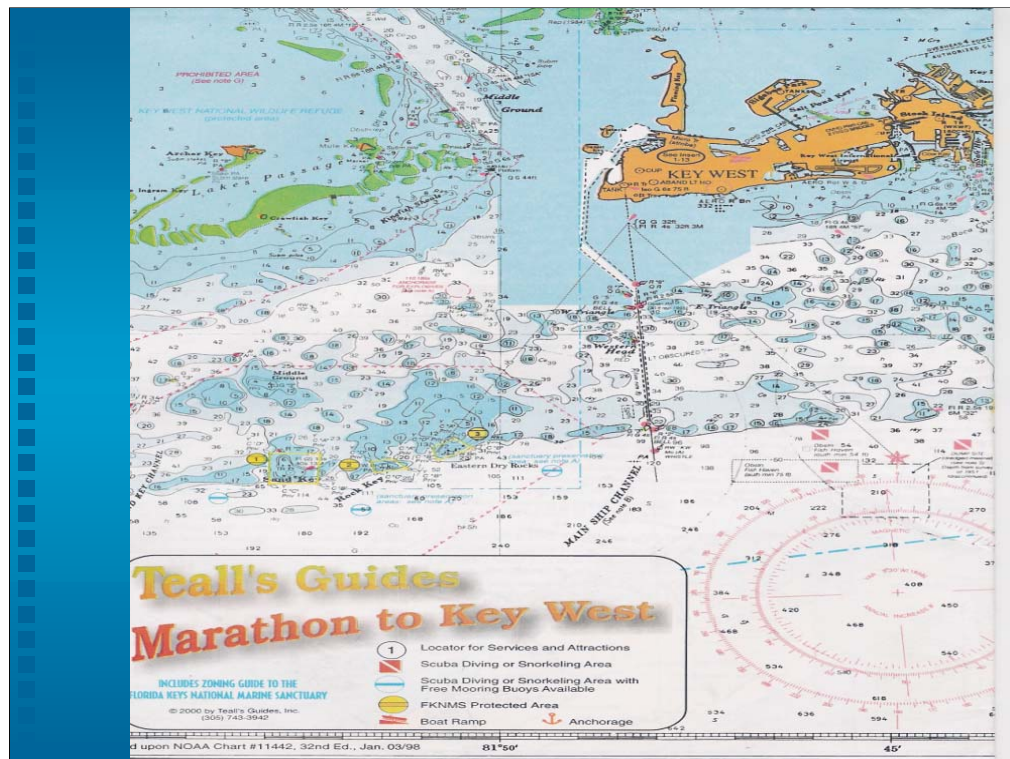
Grounding Prevention Presentations have been conducted at various clubs and civic organizations throughout the Keys and Miami area by education, science and enforcement staff. **CLICK**

Waterways is a television show which appears on public television throughout south Florida. Vessel groundings have been the subject of a number of episodes.

CLICK

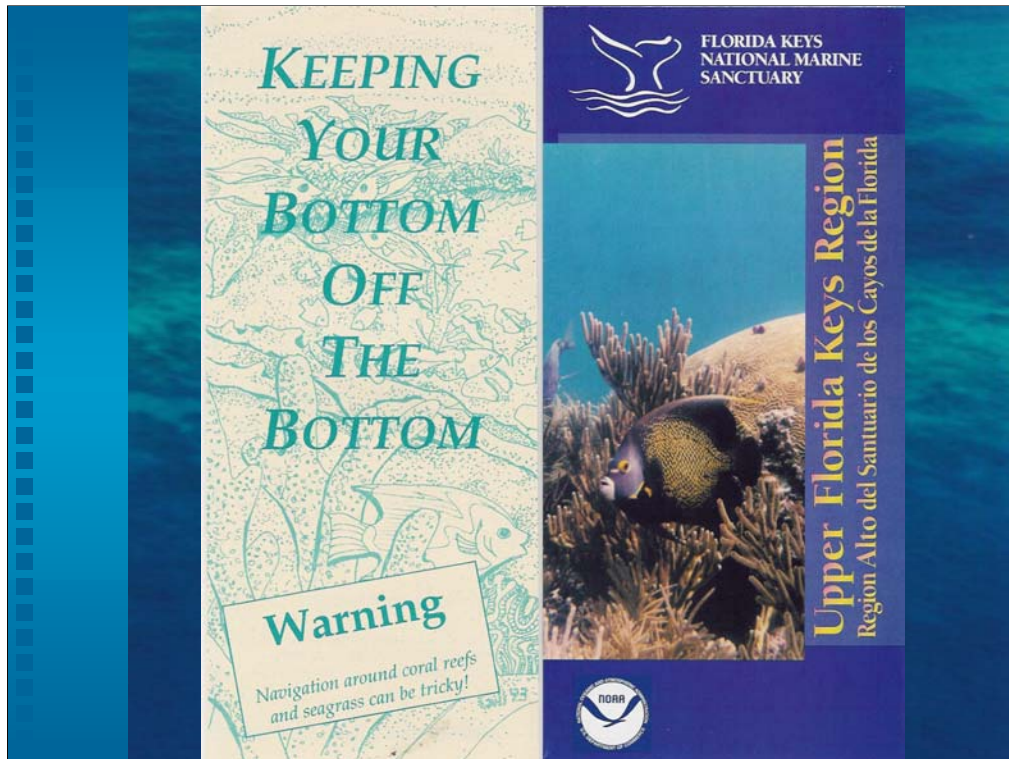
The Sanctuary has a monthly Brochure route which distributes Sanctuary brochures and educational products to over 400 marine related businesses in the Keys and the south Miami area.

>Some of the products distributed are:



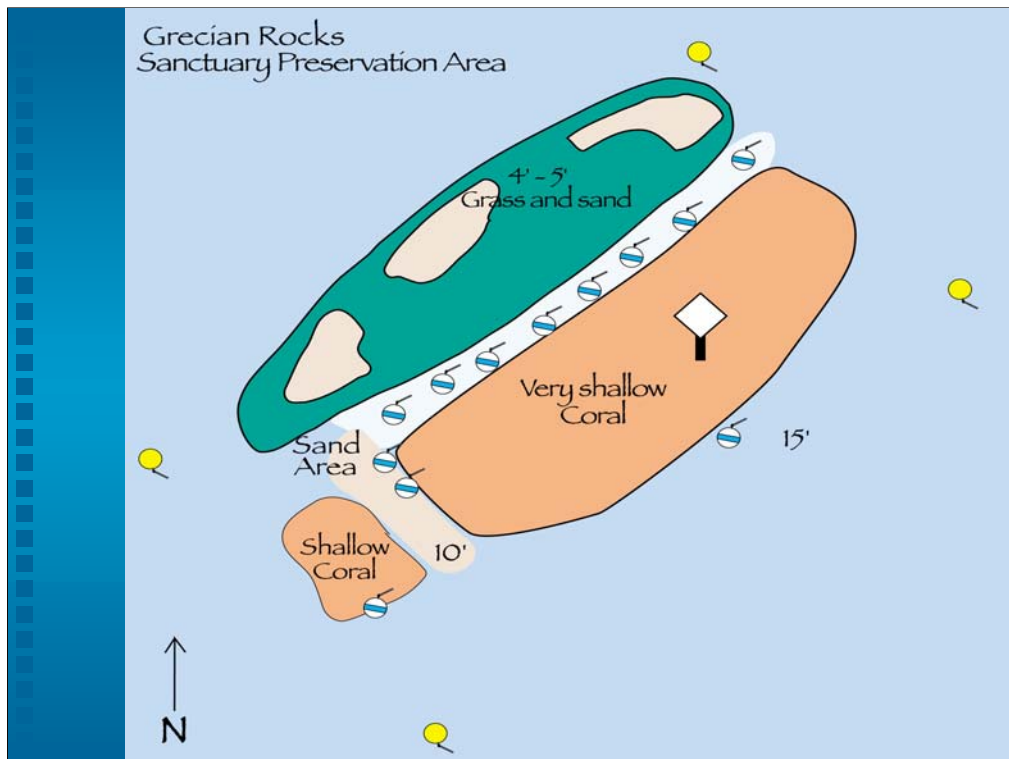
Tealls Guides which are pulp paper copies of current navigation charts with a copy of Sanctuary regulations contained as an insert.

- In addition to being distributed on the brochure route Officers and Team Ocean volunteers hand them out to boaters who need them.
- Sanctuary pays for printing of the Sanctuary regulations, advertisers pay for the rest.
- There have been over 120,000 copies distributed.



The “Keeping Your Bottom Off the Bottom” Brochure advises people how to avoid running aground and what to do if they do run aground.

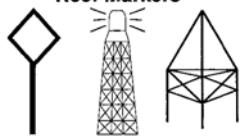
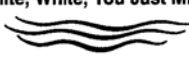
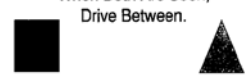



The Site brochures, one for the lower Keys and one for the upper Keys give information on the reef ecosystem, Sanctuary regulations, grounding information, and additionally contains small site maps of the Sanctuary Preservation Areas such as **CLICK**



This one of the Grecian Rocks SPA.

>The site maps aid boaters in getting around a visited site, without running over the top of it.

>The yellow buoys mark the boundaries and the blue and white ones are mooring buoys.

<h1>Florida Keys</h1> <h2>Safe Boating Tips</h2>		<h3>What do you do if your boat is aground or in shallow water?</h3> <h2>STOP</h2>
<p>Reef Markers</p>  <p>I-Beam Lighthouse Reef Tower</p> <p>Do NOT approach These Markers!</p>	<p>Prevent Running Aground -Read The Water Color! Brown, Brown, Run Aground. White, White, You Just Might.</p>  <p>Green, Green, Nice and Clean. Blue, Blue, Cruise On Through.</p>	<ul style="list-style-type: none"> ✓ Turn your motor OFF! <i>(Do NOT attempt to power off!)</i> ✓ Trim your motor UP! ✓ Wait for high tide to drift free. ✓ Groundings must be reported to the US Coast Guard on VHF radio channel 16 or Florida Marine Patrol at 1-800-DIAL-FMP. <p>Prevent damage to the boat, seagrasses, and coral reefs.</p>
<p>Channel Markers</p> <p>When Both Are Seen, Drive Between.</p>  <p>When Seen Apart, Slow Down - Check A Chart.</p>	<p>Regulatory & Information Markers</p>  <p>Slow Down - Read The Sign</p>	
<p>National Marine Sanctuary Program</p> 	<p>This material has been prepared using a portion of the proceeds from the sale of Manatee and Florida panther license plates through the Florida Advisory Council on Environmental Education.</p>	

This sticker is applied to the consol of every rental vessel (except Jetskiis) in the Keys. Prior to issuance of the stickers and the video mentioned earlier we had a significant problem with rental vessels running aground especially in the upper Keys. Since the video and sticker the numbers of groundings involving rental boats has decreased dramatically.

National & International Outreach

- National Publications
- Area To Be Avoided on US Nautical Charts
- Particularly Sensitive Sea Area

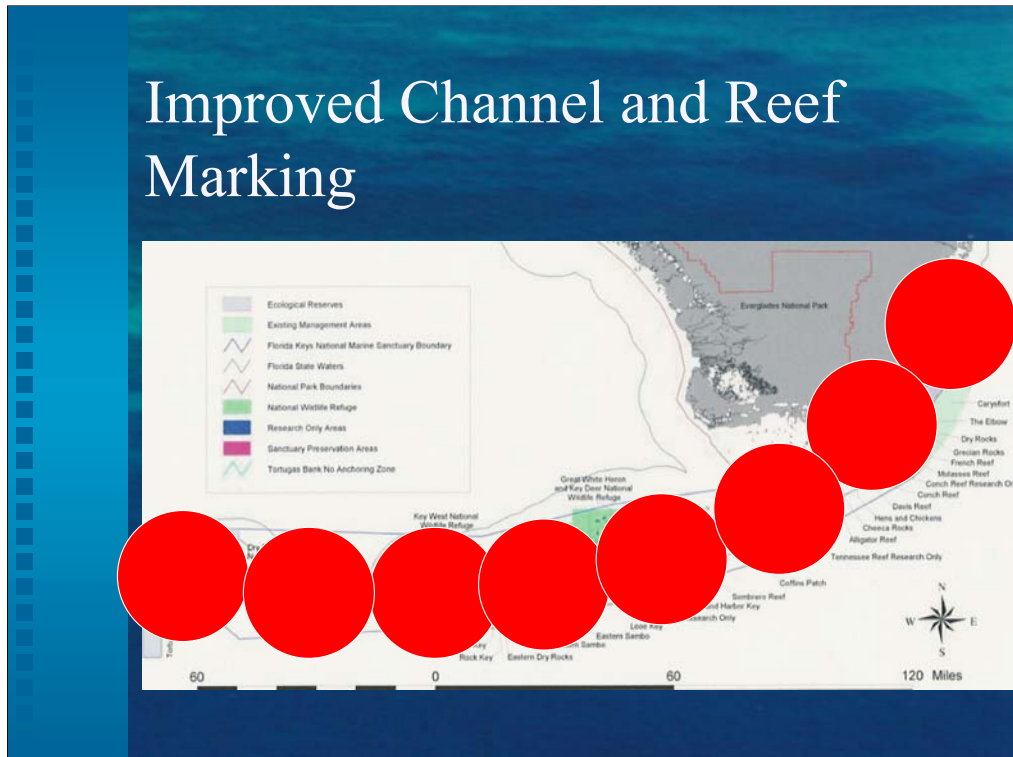
We have also tried to reach a national and international audience. **CLICK**
Articles on groundings in the Florida Keys National Marine Sanctuary have appeared in “Sailing” and in various cruising guides. Another article will appear shortly in “Seaworthy” the national publication of BOAT US. **CLICK**
The establishment of the Area to Avoided requires all Tank Vessels and other vessels over 50 meters to remain clear of the reef. It appears on all US charts.

>In the 11 years Since the establishment of the ATBA there have been four ship groundings on the reef, in the 8 years prior to establishment there were 8.

>We average about 3 cases a year for ATBA violations. **CLICK**

The Florida Keys National Marine Sanctuary is in the process of being designated as the third Particularly Sensitive Sea Area by the International Maritime Organization. With this designation vessels of all member nations will be required to remain clear of the ATBA and the area will appear on all International Charts including British Admiralty Charts.

Improved Channel and Reef Marking



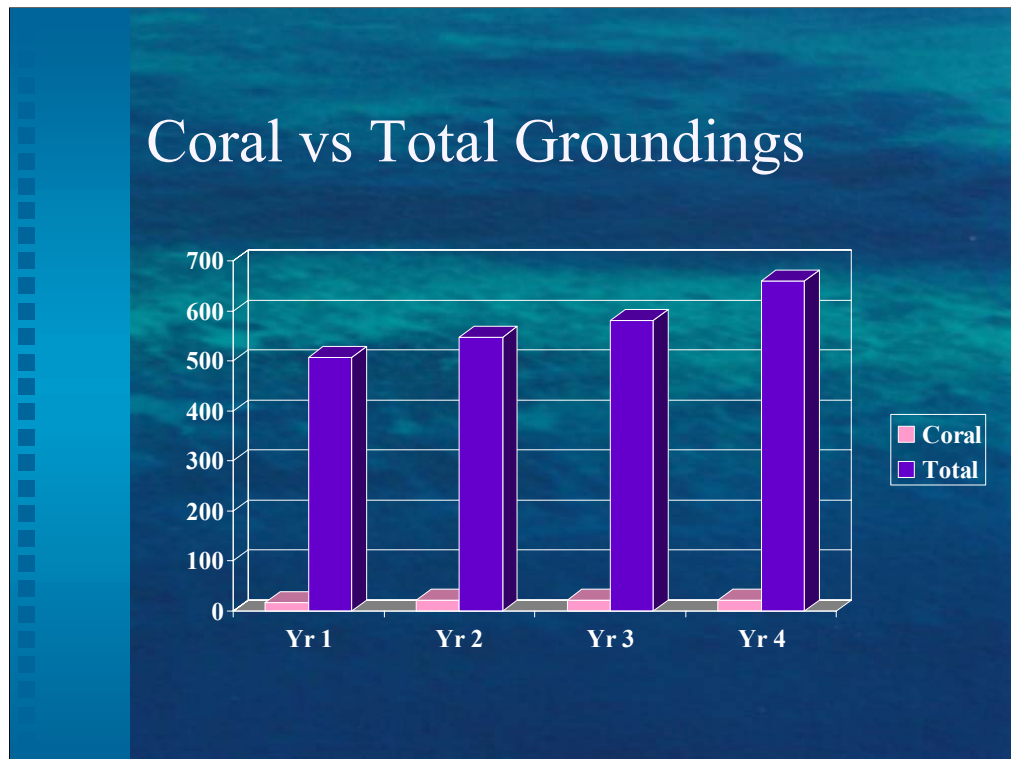
CLICK

Through our grounding database we have identified problem areas and working with USCG have changed and improved channel marking. **CLICK**

As a result of the Houston settlement eight RACON beacons were installed along the reef tract from Fowey Rocks to the Dry Tortugas in February of 1999. **CLICK**

These beacons put a distinct large return on vessel radars warning the vessels of there close approach to the reef line.

>Since installation we have had no ship groundings on the reef.



Overall we feel we are making headway against coral groundings in the Keys.

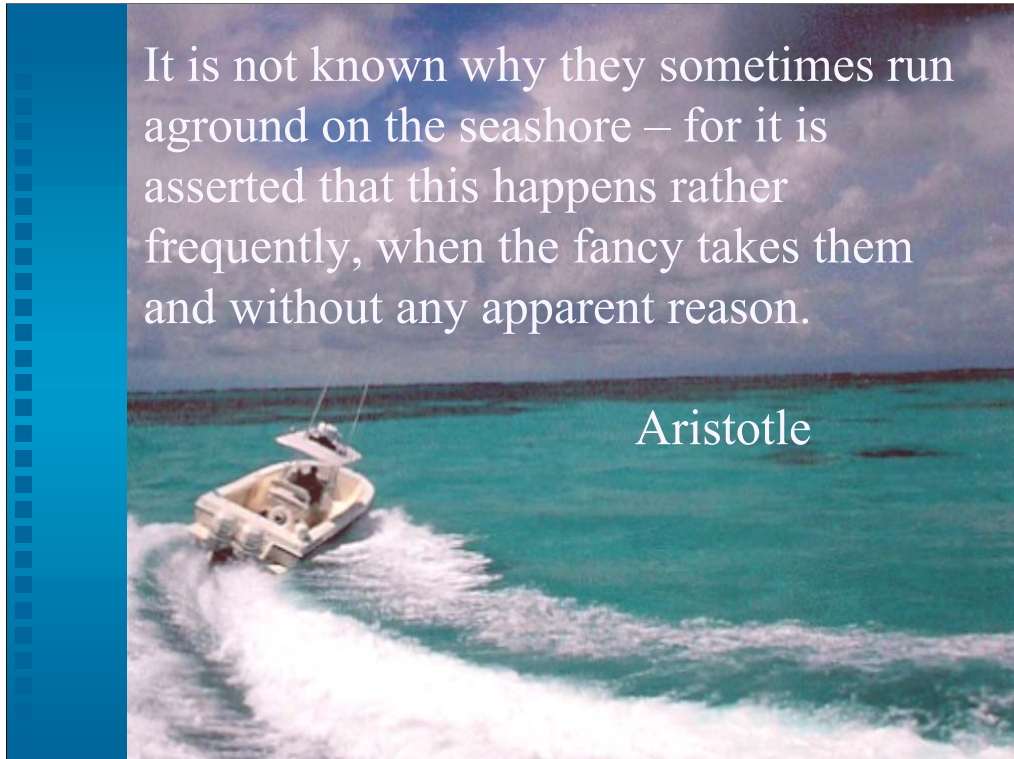
>We have had no ship groundings since February of 1997.

>And although total groundings have increased by 30% in four years, from 507 to 660, large coral groundings have remained fairly constant. Between 8 & 10/yr. Minor coral groundings have ranged between 7-14 with seven in the first year and 12 to 14 the last three years.



As you can see by this slide our officers don't always yell at people, write citations and take people to jail. We take a warm and fuzzy approach to Law Enforcement and really consider ourselves a branch of the education department.

And with that I'd like to leave with quote from a wise philosopher. **CLICK**



It is not known why they sometimes run aground on the seashore – for it is asserted that this happens rather frequently, when the fancy takes them and without any apparent reason.

Aristotle

READ SLIDE

Aristotle was referring to dolphins, but I'm sure had he lived in our time he would have applied to vessels as well.

Natural Resource Damage Assessment (NRDA) and Vessel Groundings

Douglas Helton



Presentation Outline

- Applicability of OPA
- Preliminary Assessment
- Injury Assessment
- Restoration Planning
- Funding
- Discussion

Claims Under the Oil Pollution Act (OPA)

- One of the goals of OPA is to ensure that the polluter pays the cost of the incident. Claims can be made for:
 - Removal Costs
 - Personal Property
 - Real Property
 - Subsistence Use
 - Lost Profits and Earnings
 - Government Revenues
 - Increased Public Service
 - **Natural Resources Damages**



When does OPA apply?

- *Gatlin Oil Co. v. U.S.*, 169 F.3d. 207 (4th Cir. 1999) narrows the applicability of OPA. Damages are only recoverable if they are caused by:
 - **oiling or the threat of oiling**
 - **result of response actions**
- The NPFC take the position that physical injuries to coral reefs caused by a grounding event are not compensable under OPA, even if the grounding leads to an oil spill.

So is there a role under OPA?

- OPA is a strong response authority and is a potential source of funding
- Oil related impacts are compensable
- Physical impacts are compensable if they are the result of a response action
 - What constitutes a response action? No-Action?
 - What if injuries aren't divisible?
- Preliminary assessment costs are recoverable



Sometimes the physical impact from the grounding isn't a big issue



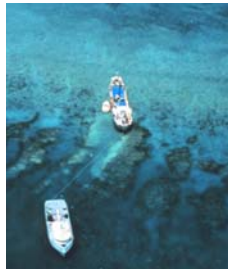
Lost uses

- Vessel groundings may result in closures and loss of recreational opportunities
- Are closures response actions?

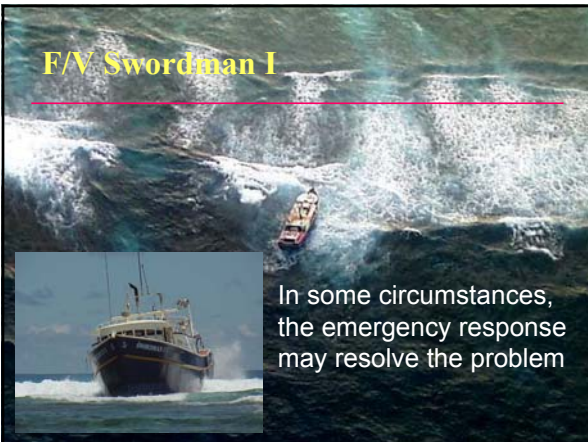


Proceed Carefully

- Accomplish as much as possible under emergency response
 - NRDA focused grounding surveys to document physical impacts may be rejected, but surveys necessary for vessel salvage would probably be covered
- Consult with counsel early regarding legal strategies
- Initiate preliminary assessment to collect ephemeral data



F/V Swordman I



In some circumstances, the emergency response may resolve the problem

Fundamental Concepts

- Goal is restoration of the environment
- NRDA actions should not interfere with the primary goal of an effective response
- NRDA actions are separate from and supplementary to response actions
- Injury caused by the response is compensable
- NRDA actions are compensatory, not punitive
- Not all spills warrant a NRDA

NRDA Process

- Preliminary assessment
 - Scoping exercise
 - Takes place during response
- Restoration Planning
 - Conduct injury studies
 - Develop reasonable range of restoration alternatives
 - Develop restoration plan
- Restoration Implementation
 - Settle or litigate
 - implement and monitor projects



Preliminary Assessment Objectives:

- To rapidly initiate damage assessment activities in order to collect information, samples, and evidence that might otherwise be lost
- To provide information to decision-makers on whether and how to proceed
- To develop a technical foundation for later assessment work
- Methods not unique to OPA

Preliminary Assessment Goals

- By the close of the preliminary assessment, there needs to be a clear understanding of the:
 - Legal issues: (Does OPA apply?)
 - Response actions: (Did the actions address injuries to natural resources or cause additional injuries?)
 - Potential injuries: (What evidence?)
 - Preliminary Scale: (How many, how far, how long?)
 - Restoration concepts: (What can we do?)
 - Trustee issues: (Which agencies are in, what are their concerns and roles)
 - Next Steps: (consensus to proceed or stop)

Many oil impacts are ephemeral and quick response is necessary

- Pre-incident planning is critical, especially for remote incidents
 - Identify response team- both technical and legal
 - Establish prompt notification protocols
 - Coordinate with co-trustees and response agencies
 - Develop rapid assessment methods
 - Acquire appropriate equipment, funding, and contract support
 - Train personnel

Typical Preassessment Activities

(some of this may be collected by the response)

- Overflights and photo documentation
- Shoreline (SCAT) surveys
- Source oil collection
- Water sampling
- Shore Sediment sampling
- Subtidal Sediment Sampling
- Shellfish Exposure
- Grounding site delineation
- Wildlife aerial and boat surveys
- Wildlife Collection
- Fish exposure
- Fish mortality
- Recreational surveys
- Meteorological and oceanographic data for modeling
- Data management

Injury Assessment Overview

- OPA does not mandate specific injury assessment methods but requires that:
 - Procedure must be capable of providing useful information for restoration planning (i.e. must be relevant)
 - Additional cost of more complex procedure must be reasonably related to expected increase in quantity and/or quality of information provided by the procedure
 - Procedure must be reliable and valid for the particular incident

Injury to Natural Resources

- NRDA studies are designed to evaluate whether:
 - Injury has occurred
 - Observable or measurable adverse change in a resource or impairment of a natural resource service
 - Injury was caused by the incident
 - Injured resource must be exposed to the spilled oil, or injury occurred as a result of the incident
 - Injury can be quantified
 - Determine nature, extent and severity of injuries
 - Injury can be restored
 - Provide technical basis for evaluating need for, and scale of restoration (primary and compensatory)

How Do Trustees Determine What Methods are Reliable and Valid?

- Based on sound science within relevant fields/disciplines
- Bases for judging the technical soundness of a method include:
 - Consistency with generally accepted scientific principles
 - Empirical observations supporting approach
 - Publication in credible scientific journals/proceedings
 - Subject to peer review

Importance of Context

■ Context is critical

- "The merits of different procedures will vary depending on how they are proposed to be used in a given incident scenario" (§ 990.13 preamble)
- "The procedure must be reliable and valid for the particular incident" (§ 990.27(a)(3))



Importance of Innovation

■ Innovation should be encouraged in NRDA

- District court in GLD recognized that new scientific models may not have had the "necessary time to truly gain general acceptance"
- Further stated that "the relative 'youth' of a scientific technique does not make it any less valid"

Importance of Judgment

■ Best professional judgment of experts will (and should) always be needed

- Which among multiple reliable and valid methods to apply?
- How to implement those methods?
- How to interpret the results?
- Local knowledge of resources-at-risk
- Experience with oil spill impacts in coral habitats

Range of Procedures

- The NOAA/OPA rule provides for the use of a range of assessment procedures:
 - Field studies
 - Procedures conducted in the laboratory
 - Models and compensation formulas/schedules
 - Literature-based procedures.
 - Benefits transfer
- Trustees may use the above assessment procedures alone, or in any combination

General Caveat on Procedures

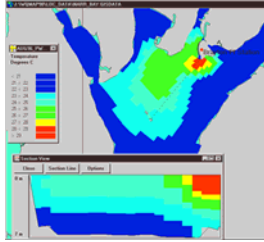
- Simplified approaches are not necessarily less rigorous or less valid than the field and laboratory studies
- The additional precision and accuracy of more complex procedures may not be warranted given the limited precision implicit in many types of restoration
 - Need to consider cost

Combined Approaches

- Most injury assessments use a combination of assessment tools, including:
 - Data generated by the responders
 - Field surveys to document exposure and obvious injuries and loss of use
 - Literature on the resources, resource use/values and type of oil
 - Modeling of the oil fates and recovery of lost use activities
 - Laboratory analyses of the spilled material
 - Expert judgement
 - Peer review

Simplified Assessment Approaches

- Not all spills warrant an extensive field assessment
- OPA allows for simplified assessments based on:
 - Literature on fate and effects of similar spills
 - Computer Models
 - Laboratory studies (Bioassays, etc.)



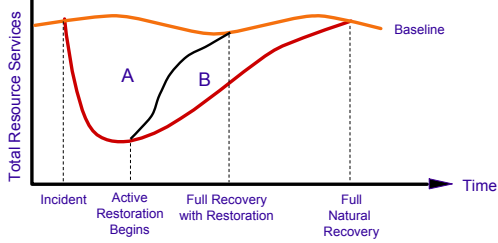
OPA Restoration Requirements

- Funds recovered must be spent on restoration, rehabilitation, replacement, or acquisition of the equivalent of the injured resources
- Plans shall be developed and implemented only after adequate public notice
- No double-recovery of claims
- Nexus to the injury

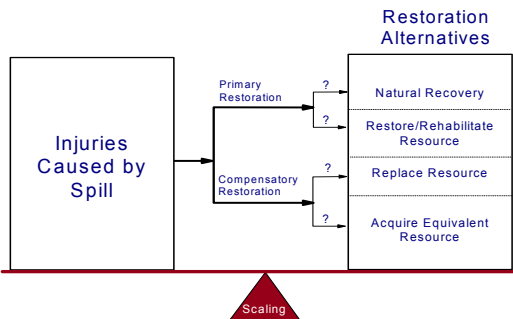
Primary and Compensatory Restoration

- Goal is make the public and the environment whole for injury to or loss of natural resources and services
- Accomplished in two parts:
 - Returning injured resources and services to baseline conditions ("primary restoration")
 - Compensating for interim losses from the date of the injury until recovery of injured resources and services ("compensatory restoration")
- NRDA claim = cost to implement primary and compensatory restoration, plus cost of assessment

Restoration and Compensation for Lost Resources Services



Assessment and Restoration Challenge



Scope of Restoration Alternatives

- Trustees have broad discretion to determine appropriate restoration.
- Primary restoration needs to have a strong link to the specific injury
- Compensatory restoration typically encompasses a wider range of alternatives than primary

Restoration Concepts (Discussion)

- **Primary Restoration**
 - Restoration of reef framework
 - Restoration of other affected shorelines
- **Compensatory Restoration**
 - Reducing other threats and prevention of future losses through navigational improvements, etc.
 - Removal of other wrecks, fishing nets, etc

Pago Pago Longliners

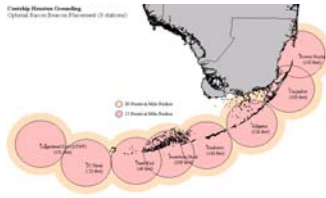
- Restoration included transplanting corals and removal of vessel debris



Prevention of Future Injuries or Losses

- Prevention of future losses rather than actively restoring or replacing past injuries. Accident prevention such as navigation aids to prevent destructive activities.
- Example: Navigational improvements in the Florida Keys to help prevent groundings

Preventing future groundings



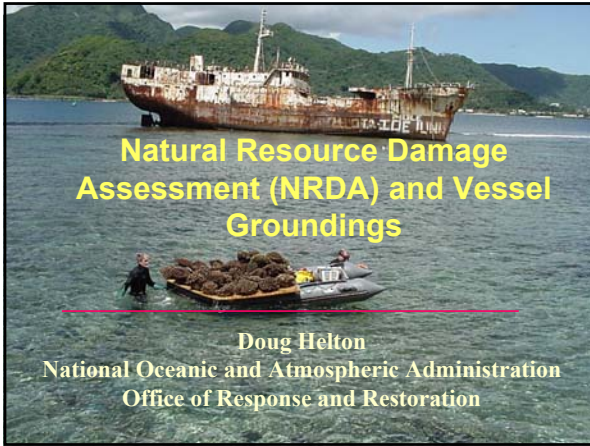
Funding

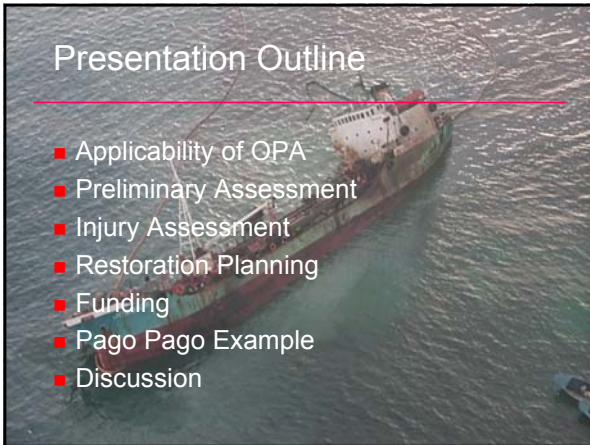
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 - fund for injury studies
 - restoration costs



Conclusions:


- Trustees should try to accomplish as much as possible during the operation response
- OPA based NRDA is appropriate for:
 - Oil injuries
 - Response injuries
 - non-divisible injuries
- Preassessment funding option should be considered
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OPA applicability to dumping sites

- M/V Kimton, Fajardo, Puerto Rico
 - Grounded in Storm
 - USCG emergency response-twice
 - Vessel used for illegal dumping of waste oils and explosives
 - Ultimately removed under OPA authority
-
- Potential problem here?
F/V Charito?



OPA is also useful if there is a concern about lost uses

- Vessel groundings may result in closures and loss of recreational opportunities
- Are closures response actions?



NRDA may be a tool for vessel removal and restoration, but...

- Costs may outweigh damages for small incidents
- Expensive
- Time consuming
- Staffing needs



Proceed Carefully

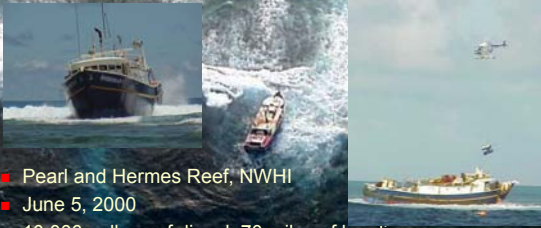
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F/V Swordman I



- Pearl and Hermes Reef, NWHI
- June 5, 2000
- 10,000 gallons of diesel, 70 miles of longline gear
- Removed and scuttled in 6,000 feet of water
- Response covered by OPA trust fund

Fundamental concepts

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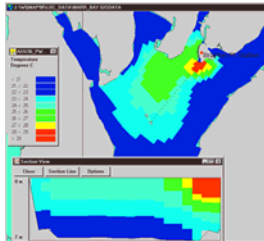
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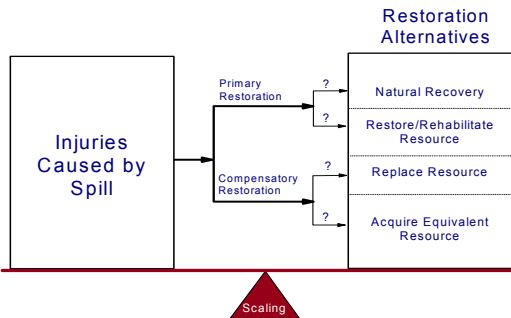
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Assessment and Restoration Challenge



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- Trustees have broad discretion to determine appropriate restoration.
- Primary restoration needs to have a strong link to the specific injury
- Compensatory restoration typically encompasses a wider range of alternatives than primary

Restoration Concepts (Discussion)

- **Emergency Restoration**
 - Reattachment of corals
 - Debris and rubble removal (to prevent scouring)
- **Primary Restoration**
 - Restoration of reef framework
 - Restoration of other affected shorelines
- **Compensatory Restoration**
 - Reducing other threats and prevention of future losses through navigational improvements, etc.
 - Removal of other wrecks, fishing nets, etc

Emergency Restoration

- Fortuna Reefer, Puerto Rico
- Emergency Restoration focused on reattachment of broken coral



Primary Restoration Example:

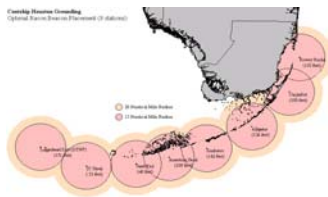
- Directly repairing the injury
- Substrate stabilization using flexible concrete mats
- Substrate allows for coral recolonization and replaces the three-dimensional structure of the reef
- Needs to be properly engineered and have stabilization plan for wave energy and storms



Compensatory restoration example: Prevention of Future Injuries or Losses

- Prevention of future losses rather than actively restoring or replacing past injuries. Accident prevention such as navigation aids to prevent destructive activities.
- Example: Navigational improvements in the Florida Keys to help prevent groundings

Preventing future groundings



Funding

- One of the major benefits of OPA is the access to funding through the National Pollution Funds Center for:
 - funds to initiate a damage assessment
 - fund for injury studies
 - restoration costs



Pago Pago Longliners

- Dec 1991: Typhoon "Val" strikes American Samoa
- 9 fishing vessels break loose from anchorage & ground in Pago Pago Harbor
- 10,500 gallons of oil removed from 3 vessels during initial response
- 1991 - 1997: Vessels continue to deteriorate as search for Responsible Parties prove fruitless



Planning

- 7 vessels ground in the inner harbor
- 2 vessels ground in the outer harbor
- Inner harbor vessels to be accessed via rock causeways
- Outer harbor vessels to be accessed via trestles
- Restoration plan to address expected response injuries



Response to Inner Harbor Vessels

Causeway Construction

- Fill material obtained from local quarries
- Three separate causeways built to access individual vessel clusters
- Fill material recycled



Response to Inner Harbor Vessels

- Hydraulic shear used to cut open each vessel
- Oil pumped from tanks
- Scrap trucked to storage area
- [36,000 gallons oil removed](#)



Response to Inner Harbor Vessels

- Anhydrous ammonia in refrigeration systems & portable tanks
- Level B entry & air release of fixed systems
- 600 pounds anhydrous removed



Response, Salvage & Disposal of Outer Harbor Vessels

- Two vessels grounded on healthy reef
- Vessels in fair condition
- Intact extraction safer, more cost effective & would minimize reef damage
- Contract with Navy SUPSALV & Crowley Marine Services



Response, Salvage & Disposal of Outer Harbor Vessels

- Disposal offshore



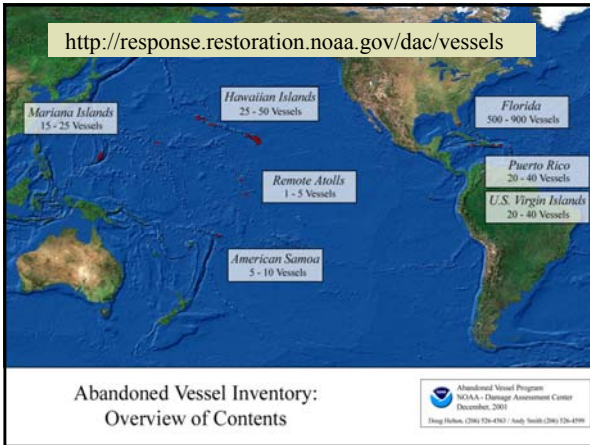
Emergency Restoration Plan

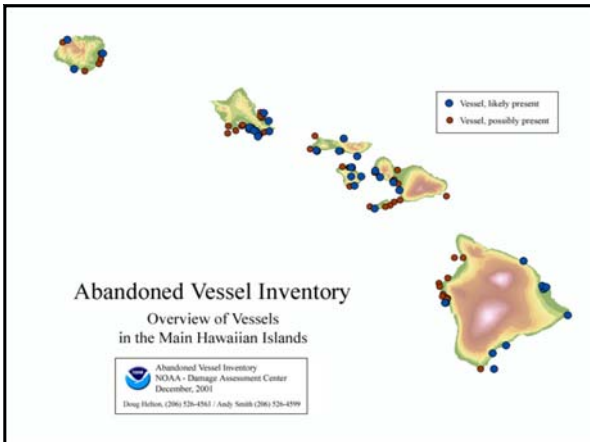
- Plan quantified injuries from construction of causeways (about 75,000 sq. ft.) & identified restoration actions to compensate for losses.
- Restoration included:
 - Removal of remaining vessel structure
 - Transplanting corals to minimize response injuries
 - Validating Aua transect, a research monitoring site
 - Long term monitoring



Conclusions:

- Trustees should try to accomplish as much as possible during the operation response
- OPA based NRDA is appropriate for:
 - Oil injuries
 - Response injuries
 - non-divisible injuries
- Preassessment funding option should be considered
- Questions and Discussion





Kure Atoll

Northwestern Hawaiian Islands

Unknown Vessel
reported in 1977,
hull piece still on reef

Paradise Queen II
ran aground in October, 1998,
hull pieces and gear scattered
on reef and shore

Abandoned Vessel Project
NOAA - Damage Assessment Center
December, 2001
Doug Hixon (206) 126-4363 / Andy Smith (206) 126-4199

Abandoned Vessel Project

Marianas Overview

1. SAIPAN
SAIPAN HARBOR
3 visible, rusting hulls and
additional submerged wecks

2. TINIAN
TINIAN HARBOR
fishing vessel in three rusting
pieces

3. ROTA
TETETO BEACH
rusting bow section of a
fishing vessel
SONG SONG VILLAGE
3 vessel pieces on reef

4. GUAM
APRA HARBOR
5-15 vessels, including 4 visible
along breakwater and multiple
submerged wecks (many used
as olive sheds)

The Marianas Islands are comprised of Guam and the Commonwealth of the Northern Mariana Islands (which includes the islands of Saipan, Tinian, Rota, and Iwo Jima). These US Trust Territories are located about 1300 miles south of Japan, of 15 degrees North, 143 degrees East.

Abandoned Vessel Project
NOAA - Damage Assessment Center
January, 2002
Doug Hixon (206) 126-4363 / Andy Smith (206) 126-4199
http://response.meritsystems.us.gov/abv/

ABANDONED VESSEL INVENTORY

Sample record screenshots

I. Vessel
Name: Calspan 638
Type: Fishing Vessel
Date: 10/19/98
Status: Abandoned
Tonnage: 1000
Length: 200
Width: 30
Draft: 8
Color: White
Hull Number: 638
Operator: Calspan
Remarks: 10/19/98 - Ran aground on Kure Atoll reef
10/20/98 - Salvaged and beached at Kure Atoll

II. Location
Latitude: 19.375
Longitude: 155.225
Island: Kure Atoll
Coordinates: 19N 155W
Depth: 50
Beach: Teteeto Beach
Remarks: 10/19/98 - Ran aground on Kure Atoll reef
10/20/98 - Salvaged and beached at Kure Atoll

III. Owner
Company: Calspan
Address: 2000 1st Ave
City: Honolulu
State: HI
Zip: 96815
Phone: (808) 531-1000
Fax: (808) 531-1000
E-Mail: info@calspan.com

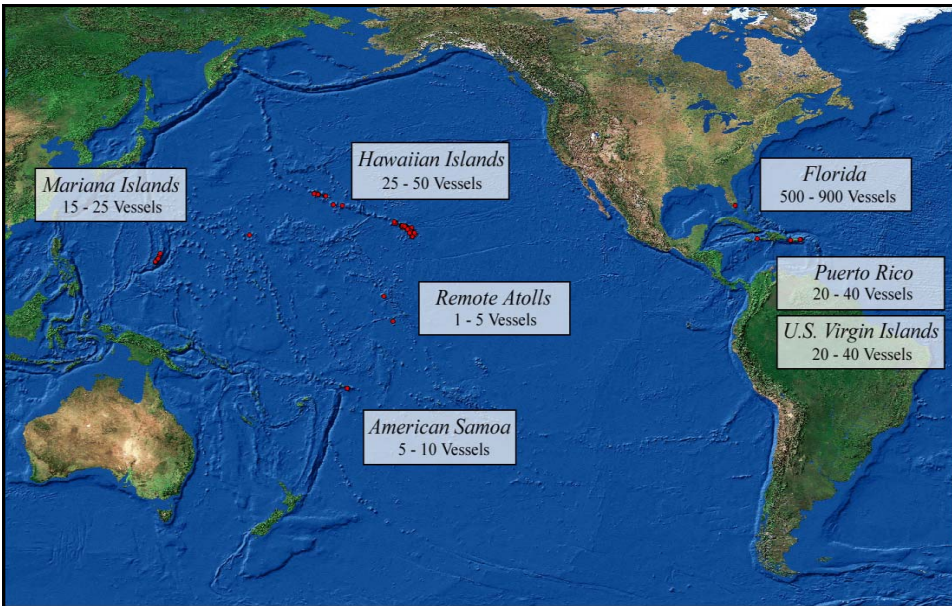
IV. Incident
Date: 10/19/98
Time: 12:00
Weather: Clear
Wind: 10
Current: 1
Direction: N
Speed: 10
Status: Abandoned
Remarks: 10/19/98 - Ran aground on Kure Atoll reef
10/20/98 - Salvaged and beached at Kure Atoll

V. Photos
Photo 1: [Image of vessel]
Photo 2: [Image of vessel]
Photo 3: [Image of vessel]
Photo 4: [Image of vessel]

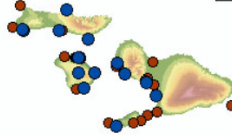
VI. Contacts
Name: [Name]
Title: [Title]
Company: [Company]
Address: [Address]
City: [City]
State: [State]
Zip: [Zip]
Phone: [Phone]
Fax: [Fax]
E-Mail: [E-Mail]

VII. General
Project Number: [Number]
Project Name: [Name]
Project Type: [Type]

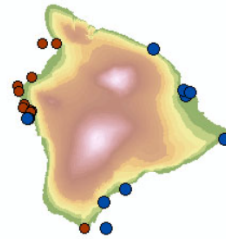
Abandoned Vessel Project
NOAA - Damage Assessment Center
January, 2002
Doug Hixon (206) 126-4363 / Andy Smith (206) 126-4199
http://response.meritsystems.us.gov/abv/



**Abandoned Vessel Inventory:
Overview of Contents**




- Vessel, likely present
- Vessel, possibly present



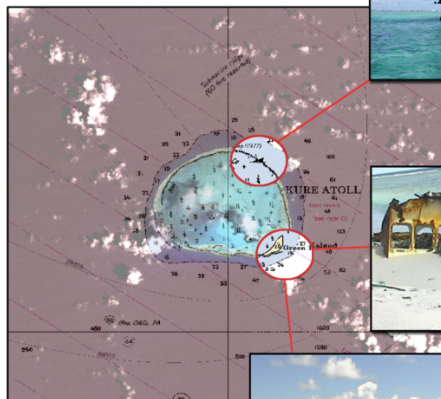
Abandoned Vessel Inventory

Overview of Vessels in the Main Hawaiian Islands


 Abandoned Vessel Inventory
 NOAA - Damage Assessment Center
 December, 2001
 Doug Helton, (206) 526-4563 / Andy Smith (206) 526-4599

Kure Atoll

Northwestern Hawaiian Islands




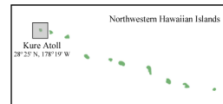
Unknown Vessel
reported in 1977,
hull piece still on reef



Paradise Queen II
ran aground in October, 1998,
hull pieces and gear scattered
on reef and shore



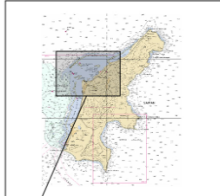

 Abandoned Vessel Program
 NOAA - Damage Assessment Center
 December, 2001
 Doug Helton, (206) 526-4563 / Andy Smith (206) 526-4599
Image credits:
Center map: LANDSAT 7 image (courtesy of NOAA Datacenter) overlaid with NOAA Chart 19485. 7th ed.
 Customized from: Photo taken by David Camp, used with permission of NOAA, NMFS, USFWS, and Hawaii's DNR.
 Paradise Queen II: NORWASIP Expedition 2000 and Bonnie P. Bishop Museum



Abandoned Vessel Project Marianas Overview

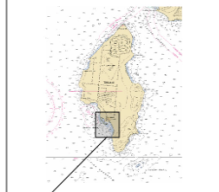
Abandoned Vessel Project
NOAA - Damage Assessment Center
January, 2002
Doug Helton, (206) 526-4563 / Andy Smith (206) 526-4599
<http://response.restoration.noaa.gov/dac/vessel/>

1. SAIPAN

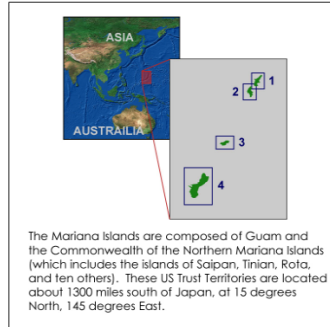


SAIPAN HARBOR
3 visible, rusting hulls and
additional submerged wrecks

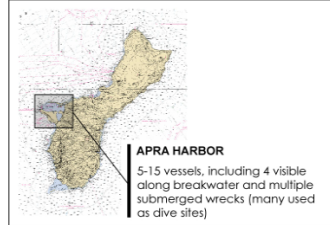
2. TINIAN



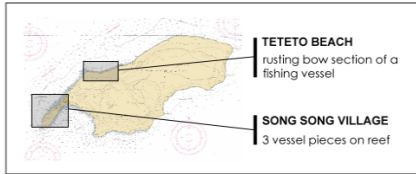
TINIAN HARBOR
fishing vessel in three rusting
pieces



4. GUAM



3. ROTA



ABANDONED VESSEL INVENTORY

Sample record screenshots

Abandoned Vessel Project
NOAA - Damage Assessment Center
January, 2002
Doug Helton, (206) 526-4563 / Andy Smith (206) 526-4599
<http://response.restoration.noaa.gov/dac/vessel/>

Microsoft Access - [AbnVessels - Form] [X] [Y]

Record: 381 of 1478

I. Vessel

Name: Unknown308 Candidate: [v]

Type: Length: feet
 Hull: Beam: feet Condition:
 Historic Value: Weight: tons
 Legal Status:

Media Images:
 Description:
 Source and Date:
 Date:

Record: 381 of 1478 of 1

II. Location

Chart No.: Latitude:
 Dip: Longitude:
 Location: Accuracy: seconds
 State: CO District:
 Location Comments:

III. Owner

Owner Information:
 - name and contact info:
 - insurance:

IV. Incident

Incident Date: Incident Description:
 Last Survey Date: Response Action:

V. Threats

Contents:
 Oil:
 Hazardous Material:
 Other:
 Threats Note:

Navigation: Physical Damage:
 Pollution: Aesthetics:
 Human Safety: Entanglement:
 Debris: Other:
 Threats Note:

Resources at Risk:
 Coral: Beach:
 Seagrass: Wildlife:
 Mangrove: Other:
 Resources Note:

VI. Contacts

Last Name: First Name: Title: Position:
 E-mail: Phone:
 Address:
 Organization:
 Notes:
 Page 115, No 308

Record: 381 of 1478 of 1

Select a Contact Refresh Contacts

VII. General

The record is recorded.
 in AWDG:
 in AWTG: Identifier:
 on chart:
 in other:
 Further Action:
 References / Links / Documents:

Record: 381 of 1478 of 1478

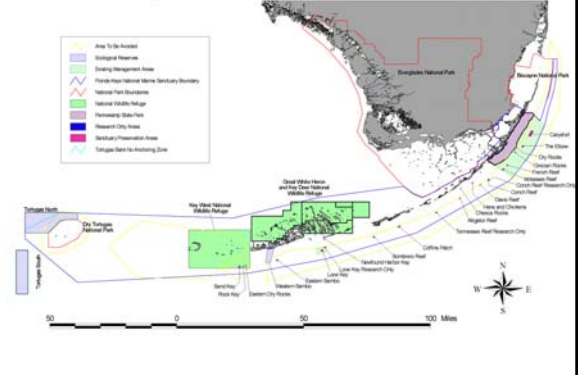
Print View

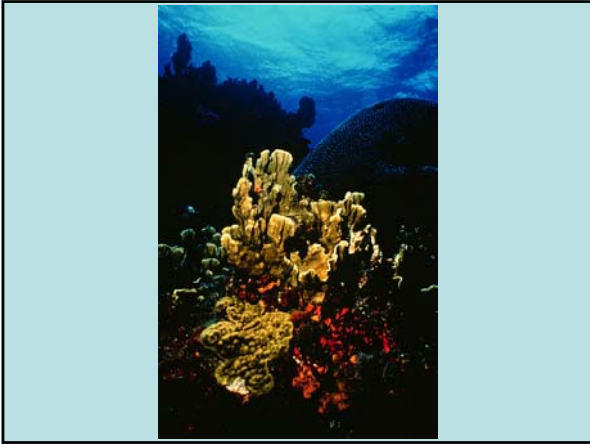
Vessel Grounding Injury Assessment

In the
Florida Keys National Marine Sanctuary



Florida Keys National Marine Sanctuary









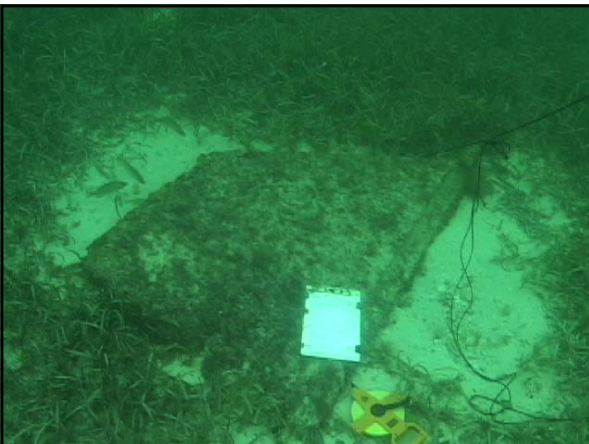


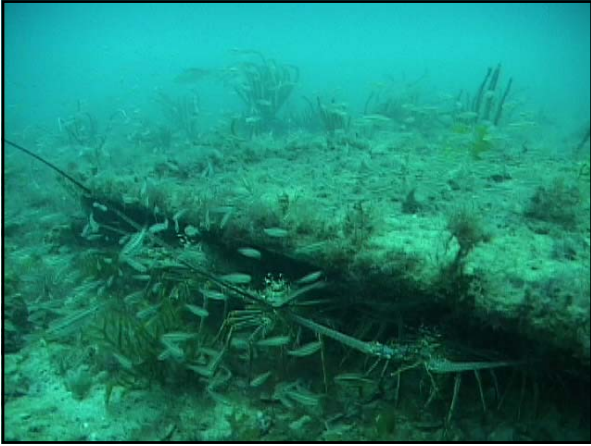








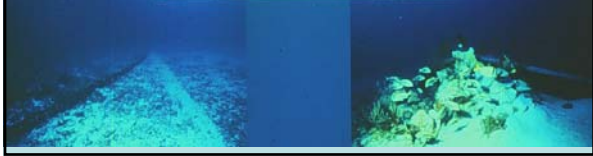








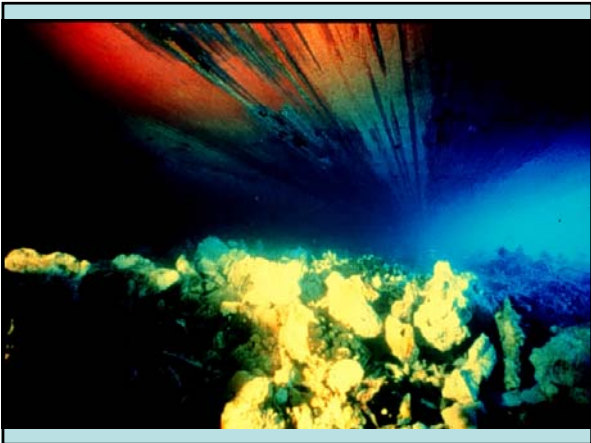
Anchor Damage on Tortugas Bank

















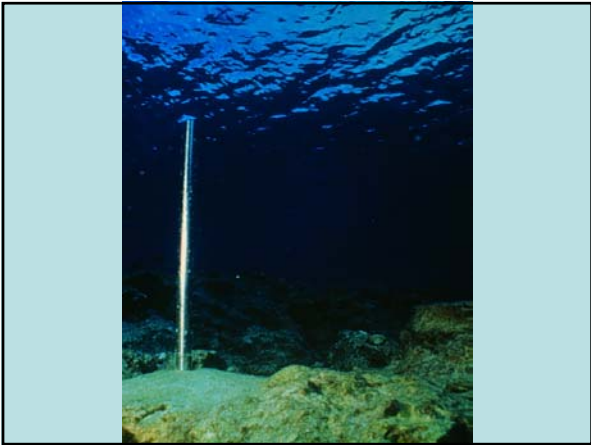


















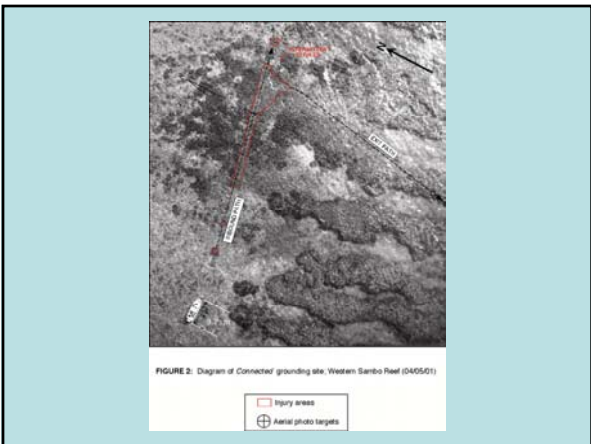
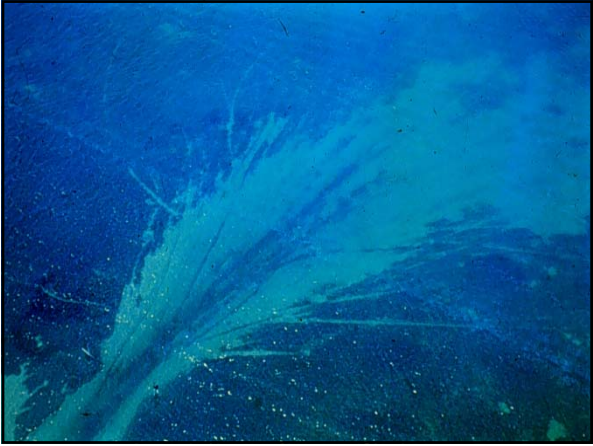


FIGURE 2: Diagram of 'Connected' grounding site, Western Samo Reef (040501)

□ Injury areas
⊕ Aerial photo targets

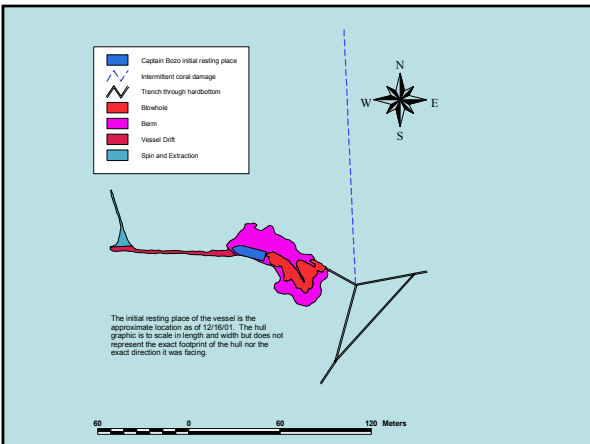


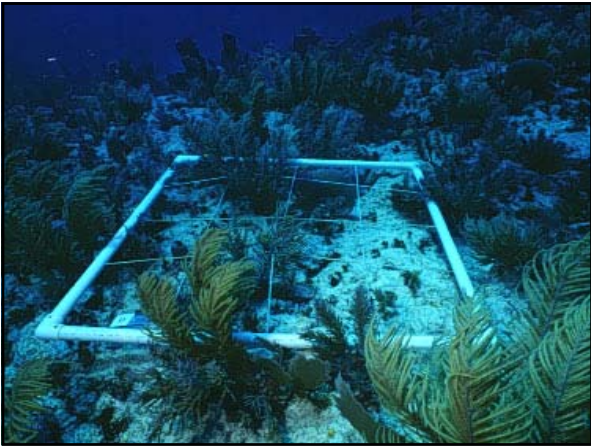


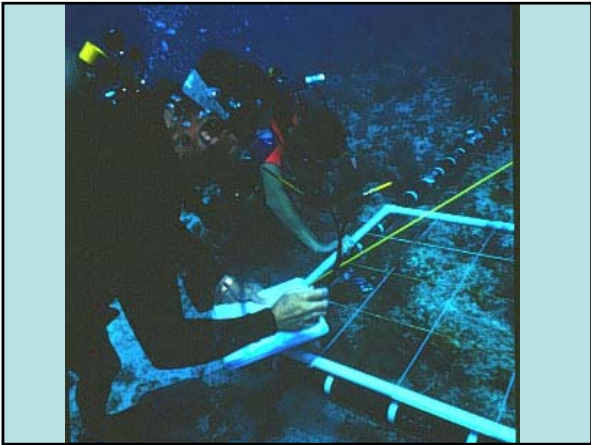














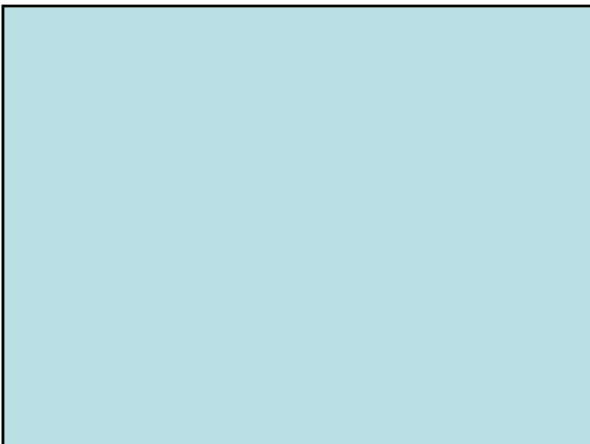


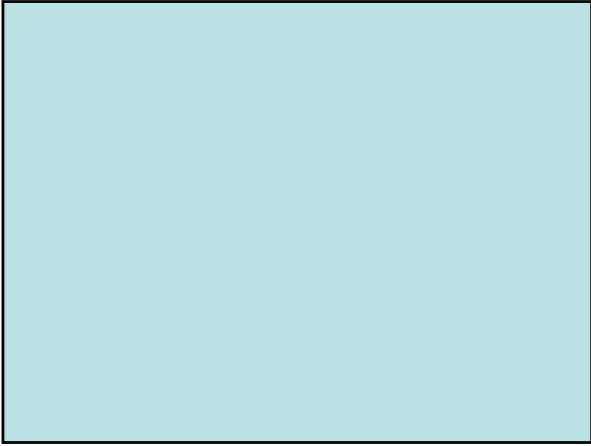














Threshold Criteria

Authority

Possible Actions, Questions

Oil Discharge or Threat?



- Can vessel owner be forced to remove?
- Will CG remove w/summary authority? (Is removal “necessary”?)
- Can state remove under OPA, CWA, state pollution cleanup law and recover costs from the Fund? (costs “not inconsistent” with NCP)
- Are injuries caused by oil, threat of discharge or response actions?
- Are grounding injuries indistinguishable from response-caused injuries?
- Has/will removal of oil and leaving vessel cause natural resource injuries?
- Is there a need to assess the cause of natural resource injuries (“initiate” NRDA)?
- Response costs, NRDA claims to Fund or court if RP won’t pay.

Hazardous Substance Discharge or Threat?



- Can vessel owner be forced to remove?
- Will CG remove? (Is removal “necessary”?)
- Are coral injuries caused by hazardous substance, threat of discharge, or response actions?
- Are grounding injuries indistinguishable from response-caused injuries?
- Has/will removing oil but leaving vessel cause injury?
- Response costs, NRDA lawsuits for fed, state, tribal trustees

*Oil or Hazardous
Substance, Foreign
Flag Vessel, "Grave
& Imminent Danger"?*

**INTERVENTION
ON THE HIGH
SEAS ACT**

- Will CG remove?
- Is vessel owner citizen of state party to Convention?

*Navigational Hazard
Or Future Threat to
Navigation?*

**RIVERS &
HARBORS
ACT**

- Can vessel owner, operator, lessee be forced to remove?
- Will CG remove if owner won't? *Must* CG remove – is vessel a current hazard to navigation and has it been left for 30 days or more?
- If vessel breaks up or moves could it be a hazard to navigation?

*Vessel 100 Gross
Tons, left 45
Days or More?*

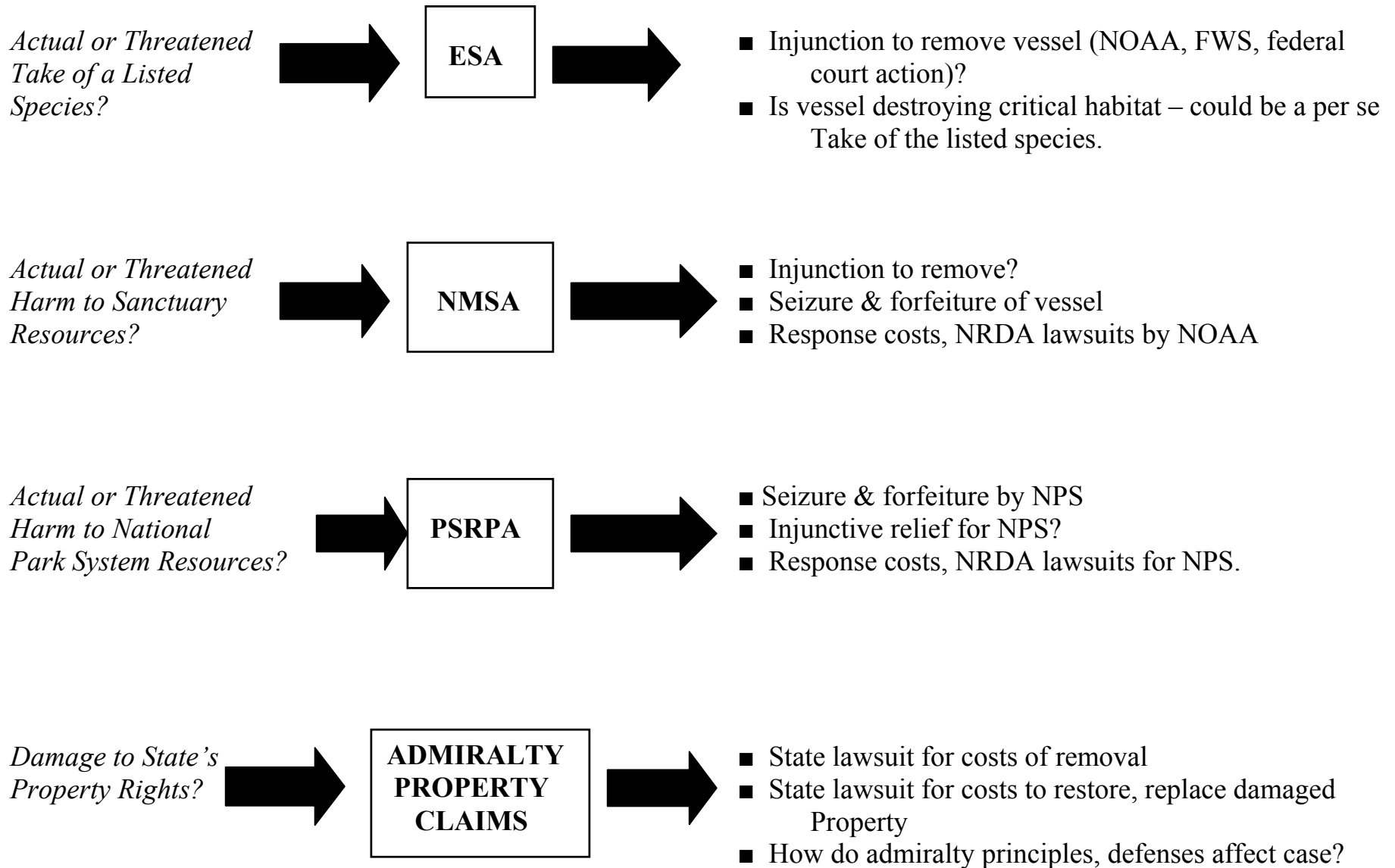
**ABANDONED
BARGE ACT**

- Can vessel owner, operator, lessee be forced to remove?
- Will CG remove if owner won't?

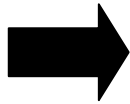
*Vessel "Abandoned
& Embedded" in
State Submerged
Lands?*

**ABANDONED
SHIPWRECK
ACT**

- What can states do with title to vessels, especially if the vessel has no historic value?



*Vessel Abandoned
On Property
Owned by
Government?*



**ADMIRALTY
QUIET TITLE
ACTIONS**



- Get agreement with known vessel owner to provide clean title or title insurance in transfer of vessel to government; government can remove/dispose
- Court action to seek declaration of abandonment if owner not known, not cooperative; title passes to government, government may use, remove, destroy.

Legal Authorities for Responding to Grounded and Abandoned Vessels: Vessel Removal, Liability for Environmental Harm, and Sources of Funding

Cheryl L. Scannell¹

January 2002

SUMMARY: No federal law accomplishes all of the objectives of providing authority to remove grounded or abandoned vessels that are *not* obstructing navigation, liability for physical injury to natural resources caused by vessel groundings, and a source of up-front funding other than agency appropriated funds to accomplish vessel removal or resource restoration. The Oil Pollution Act (“OPA”) and the Clean Water Act provide ‘summary’ (no seizure or abandonment required) removal authority for vessels discharging or posing a substantial threat of a discharge of oil or hazardous substances, but this doesn’t mean that every grounded vessel will be removed under this authority. The National Marine Sanctuaries Act authorizes judicial seizure and forfeiture of vessels harming sanctuary resources, as opposed to summary removal authority, but does not provide non-appropriated funds to pay for these activities, and the Act is only applicable in designated national marine sanctuaries. The Park System Resource Protection Act is similarly geographically limited to designated areas under the management of the National Park Service, and does not provide a source of non-appropriated funds for vessel seizure. The Rivers and Harbors Act provides for removal of abandoned vessels, defined in the Act, which are actually or potentially obstructing navigational channels, but does not provide a fund to pay for these activities and would impose liability for damages caused by vessel abandonment only for impacted navigational resources. This Act has traditionally been interpreted as far narrower in scope than the ‘waters of the United States’ covered by the Clean Water Act. Other federal laws provide less direct and useful authority than the statutes discussed above respecting vessel removal authority. The OPA, CWA, CERCLA, NMSA and PSRPA all impose liability for damages for natural resource injuries caused by violations of these Acts, but, with the exception of OPA’s special fund to pay claims in certain circumstances, damages have to be recovered through lawsuits against vessel owners or operators. OPA, as interpreted by one federal appeals court, does not include liability for natural resource damages caused by a grounding itself, as opposed to damages caused by oiling or by response activities. Common law claims in tort, trespass or public nuisance may be technically applicable to grounded or abandoned vessels, but they will more than likely be decided under principles of admiralty law, including fault-based liability and limitation of liability, they do not provide removal authority prior to a judgment, and may not provide for payment of removal costs, depending upon the circumstances.

¹ Office of the General Counsel, Natural Resources Division, National Oceanic and Atmospheric Administration. 9721 Executive Center Dr. No., St. Petersburg, FL 33702. cheryl.scannell@noaa.gov. The views presented are those of the author and not necessarily representative of the position of the agency or of the federal government. NOAA’s Doug Helton contributed substantially to the discussion of insurance parameters in the paper.

Principles of federal admiralty law may constrain what states can do with new laws in this area. The Supreme Court has held, consistently in theory if not in practice, that states cannot alter the “characteristic features” of admiralty law, or interfere with the “required” uniform application of admiralty law around the country. Depending upon the objective for new legislation, e.g., vessel removal authority or liability for environmental harm, a federal law may be a more viable vehicle, at least as a first step, to avoid having a state law deemed an unconstitutional imposition upon admiralty law.

Interested state and federal parties must thoroughly analyze and document their particular circumstances to inform the deliberations over what type of legislative agenda to pursue. Databases should be constructed detailing, among other things: the number and types of vessel groundings and abandonments that occur in affected jurisdictions; ownership and insurance status of these vessels; the existence of vessel salvage equipment and expertise in the jurisdiction; any information on the costs of past vessel removal exercises; the existence and efficacy of state laws in dealing with these vessels; the types of natural resources affected, the nature of the impacts thereto, and the availability and costs of restoration techniques to address these impacts; and the political potential for new legislation in the jurisdiction.

Introduction

This paper initiates one action item of the Coral Reef Task Force, constituted pursuant to the Coral Reef Conservation Act of 2000, 16 U.S.C. 6401 *et seq.*, to analyze the efficacy of existing laws and regulations in providing robust authority to respond to grounded and abandoned vessels that are causing or threatening to cause harm to coral reef ecosystems. It is anecdotally understood that dozens of vessels are run aground each year in coastal waters of the United States, many causing measurable harm to natural resources. Yet, there has been a perception that existing federal laws and regulations provide less than optimal authority for prompt removal of grounded or abandoned vessels that are causing harm to natural resources but which are not otherwise obstructing or threatening to obstruct navigation. The scope and applicability of federal legal mechanisms to hold vessel owners or operators liable for environmental harm resulting from groundings or abandonments has also not been well understood. Finally, the high costs of vessel removal or restoration of natural resources injured by vessels spawn intense interest in a source of funding for these activities other than from state or federal agency appropriated monies; for example, there has been considerable uncertainty regarding the scope of incidents for which the federal Oil Spill Liability Trust Fund will be available to pay for vessel removal or natural resource restoration.

This paper focuses primarily on federal legislation that is or may be used for removal of grounded or abandoned vessels, or restoration of harm caused by such vessels, in various situations. The paper first discusses longstanding principles of federal admiralty law, then judge-made tests of whether state laws unconstitutionally alter admiralty law. This discussion will allow an evaluation of the potential efficacy of common law actions such as tort, trespass or nuisance claims to deal with grounded or abandoned vessels, and an evaluation of whether

amendments to existing federal laws, or new state or federal laws might present issues of constitutionality. The paper next details existing federal statutes and their benefits and limitations for vessel removal or resource restoration. After discussing a recent example of a grounded vessel threatening to harm coral resources that seemed to fall through the cracks of all federal statutes, the paper then broadly discusses possible amendments to federal statutes, new federal statutes, and new state laws that might address the gaps in existing law. Various state laws dealing with vessel removal authority are outlined in an appendix to the paper.

It is hoped that this paper will allow resource managers to evaluate the risks and likely success of bringing a claim involving a specific grounded or abandoned vessel under any of the existing laws, and provide guidance for crafting effective new legislation if desirable.

Federal Admiralty Law

Admiralty law is the only subject matter of law specifically reserved to the federal courts by the U.S. Constitution (Article III, Section 2). Congress codified this grant of jurisdiction first in the Judiciary Act of 1789, and more contemporaneously in 28 U.S.C. § 1332. Both these Acts granted state courts concurrent jurisdiction over admiralty claims through clauses “saving to suitors in all cases other remedies to which they are otherwise entitled.” These clauses have been interpreted as allowing state courts to try admiralty claims when in personam relief, versus in rem relief, is being sought, and the claim is otherwise within the jurisdiction of authority granted to the state court. However, “federal law must be applied to these state court suits because they remain admiralty cases.” See, *Zych v. Unidentified, Wrecked and Abandoned Vessel*, 941 F.2d 525 (7th Cir. 1991). Thus, the only real benefit of invoking a savings to suitors clause would be to have a claim adjudicated in state rather than federal court.

Federal courts have honored the perceived significance of admiralty law’s constitutional status through a few major themes in admiralty case opinions: that admiralty cases cannot be taken fully out of the jurisdiction of the federal courts, that admiralty law requires uniform application around the nation, and that characteristic features of admiralty law cannot be altered by state law, or, some courts hold, by federal legislation. This admiralty backdrop is relevant to the grounded and abandoned vessels issue in three ways. First, in the absence of applicable federal legislation, an incident involving a vessel grounding is going to be treated as an admiralty matter, and many specific aspects of admiralty law will be applied to the dispute; some of these important tenets of federal admiralty law are discussed below. Second, admiralty cases will either be removed to federal court, or, if there is a pendant state claim, the state court will nonetheless apply federal admiralty law to the admiralty claim. Third, any new legislation that deals with grounded or abandoned vessels, and thus arguably impinges upon traditional admiralty law, must withstand potential challenges that the law impermissibly alters the necessary uniform application of admiralty law, or characteristic features of traditional admiralty law.

Admiralty Jurisdiction and Characteristic Features of Admiralty Law

Generally, admiralty jurisdiction covers cases involving the “relationship of vessels, plying the high seas and our navigable waters, and to their crews.” *Askew v. American Waterways Operators, Inc.*, 411 U.S. 325 (1973). Admiralty law at its inception at the birth of this nation was concerned with maritime navigation and maritime commerce, not with public health or the environment. One court has described vessel groundings as “an occurrence unique to maritime law.” *Maryland v. Kellum*, 51 F.3d 1220 (4th Cir. 1995). Courts are split, however, as to whether ancient, long-lost shipwrecks are “characteristic features” of admiralty law, as they no longer concern maritime navigation and commerce. *See, for discussion, Zych v. Unidentified, Wrecked and Abandoned Vessel*, 941 F.2d 525, 531-532 (7th Cir. 1991).

Legal tests for invoking federal admiralty jurisdiction over a claim have evolved over the years, sometimes resting upon the involvement of a vessel operating on navigable waters, sometimes resting on whether the claim at issue arose or occurred on navigable waters. The Supreme Court has rejected a narrow focus, such as the involvement of navigation alone, holding that such limits would not protect the fundamental interest which gave rise to maritime jurisdiction, that is, the protection of maritime commerce (*Foremost Ins. Co. v. Richardson*, 457 U.S. 668 (1982)). In 1995 the Supreme Court outlined a 2-part test for deciding whether federal admiralty jurisdiction covers a claim: first, courts must assess the general features of the type of incident involved and determine whether the incident or its resolution in the courts may have potentially disruptive impacts upon maritime commerce, and second, courts must determine whether the general characteristics of the activity giving rise to the incident show a substantial relationship to traditional maritime activity - whether the activity, commercial or non-commercial, is so closely related to activity traditionally subject to admiralty law that the reasons for applying special admiralty rules would apply. *Grubart v. Great Lakes Dredge & Dock*, 513 U.S. 527 (1995). Lastly, admiralty jurisdiction originally did not extend to injuries which occurred on shore, but the Admiralty Extension Act of 1948 extended jurisdiction to all cases of damage or injury caused by a vessel, regardless of whether the injury was done on land or at sea (46 U.S.C. § 740).

If a case is determined to fall within federal admiralty jurisdiction, certain tenets of admiralty law will be applied to that case, with consequences for the party bringing the case including the type of proof required and the quantum of the recovery available. Some of the major tenets of admiralty law that might impact a common law claim brought in the case of a grounded or abandoned vessel causing harm (e.g., maritime tort, nuisance or trespass claims) are discussed below.

Liability in admiralty cases is fault-based, as opposed to the strict liability characteristic of numerous federal environmental statutes, thus requiring proof of negligence or worse behavior on the part of a defendant². Liability in admiralty cases is also proportionate to fault, not joint

² There are two exceptions, one for defective products liability, which courts hold has always subjected defendants to strict liability, even in admiralty cases, and one for personal injury to seamen in the case of unseaworthy vessels.

and several, which may require proof of the relative culpability of multiple negligent parties in order to recover fully on a claim.

The Limitation of Vessel Owner's Liability Act, 46 U.S.C. § 183, ("the Limitation Act"), is universally considered a characteristic feature of admiralty law. Under this Act, the owner of a vessel, foreign or domestic, may limit his or her liability to the value of his or her interest in a vessel and its cargo, for damages or injury caused or incurred during a voyage, if the injury or cause thereof were not within the privity or knowledge of the owner. The value of the vessel owner's interest is determined after the incident, not before, thus may be negligible if the vessel is a total loss and the owner does not have any insurance.

In admiralty law there is traditionally no recovery for economic losses in the absence of physical injury, the so-called Robin's Dry Dock rule after *Robin's Dry Dock & Repair v. Flint*, 275 U.S. 303 (1927). In the absence of specific statutory authorization of claims for such things as lost use of resources, diminution in value, or lost revenue, a plaintiff suffering such losses was required to have also suffered a physical injury or damage to property in order to recover for the economic loss claims.

Vessels may be sued directly in admiralty law, in "in rem" actions, which require the vessel to be arrested or otherwise brought into the jurisdiction of a federal district court. Local court rules may require plaintiffs in in rem actions to post bonds for U.S. marshal costs of guarding and maintaining a vessel while the claim is tried, and may also allow the vessel owner to post a bond for the value of the vessel, allowing the release of the vessel to the owner. Successful claims against a vessel will result in a judicial sale or forfeiture of the vessel, and there may be circumstances where prior lien holders on the vessel would have superior claims to that of the party bringing the in rem forfeiture action.

Insurance carriers cannot be sued directly in admiralty law.

There is an infrequently-used doctrine in admiralty law that could be applicable to grounded vessels that are severely damaged or long-abandoned by their owners - the "Dead Ship" doctrine. The purpose of the doctrine is to deny vessel status to ships and thus remove them from the scope of admiralty jurisdiction. Courts, however, seem to consistently reject basing a determination of admiralty jurisdiction solely upon the status of a vessel, unless a vessel owner has affirmatively taken a ship out of service and withdrawn it from navigation and maritime commerce (e.g., the vessel is in dry dock). In the case of grounded or wrecked vessels, courts have invoked admiralty jurisdiction because the vessels threaten navigation and maritime commerce. Indeed, the doctrine of dead ships is rarely if ever mentioned in cases involving wreck removal or maritime salvage, in the latter instance because courts want to uphold traditional principles of salvage awards in admiralty law. As regards tort actions specifically, the status of a vessel is only narrowly relevant to deciding admiralty jurisdiction, with courts asking instead whether there is some relationship between the tort and traditional maritime activities, whether the tort involved navigation or commerce on navigable waters. Rutherglen, G. *Dead Ships*. 30 J. Mar. L. & Com. 677 (1999).

Finally, the concept of vessel abandonment is a long-standing aspect of admiralty law. Abandonment means the relinquishment of all title to a vessel, and only an owner can abandon a vessel under admiralty law. Vessels and cargo must be abandoned separately. There is a time-honored legal fiction within admiralty law that holds that a grounded or sunken vessel is never abandoned, that the owner at the time of the calamity retains title. This is in part to encourage maritime salvage or voluntary rescue of vessels in return for a generous award, as opposed to applying a law of finds (basically, “finders-keepers”). Abandonment must be established by clear and convincing evidence, and lapse of time since a vessel has sunk or run aground, or failure of an owner to return to the vessel, are not alone considered sufficient circumstantial evidence of abandonment in admiralty law. Thus, private property rights is a legal issue to resolve even for wrecked, seemingly deserted vessels.

It is also a long-standing tenet of admiralty law that an owner of a vessel that sinks through no fault of his or her own, may affirmatively abandon the vessel where it sinks, and is not liable to remove the vessel nor for damages that result as a consequence of the sinking, even if the vessel is a hazard to navigation (the latter has been changed by the Rivers and Harbors Act, discussed below). The privilege of abandonment by innocent owners has its origins in English common law, and was summarized in this passage from a mid-19th century court opinion:

“When a vessel is lost by the act of God, or by accident, the owner suffers oftentimes great damage...it seems to be a great hardship to add to his misfortune the duty of removing the wreck. It would discourage commerce to hold him to so severe a duty, for who would engage in trade, if, when he has lost his vessel, he might be forced to incur an expense of more than her original cost in removing the wreck from some difficult position. If compelled by the accident to abandon his property, the duty of removal should rather fall on the public...”

Winpenny & Chedester v. Pa., 65 Pa. 135, 139 (S.Ct. Pa. 1870).

Admiralty Preemption of State Laws Versus the Proper Reach of State Laws Touching Admiralty Matters

In sum, courts’ holdings in this area, including those of the U.S. Supreme Court, are often difficult to reconcile with the stated tests. In 1960, Justice Frankfurter dissented in a case in which the majority of the Supreme Court elected not to give priority to the Court’s previously sanctioned rule that state laws could not disrupt the uniform application of admiralty law. Justice Frankfurter complained that the Court’s wanderings on this question left no reliable way to determine what measure of disharmony would be permitted in the maritime field, and what level of state intrusion would be tolerable (*Hess v. United States*, 361 U.S. 314 (1960), discussed in Bederman, D.J., *Uniformity, Delegation and the Dormant Admiralty Clause*, 28 J. Mar. L. & Com. 1, 1997). In 1994, writing for the majority in *American Dredging Co. v. Miller*, Justice Scalia wrote that “it would be idle to pretend that the line separating permissible from

impermissible state regulation is readily discernible in our admiralty jurisprudence, or indeed is even entirely consistent within our jurisprudence.” 114 S.Ct. 981, 985 (1994). With these enormous caveats in mind, this section discusses the various permutations of tests that courts have applied to determine whether state laws comprise unconstitutional alterations of admiralty law.

Preemption Tests and Analyses

Courts have held that a defendant’s liability must be measured under admiralty law principles instead of state law, if the law implicates rights as opposed to remedies. The admiralty law principle of comparative fault has been held by the Supreme Court to be a “substantial right.” *Pope and Talbot, Inc. v. Hawk*, 346 U.S. 406 (1953). Thus, any scheme of liability without fault, or without allocation of damages based upon relative fault, presents an immediate conflict with admiralty law.

Laws covering activities or incidents which occur upon navigable waters immediately trigger admiralty jurisdiction and raise the possibility of preemption.

State laws are reviewed by courts to determine whether the law seeks to alter something that is a characteristic feature of admiralty law, or to alter a feature which requires uniform application to maintain the proper harmony of admiralty law. In *Southern Pacific Co. v. Jensen*, 244 U.S. 205 (1917), the Supreme Court fashioned a 3-prong preemption test: (i) does the state law contravene an Act of Congress? (ii) does the state law cause material prejudice to a characteristic feature of admiralty law? (iii) does the state law impermissibly disrupt the proper harmony and uniformity of admiralty law? In *American Dredging, supra*, Justice Scalia refined the “characteristic feature” prong into a determination of whether the state law impinges upon a federal rule that either originated in admiralty or has exclusive application there, thus not a doctrine of general applicability. Justice Scalia went on to conclude that state procedural, versus substantive, laws cannot impinge upon any characteristic feature of federal admiralty law. As regards the uniformity prong, courts tend strongly to see a greater need for uniformity for activities in navigable channels, where interstate commerce is frequent.

In passing federal legislation Congress is said to have the capacity, under the admiralty and the necessary and proper clauses of the Constitution, to modify admiralty law based on changes in experience and circumstances. *Zych v. Unidentified, Wrecked and Abandoned Vessel*, 19 F.3d 1136, 1140 (7th Cir. 2000). However, Congress cannot remove a subject matter which is traditionally included within admiralty jurisdiction, nor can it add a subject matter which has traditionally been outside of admiralty jurisdiction, and Congress cannot make admiralty law non-uniform. *Panama R.R. Co. v. Johnson*, 264 U.S. 375, 386-87 (1924). Before Congress passed the Abandoned Shipwreck Act, giving states title to all abandoned shipwrecks embedded in submerged lands of the state, federal courts had held numerous state laws relating to determining title to or management authority over historic shipwrecks unconstitutional, as preempted by admiralty jurisdiction. The Abandoned Shipwreck Act made laws of salvage inapplicable to these vessels. One case challenged the constitutionality of this Act, charging that

Congress impermissibly excluded shipwrecks from admiralty jurisdiction. *Zych v. Unidentified, Wrecked and Abandoned Vessel*, 941 F.2d 525 (7th Cir. 1991). Though the case was decided on other grounds, the court suggested that perhaps Congress did not consider that long lost, long-sunken abandoned wrecks were essential features of admiralty law.

In *In re. Glacier Bay*, 746 F.Supp. 1370 (D. Alaska 1990), the federal district court reviewed a claim for economic losses under the Trans-Alaska Pipeline Authorization Act (TAPPA), against a challenge that to read the Act to allow such an award would improperly alter the characteristic feature of admiralty law which prohibits purely economic awards in the absence of some physical injury. The statutory language at issue provided recovery for “all damages” sustained by “any person,” and a clause making the Act applicable “notwithstanding the provisions of any other law.” The court held that this language unambiguously established Congress’ intent to alter admiralty law for incidents covered by the TAPAA. The court further found the legislative history supportive of this conclusion, expressing Congress’ desire to adequately compensate the victims of oil spills in stating, “[T]he Conference concluded that existing maritime law would not provide adequate compensation to all victims...in the event of the kind of catastrophe which might occur.” *Id.* at 1386.

In conclusion, prior decisions on admiralty preemption of state laws provide some guidance on the types of new statutes that will withstand constitutional challenge, and statutory and legislative history language that is helpful to making the case for constitutionality.

Tests of State Laws Permissibly Touching Admiralty Matters

Courts have held that admiralty jurisdiction cannot swallow whole the police power of states to protect their lands and their citizens (*See, e.g., Askew, infra*). This type of reasoning led to development of a “maritime but local interest” test to uphold state laws, many in the area of employment and personal injury involving seamen, but this test hasn’t been mentioned in the most recent Supreme Court cases dealing with the issue of admiralty preemption of state laws. States are permitted to supplement remedies available to enforce federal rights, and to legislate over matters affecting land and sea which Congress has expressly or impliedly left to the states to govern. Thus, federal legislation which reserves issues to the states, or expressly declines to preempt additional protections or liability in state law, can pave the way for states to act on top of federal legislation. State laws or regulations which do not affect vessel operations or operators, but rather govern liability issues with respect to landowners or contractors within the state, and which have no extraterritorial effect, are held to be permissible. *Cammon v. City of New York*, 95 N.Y.2d 583 (C.A. N.Y. 2000).

It is also generally accepted that states may clear obstructions from navigable waters and recoup their costs, so long as the state law providing such authority does not conflict with federal laws. vonBittner, W.T.R. *The Louisiana Removal of Sunken Vessels Act of 1985 – State Wreck Removal Statutes in Perspective*. 11 Mar. Law 49 (1986). Oil spillage has been held to be an insidious form of pollution of vast concern to coastal states, and within the police power to regulate, at least when the oil is spilled from an onshore facility and not a vessel. (*Askew, infra*).

One court held that unseaworthy vessels were not covered by the principle prohibiting state regulation in the absence of prior congressional action in the admiralty area, holding that states may protect their people without waiting for federal action, provided that the state action does not conflict with federal law. *Kelly v. Washington Ex Rel. Foss Co.*, 302 U.S. 1 (1937).

Two Illustrative Cases

The following two cases are useful to analyze because they both deal with the intersection of a state environmental statute and federal admiralty law.

In *Askew v. American Waterways Operators*, 411 U.S. 325 (1973), over challenges by merchant shipowner and operator organizations and world shipping associations, the Supreme Court upheld a Florida law that imposed strict liability upon terminal licensees for damages for oil spills in state territorial waters that originated from onshore oil terminal facilities, or from vessels heading to or from such facilities. The Supreme Court reversed the district court's finding that the law unconstitutionally altered admiralty law on the following grounds: (1) the state law was passed after amendments to the Federal Water Pollution Control Act which, in a non-preemption clause, expressly allowed additional state regulation of water pollution by oil discharges; (2) there was no clear conflict of the state law with federal law in the area because the federal law at that time dealt only with response costs and not with damages; and (3) the issue of oil pollution was considered an area of great concern to states and historically within the police power of the states, and admiralty law cannot swallow all of a state's police power. The applicable non-preemption clause, section 1161(o)(2) of the Water Quality Improvement Act of 1970, 33 U.S.C. 1161 *et seq.*, provided among other things that:

“nothing in this section shall be construed as preempting any State or political subdivision thereof from imposing any requirement or liability with respect to the discharge of oil into any waters within such State.”

The Supreme Court assessed whether this broad waiver of “any requirement or liability” was valid when it impinged upon admiralty law, and concluded that it was because to hold otherwise in the context of the Florida law would be to impermissibly engulf the police power of the state.

The Court characterized the state law as a compliment to a federal statute that envisioned state and federal cooperation in the area of regulating oil pollution. The Court distinguished the *Askew* facts from prior Supreme Court cases on admiralty preemption which overturned state laws that made impermissible inroads on a harmonious system of admiralty law, or that conflicted with a rule of admiralty law which required uniform application. The Court's opinion further suggested that state laws which are creating new rights or new remedies for harms not addressed by admiralty law, so long as they are limited to conduct with a state's borders, may be more readily upheld as not in conflict with admiralty law.

The Court also rejected a claim that the Florida law's imposition of strict liability for costs or damages incurred by the state or by private persons was an impermissible conflict with the

federal statute's scheme of liability limits in the absence of negligence, holding that the state's police power is a sufficient basis for such a scheme to protect state and private interests. It is noteworthy that the Florida law imposed its strict liability on oil terminal licensees, and not upon vessels or their owners or operators, so there was no direct conflict with the Limitation Act.

An admiralty preemption case with particular relevance to the issue of grounded vessel liability is *Maryland Dept. of Natural Resources v. Kellum*, 51 F.3d 1220 (4th Cir. 1995). Maryland passed a law imposing strict liability for any damage caused to state-owned oyster bars by any person, by any cause. The state brought a claim under its law against the owner and operator of a barge which ran aground and damaged an oyster bar. Reversing the district court which had upheld the law under *Askew*, the 4th Circuit held that Maryland's law was unconstitutional as applied to the barge. The Court held that the vessel was engaged in the traditional maritime action of navigation, that the stranding of a vessel is an occurrence unique to maritime law, and that damage to property caused by a stranding has uniformly been treated as a maritime tort under admiralty jurisdiction. The remedy traditionally provided by admiralty law for such a tort is damages based upon negligence and fault, not on strict, joint and several liability. Thus, the Court held that Maryland's law impermissibly altered federal admiralty law. The Court cited to numerous federal court cases which had refused to apply state law to maritime torts where to do so would deprive a party of a substantial federal right, such as fault-based liability.

The *Kellum* Court distinguished *Askew* as inapplicable to Maryland's oyster damages law, on the grounds that the *Askew* case and the Florida law therein did not impact vessels operating on navigable waters, or their owners or operators. The 4th Circuit, discussing the Supreme Court's analysis of the federal water quality act's non-preemption clause at issue in *Askew*, suggested that the Supreme Court upheld this waiver of preemption as applied to the Florida law because the Florida law did not involve "vessels plying the high seas and our navigable waters." This discussion clearly implied that the 4th Circuit would view such a waiver an unconstitutional alteration of admiralty law and its uniform application if applied to vessels in navigation or on navigable waters. The *Kellum* Court characterized its decision as consistent with the more recent Supreme Court case on admiralty preemption, *American Dredging, supra*, which evaluated whether a state law is merely modifying or supplementing federal admiralty law, or whether the state law is impermissibly contradicting admiralty law or depriving any person of a substantive federal right in admiralty law.

These cases illustrate that new legislation dealing with the responsibilities and liabilities of vessels and their owners and operators may draw constitutional or preemption challenges. Potential strategies for crafting legislation that would survive such challenges are discussed in the new legislation section below.

Federal Laws Providing Authority to Deal with Grounded or Abandoned Vessels

This section first briefly discusses common law claims that may be brought in response to grounded or abandoned vessels. The paper next discusses federal statutes that provide express

authority regarding grounded or abandoned vessels. The review is limited to express authorities because it seems particularly inadvisable to imply the existence of authority to remove, seize or destroy vessels from broad, generic language such as, “take any necessary response action,” for several reasons. First, title in vessels is a property interest, and persons cannot generally be deprived of property by governments without due process and/or compensation. These property rights principles are heightened for vessels given the abandonment concept in admiralty law – the presumption against abandonment and the requirement for express abandonment or extensive circumstantial evidence before an owner’s interests in a vessel may be assumed to be forgone. Second, several statutes provide express authority to remove, destroy, and/or seize vessels in certain circumstances, raising the specter of the long-standing rule of statutory construction that authority should not be read into vague language when Congress has demonstrated that it knows how to expressly grant such authority when it is deemed appropriate.

Common Law Claims

Common law claims³ that have been brought to seek relief from harm caused by grounded or abandoned vessels include quiet title actions, torts, trespass and nuisance claims. These claims are discussed as federal laws because, based upon case law and common sense, it is quite likely that if brought in state court under state law, these claims will either be removed to federal court under admiralty jurisdiction or will be reviewed under federal admiralty law principles. Any claim against a vessel itself is an in rem action and such claims are reserved solely to admiralty jurisdiction, and require arrest of the vessel or the claim will be dismissed (arrest is discussed briefly above). Another important note at the outset of this discussion is that these causes of action require bringing a lawsuit before any relief can be granted, thus they do not provide for prompt removal of grounded or abandoned vessels. Finally, it should be restated that if admiralty principles are applied the shipowner’s Limitation of Liability Act may be applicable to limit any possible recovery from the vessel’s owner.

If a property owner seeks only to get rid of a vessel that is grounded upon its property, the owner could bring an admiralty action to quiet title alleging that the vessel was abandoned upon his or her property. Such a suit would require proof of abandonment under admiralty law principles and a successful suit would place title to the vessel in the property owner, though no vessel removal costs or damages would be awarded. As discussed briefly above, admiralty law presumes that vessels are never abandoned, and proof existing solely of the owner’s failure to return to the vessel for some period of time will not establish abandonment. Factors that are relevant to evaluating abandonment include: the length of time since the casualty; the location

³ For those unfamiliar with the concept, common law consists of judge-made law, rights and remedies, crafted in the course of deciding a lawsuit, in contrast to legislatively-promulgated statutory law. Common law claims may be brought in the absence of statutory law, but jurisdictions should determine whether statutes have been passed that modify common law rights and remedies, for instance in limiting the amounts of recoveries for certain claims, among other things.

and the difficulty of returning to raise the vessel; the existence or lack of feasible and affordable technology to raise the vessel; whether the owner insured the vessel and whether it made a claim of loss against the policy; among other things. *See, e.g., Fairport International Exploration v. The Shipwrecked Vessel Known as the Captain Lawrence*, 245 F.3d 857 (2001).

Common law tort claims that may be applicable to grounded or abandoned vessels and that can be brought by governments would generally involve property damage claims, requiring a protectable interest such as ownership of the property, some evidence of the nature and extent of the injury, and negligence or fault on the part of the perpetrator. Remedies include damages for harm done to the property, generally repair or replacement value, which could include the costs of removing the vessel. The availability of injunctive relief to order an owner to remove a grounded vessel is uncertain, since it is generally discussed that admiralty courts do not have the power to grant purely equitable relief (*see, e.g., Sound Marine & Mach. Corp. v. Westchester Co.*, 100 F.2d 360 (2d Cir. 1933), *cert. denied*, 306 U.S. 642 (1939)), and claims for property damage caused by vessels are uniformly tried as maritime torts.

Trespass is a specific type of property tort claim, alleging unlawful or unpermitted entrance upon the property or against the property rights of another that results in actual harm to the property owner. Trespass actions require proof of intent to enter or intrude. Remedies include damages, if a loss to the owner can be established, and injunctive relief to abate the trespass unless the claim is tried in admiralty and equitable relief is ruled unavailable. A claim alleging trespass by a vessel upon one's property interests will immediately be reviewed to determine whether it is within federal admiralty jurisdiction. In *Western Geophysical Co. v. Adriatic, Inc.*, Civ. Action No. 96-513 (E.D. La. 1996), Louisiana oyster bed lease holders brought trespass and other claims against companies engaged in seismic oil and gas exploration activities from vessels. The oil company defendants removed the suit to federal court, arguing that jurisdiction lay in admiralty, and the oyster lessees, trying to return the action to state court, asserted that there was no connection to traditional maritime activities thus the federal court had no subject matter jurisdiction. The Court applied the Supreme Court's 2-part test from *Grubart, supra*, analyzing whether the general features of the incident or the resolution of the claim could have a disruptive impact upon maritime commerce and whether the actions giving rise to the incident showed a substantial relationship to traditional maritime activities. The Court ruled that a claim of trespass can have a potentially disruptive effect on maritime commerce, if vessels are not allowed to navigate waterways freely, and that the claim of trespass on and damage to offshore oyster beds is substantially related to traditional maritime activity, as is surveying for offshore oil and gas resources. Thus, the Court held that the matter was within its admiralty jurisdiction (the claim is still in litigation over the factual question of whether any actual damages were caused to the lessees' property interests).

In an action arising out of a vessel deposited into the plaintiff's commercial fish pond as a result of a tidal wave, the plaintiff sought no damages but only to have the vessel removed as a trespass. The vessel was a total loss and was abandoned by its owner to the hull insurance company and an insurance claim was paid. The Court was not willing to order the removal of the vessel by its former owner or the insurer, but entertained the claim for the costs of removal.

The issue then became whether the shipowner's Limitation of Liability Act was applicable. In a review of case law the Court noted that cases dealing with removal of wrecks in which the Limitation Act was applied were claims against the owner of the vessel for failure to remove the wreck. Cases in which the Limitation Act was inapplicable involved vessels which had sunk in navigable waters and were left for some time, after which other vessels colliding with the sunken wreck suffered damage. In this particular case, the owner had abandoned the vessel and the limitation act is not available to insurers. *Wong v. Utah Home & Fire Ins. Co.*, 167 F. Supp. 230 (D. Ha. 1958).

A contemporary case to watch is *Oregon v. Taiheiyō Vaiun Ltd.*, Or. Cir. Ct., Coos Co., No. 01-CV-0383, filed October 2, 2001. In this case, Oregon has filed a trespass claim against the owners of the New Carissa. The New Carissa is an infamous oil spill case in which, during extensive efforts to attempt to lighter remaining oil off of the floundering vessel, the vessel broke in half and the stern lodged itself upon an Oregon public beach on February 4, 1999. This is an instance where the U.S. Coast Guard determined that its summary removal authority under the Clean Water Act and the Oil Pollution Act (discussed below) did not allow it to remove the stern from the beach as a pollution response action (Capt. D. Capizzi, U.S.C.G., personal communication). The owner has stated that it continues to work on ways to remove the stern. The state is seeking a "storage charge" of \$1,500 per day, as a result of an "unauthorized entry upon state property," unspecified additional damages, and an injunction ordering the owner to remove the wreck from the beach. It seems predictable that the owner will invoke admiralty jurisdiction over the entire set of claims, and possibly removal to federal court. If the state seeks to avoid admiralty jurisdiction it may try and argue permutations of the dead ship doctrine, discussed above as rarely invoked in the case of sunken or wrecked vessels. If there is no proof of negligence and the owner can invoke the Limitation Act, the state would likely recover little or nothing. The lack of intent to trespass, and the vessel owner's alleged continuing good faith efforts to remove the stern from the beach, may also hinder the state's claim.

Governments have also brought public nuisance claims against the owners of long grounded vessels. The theory of public nuisance requires the governmental plaintiff to show an unreasonable interference with a right common to the general public caused by an action such as a grounded vessel not removed by its owner, and federal common law nuisance claims have been dismissed when there has been no allegation of an interstate impact, e.g., interstate migration of pollution (*see, e.g., Reserve Mining Co. v. EPA*, 514 F.2d 492 (8th Cir. 1975)). These claims have typically suffered the same fate as the tort and trespass cases discussed above - they are reviewed first to determine whether they should be tried under federal admiralty law and in federal court, and if they involve vessels admiralty law is applied. Courts have long recognized the admiralty right, in the absence of applicable statutory law, for a non-negligent owner to abandon a vessel with no liability for a public nuisance. *See, e.g., Rex v. Watts*, 2 Esp. 675; *Winpenny v. Philadelphia*, 65 Pa. 135; *Ball v. Berwind*, 29 Fed. 541.

Federal Statutory Law

The "Wreck Act," Rivers & Harbors Act §§ 409-415 (33 U.S.C. §§ 409-415)

This Act is administered by the U.S. Army Corps of Engineers (“ACOE”), but authority is shared with the U.S. Coast Guard under a memorandum of agreement for coastal waters. ACOE implementing regulations are at 33 C.F.R. Part 245.

The purpose of the Wreck Act sections of the Rivers & Harbors Act is described as the protection of vessels plying navigable waters from damage that would be caused by collisions with sunken or wrecked vessels. Sunken or wrecked vessels that do not obstruct navigation, or pose a threat of obstruction, are not prohibited by the Act.

The Act prohibits all sinkings, moorings, and anchorings of vessels in navigable channels that obstruct, impede or endanger navigation. Amendments to the Act in 1986 extended this prohibition to vessels which were sunk non-negligently, in addition to those sunk through fault or intent. Thus, vessels which were sunk in navigable channels prior to 1986 are not covered by the Act if they were sunk accidentally.

Owners, operators and lessees of sunken vessel obstructions have a duty to mark the obstruction and promptly remove the vessel. Failure to mark and remove within 30 days of sinking constitutes an abandonment of all interests in the vessel to the United States, the vessel becomes subject to U.S. removal and destruction, and the owners, operators and lessees are liable for costs of such removal or destruction. Courts have held ACOE strictly to a requirement that they make a finding of a threat to navigation before they remove a vessel and seek cost recovery. ACOE regulations list the following non-exclusive factors to be considered in determining whether a vessel is a hazard to navigation:

- (1) Location of the obstruction in relation to the navigable channel and other navigational traffic patterns;
- (2) Navigational difficulty in the vicinity of the obstruction;
- (3) Clearance or depth of water over the obstruction, fluctuation of water level, and other hydraulic characteristics in the vicinity;
- (4) Type and density of commercial and recreational vessel traffic, or other marine activity, in the vicinity of the obstruction;
- (5) Physical characteristics of the obstruction, including cargo, if any;
- (6) Possible movement of the obstruction;
- (7) Location of the obstruction in relation to existing aids to navigation;
- (8) Prevailing and historical weather conditions;
- (9) Length of time the obstruction has been in existence; and
- (10) History of vessel accidents involving the obstruction.

33 C.F.R. § 245.20.

The Act provides ACOE with authority to immediately remove vessel obstructions that are actually stopping or seriously interfering with navigation; ACOE’s internal policy materials caution that these actions raise the possibility of a takings claim if implemented without proper justification.

The Act allows owners of vessels sunk without negligence to abandon the vessel to the United States, though it isn't clear what this accomplishes for the owner because he or she still has a duty to mark and remove the vessel. Some commentators suggest that the Limitation of Liability Act may still be available to these non-negligent owners, allowing them to limit their liability for removal costs incurred by the ACOE, because the Act does not expressly preempt the Limitation Act. The ACOE must remove vessels that are a hazard to navigation and which have been abandoned to the United States, but it is not clear whether the ACOE has a duty to remove non-abandoned hazards to navigation when their negligent owners refuse to remove them.

Violations of the Act are criminal misdemeanors punishable by fines of up to \$25,000 per day and/or imprisonment for 30 days to 1 year. Courts are split on whether injunctive relief is available under the Act to order an owner, operator or lessee to remove a vessel. Fines recovered are deposited into the general fund of the U.S. Treasury, and there is no special fund to pay for the ACOE's costs of vessel removal.

Vessels used in violation of the Act are liable in rem to the United States for its removal costs, and for any damages caused by such vessel; damages recovered are used for improvement of the harbor or waterway in which the damage occurred. 33 U.S.C. § 412. This section thus seems inapplicable to environmental restoration costs, and the case law deals only with damages to navigational structures or improvements.

The scope of the waters covered by the Act is an issue of interest for purposes of determining the utility of this Act for removing grounded or abandoned vessels. The ACOE's jurisdiction under this Act is described as confined to the traditional meaning of "navigable waters," as opposed to the Clean Water Act's "waters of the United States." ACOE's general definition of navigable waters of the U.S. includes waters "generally subject to the ebb and flow of the tides and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce." 33 C.F.R. § 329.4. Informal contacts between NOAA and both the ACOE and the U.S. Coast Guard regarding past grounded vessels raises the issue of whether the Act is being applied narrowly to solely traditional navigable channels such as actual harbors and marinas, and the corollary question of whether this is a necessary limitation (see discussion of *R/V Karma* below). One court has ruled that the use of the phrase "navigable channel" in the Act restricts its application to inland waterway locales. This court went on to find the Act inapplicable to a wreck "some eleven nautical miles off the coast of Louisiana, in the open and unrestricted waters of the Gulf of Mexico." *Progress Marine, Inc. v. Foremost Ins. Co.*, Civ. Action No. 76-H-121 (S.D. Tx. 1981). Another applicable case concerned a vessel under tow that ran aground after the tow line parted, on a beach north of the city of Pacifica and 4 miles south of the Golden Gate Bridge. The court opined in dicta that the Rivers and Harbors Act covered this vessel, because of the threat that if not removed from the beach it would break up and or sink and obstruct offshore navigation. *National Metal & Steel Corp. v. The Tug Mariner*, 341 F.Supp. 249, 253 (N.D. Cal. 1971).

The Abandoned Barge Act of 1992, 46 U.S.C. 4701 et seq.

This Act was aimed at the insidious practice of using barges abandoned in waterways as dumping grounds for hazardous materials. The 1992 legislative history to the Act cited Government Accounting Office estimates of 600 to 1,200 abandoned barges then existing in the nation's waterways, and to U.S. government costs of almost \$6 million to clean up pollutants from just 51 of these vessels. 138 Cong. Rec. H.7221, 102nd Cong. 2nd Sess. (8/3/92).

This Act is administered by the U.S. Department of Transportation, through the U.S. Coast Guard ("USCG"). The Act is applicable to vessels greater than 100 gross tons (cargo capacity), and prohibits the abandonment of such vessels on the navigable waters of the United States. There is no requirement that the vessel be an actual or potential hazard to navigation, or present an actual or potential threat of a pollution discharge. Such vessels are defined as "abandoned" if left unattended for longer than 45 days, though an owner may notify the USCG that he or she doesn't intend to abandon the barge. After abandonment the Act allows, but does not require, USCG removal of the vessel 30 days after completion of certain notification procedures. The USCG may levy civil penalties of up to \$1,000 per day against the owner, operator, or the vessel in rem (fines are deposited into the general treasury, and there is no special fund to pay for removal). The USCG may remove the vessel if the owners fail, or may seek an injunction ordering removal of the vessel. The Act provides no liability for environmental harm caused by the abandonment of the covered vessels.

In the last 2 fiscal years, amendments have been inserted into USCG appropriations bills seeking to limit the Coast Guard's removal authority under this Act to abandoned barges discharging or posing a substantial threat of a discharge of oil or hazardous substances, and where it is necessary to remove the barge in order to eliminate the discharge or threat. Thus far these amendments have been stripped from the appropriations bills.

The Abandoned Shipwreck Act, 43 U.S.C. §§ 2101-2106 (1989).

This Act has limited applicability to the problem of removing grounded vessels as it stands, but it might be an appropriate platform for a useful amendment.

The Act is administered by the Department of the Interior (DOI) and the states. The Act was initially intended to address litigation over title to historic shipwrecks, as between states and treasure salvors. Under the Act, the U.S. takes title to every vessel that is abandoned and embedded in the submerged lands, or coralline formations on submerged lands, of a state. If the shipwreck is listed or is eligible for listing on the National Register of Historic Places, title remains in the U.S., otherwise title passes to the state in whose submerged lands the vessel is embedded. The Act does not define "abandoned" and courts have reviewed this criterion according to established admiralty law principles. The Act defines "embedded" as "firmly affixed in the submerged lands or in coralline formations such that the use of tools of excavation is required in order to move the bottom sediments to gain access to the shipwreck, its cargo, or any part thereof." 43 U.S.C. § 2102(a).

The law's stated policy is to facilitate state implementation of the Act so as to guarantee recreational exploration of shipwreck sites, and allow for appropriate public and private recovery of shipwrecks consistent with historical values and historical appreciation, and the environmental integrity of the site. The Act doesn't prohibit state removal and destruction of abandoned and embedded vessels, but such activity would clearly be an abuse of the intent of the Act as written. The Act is not applicable to environmental harm caused by vessels running aground or sinking.

The Act expressly makes the law of finds and the law of salvage inapplicable to abandoned and embedded shipwrecks. Thus, courts have held that if a state has a colorable claim to title, the state cannot be sued over its claim to title on eleventh amendment grounds, and no claim for a salvage award would be recognized. This aspect of the law resulted in a constitutional challenge on the grounds that Congress had impermissibly excluded shipwrecks, a traditional maritime subject matter, from admiralty law and jurisdiction. In *Zych v. Unidentified, Wrecked and Abandoned Vessel*, the 7th Circuit decided the title claims for the vessel in the state's favor on other grounds, but in dicta suggested that by passing the law as written, Congress indicated that it didn't think that long-sunk, abandoned vessels were traditional admiralty matters. 941 F.2d 525, 532 (7th Cir. 1991). Thus, this is another example of the possible protection that federal legislation can provide to subsequent state laws when the issue is whether admiralty law and jurisdiction have been impermissibly altered.

Clean Water Act (33 U.S.C. 1251 *et seq.*) and Oil Pollution Act (33 U.S.C. 2701 *et seq.*).

These statutes are relevant to the issue of grounded vessels due to the grant of "summary" removal authority (no seizure or abandonment required before removal) to federal response agencies in the Clean Water Act for incidents involving oil or hazardous substances:

- “(1)(A) The President shall, in accordance with the National Contingency Plan, ensure effective and immediate removal of a discharge, and mitigation or prevention of a substantial threat of a discharge, of oil or a hazardous substance –
- (i) into or on the navigable waters;
 - (ii) on the adjoining shorelines to the navigable waters;
 - (iii) into or on the waters of the exclusive economic zone; or
 - (iv) that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States.
- (B) In carrying out this paragraph, the President may –
- ...(iii) remove and, if necessary, destroy a vessel discharging, or threatening to discharge, by whatever means are available.”

33 U.S.C. § 1321. This removal authority is incorporated into the Oil Pollution Act (“OPA”) through section 2702(b)(1), but the Clean Water Act (“CWA”) is still available for incidents for which liability cannot be established under OPA. Section 2716(b)(3) of OPA authorizes the

USCG to seize⁴ and institute forfeiture proceedings against any vessel found in U.S. navigable waters without the evidence of financial responsibility for oil spills required by OPA. These express grants of authority regarding vessel removal or destruction, and vessel seizure and forfeiture, raise the significant question of whether vessels may be removed to carry out any other provision of the Act, such as the natural resource damage assessment and restoration provisions (OPA § 2706).

OPA is of particular interest to state and federal natural resource managers because this Act established the Oil Spill Liability Trust Fund (“OSLTF”), available to fund government removal actions up-front, and to pay claims for response costs and natural resource damages covered by the Act, when responsible parties refuse to pay or cannot be identified.

The scope of authority to remove vessels in order to abate a discharge or a threat has been an issue of some dispute between USCG and natural resource agencies, in that in some instances USCG will remove oil from a grounded vessel but leave the vessel in the environment. The Coast Guard has developed a set of procedures and standards for determining when a vessel may be removed under this authority⁵. The focus of USCG’s policy is a determination of whether or not removal of the vessel is **necessary** to remove the discharge of oil or hazardous substances or eliminate the threat of a discharge. This determination is made initially by an On-Scene Coordinator, considering at minimum the following factors:

- (1) The threat of pollution that would be posed by any residual oil or hazardous substance remaining on the abandoned vessel if cleanup operations were not to include disposal of the abandoned vessel;
- (2) The relative cost of cleanup operations that include disposal of the abandoned vessel, as compared with cleanup operations that do

⁴ Seizure generally involves getting a warrant for the arrest of a vessel from a U.S. District Court, and bringing the vessel into custody. The vessel must be stored and guarded while in custodial care by valid law enforcement entities. In most cases an owner is allowed to post a letter of Undertaking, or bond, equal to the value of his interest in the vessel, in lieu of the vessel and the vessel is allowed to go free. The vessel or the bond is then applied to the value of any damages judgment entered after a trial or settlement. Some statutes, like the NMSA, provide that a vessel used in violating the Act is subject to forfeiture (judicial sale) in addition to any other damages recoveries allowed under the Act, so the value of the vessel is not an offset against a damages judgment.

⁵ The procedures are cited from an internal USCG manual chapter dealing with abandoned vessels, but Coast Guard legal officials inform the author that these same considerations would apply to a vessel that was not technically abandoned according to any statutory standard.

not include disposal of the abandoned vessel; and

(3) The substantial likelihood that the abandoned vessel will be a site for future illegal dumping.

Commandant Instruction M16465.43.

Only the Commandant can approve the removal or destruction of a vessel under this authority, which the Coast Guard considers to be an “intervention” (discussed below). The Coast Guard informed the author that there have been no circumstances in which the Coast Guard removed the vessel but did not destroy it; if grounded vessels have any value that would justify salvaging the vessel, then owners or insurers usually step in to do so.

Because response costs are not required to be proved necessary, but only not inconsistent with the National Contingency Plan (OPA § 2702(b)(1)), resource managers left to fend with de-oiled vessels question the application of a strict necessity standard when removing a vessel is otherwise a feasible method of abating an oil discharge or threat of a discharge, and leaving the vessel after de-oiling would cause harm to natural resources or property of both state and federal governments. Overlaying a necessity requirement on the decision to remove a vessel also seems contrary to the language of the CWA, which includes a necessity requirement only in connection with a decision to destroy a vessel. Natural resource managers should continue to work with the USCG to determine the most appropriate application of the CWA/OPA vessel removal authority, whether by the USCG or by states themselves, particularly in the context of the Coral Reef Conservation Act’s mandate to use existing legal authorities to their full extent to protect and conserve coral resources.

As regards liability for environmental harm caused by grounded vessels, OPA and the Clean Water Act do provide for recovery by designated state, federal and tribal trustees of damages for injury to, destruction or, or loss of natural resources, with the measure of damages equal to the costs of restoration, replacement or rehabilitation of the injured resources, and reimbursement of assessment costs. Damages may be recovered through a civil action in federal court under both statutes, or from the OSLTF under OPA, as discussed above. Liability is strict, joint and several and subject to limited defenses enumerated in the Act. One federal circuit court case has interpreted OPA in such a manner that damages are only recoverable if they are caused by oiling or by the threat of oiling, including if they were caused by response actions, but not if they were caused by the incident which involved or led up to the oil discharge or threat. *Gatlin Oil Co. v. U.S.*, 169 F.3d. 207 (4th Cir. 1999). Thus, the National Pollution Funds Center (“NPFC”) has taken the position that damages for physical injuries to coral reefs or other resources caused by a grounding event are not compensable under OPA, even if the grounding leads to an oil spill. The OPA trust fund was used to pay restoration costs associated with the removal of 9 long-stranded fishing vessels from Pago Pago harbor, in American Samoa. However, the unique circumstances of this incident caution against assuming that the OPA fund will be broadly available for vessel removal. In this case, there was extreme interest by one of American Samoa’s senators in getting the federal government to assist in the removal of these vessels. On

the other hand, given that no vessel owners could be identified or contacted, there was no responsible party mounting an active challenge to interpreting OPA to allow payment of these costs. The USCG stuck to its position that their authorities did not allow them to remove these vessels as a pollution response, because they could effectively remove the oil from the vessels without removing all portions of the vessels. In the end, the trustees' restoration plan identified removal of the vessels as an action to compensate for the harm caused by the USCG's response actions of removing the oil from the vessels, which included building structures on top of coral resources. Thus, in the future, trustees seeking payment of natural resource damages claims from the OPA fund to pay for vessel removal must show that the removal embodies restoration, replacement, rehabilitation or acquisition of the equivalent of natural resources injured, destroyed or lost as a result of oiling or as a result of a substantial threat of oiling, including injuries caused by response actions.

NOAA has recovered damages in settlements pursuant to OPA for physical injury to coral resources caused by response vessel activities. Further, natural resource trustee agencies are authorized to recover the costs of activities to initiate damage assessment investigations under OPA, and in a recent NOAA case, the NPFC and the responsible parties for a grounding incident recognized that these initiation costs include investigations to determine whether response actions necessitated by the grounding resulted in any natural resource injury (NOAA's claim was paid from the OSLTF). In other incidents, NOAA has been prepared to argue, consistent with common law causation principles, that if response actions clearly result in natural resource injury, and the injuries caused by response actions are indistinguishable from injuries caused by the initial grounding, that the burden shifts to the responsible party or the NPFC to demonstrate which injuries are excluded from OPA's coverage; if injuries cannot be partitioned, then restoration costs for all injuries should be compensable under OPA. NOAA and the Commonwealth of Puerto Rico recently recovered damages for physical injury to reef resources in an OPA settlement based on this theory of indivisible injury.

Natural resource damages claims under OPA must be brought within 3 years of the completion of a damage assessment conducted in accordance with the regulations at 15 CFR Part 990, or 3 years from the date on which the loss and its connection with the discharge are reasonably discovered with the exercise of due care. Natural resource damages claims under OPA must be based upon a publicly-reviewed restoration plan that may be presented to the Oil Spill Liability Trust Fund after being presented and refused by the responsible parties.

Lastly, OPA specifically preempts the shipowners' Limitation of Liability Act (the preemption has been upheld by the courts), and waives federal preemption of state laws that would impose additional liability for oil discharges. (OPA § 2718).

Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601 *et seq.*

The Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") provides authority to federal and state governments to respond to releases or substantial threats

of releases of hazardous substances from facilities into the environment. The Act establishes a tax-derived fund (“the Superfund”) to pay for governmental response and removal costs up-front, in advance of governmental civil actions to recover these costs from responsible parties. CERCLA also imposes liability for natural resource damages resulting from releases of hazardous substances, subject to limited enumerated defenses, but damages must be recovered through civil lawsuits in federal court and the Superfund is not available to pay these claims. The President delegated authority to the Department of Transportation to respond to releases of hazardous substances in the coastal zone (E.O. 12316), as defined in the National Contingency Plan (40 CFR § 300.6). The Secretary of Transportation redelegated authority to the Commandant to respond to releases and threats of releases from vessels, and the Commandant in Coast Guard Headquarters has not redelegated authority to remove or destroy a vessel as part of a CERCLA response action (*see, e.g.*, 49 FR 574 and 53 FR 30259). Commandant Instruction M16465.43, discussed *supra* expresses the Coast Guard’s policy toward removing and destroying a vessel that is releasing or poses a substantial threat of a release of hazardous substances. Thus, such removal and destruction must be necessary to remove the release or abate the threat. In sum, then, CERCLA provides an additional source of money for designated federal response agencies to remove vessels discharging or threatening to discharge hazardous substances.

Intervention on the High Seas Act, 33 U.S.C. 1471 *et seq.*

This Act implements two international treaties, the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (1969) and the International Protocol Relating to Intervention on the High Seas in Cases of Marine Pollution by Substances Other than Oil (1973). Thus, the Act is primarily concerned with the actions of foreign flag vessels. The two conventions are substantially similar, and the oil pollution intervention treaty provides, among other things, that:

“Article I. (1) Parties to the...Convention may take such measures on the high seas as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution or threat of pollution of the sea by oil, following upon a maritime casualty or acts related to such a casualty, which may reasonably be expected to result in major harmful consequences.”

The Convention prohibits actions against warships or vessels owned or operated by a nation and used only for governmental, non-commercial purposes. The Convention has a detailed requirement to notify and consult with affected countries prior to taking measures under the Convention, and requires that damages be paid by the country taking action if the actions are in contravention of the Convention.

“Intervention” is not specifically defined in the Conventions or in the Intervention Act, but is discussed in several parts of the Code of Federal Regulations as:

“any detrimental action taken against the interest of a vessel or its cargo without the consent of the vessel’s owner or operator.”

See, e.g., 33 CFR § 1.01-80(e)(2), FWPCA and OPA 90 delegations.

The Intervention Act provides that:

“Whenever a ship collision, stranding, or other incident of navigation or other occurrence on board a ship or external to it resulting in material damage or imminent threat of material damage to the ship or her cargo creates, as determined by the Secretary [of Transportation], a grave and imminent danger to the coastline or related interests of the United States from pollution or threat of pollution of the sea by convention oil or of the sea or atmosphere by a substance other than convention oil which may reasonably be expected to result in major harmful consequences, the Secretary may, except as provided for in section 10 [33 U.S.C. § 1479], without liability for any damage to the owners or operators of the ship, her cargo or crew, or to underwriters or other parties interested therein, take measures on the high seas, in accordance with the provisions of the convention...to prevent, mitigate, or eliminate that danger.”

33 U.S.C. § 1472. Section 1473 of the Act provides that a determination of grave and imminent danger to the coastline or related interests shall consider interests directly or indirectly threatened and including, but not limited to, human health, fish, shellfish, and other living marine resources, wildlife, coastal zone and estuarine activities, and public and private shorelines and beaches. Section 1477 provides that actions taken under the Act must be proportionate to the actual or threatened damage to the coastline or related interests, and may not go beyond what is reasonably necessary to prevent, mitigate, or eliminate the threat. The Act codifies the Convention’s notice and consultation procedures and its requirement that the state taking action, in this case the United States, pay compensation for damages caused by actions taken which exceed those reasonably necessary to eliminate the threat to coastal and related interests.

Thus, the interests protected by the Conventions and the Act are broad, and potential actions to protect those interests are unlimited in nature so long as they are proportionate in scope to the harm or threat created by a maritime casualty. The proportionality requirement is similar to the Coast Guard’s internal policy implementing the Clean Water Act / OPA vessel removal and destruction authority, wherein removal and destruction of the vessel must be necessary to remove the pollution discharge or threat.

The Conventions’ triggering standard of grave and imminent danger, however, is on the face of it quite high.

Endangered Species Act, 16 U.S.C. 1531 *et seq.*

This Act, administered by the Departments of the Interior and Commerce, authorizes the seizure of vessels without a warrant for civil and criminal violations of the Act (e.g., a take of an endangered species, which may include destruction of designated critical habitat), which are also punishable with penalties. Seized vessels used to aid in a taking in a criminal violation of the Act (knowing taking) are subject to forfeiture to the United States. The Act provides for injunctive relief to enjoin any person from violating the Act. NOAA has informally discussed using this provision to seek a court order for removal of a grounded vessel that is harming or threatening to harm a listed species or its designated critical habitat, which includes many coral reef systems, and ordering habitat restoration in circumstances where if not restored the habitat injury would result in continuing takes, but neither of these theories have been tested in court actions.

National Marine Sanctuaries Act, 16 U.S.C. 1443 *et seq.*

This Act is administered by NOAA, but requires concurrence in certain decisions by states in which the sanctuaries are located. The Act is only applicable to the resources of national marine sanctuaries established in accordance with the agency rulemaking provisions of the Act. A vessel which is suspected of being used to violate the Act may be seized and such vessel is subject to forfeiture to the United States as a recovery separate from civil penalties, natural resource damages, and response costs. Response actions include actions to minimize destruction, loss, or injury of sanctuary resources, or to minimize the imminent risks of such destruction, loss or injury, including seizure and forfeiture. Given the express authority to seize vessels, it may not be implied that grounded vessels can be summarily removed and/or destroyed under the Act, and unfortunately the NMSA does not include a definition of abandoned vessels. Injunctive relief is available under the Act to abate imminent risk of destruction, loss or injury, and/or to restore or replace already-destroyed, injured or lost sanctuary resources. Though this provision clearly could be used to secure a court order for removal of grounded vessels, in most instances where a vessel owner has not already instituted salvage of his vessel, the owner does not have the resources to fund vessel removal and an injunction would be futile. The Act has been interpreted by courts as imposing strict, joint and several liability for damages for injury, destruction or loss of sanctuary resources (*See, e.g., U.S. v. Great Lakes Dredge & Dock Co*, 259 F.3d 1300 (11th Cir. 2001)), and vessels causing injury are liable in rem in addition to persons causing the injury. Damages recovered through civil actions in federal district court are used for restoration and reimbursement of assessment costs. Finally, the Act expressly preempts the vessel owners' Limitation of Liability Act. 16 U.S.C. § 1443(a)(4). There is no source of funding other than appropriated monies and civil lawsuit recoveries for NOAA to implement this Act.

Park System Resource Protection Act, 16 U.S.C. § 19jj

This Act is applicable to the resources under the jurisdiction of the National Park Service. Vessels that destroy or cause injuries to park system resources are liable in rem, in addition to

persons causing the injury, subject to limited defenses. The Act has been interpreted as imposing strict, joint and several liability, and although silent on the matter the Act has been interpreted as having preempted the vessel owner's Limitation of Liability Act. *In re. Tug Allie-B, Inc.*, 114 F. Supp. 2d 1301 (M.D. Fla. 2000), *affirmed*, No. 00-15305, 11th Cir., November 16, 2001. The Act authorizes recovery through civil lawsuits in federal courts of natural resource damages and response costs for "all necessary actions to prevent or minimize the destruction, loss of, or injury to park system resources, or to minimize the imminent risk of such destruction, loss or injury," 16 U.S.C. § 19jj-2(b), but does not expressly authorize removal of grounded vessels, and does not define abandoned or derelict vessels. Natural resource damages recovered are used for restoration. There is no source of funding other than appropriated monies and civil lawsuits for the Park Service to implement this Act.

Magnuson Stevens Fishery Conservation & Management Act, 16 U.S.C. 1801 *et seq.*

This Act which regulates commercial and recreational fisheries primarily through the establishment of fishery management councils to develop fishery management plans, seems to have little practical relevance to the issue of grounded or abandoned vessels, other than that the Act does authorize that vessels used in violation of the Act or its regulations are subject to forfeiture to the United States. Thus, arrest of the vessel and a trial on an alleged violation of the Act would be necessary to remove a vessel and recover the costs of arrest and maintenance. No provisions of this Act provide or imply authority to recover costs to restore habitat injured through violations of the Act.

Coastal Zone Management Act, 16 U.S.C. 1451 *et seq.*

This Act provides no authority for the federal government to act directly to remove grounded or abandoned vessels, or to bring suits for damages. This Act is primarily a vehicle for the federal government, through NOAA, to provide grants to states for various purposes which could be interpreted as covering vessel removal actions. However, if states do not possess independent state authority to remove abandoned or derelict vessels, it would be highly inadvisable to read this Act's broad language regarding managing, protecting and restoring resources to provide such authority.

Public Vessels

Government ownership or operation of vessels may affect the actions that can be taken against such vessels if they run aground. A potential plaintiff must initially evaluate whether principles of sovereign immunity will shield the government party from being sued at all, or from liability for money damages. For example, the Oil Pollution Act excludes discharges or threatened discharges from public vessels from OPA's liability coverage (33 U.S.C. § 2702(c)(2)), but the Act provides that the Oil Spill Liability Trust Fund will pay claims caused by spills from these vessels. The Suits in Admiralty Act, 46 U.S.C. 741 *et seq.*, and the Public Vessels Act, 46 U.S.C. 781 *et seq.*, waive sovereign immunity of the United States for damages caused as a result of a vessel or cargo owned, in possession of, or operated by or for the U.S., for any suit in

admiralty that could have been maintained if the vessel was privately owned and if a private vessel owner in the same circumstances would have been liable in personam. However, these Acts limit harmed parties to bringing suits in personam against the U.S., and prohibits seizure of U.S. vessels and in rem actions against such vessels (the U.S. can consent to seizure of its vessels if necessary to limit its liability). Suits must be brought within 2 years after the cause of action arises, and the U.S. reserves to itself the benefit of all exemptions, defenses and limitations of liability that a private owner or operator of a vessel would have. Foreign nationals harmed by U.S. vessels or cargo may not bring an action against the U.S. under this Act unless the laws of that person's nation would allow suits by U.S. citizens under similar circumstances.

Insurance Parameters

Informal conversations with maritime insurance industry representatives suggests that this may not be a fertile area for seeking solutions to the problem of grounded or abandoned vessels. Maritime insurance matters are regulated far less extensively than auto or homeowners insurance, and there are no general legal requirements that vessels carry insurance to cover damages resulting from collisions or sinkings, or costs of vessel removal. These informal conversations suggest that the costs of policies to cover grounding damage to natural resources or vessel removal would be prohibitive to a significant segment of the boating community; small to medium fishing operators have long suggested that insurance requirements would put many of them out of business. Many marine insurers do not write policies for vessels under 26 feet in length, or provide limited coverage for such vessels. Some insurance companies pay the full cost of wreck removal, while others do not cover wreck removal at all. Some insurers may pay off a total loss claim on the vessel but leave the owner responsible for the removal or any further liability caused by a collision with the wreck. Since hull policy coverage is usually based upon market value of the vessel as determined by a recent survey, not on replacement value, the cost of wreck removal may often exceed the insured value of the vessel. In these situations, the owner may take the insurance payment and abandon the vessel.

In admiralty law, vessel removal costs have typically been paid under insurance policy "sue and labor" clauses, covering sums spent by an insured in efforts to mitigate damage and loss once an incident has occurred, if a policy does not have a clause specifically covering vessel removal costs.

Vessel salvage must be distinguished from wreck removal, the latter referring to a vessel that is a total loss as a result of a maritime casualty. Hull salvage is usually paid by a hull insurance underwriter and wreck removal costs are usually paid by excess underwriters such as Protections and Indemnities ("P&I") underwriters.

An owner may abandon his or her vessel to their hull insurance underwriter, but the underwriter does not have to accept abandonment. As discussed briefly above, the hull underwriter cannot raise abandonment as a defense and cannot invoke the Limitation Act if abandonment has been accepted, so there may be risk of exposure to claims from third parties. Both the owner and the hull underwriter may abandon to a P&I underwriter, in which instance the P&I underwriter

would be required to pay for vessel removal if the owner would have been legally liable to remove the vessel.

Under OPA, responsible parties for certain vessels are required to establish and maintain evidence of financial responsibility sufficient to meet the maximum amount of liability that party might be subject to under the Act - which should include the costs of vessel removal as a response action.

Draft Wreck Removal Convention

There is no applicable statute on this matter as this international convention being sponsored by the International Maritime Organization is still in draft form, and is at least 3 to 4 years away from being offered up for signature and ratification. However, if the United States enters into this convention and passes implementing federal legislation, it would provide enormous assistance with the problem of wrecked foreign flag vessels. Such a statute should be amenable to including domestic wrecks within its coverage.

The Draft Wreck Removal Convention (“DWRC”) would apply to ships of any kind operating in the marine environment comprised of the exclusive economic zones of signatory nations. The DWRC defines “wrecks,” “maritime casualties,” “hazards,” and “removal,” and its objective is to authorize state parties to take measures established under the Convention to remove wrecks posing hazards. Measures must be proportionate to the hazards posed by wrecks, though there is no liability imposed for disproportionate measures taken and causing damage. The Convention is not applicable to warships or ships operated by governments in non-commercial service, and the Convention doesn’t apply if liability is otherwise established by other international conventions, such as the Intervention Convention discussed above. There are a number of responsibilities imposed upon state signatories to the Convention. First, states must require its citizen shipowners to report to an affected state if any of its ships become wrecks, to include information on location, size and type of wreck, nature of damage and condition of wreck, nature of the cargo and nature of any oil on the vessel. Affected states are required to make the determination of whether a wreck comprises a hazard. The criteria for determining a hazard are similar to the navigational hazard criteria used by the ACOE under the Rivers and Harbors Act (*supra*), and include additional criteria such as the proximity of the wreck to particularly sensitive sea areas, the nature of the cargo and oil aboard, and damage to the marine environment that would result if such were released, proximity of offshore installations, pipelines, and telecommunication structures, and any other circumstances that necessitate the removal of the wreck. The party state affected by a wreck has the responsibility to take all reasonable steps to mark wrecks that are hazards. If a state determines that a wreck is a hazard the state must immediately inform the shipowner. Shipowners must remove wrecks determined to be hazards. Affected states can set reasonable conditions on the removal and can establish deadlines, after which the state may remove the wreck at the shipowner’s expense.

Affected party states may undertake immediate removal in emergency circumstances. Party states are also required to establish a system of providing certification that shipowners of ships

of a certain length (not yet determined), carrying the flags of their states, have insurance or other financial security to cover liability that might arise under the Convention.

A shipowner's defenses to financial liability under the Convention include: a maritime casualty leading to the wreck resulted from an act of war, hostilities, civil war, insurrection, or a natural phenomenon of an exceptional, inevitable and irresistible character; or the casualty was caused wholly by an act or omission done with the intent to cause damage by a third party; or the casualty was wholly caused by the negligence or other wrongful act of any government or other authority regarding its responsibilities to maintain lights or other aids to navigation. International and national legal principles of limitation of liability are also available to shipowners.

Actions for compensation may only be brought in the courts of the state affected or threatened by a ship or a wreck. Claims must be brought within either 3 years of the date when the state determined that a wreck comprised a hazard or 6 years from the date of the maritime casualty. Claims may be brought against the shipowner or directly against an insurer. An insurer may raise all of the defenses available to the shipowner, including limitation of liability, and the additional defense that the maritime casualty was a result of the wilful misconduct of the shipowner.

The Convention does not expressly address the scope of costs and damages that are recoverable from shipowners, but does not appear to contemplate damages for harm to the marine environment.

Bad Karma: The Grounded Sailboat that Fell Through the Federal Statutory Gaps

In late 2000, NOAA was contacted by a resource manager for the Commonwealth of Puerto Rico seeking assistance with a particularly annoying grounded vessel incident. The vessel, after being stripped of equipment, superstructure, and fuels, was taken to a small island offshore, and intentionally sunk by its operator, who planned to run ecotourism snorkeling trips from the mainland to the grounding site. The vessel was sunk in an area of seagrass that has been designated as critical habitat for several endangered sea turtle species. Further, the vessel was not stationary and threatened to move from the seagrass into a nearby coral reef habitat. Thus, Puerto Rican resource managers anchored the vessel to prevent its threat to the reef. The would-be entrepreneur was known to the resource managers, and he consistently refused to remove the vessel from the state's property.

Puerto Rico did not evaluate whether they had state authority to remove the vessel, but they knew they did not have funds immediately available to manage the incident themselves, and they were concerned that winter storms would move the vessel around and cause more environmental

harm. So they contacted NOAA. NOAA resource managers contacted EPA, USCG, ACOE, and the U.S. Navy, leading to these agencies' judgments that the Ocean Dumping Act, the Clean Water Act, the Rivers and Harbors Act, the Intervention Act, OPA, and agency operational authorities were all unavailable as authorities to remove this vessel. The vessel was not in a national marine sanctuary or a national park, making the NMSA and 19jj inapplicable. NOAA began investigating whether the Endangered Species Act could be used for this incident. National Marine Fisheries Service ("NMFS") agents, charged with enforcing the Act, began investigating the operator who divulged that he didn't actually own the vessel, he had sold it to someone whose last name he didn't know, but then sunk the vessel anyway. The NMFS could not uncover any records of ownership of the vessel, complicating the question of whether to seize the vessel - a costly proposition given the condition of the vessel and its location offshore, and the operator's clearly insolvent status. NOAA began investigating the injunctive relief provision of the Act, which would have required a showing that the action to be enjoined was violating the Act - causing a take of an endangered species through destruction of designated critical habitat - an approach to defining take that hasn't been tested yet. The vessel remains where it was intentionally sunk.

Filling the Gaps: Possible Amendments to Federal Statutes, New Federal Statutes, New State Laws

In general, the appropriate option for legislation depends upon (1) whether a federal or state agency needs to exercise the authority, and (2) the nature and extent of the problem needing to be addressed. If a federal agency needs new authority then obviously a change to federal law is required. If the authority desired seems like it would raise admiralty preemption issues, as in the *Kellum* case with strict liability for environmental damage, then a federal statute that notes the unavailability of an appropriate remedy in admiralty law, grants both federal and state agencies authority to act under the federal law, and waives preemption of additional state regulation on the same subject might be an appropriate approach, rather than the states risking a *Kellum*-like outcome and having their state laws held unconstitutional. It may be ill-advised to try and amend certain federal statutes, such as the Clean Water Act, the Endangered Species Act, or natural resource damages provisions, because these Acts have been controversial for years and proposing even limited, popular amendments may cause opponents of these statutes to try and attach unrelated, detrimental measures.

Any new legislation that establishes new sources of monetary liability will likely be heavily scrutinized at the level of the federal government, particularly if it resembles the perceived inequities of natural resource damages provisions like those under OPA which have been under fire for many years. On the other hand, protecting and restoring coral has been one of the most popularly supported types of environmental legislation in the federal government. Thus, interested parties also need to assess whether they would be well served with new authorities that only apply to coral resources, or whether other resources are at equal or greater risk from vessel groundings and abandonments.

States are fairly free to pass legislation granting themselves authority to remove abandoned vessels and recover their removal costs from vessel owners or from sale of the vessels, so long as their laws don't conflict with federal law. Many states have passed such removal legislation (reviewed in the appendix), and there are some key provisions that should be included in any new legislation, such as a definition of abandonment.

If the desired outcome is a new source of up-front funding for vessel removal or restoration, this raises additional needs for analysis and challenges for new legislation. New funding would generally either have to represent an increase in federal agency appropriated funds, either to act directly on a problem or to pass to the states as grants, a redirection of existing levels of federal agency appropriated money to fund these new initiatives to the detriment of other funded activities, or fund raising initiatives such as user fees or taxes of some sort, with the latter expected to be controversial at the federal level.

The following represents fairly non-critical brainstorming by the author, and has not yet had the benefit of focused input from affected resource management agencies or the agencies that administer these laws. These legislative proposals are presented to generate thought, discussion and new ideas:

A. *New Federal Vessel Removal Authority*

(1) Amend the Coral Reef Conservation Act of 2000, 16 U.S.C. § 6401. This Act created the federal interagency coral reef task force, and, among other things, charged the federal agencies with proposing new legislation if a review of existing authorities proved the latter to be insufficient to protect, conserve and restore coral reef ecosystems. Thus, amendments to deal with grounded and abandoned vessels that are harming coral reef ecosystems would not start on controversial footing.

The Act could be amended to define vessel abandonment in terms of time since grounding, and allow for removal and destruction or sale of abandoned vessels, provide immediate removal authority for certain circumstances, such as the vessel threatening to move and destroy new coral resources, and provide for injunctive relief to order owners to remove grounded vessels. The amendments should provide for recovery of all costs of recovery, notice, sale and destruction, with recovered funds deposited into a revolving fund immediately available to the agency to use for future vessel removal actions under the Act. Amendments could make abandonment on coral reefs or in coral reef ecosystems unlawful, and impose penalties for abandonment and failure to remove, though such provisions would probably require a law enforcement and administrative hearing apparatus in the enforcing agency. The amendments should hold the acting agency harmless from any damage caused to the vessel or any interests in the vessel, when they properly exercise their removal authority. The amendments could designate both federal and state agencies empowered to exercise the new authorities, and waive federal preemption of state laws seeking to compliment the removal authority. The amendments should expressly preempt the vessel owners' Limitation of Liability Act.

(2) Amend the Abandoned Shipwreck Act. Amendments to this Act could authorize states to dispose of vessels to which they've acquired title under the Act, if the vessels are not capable of providing the historical appreciation and recreational opportunities envisioned in the Act.

(3) Amend the Abandoned Barge Act. Amendments could broaden the Act's scope to include vessels less than 100 gross tons, and to include any abandoned vessel causing or threatening to cause harm to natural resources of the United States including the states and territories. The amendments could authorize either state or federal agencies with jurisdiction over the affected resources to exercise the removal authority, and seek recovery of their costs. The Act should be amended to allow fines recovered for penalties to be deposited into a revolving fund outside the general fund of the U.S. Treasury, to be used to fund future vessel removals, including through grants to states. This Act would be most useful if amended to include a new source of funding with which to remove abandoned barges if owners refuse or are unable to pay for removal.

(4) Amend the Endangered Species Act. This Act could be amended to expressly allow for removal or seizure of vessels that are causing an actual or threatened take of an endangered species, expressly including destruction of critical habitat. The amendments could allow for forfeiture of the vessel to the United States if the Act is found to have been violated. This amendment seems less useful than many others discussed in this section, and as discussed above, would likely attract proposals for amendments detrimental to the Act.

(5) Amend the Clean Water Act. This Act could be amended to make abandonment of vessels in certain habitats an express violation of the Act (an 'unlawful discharge of pollutants'), and to allow for vessel removal, forfeiture, penalties, and natural resource damages - many of which are already provided by the Act. As discussed above, the Clean Water Act has been controversial at times and trying to amend this Act to address limited problems may be counterproductive.

(6) Amend the Oil Pollution Act. OPA could be amended to expressly authorize vessel removal as a response action to remove a discharge or eliminate a threat of a discharge if the vessel left aground after oil removal would violate other environmental laws (e.g., the ESA, the MMPA), without a showing that removal of the vessel was absolutely required to remove the discharge or threat. If this is not considered a change in existing law, the Coast Guard could amend its Commandant Instructions to clarify that this authority exists. It should be noted that the Coast Guard has expressed concern that stepped-up use of the Fund for these non-traditional uses would dissipate the Fund, and they are concerned that Congress would refuse to reinstate the OPA tax on oil imports that is the source of money in the Fund.

(7) Amend the NMSA and the PSRPA. These Acts should be amended to include definitions of abandoned and derelict vessels, and provide explicit authority to remove,

sell, or destroy such vessels (and although the 11th Circuit has ruled these Acts impose strict, joint and several liability and are immune from the Limitation Act, amendments to make these interpretations explicit would avoid having to defend future lawsuits on these grounds).

B. New *State Vessel Removal Authority*

There should be no real legal impediment to a state passing its own laws to grant itself authority to remove abandoned vessels and recover its costs, so long as such laws do not conflict with federal law. There are, however, several advisable provisions to include in such laws, including:

- define “abandoned” and/or “derelict” vessels, to cover both vessels left unattended for a prolonged period of time and vessels that are falling apart which are desirable to remove prior to the running of the abandonment period;
- include a public notice procedure to allow lien holders to come forward after removal, but allow for waiver of lien holder interests if they don’t respond to the notice;
- making abandonment unlawful provides a platform to impose penalties on vessel owners, operators, lessees, licenses, and possibly lien holders;
- identify the state entities that can exercise removal authority, and hold them harmless for any damages caused by or during the removal, including damage to lienhold interests;
- provide for summary removal authority (e.g., before abandonment is met, before public notice period is expired) if vessel is a serious hazard to navigation;
- include statement that law shall not be interpreted as conflicting with federal law;
- hold owners, operators, and lessees liable for state’s removal and associated costs, e.g., notice, storage, sale (holding the vessel liable in rem invokes admiralty jurisdiction);
- include injunctive relief provision allowing a court to order an owner to remove a derelict vessel or a vessel which hasn’t become abandoned;
- include civil penalties for failing to obey order to remove, and for abandonment, in addition to costs of removal;
- provide authority to sell removed vessels at auction, take title for state use, or dispose of the vessels;
- provide for deposit of fines and costs recovered into a revolving abandoned vessel removal fund, to pay for future removal actions without an act of the legislature to appropriate the money, and establish the fund as interest-bearing.

C. New Authority Imposing Damages Liability for Environmental Harm

Given the *Kellum* case, if interested states are seeking to impose strict, joint and several liability for damages caused by vessel groundings, a federal law should be considered as an initial platform. Such a federal law could be saved from constitutional challenges with legislative history and policy statements in the act that note that admiralty law does not provide a sufficient remedy for the harm to natural resources addressed in the new

act. Otherwise, states should not be hampered from imposing new liabilities for damage to their property caused by the negligence of owners or operators of vessels that run aground in their territorial waters.

Amending the Coral Reef Conservation Act of 2000 would be a logical vehicle for a new federal liability provision, and the author and other federal members of the Coral Reef Task Force have extensive experience with natural resource damages provisions to guide the crafting of new legislation. Given the focus of this Act, however, resource managers would have a continuing burden to establish that the injured resources for which damages are sought are “coral reef ecosystem” resources.

Designating new national marine sanctuaries or new national parks would bring new areas under the auspices of these Acts, with their provisions regarding vessel removal or seizure discussed above. However, these Acts have some meaningful limitations, also discussed above. For instance, the NMSA and PSRPA could be improved through amendments defining abandoned and derelict vessels and allowing their removal, 19jj could benefit from express preemption of the Limitation Act, and both could benefit from express recognition that the standard of liability is strict, joint and several.

A stand-alone “abandoned and grounded vessels causing environmental harm” statute could be drafted to provide both removal authority and damages liability. Such a law could designate resources, or habitats, or types of harm to be covered, based upon statistics regarding areas that are most impacted or most at risk from these incidents. Such a statute could also be used as an umbrella to accomplish all of the minor conforming amendments to other statutes such as the Clean Water Act while hopefully avoiding opening these other laws up for widespread deleterious amendments.

The Coastal Zone Management Act could be amended to make it express that some of the actions for which grants are awarded include removal of vessels, if the state grantee is otherwise authorized to remove vessels under state law. The Act could also be amended to include a new section on grounded and abandoned vessels not covered by other existing federal authorities, providing NOAA, directly or through grants to the states, authority to remove abandoned vessels and restore harm caused by such vessels.

D. New Funding Sources, For Removal or Restoration

(1) OPA Fund. The Fund should be made expressly available, through legislation or policy directives, to remove vessels if such removal is one feasible option to deal with a discharge or threat of a discharge, particularly if leaving the vessel aground would cause continuing injury to natural resources of the United States including its states and territories, because such ongoing harm then becomes the result of a response action decision.

(2) Abandoned Barge Act Funding. Affected federal agencies could coordinate an effort

to seek increased funding for removal of vessels covered by this Act, that could be based upon the database of abandoned vessels that the USCG is required to maintain under the Act.

(3) Federal Grants to States. The Coastal Zone Management Act, the Land and Water Conservation Fund, the Federal Aid to Wildlife Restoration Fund, the Aquatic Resources Trust Fund, the Sportfish Restoration Account - are grant and aid programs providing federal funds to states for resource management purposes. Some or all of these sources may allow states to use the money received to remove vessels and restore habitats damaged by grounded vessels, though some of the underlying authorities might need to be amended to clarify these purposes, and the states have to have their own express authority to remove vessels and to restore habitats. However, unless increased revenues were moved into these accounts, states would likely be reallocating the funds that they already receive to vessel removal/restoration purposes. This author is not yet familiar enough with these accounts and their revenue sources to know whether additional monies can be deposited or appropriated through a legislative mechanism, without robbing Peter to pay Paul.

(4) Boating and Fishing Fees, Licenses, Permits. Parks and protected areas can or could charge use fees that could be allocated to fund vessel removal activities. Fees for fishing and boating licenses or permits could be moderately raised statewide to fund abandoned vessel accounts and activities, though this would clearly be a political issue – raising fishing license fees by \$2 statewide in Florida to pay for its vessel removal programs was raised in the legislature and vetoed by the governor.

(5) Abandoned Vessel Funds. A few states have established abandoned vessel funds, consisting of appropriated money and any recoveries from vessel removals, sales and penalties. Local governmental units typically apply to these funds for grants for specific vessel removal projects. One criteria used to review grant applications by several states is whether the entity seeking funds has an active enforcement program to prevent vessels from becoming abandoned or for getting them removed by their owners or operators, before seeking state monies.

(6) Other?

Next Steps

State and federal coral reef stakeholders must determine whether their ability to appropriately manage grounded and abandoned vessel issues is hampered by a lack of effective legal authorities, by a lack of up-front funding, or both.

As regards legal authorities, stakeholders must determine whether the patchwork of existing laws, including state and federal statutory law and admiralty common law, provides sufficient

authority to manage all, most, or their most pressing grounded/abandoned vessel problems. It would be most useful if these determinations by various jurisdictions were made on the record, through documentation of case histories, and desk top application of existing authorities to problem vessels, old and new, to illustrate how the vessels fall through which holes in the various statutes. Part of this analysis should determine whether authorities which require court action to recover funds prior to removing a vessel, such as admiralty torts, are workable, or whether up-front funding to remove vessels is essential, and why. This record, coupled with a database on the nature and extent of each jurisdiction's past and ongoing grounded/abandoned vessel problem will provide critical input to the deliberation on what type of new legal authorities to pursue. As discussed above, a database that would illustrate the need for new legal authorities might need to include: the number and types of vessel groundings and abandonments that occur in affected jurisdictions; ownership and insurance status of these vessels; the existence of vessel salvage equipment and expertise in the jurisdiction; any information on the costs of past vessel removal exercises; the existence and efficacy of state laws in dealing with these vessels; the types of natural resources affected, the nature of the impacts thereto, and the availability and costs of restoration techniques to address these impacts; and the political potential for new legislation in the jurisdiction. All jurisdictions should also analyze whether grounded and abandoned vessels are significantly impacting resources other than coral; there may be only one bite at the apple when seeking new legislation and it might be prudent to have a new law that covers all resources and ecosystems adversely affected by these vessels.

As regards sources of up-front funding, coral reef stakeholders should investigate existing federal grant and aid programs, to determine whether they have applied for all funds which would legally be available to address grounded/abandoned vessels, or to determine whether more monies are available from these same sources. Creative brainstorming on new sources or new approaches to funding should be undertaken. For example, stakeholders may want to consider seeking funds to address single or a few specific vessels, such as supplemental appropriations from congress, or grants or endowments from charitable trusts and foundations.

APPENDIX

Brief Review of Some State Vessel Removal Laws⁶

Alaska, Alaska Statute §§

- § 30.30.010 It is unlawful to store or leave a vessel in a wrecked, junked or substantially dismantled condition or abandoned on any public waters, or at ports or harbors of the state without government permission. Derelict vessels (defined at § 30.30.090) may be removed from public waters by the state if they obstruct or threaten to obstruct navigation, contribute to air or water pollution, or constitute a danger or potential danger to the environment. States that this section shall not be construed to contravene federal law.
- § 30.30.020 Vessels left unattended for continuous period of more than 30 days in waters of the state, on public property, or on private property without owner's permission may be taken into custody by the state and disposed of. Violations of statute are criminal misdemeanors punishable by fines up to \$500 and/or imprisonment for up to 6 months.
- § 30.30.030 Prohibitions against leaving vessels unattended may not apply in un-incorporated areas if it is the custom or locally-accepted practice to leave vessels unattended and they don't obstruct navigation.
- § 30-30-040 Notice procedure required (on vessel, to registered owner by certified mail, and to all lien holders - giving 20 days to repossess vessel) after vessels taken into custody and prior to sale or disposal.
- § 30.30.050 Non-repossessed vessel may be sold at public auction or if not sold disposed of, donated to government agency, or junked.
- § 30.30.060 Vessel in custody may be repossessed by payment of all state's harbor fees, towing, storage, appraisal, notice, and other costs.
- § 30.30.070 Public auction not required if appraised value of vessel is less than \$100.
- § 30.30.090 "Derelict vessel" = vessel left unattended for a continuous period of more than 24 hours if (1) vessel is sunk or in immediate danger of sinking, is obstructing a

⁶ "State" or "government" is used throughout in describing the authorities and responsibilities, in lieu of noting each statute's particular delegation of such duties to specific state agencies.

waterway, or is endangering life or property; or (2) vessel has been moored or otherwise left on the waters of the state or public property contrary to law, or the vessel has been left on private property without owner's permission and either (i) the vessel's certificate of number has expired and the registered owner is not longer at the last address listed; (ii) the last registered owner disclaims ownership and the current owner's name or address cannot be determined; (iii) the vessel I.D. numbers have been obliterated or removed; or (iv) state or USCG records indicate that the vessel has never been registered or documented and the owner's name and address cannot be determined.

§ 30.30.110 - 30.30.150 Relate to vessels abandoned on business premises of owner in vessel repair business.

California

Harbors & Navigation Code

§ 522 "Abandoned property" = any hulk, derelict, wreck, or parts of any ship, vessel or any other watercraft sunk, beached, or allowed to remain in an unseaworthy or dilapidated condition upon publicly owned submerged lands, salt marsh, or tidelands within municipal or public corporate limits without its consent for longer than 30 days without a watchman or other person in charge of the property

The municipal or public corp. may take title for purposes of abatement without any liability for tax liens on the property, and may sell, destroy, or dispose of such in any manner. If the public entity sells the property, it must satisfy outstanding tax liens.

Provisions for owner to reclaim property, if property is removed in specified time period; may be liable for public or municipal costs incurred with respect to the abandoned property.

§ 524 Any peace officer may remove, after a reasonable period, a vessel from private property if the vessel has been involved in, and left at, the scene of a boating accident and no owner is available to grant permission for removal; cannot remove if owner has been contacted and refuses to grant permission for removal.

§ 525 Unless for urgent and immediate concern for the safety of those aboard a vessel, no person shall abandon a vessel upon a public waterway or on public or private property without consent of property owner or person in lawful possession of the property.

The last registered owner of a vessel abandoned as above is responsible for the abandonment and liable for costs of removal and disposition.

Violation of section is an infraction incurring fines of \$500-\$1,500; 80% of fines recovered deposited into Abandoned Watercraft Abatement Fund to be used exclusively, upon appropriation by the legislature, for grants to local agencies for abatement, removal, storage, disposal. Grants evaluated with great weight placed on 2 factors: existence of an active local enforcement program to control and prevent abandonment of watercraft, and existence of a submerged navigational hazard abatement plan. Grants must be matched by 10% contribution by local agency. Grants not available for abatement, removal or storage of commercial vessels.

See www.dbw.ca.gov/aw_grants.htm for information on California's Abandoned Watercraft Abatement program and fund.

Public Resources Code

§ 6302.1 State may remove from areas under its jurisdiction any vessel, boat, raft or other watercraft left unattended and which is moored, beached or docked in a position to obstruct normal movement of traffic, or in a condition to create a hazard to other vessels, to public safety, or to the property of another;

May remove any vessel which seriously interferes with or otherwise poses a critical and immediate danger to navigation or to public health, safety or welfare;

“Through appropriate action at law or in equity in the courts of this state,” the state may remove or destroy vessels which hinder navigation or otherwise create a public nuisance in areas under the state's jurisdiction;

State may recover its costs of removal actions.

Vehicle Code

§ 9864 Owners must notify state within 15 days of the wrecking, dismantling, destruction, or abandonment of an undocumented vessel; upon receipt of notice of such, or upon official determination that an undocumented vessel has been abandoned, the state may destroy such vessel after 30 days if an investigation discloses that no person claims an interest in the vessel.

Connecticut, General Statutes §§

§ 15-8 thru 15-9 = removal related to vessels under the jurisdiction of harbor masters.

§ 15-140c No person shall abandon any vessel on waters of the state or on property other than his own without consent.

A vessel is presumed abandoned if left on waters of the state, moored, anchored or made fast to the shoreline, and unattended for a period of more than 24 hours, or left on another's property without consent for a period of greater than 24 hours.

The last registered owner at the time of abandonment shall be deemed the person responsible for abandonment.

State officers may take abandoned vessels into custody; no liability shall attach for any damages to the vessel.

Removal, storage and related costs become a lien on the vessel title.

Florida Statutes §§

§ 253.04 State duty to protect state lands, authority to bring actions ; authority to develop a civil penalty schedule for damage to coral reefs, up to \$1,000/m², plus up to \$250,000 for aggregated circumstances, per occurrence, including:

- absence of extenuating circumstances, e.g., bad weather
- disregard for safe boating practices
- vessel operator under the influence
- navigational error
- disregard for speed limits or other boating regulations
- failure to use available charts and equipment
- willful or intentional nature of the violation
- previous coral reef damage caused by the operator

Penalties may be doubled within John Pennecamp Coral Reef State Park.

Establishes liability for persons causing damage to state lands through knowing refusal to comply with or willful violation of provisions of state law.

§ 376.15 Derelict Vessels, Removal from Public Waters

- Unlawful for any person, firm or corp. to store or leave any vessel in wrecked, junked or substantially dismantled condition or abandoned upon any public waters or at any port within the state without consent of the agency with jurisdiction over the waters, or docked at any private property without the owner's consent
- Designates Fl. Fish & Wildlife Conservation Commission as agency empowered to remove derelict vessels
- Cmmn. may establish grant program to local governments for vessel removal; requires appropriation of funds by the legislature
- Criteria for judging grant applications must include at least:
 - number of derelicts within the applicant's jurisdiction
 - threat posed by such vessels to public health or safety, the environment,

- navigation or aesthetics
- degree of commitment of local government to maintain waters free of abandoned and derelict vessels
- States that removal authority under the statute not intended to be in contravention of federal law.

§ 823 Abandoned and Derelict Vessels; Removal; Penalty

- Unlawful for any person, firm or corporation to store, or leave any vessel in wrecked, junked or substantially dismantled condition, or abandoned upon any public waters or at any port in the state without consent of the agency with jurisdiction over the waters, or docked at any private property without the owner's consent.
- Cmmn. authorized to remove or cause to be removed any abandoned or derelict vessel from public waters when such obstructs or threatens to obstruct navigation or in any way constitutes a danger to the environment; all costs incurred in removal are recoverable from vessel owner
- Cmmn. may delegate removal authority.
- Violation of statute is a criminal misdemeanor.
- All costs

Georgia, Official Code of GA Annotated

- § 52-7-14 Any person who fails to salvage any vessel within 12 months after its sinking forfeits ownership; any person may thereafter salvage and claim the vessel.
- § 52-7-70 “Abandoned vessel” = vessel left by owner or person acting for the owner with a vessel dealer, repairman or wrecker service without contact for 30 days or 30 days after necessary repairs;
- or left unattended upon or in any public water or at any port without consent of agency with jurisdiction, or docked at any private property without consent of the owner, for at least 5 days and when it reasonably appears to a law enforcement officer that the individual who left such vessel unattended does not intend to return and remove the vessel;
 - or left on property where it was lawfully towed for at least 30 days without anyone making a claim;
 - or left unattended on private property for at least 30 days without anyone making a claim.
- “owner” = owner, lessor, lessee, security interest holder, all lienholders
- § 52-7-71 Rights and responsibilities of persons removing abandoned vessels (e.g., salvage companies) at the request of law enforcement officers or private property owners
- § 52-7-72 Any peace officer finding a vessel which has been left unattended in or upon any

public waters or other public property for at least 5 days shall be authorized to cause such vessel to be removed to storage, if the officer reasonably believes that the person who left such vessel does not intend to return and remove it;

Peace officers may cause immediate removal if unattended vessel poses a threat to public health or safety.

Peace officers effecting removal are only liable for damages if they acted with gross negligence.

Notice process must be implemented within 72 hours of removal.

§ 52-7-73 Any person who removes or stores a vessel which is or becomes abandoned shall have a lien on the vessel for reasonable fees of removal, storage, advertising.

Hawaii, HI Revised Statutes

§ 200-6 No person shall sink, or abandon any type of watercraft, sunk or unsunk, on or within ocean waters or navigable streams of the state without a permit. State may require removal of such vessels by any person violating this provision, or remove such if the person fails, at the person's expense.

The state may seek injunction or other legal or equitable relief to enforce this provision.

No person shall anchor, moor, or place any vessel on or within the ocean waters or navigable streams of the state without a permit. The state may order removal, or remove at violator's expense. Prohibition is not applicable to vessels of the United States, vessels involved in interstate or foreign commerce, or pleasure craft or fishing vessels temporarily anchored for less than 72 hours.

§200-48 "Derelict vessel" = vessel left unattended for continuous period of more than 24 hours if:

- sunk or in immediate danger of sinking, obstructing a waterway, or is endangering life or property;
- moored or left contrary to law and either:
 - (i) registration has expired and owner no longer resides at last listed address;
 - (ii) last registered owner disclaims ownership;
 - (iii) vessel documentation number has been removed or obliterated; or
 - (iv) no state or USCG record that the vessel has ever been registered.

- § 200-49 Disposition of Abandoned Vessels
 - derelict vessel may immediately be taken into custody
 - immediate notice procedure required, informing of intended disposition - in public forum, on vessel, by certified mail to registered owner and all lien holders on file;
 - if not repossessed within 20 days, vessel may be sold and if not sold, destroyed.
- § 200-41 Any vessel which has been left unattended for continuous period of more than 30 days and is within waters of the state or on public property, or on private property without authorization, may be caused by state to be taken into custody and disposed of.
- § 200-42 Upon taking vessel into custody, written notice of intended disposition must immediate be posted on vessel and copy sent by certified mail to registered owner and all lien holders shown in state records, giving 20 days to repossess vessel.
- § 200-43 If vessel not repossessed within 20 days, it may be disposed at public auction following minimum 5-day public notice. If no bids are received, vessel may be sold by negotiation, junked or donated to government agency.
- § 200-44 Persons with interest in vessel in custody may repossess before the public auction by payment of all state fees, expenses. If person is not the registered owner, must also post security bond up to the value of the vessel, to be returned if not forfeited within 2 years.
- § 200-45 Public auction not required if appraised value of vessel less than \$250; such vessels may be sold by negotiation, junked, or donated to government agency.
- § 200-47 Proceeds of sale equal to state's fees and expenses deposited into boating special fund, balance to general fund of the state. Owner may recover the balance within one year by filing a claim. If proceeds of sale are less than state's costs incurred, state may bring an action against the owner or any person who had an interest in the vessel when it was taken into custody.

Louisiana, Revised Statutes § 30 – abandoned vessel removal program limited to vessels actually discharging or threatening to discharge oil.

Maryland Natural Resources Code

- § 8-721 “Abandoned vessel” = any vessel that is (1) illegally left of has remained without permission for more than 30 days on public property, including public marinas; (2) has remained for more than 90 days without consent of owner or person in

control of private marina, private boatyard, private dock, or at or near water's edge on private property; (3) on other private property for more than 180 days without consent; (4) found adrift or unattended in or upon waters of state and in condition of disrepair as to constitute a hazard or obstruction to use of state waters, or presents a potential public health or environmental hazard.

After a minimum 15-day notice period (by certified mail to last registered owner and all lien holders of record, informing of right to reclaim vessel within 3 weeks upon payment of state's expenses), state may seize, remove and take into custody, and may not be held liable for any damage done to the vessel.

Failure to reclaim vessel upon notice constitutes waiver of all right, title and interest, and consent to state's disposal of vessel. State may sell at public auction, take title, or dispose.

Alternative newspaper notice required when a registered owner cannot be identified or if certified mail notice is returned.

No notice prior to disposal required if state can't remove vessel intact due to state of disrepair; state may dispose of such vessels through any reasonable means.

State may delegate removal authority to local jurisdictions.

Massachusetts Annual Laws

- Ch.91, § 10A1/2 Establishes harbors and inland waterways maintenance fund, available for use, among other things, for removal of sunken and abandoned vessels.
- Ch.91, § 38 State shall take charge of any wrecked vessel or other shipwrecked property on any shores or waters of the state and not in the custody of the owner or agent, if the value of vessel is \$100 or more, and may take charge if value is less than \$100.
- Ch.91, § 39 Wrecked, sunken or abandoned vessels deposited or remaining in tide waters of state and deemed to be or liable to become an obstruction to safe and convenient navigation or other uses of waters may be removed by state.
- Ch.91, § 40 Requires notice to be sent to any known owner or master or user of wrecked, sunken or abandoned vessel, requiring removal within specified time.
- Ch.91, § 41 State may remove wrecked, sunken or abandoned vessels if no known

owner or if noticed owner fails to remove in time specified.

- Ch.91, § 42 Liability for state costs of removal extended to any owner or interest holder in a vessel wilfully or maliciously wrecked, sunken or abandoned, plus any person with control over the vessel, or having used the vessel prior to its being required to be removed. State authorized to bring cause of action to recoup costs.
- Ch.91, § 43 If costs incurred are not paid within 10 days after state removal, the state may sell the vessel at public or private sale.
- Ch. 91, § 44 Insurers of vessels who have paid the loss to their insured shall not be liable to remove the vessel or for the costs of removal unless they exercised some act of ownership or control over the vessel.
- Ch. 91, § 45 *** Authorizes state to make application to the U.S. government for reimbursement of any state removal costs which in the state's opinion might property have been paid by the U.S.*

Mississippi Code Annotated

- § 49-27-71§ State may remove from coastal wetlands or from any private or manmade canal with a navigable connection to coastal wetlands, any derelict vessel determined to be a public safety or environmental hazard and having been relinquished, deserted or left by the owner with intent to abandon.

Any vessel submerged in or on coastal wetlands or connecting canal in excess of 90 days is declared abandoned and derelict (no vessel submerged for more than 100 years shall be declared a derelict).

Any owner or operator of a derelict vessel is liable to the state for restoration of affected coastal wetlands plus removal costs.

Notice ordering removal of derelict must be sent by certified mail to last known owner and operator, ordering removal and restoration within 30 days; newspaper notice required if owner, operator not ascertainable. Notice must inform of state intent to remove and dispose, and must be run once/week for 3 consecutive weeks - state may remove 10 days after last published notice.

Derelicts removed by state or local jurisdictions may be destroyed without further notice. If owner, operator is identified subsequent to state expending costs of removal and restoration, owner and operator are liable for double the costs of removal and restoration, plus attorney and court costs.

Authorizes chancery courts where vessel is located to order removal of derelicts and restoration, and for imposition of penalty of up to \$500 /day for non-compliance, as well as liability for attorneys' fees and court costs

Costs and damages recovered in excess of removal and restoration cost reimbursement are deposited into Derelict Vessel Fund.

Authorizes state to contract for removal, salvage.

Holds state and its employees harmless from liability for damages.

New Jersey Statutes

- § 12:7-48 No person shall use a power vessel to moor, ground, or abandon any hulk or derelict on state lands below mean high-water mark.
- § 12:7C-9 Unlawful to wilfully abandon any vessel on public lands or waters or on any private property or water immediately adjacent thereto without consent. Vessel which has remained moored, grounded or otherwise attached or fastened as above for more than 6 months is prima facie evidence of abandonment.
- § 12:7C-16 Makes previous owner of abandoned vessel liable for removal costs to any person receiving title to the vessel.

Rhode Island General Laws

- § 46-6-9 State may order any person known as owner, interest holder, or exercising control over a vessel to remove obstruction of waterway within 30 days. Fines of \$100/day for failure to comply.
- § 46-6-10 State may remove a vessel if the noticed person fails to do so, or if no person is known upon whom notice to remove can be served.
- § 46-6-13 Insurer that pays loss to insured vessel interest holder is not liable to remove vessel or for costs of removal.

U.S. Virgin Islands Code

- § 715 Unlawful for any person or corporation to store or leave any vessel in wrecked, junked or substantially dismantled condition, or abandoned, on any public waters or any port without state consent, or docked at private property without owner's consent.

State may remove any derelict vessel from public waters when the vessel obstructs or threatens to obstruct navigation, contributes to air and water pollution, or constitutes a danger or potential danger to the environment.

State may take derelict vessel into custody immediately upon its discovery and publish notice and serve notice by certified mail on registered owner and all recorded lien holders of state's intended disposition of vessel.

If vessel is not repossessed within 30 days, state may dispose by negotiated sale or public auction of multiple bids received. If not sold, state may dispose, donate to agency.

States that statute is not intended to contravene federal law.

Washington

No laws passed yet, intense deliberations over past several years. Washington notes that most vessels abandoned are derelict with no salvage value; over 100 vessels are abandoned in state in typical year, 60% abandoned on public property; most vessels are between 20 and 40 feet long, wood or fiberglass hulls; average cost of disposing of abandoned derelict vessels is \$2,000-\$4,000, though large vessels may cost \$15,000 (clean them of fuel and other pollutants and haul them to a landfill).

VESSEL GROUNDING PROGRAM

POLICIES & PROCEDURES

BISCAYNE NATIONAL PARK



Original February 1996

Revised March 2001

These materials are draft guidance that have not been adopted. The views presented are those of the author and not necessarily representative of the position of the agency or the federal government

TYPE OF DIRECTIVE OR PROCEDURE: Law Enforcement & Resource Management

SUBJECT: Guidelines for reporting, documentation, response, assessment and removal of vessels grounded in Biscayne National Park..

AMENDS: All previous documents and memorandums

WORKS IN CONJUNCTION WITH: Biscayne National Park (2001) Guidelines for Recovery of Costs

RECINDS: 1996 Vessel Grounding Response Policies and Procedures

REVIEW AND REVISIONS: The Grounding Oversight Committee (GOC) will conduct an annual review of protocols. Revisions suggested by the GOC will be approved and included as addendum to original protocols.

APPROVED BY:

SUPERINTENDENT _____ Date: _____

ASSISTANT SUPERINTENDENT _____ Date: _____

GROUNDING OVERSIGHT COMMITTEE

Visitor Protection Division Chief _____ Date: _____

Resource Management Division Chief _____ Date: _____

Grounding Law Enforcement Officer _____ Date: _____

Resource Damage Recovery Officer _____ Date: _____

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**Biscayne National Park
Vessel Grounding Response
Policies and Procedures**

February 1996

By

Beau Jackson

Under contract #RM106 with Biscayne National Park

**Biscayne National Park
Vessel Grounding Program
Policies and Procedures
2001 Revision**

By

**Karen Battle
Biscayne National Park**

Including:

1999 Recommendations for Large Vessel Groundings

By

**Karen Battle
Steve Stinnett
Biscayne National Park**

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BISCAYNE NATIONAL PARK VESSEL GROUNDING PROGRAM

PREFACE

I. PURPOSE

The purpose of this document is to communicate and standardize the procedures for the reporting, documentation, response, assessment and removal of vessels grounded in Biscayne National Park. The policies that govern these procedures are outlined so that they may contribute to a more focused and coordinated effort to reduce the impacts of vessel groundings on the marine environment of the Park.

Policies -Articulates specifically what is to be accomplished by responding to vessel groundings. Policies provide a foundation from which operational decisions shall be made.

Procedures -Discusses the responsibilities of those responding to grounding incidents and outlines options to aid in their decision making process. The order of the procedures (pp 5-49) follows the sequence of a response to a typical grounding incident. Beginning with the reporting of the incident by a commercial towing operator and concluding with a Injury assessment.

II. SCOPE

This authority applies to destruction of, loss of, or injury to any living or non-living resource, caused by vessel groundings located within the boundaries of Biscayne National Park, except for resources owned by a non-federal entity.

III. DEFINITIONS

The following definitions shall have the meaning below for purposes of these guidelines. The statutory definitions are found at 16 USC 19jj.

- A. **PSRPA, 16 USC 19jj**: The Park System Resource Protection Act of July 27, 1990, which addresses resource protection, as amended by the Omnibus Parks and Land Management Act (Public Law 104-333, enacted November 12, 1996), provides the National Park Service (NPS) with expanded authority to recover costs and damages from those who cause destruction of, loss of, or injury to park system resources. Funds recovered may be used by the park unit that incurred the costs or suffered the injury¹.

¹ Without this specific statutory authority, recovered monies would have to be deposited in the General Fund of the United States Treasury. This statute is a "strict liability" statute that does not require intent or negligence. The mere fact that damage was done is enough to invoke the Act and a 19jj action.

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- B. **Park System Resource**: 16 USC 19jj (d) Any living or non-living resource that is located within the boundaries of a unit of the National Park System, except for resources owned by a non-Federal entity.
- C. **Living or Non-Living Resource**: Natural resources (eg. flora, fauna, water, geology, soils, air, noise); Cultural Resources (eg., sites, objects, landscapes); Man-made equipment and facilities (e.g., recreational facilities, vehicles, lights, signs, equipment, buildings, aids to navigation), as well as the service they provide.
- D. **Damages**: 16 USC 19jj Compensation for (b)(1)(A)(i) the cost of replacing, restoring or acquiring the equivalent of a park system resource: and (b)(1)(A)(ii) the value of any significant loss of use of a park system resource pending its restoration or replacement or the acquisition of an equivalent resource; or (b)(1)(B) the value of the park system resource in the event the resource cannot be replaced or restored. (b)(2) the costs of damage assessments under 19jj-2(b).
- E. **Response Costs**: 16 USC 19jj (c) The costs of actions taken by the Secretary of the Interior to prevent or minimize destruction of, loss of, or injury to park system resources; or to abate or minimize the imminent risk of such destruction, loss, or injury; or to monitor ongoing effects of incidents causing such destruction, loss or injury.
- F. **Defenses to Liability**: 16 USC 19jj-1 A person is not liable under this authority if such person can establish that (c)(1) the destruction, loss of, or injury to the park system resource was caused solely by an act of God or an act of war; (c)(2) such person acted with due care, and the destruction, loss of, or injury to the park system resource was caused solely by an act or omission of a third party, other than an employee or agent of such person; or (c)(3) The destruction, loss of, injury to the park system resource was caused by an activity authorized by Federal or State law.

IV. TERMINOLOGY

A. **Operational Definitions:**

“Vessel grounding” or “grounding” refers to any incident in which a vessel comes in contact with, has been in contact with or is creating injury to the bottom, including “prop scarring” incidents. The vessel does not have to be stuck for an incident to be considered a vessel grounding.

"the bottom" is described as any submerged natural resource (seagrass, coral, hardbottom), terrestrial resources (mangroves) or cultural resources.

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“Prop Scarring” occurs when a boat is powered over a shallow grass bed, coral reef, mangrove shoreline or other resource causing the resource to be injured.

"Power Off" refers to an operators use of the engines while attempting to remove a vessel from the bottom.

"Blow Out" refers to holes that are created when a vessel operator attempts to power off.

“Grounding response effort” refers to any activity dealing with the reporting and documentation of a grounding incident, the removal of a grounded vessel, or the injury assessment and restoration of a grounding site.

B. Case Terminology:

The following terminology is used to differentiate between types of grounding cases within Biscayne National Park

Restitution Cases - Cases in which a restitution schedule is used to determine a damage cost figure. This decision can be based on size and severity of injury and the type and characteristics of resources damaged. The restitution schedule is a simplified method to determine costs for damaged resources and was developed to assist in managing the overall program.

Restoration Cases - Cases in which the decision has been made to develop a restoration cost estimate and claim report for an injured site which will include all costs allowed under 16 USC 19jj. These cases can be handled in either a criminal venue or a civil venue.

V. GROUNDING PERSONNEL

A. Grounding Oversight Committee (GOC)

It will be the GOC's responsibility to oversee, coordinate and organize the BNP grounding program as described in these guidelines.

The GOC will be comprised of the following personnel

1. Visitor Protection Division Chief (VPDC)
2. Grounding Law Enforcement Officer (GLEO)
3. Resource Management Division Chief (RMDC)
4. Resource Damage Recovery Officer (RDRO)

B. Grounding Law Enforcement Officer (GLEO)

The VPDC will designate one LE officer to be the GLEO. It will be the GLEO's

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responsibility to follow the protocols in the GPP including:

1. Assist other LE officers in investigation when necessary
2. Track response costs by LE division and provide to RDRO
3. Establish and maintain a case file for cases in which recoveries will be sought. Refer to GPP for information necessary for case file.
4. Provide a copy of completed case file to RDRO after reviewing official has approved it. Some information may not be releasable.
5. Coordinate with RDRO for case litigation

C. Resource Damage Recovery Officer (RDRO)

The Resource Management Grounding Program Leader will be the designated RDRO. It will be the RDRO's responsibility to follow the protocols in the GPP including:

1. Determine what park system resource/service has been destroyed, lost or injured
2. Quantify the destruction, loss, injury and or diminishment of park resources or services. Complete or coordinate assessment of injuries.
3. Develop cost estimates and evaluate (technical feasibility, cost effectiveness, linkage to injury) alternatives for restoration, replacement and or acquisition of equivalent resources for those affected park system resources.
4. Establish and maintain case file for cases in which recoveries will be sought.
5. Track response and assessment costs and complete or organize completion of damage calculation through Reports such as a Claim Report.
6. Provide a copy of assessment and Claim Report to GLEO.
7. Coordinate with NPS Environmental Response Planning and Assessment (ERPA) office.
8. Coordinate with GLEO for case litigation.
9. Oversee restoration activities.

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BISCAYNE NATIONAL PARK VESSEL GROUNDING RESPONSE

INTRODUCTION

Too often boat operators run their vessels aground in the shallow waters of Biscayne National Park destroying coral, sea grass, and the marine animals that depend on these area for survival. In recent years boat groundings have become so frequent and devastating that the cumulative effects threaten the health of the park's shallow marine habitats.

THE PROBLEM-Coral reefs and sea grass beds often grow in shallow water and therefore are very susceptible to injury from the propeller (prop), hull, and keel of modern boats. This injury is cause for concern because coral reefs and sea grass areas are integral parts of our marine environment. In addition to their beauty, they provide food and protection for a myriad of marine animals. It is widely known that coral reefs rival the tropical rain forests in biological diversity and abundance of life. However, many people do not know that the animals on the reef depend heavily on the sea grass beds that grow nearby. These sea grass areas provide food and shelter to countless reef creatures and juvenile animals that are not yet ready to inhabit the reef.

Presently, boat groundings and prop scarring incidents (caused when a prop cuts sea grass while the boat motors over a shallow flat) occur with such frequency and the resulting injury is so severe that the reef and grass beds do not have time to recover. Coral growth is measured in inches per year, so any injury to the reef can easily take decades to grow back. Similarly, it is estimated that even small prop scars in seagrass will take two to five years to recover (Zieman, 1976). A recent aerial survey revealed that many of Biscayne Bay's sea grass flats have already had as much as 20% of the sea grass destroyed by prop scarring and boat groundings (Sargent et al. 1995). During 1994, more than 90 groundings were recorded in Biscayne National Park and in 1996 that number increased to over 200 reported vessel groundings. Particularly alarming is the fact that these incidents only reflect *reported* groundings. Frequent sightings of additional broken coral and uprooted sea grass are evidence that a relatively small percentage of groundings are reported. The majority of documented groundings take place in Biscayne Bay and impact sea grass areas. Groundings on coral reefs often go unreported because, unlike sea grass areas, rarely do vessels become stranded as a result of grounding on a reef. Most often a vessel will run into a shallow area, damaging the coral beneath, and continue on with no one but the vessel occupants aware of the injury.

Numerous sea grass grounding incidents in Biscayne National Park have left scars hundreds of feet long and scour holes up to five feet deep. In most cases the injury is not this severe, but each event contributes to the overall injury and results in a substantial cumulative effect. Damaged corals are more susceptible to algae growth and disease. The productivity of shallow water areas can be reduced by erosion of sea grass beds and water quality will continue to be degraded due to suspended sediment (Thayer et al. 1984; Zieman & Zieman, 1989).

Understandably, there is a direct correlation between the number of registered boats in an area

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and the amount of resource injury caused by boats (Livingston, 1987). That is to say, the more boats there are in a particular area, the more resource injury will occur as a result. In 1974 there were only 65,500 registered boats in Dade, Broward and Palm Beach counties, the counties closest to Biscayne National Park. In 1994 there were over 125,900 registered boats in these counties (FL D.M.V., 1995). If this trend continues, and significant progress is not made to reduce the impact of groundings/prop scarring incidents, the resulting resource injury could prove devastating.

WHAT BNP IS DOING - Recognizing the threat to the ecosystem from vessel groundings, BNP created a proactive management program in 1995. The goal of this program is to minimize the physical damage to natural resources caused by vessel groundings, to develop more effective strategies, including law enforcement, resource management and education, for the prevention of future incident and to restore the resources that have been damaged.

Enforcement - Presently civil and criminal penalties are assessed for operating a boat in a manner that results in damage to the Park's natural resources. This provides a deterrent effect by heightening the public's awareness to the serious nature of vessel groundings and prop scarring. The Park law enforcement and resource management continues to develop their working relationship with the commercial towing industry in order to improve the system of removing grounded vessels so that the resulting injury will be minimized.

Resource Management - Work is being done to improve channel and shoal area marking in an effort to prevent groundings. The Park's system of responding to groundings is being improved to better document grounding/prop scar events. With improved documentation trends can be identified, the effectiveness of present strategies can be assessed, and future strategies and the expenditure of the Park's limited resources can be prioritized. In an effort to mitigate injury and speed recovery, steps are being taken to establish a means of performing restoration on sites damaged by boat groundings. In 1996, an increased effort was made to assess damage from vessel groundings to determine the overall damage to the resources of the park. The data collected has been used in part to assist in educating boaters, to gain restitution monies for restoration of damaged seagrass shoals and coral reefs through criminal and civil cases, and to justify the installation of more aids to navigation in the park. Restoration of vessel grounding sites in coral and seagrass will begin in 2001.

Education - The Park's interpretation staff has developed numerous products about the grounding problem. These products include brochures, public service announcements, and public presentations. Park managers and law enforcement personnel take every opportunity to contact boaters directly and assist them in avoiding shallow areas of the park. Frequent presentations are given to boating groups, civic organizations and concerned citizens.

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GENERAL OVERVIEW of POLICIES

for
Vessel Grounding Program

Goal

The goal of the vessel grounding program is to minimize the physical injury to natural resources caused by vessel groundings, to develop more effective strategies for the prevention of future incidents and to restore injuries to resources caused by vessel groundings

Objectives

The objectives for achieving the goal are to:

- A. Reduce the number and severity of groundings incidents.
- B. Reduce the injury that occurs while a vessel is aground.
- C. Reduce the injury that occurs when a vessel is removed from a grounding site.
- D. Restore resources that have been injured.

Strategies

The strategies for achieving objectives are to:

- A. Educate boaters about the resource injury caused by groundings, their significance, and how to avoid running aground.
- B. Utilize uniform, fair, and reasonable enforcement measures, to make the public aware of the seriousness of vessel grounding/prop scarring.
- C. Develop and implement resource management actions:
 - 1. Document vessel grounding events and impacts in order to form a data base on grounding activities and to assist in enforcement actions.
 - 2. Form partnerships with agencies and organizations in order to better address prevention of grounding incidents (e.g. USCG/channel marking, commercial towing operators/removal methods).
 - 3. Restore injured resources

Level of Response

The level of response to a vessel grounding will depend upon the location, severity, and circumstances of the grounding. All reported vessel grounding incidents will be documented and park personnel will respond whenever possible. Because it is not possible to respond to every grounding, BNP will rely on the commercial towing industry and marine law enforcement agencies to assist in the documentation of grounding incidents and the removal of grounded vessels.

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Removal Guidelines

All grounded vessels should be removed from their grounding sites in a manner that prevents additional resource injury. The following are the BNP Grounded Vessel Removal Guidelines:

- A. Grounded vessels should not be powered off of a grounding site.
- B. Air and water hoses should never be used to create a hole in order to remove a vessel or the props.
- C. When possible, grounded vessels should be removed from a grounding site at high tide.
- D. Adequate equipment and assistance should be used in the removal of a grounded vessel.

Commercial Towing

Only commercial towing operators who have received a towing permit from Biscayne National Park may operate within Park boundaries.

Emergency Situations

Occasionally **emergency situations** arise that require immediate action to prevent loss of life or serious injury. If such a situation develops and taking the time to notify park personnel would jeopardize a persons safety, then the individual(s) responding should take the necessary action to address the situation and notify park personnel as soon as possible.

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SECTION I

COMMERCIAL TOWING OPERATORS

Required actions of towing operators responding to vessel groundings:

All Vessel Groundings

1. Notify Park immediately of any report of a vessel grounding. See grounding definition.
2. Upon arrival at site place PVC stake at stern of vessel
3. Document incident on "Reporting form for Towing Grounded Vessels" (See Appendix A)
4. Fax Documentation to Park within 24 hour
5. Coordinate vessel removal with Park Ranger. A ranger must authorize the removal of all grounded vessels.
6. Remove vessel in accordance with removal guidelines
7. Follow all regulations as stated in the Tow Company's incidental Business Permit with Biscayne National Park

Contact

1. Biscayne Ranger
2. Everglades Dispatcher (242-7740)

Grounding Information Needed by Park Personnel

1. location
2. vessel size & description
3. name/registration #
4. tow operators intentions

Grounded Vessel Removal Guideline

1. Remove vessels at high tide
2. A written or verbal plan must be submitted to the park for "technical extrications"
3. Do not power grounded vessel off site
4. Air and water hoses should never be used to create a hole in order to remove a vessel or the props.
5. Obtain as much assistance as necessary
6. Conduct operations so that damage is minimized

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Emergency Situations

Emergency situations occasionally arise and require immediate action to prevent loss of life or serious injury. If such a situation develops and taking time to notify park personnel jeopardizes a persons safety, then the towing operator responding should take the necessary action to address the situation and notify park personnel as soon as possible.

Please contact Biscayne National Park when any of the following situations arise:

1. Discharge of fuel/oil
2. Sunken or sinking vessel
3. Sick or Injured person

SECTION II

EVERGLADES NATIONAL PARK DISPATCHER

1. Upon receiving a report of vessel grounding in BNP, the ENP dispatcher will record as much of the following information as possible:
 - A. Location of grounded vessel (lat/long, physical description)
 - B. Size & Description of vessel
 1. color
 2. length
 3. power or sail?
 4. inboard or outboard engine?
 5. type of vessel (e.g. cuddy cabin, open fisherman, trawler, high performance)
 - C. Name & hailing port and/or registration #.
 - D. Name of towing operator responding.
2. After recording the above information a BNP Ranger should be notified immediately.
3. After hours notification: follow the standard procedure for BNP emergency call-out.

SECTION III

VISITOR PROTECTION

1. **Preliminary Situation Assessment** - Determine as much of the following information as possible prior to responding to a vessel grounding. Communicate with ENP dispatcher, tow operator responding, grounded vessel operator or other reporting source.
 - A. Are there injuries/medical concerns?
 - B. Has the operator of the grounded vessel been told not to power off of the grounding site?
 - C. Where is the boat located (physical location and Lat./Long.)?
 - D. What is the description of the vessel (size, type, color)?
 - E. What is the registration number and/or name of the vessel?
 - F. Who is the responding towing operator and what is his/her intentions?

2. **Level of Response**- the level of response will be determined by the severity, location and circumstances of the reported grounding but an attempt should be made to respond to all vessel groundings. Ultimately the decision to respond to a reported grounding site is a matter of ranger judgment.
 - A. Circumstances that require a physical response to grounding site:
 1. Grounding is reported to be in coral reef or mangrove area
 2. Grounding report indicates that the vessel operator attempted to power off of the site.
 3. Grounded vessel is reported to have an inboard drive configuration.
 4. Any other situation when circumstances indicate that resource injury is likely to be major (as defined Section III, 3) or there is a threat to visitor safety.
 5. Grounded Vessel is over 100ft in length

 - B. Circumstances that indicate responding to the grounding site may not be necessary:
 1. Grounding involves a vessel of less than 20 ft.
 2. Grounding is in a channel

 - C. Other circumstances to consider when determining proper level of response.
 1. Tidal state (e.g. incoming, outgoing, slack, spring).
 2. Proximity of grounded vessel to deep water.
 3. Distance of ranger from grounding site/present work load.
 4. Characteristic of resource injury involved (Pristine grass bed vs.

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impacted area).

D. Vessels over 100 ft in length (freighters, tugs, barges, shrimp boats)

1. Refer to Recommendations for Large Vessel Groundings (Section VI)

3. Major Injury - In general **major** physical injury to natural resources can include but is not limited to the following criteria:

A. Scars > 25 meters in length

B. Depression > 30 centimeters in depth

C. Total area impacted > 5 square meters

D. Disturbed rhizomes

E. Sediment pile or large amount of suspended sediment

F. Presence of hard/soft corals

G. Ancillary injury is likely to occur if corrective actions are not taken

4. On-Site Situation Assessment.

Always consider ranger safety when assessing any situation.

A. Confirm that there are no medical concerns or other emergencies (e.g. vessel taking on water, hazardous material spill). These situations take priority over a vessel grounding and therefore, should be addressed first.

B. Confirm that the vessel operators knows not to power off of the site. Communicate with the grounded vessel operator and inform him generally about how the situation will be handled.

C. Complete Grounding Documentation Data Sheet (GDDS, Appendix B)

D. Locate injured area and determine (estimate) extent of injury.

E. Notify resource management (see notification of resource management p. 10).

F. Communicate with towing operator to determine his/her plan for vessel removal and express any concerns to the towing operator. Notify the towing operator if the plan for removal has been approved by the park

G. If possible approach the vessel while it is still aground, exercise caution and avoid contributing or appearing to contribute to the resource injury.

H. Vessels over 100 ft in length (freighters, tugs, barges, shrimp boats)

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1. Refer to Recommendations for Large Vessel Groundings (Section VI)

5. Notification of Resource Management-

- A. Resource management personnel can be contacted via park radio, pager or ENP Dispatcher.
- B. Resource management personnel should be informed of incidents involving prop dredging, vessel grounding and any other activity that results in physical injury to park natural resources.
- C. Immediate notification of RM personnel should occur in the following situations:
 1. Vessel over 100ft in length
 2. Vessel removal will involve a "Technical Extrication"
 3. Vessel grounding is on the reef or in the mangroves
 4. Vessel grounding has injured a cultural resource
 5. Vessel operator attempted to power off.
- D. RM personnel should be notified within one week of any grounding that does not fall into the categories listed above.
- E. Grounding Documentation Data Sheets should be forwarded to Resource Management within one week of the grounding incident.
- F. **RM Response to Vessel Groundings**

Keep in mind that response to vessel groundings is always subject to staffing availability, comfort level of that staff and the level of the grounding incident (large vs small, emergency or not). RM staffs who are on duty may not always be considered available for response as other duties may take precedence.

1. VESSELS OVER 100 FT IN LENGTH

If the vessel is over 100 ft in length (ie: freighters, barges, commercial/recreational fishing vessels) in any resource (coral, seagrass, mangroves) the **RM division chief and RM Resource Damage Recovery Officer (RDRO) should be notified immediately.**

2. VESSELS LESS THAN 100 FT IN LENGTH

For vessels less than 100 ft, the response from RM may be different depending upon whether the RM Resource Damage Recovery Officer (RDRO) is on duty or not. The RM Resource Damage Recovery Officer (RDRO) will respond when possible for emergencies and non-emergency

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cases to assist the ranger on scene. Keep in mind that if the RM Resource

Damage Recovery Officer (RDRO) is on duty, response can benefit the case. Other RM staff will respond for emergencies.

- G. Resource Management personnel should be contacted to
 - 1. Conduct preliminary on scene injury assessment.
 - 2. Assist in evidence collection
 - 3. Review and approve removal plans
 - 4. Help in determining an exit channel
 - 5. To take underwater photos of vessel in place
 - 6. To determine location of damage
 - 7. To determine if props or other sections of vessel are embedded in sediment/coral

6. Removal of Vessel From Grounding Site.

- A. Stabilizing the grounded vessel may be necessary when waiting for high tide or assistance.
 - 1. Anchoring may reduce movement and additional injury.
 - 2. A lower unit or out drive should be raised.
 - 3. Weight distribution on the grounded vessel may be altered to aid stability.
 - 4. Rangers should have the expertise and equipment necessary to tow a small vessel in an emergency situation.
- B. Consideration should be given to the welfare of grounded vessel occupants. It may be necessary to remove some passengers from the vessel and arrange transportation to shore (e.g. young, elderly, ill, etc.).
- C. Communicate with the towing operator and grounded vessel operator throughout the removal operation.
 - 1. Be sure everyone involved understands that the vessel must be removed in a way that minimizes the amount of further resource injury.
 - 2. Determine if the removal/refloating will be a "Technical Extrication". If it is, obtain a written and or verbal plan for removal from towing operator.
 - 3. Contact RM RDRO if the removal involves at "Technical Extrication"
 - 4. **At no time will a vessel or salvage company be allowed to use the grounded vessels engines to remove the vessel, dig out sediment to remove the vessel or use water or air hoses to remove sediment without the prior approval of the resource management division. Other methods can be found to remove vessels without causing more damage.**

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5. It may be necessary to lighten the vessel in order to reduce resource damage during removal
6. Notify towing operator if the park has approval their plan to remove vessel.
7. If Resource Management personnel are on scene, coordinate removal efforts with them.
8. If the towing operation is causing unnecessary resource injury then stop operation, inform the towing operator that another method must be used or additional assistance obtained.

Summary of Vessel Removal Guidelines

1. Vessels should be removed at high tide
2. Air and water hoses should never be used to create a hole in order to remove a vessel or the props.
3. Vessels should never be powered off of grounding site
4. If the towing operation is causing unnecessary resource injury then stop operation.

D. Unusual Situations

1. The “Grounded Vessel Removal Guidelines” will prevent additional injury in most grounding incidents. However, those responding to grounding must be able to identify when they are not appropriate and react accordingly. (e.g. It may not be wise to wait until high tide to remove a grounded vessel if the weather is deteriorating or the vessel is being damaged due to wave action.)
2. Vessel Operator Refuses Assistance
 - a. If the vessel is doing no injury then inform the vessel operator of his/her responsibility to remove the vessel doing no additional resource injury and monitor the situation.
 - b. If the vessel is doing injury then inform the vessel operator that he/she will be held responsible for injury to natural resources. The on-scene Ranger should decide at what point intervention is necessary to prohibit injury to park resources. Notify resource management personnel. Ultimately, park management is prepared

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to arrange for commercial towing and the arrest/seizure of the grounded vessel.

- E. Good Samaritan Towing
 - 1. Must adhere to the same removal guidelines as commercial towing operators.
 - 2. Should be informed that they can be held liable for any injury that occurs from the towing operation.
 - 3. Generally Good Samaritan towers lack the expertise and equipment to safely remove a grounded vessel in all but the most minor of incidents.
- F. Vessels over 100 ft in length (freighters, tugs, barges, shrimp boats)
 - 2. Refer to Recommendations for Large Vessel Groundings (Section VI)

7. **Incident Investigation** for visitor protection rangers.

Investigation of a grounding incident should include the following:

- A. Vessels over 100ft in length (freighters, tugs, barges, shrimp boats)
 - 1. Refer to Recommendations for Large Vessel Groundings (Section VI)
- B. Vessels less than 100ft in length
 - 1. Ranger did not respond to scene
 - a. Inform Tow Company to fax "Reporting form for Towing Grounded Vessels" (See Appendix A) within 24 hours
 - b. Keep track of vessel groundings not responded to
 - c. It is the ranger responsibility to ensure that the tow company forwarded the reporting form to the park. The case is not complete until the form has been received.
 - d. Once ranger has received the form, obtain an incident number
 - e. Forward copy of form with incident number to RM RDRO within 7 days and have supervisor sign original
 - 2. Ranger responded to grounding site
 - a. Violation Notice- Issue citations if warranted (see Section III, 9) for Enforcement Options).
 - b. Complete Grounding Documentation Data Sheet (GDDS, Appendix B)
 - c. Locate damage
 - d. Mark site

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- e. Photograph/ video scene if appropriate.
- f. Collect Evidence from vessel if needed. This may include paint samples or photos of damage to vessel. Resource Management personnel can collect paint samples at injury site when appropriate.
- g. Contact Resource Management personnel to conduct injury assessment
- h. Grounding Documentation Data Sheets should be forwarded to Resource Management within one week of the grounding incident.
- i. Schedule aerial over flight if necessary
- j. Once RM has conducted assessment determine if a Resource Recovery Action is needed (see Section III, 8 for steps in a Resource Recovery Action)

8. Incident Documentation and Case Management for Visitor Protection Rangers.

The extent of documentation will depend on the nature of the incident, level of injury, and enforcement action. **A copy of all forms are included at the end of this document (Appendices A-D).**

A. Incidents not involving a resource recovery action

- 1. Incident requiring only towing operator response
 - Towing Operator Report
- 2. Incident in which BNP personnel respond but no resource recovery action will be initiated
 - Case Incident Form (A case incident report should be written if a citation is given or any incident involving unusual circumstances.)
 - Vessel Grounding Documentation Data Sheet
 - Towing Operator Report

B. Incidents involving a resource recovery action

1. Restitution Cases

Steps to follow when a case falls within the restitution schedule (some cases may be taken out of this category as determined by the Park based on resource or emergency conditions, See Section VIII)

- a. Complete GDDS form and Incident report
- b. Issue citations if warranted.
 - Issue VN on scene if practical. If not issued on scene complete in office. The issuance of citations in no way impacts our ability to proceed civilly.
- c. Photocopy original VN including probable cause statement
- d. Submit copy of Incident Report with original VN to supervisor for

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- approval and VN processing
- e. Label all photos taken of vessel. Label negatives.
 - Two labeled copies should be made of all photos.
 - The labels should include:
 - Incident Name/number
 - Date photos taken
 - Photographers name
- f. Start a file/packet for the case coordinating with RM RDRO
- g. Include in the file:
 - Original GDDS form
 - Original Incident report

The case incident record needs to specify who owns the vessel and who was operating the vessel at the time of the incident and the source for each bit of information. Additionally names of all persons who witnessed the incident with addresses and phone numbers.

 - Copy of Assessment report
 - Original photos/video of vessel
 - Photocopy of VN including probable cause statement
 - Original Tow Company Report if have one
- h. Give the **original file/packet** to Grounding Law Enforcement Officer (GLEO). Keep copies for yourself
- i. GLEO will complete a restitution notification letter
- j. Letter and file should be completed **within 3 weeks of incident**
- k. GLEO will obtain signature and mail restitution notification letter
- l. GLEO will maintain files/packets.
- m. GLEO will work with AUSA on settling and/or litigating case
- n. GLEO will coordinate with RDRO for possible court appearances or on settlement.
- o. Refer to the Guidelines for Recovery of Cost for procedures on managing funds.

2. Restoration cases

Steps to follow when a case outside the restitution schedule (some cases may be put in this category as determined by the Park based on resource or emergency conditions, See Section VIII)

- a. Complete GDDS form and Incident report
- b. Begin a keeping a time log for hours worked on case
- c. Keep copies of your time cards and premium pay authorization sheets for all pay periods in which you worked on the case.
- d. Keep copies of all receipts on purchases
- e. VN
 - Issue citations if warranted
 - Issue VN on scene if practical. If not issues on scene complete in office. The issuance of citations

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- in no way impacts our ability to proceed civilly.
- f. Photocopy original VN including probable cause statement
 - g. Submit copy of Incident Report with original VN to supervisor for approval and VN processing
 - h. Label all photos and negatives
 - Three labeled copies should be made of all photos.
 - The labels should include:
 - Incident Name/number
 - Date photos taken
 - Photographers name
 - i. Investigating ranger puts in a request to the current Park Air Ops Officer for a joint RM/LE overflight of grounding site.
 - j. Keep log of any communication with owner, operator, insurance company etc.
 - k. Start a file/packet for the case
 - l. Include in the file/packet (see attached Check list)
 - Original GDDS form
 - Original Incident report
 - The case incident record needs to specify who owns the vessel and who was operating the vessel at the time of the incident and the source for each bit of information. Additionally names of all persons who witnessed the incident with addresses and phone numbers.
 - Copy of Assessment report
 - Original Photos and negatives
 - Aerial Photos and negatives of site
 - Original video tapes
 - Photocopy of VN including probable cause statement
 - Original Tow Company Report if have one
 - Weather report for day(s) of incident
 - Tide reports for day(s) of incident
 - Ownership search on the vessel
 - A **current** address and phone number for the owner and operator of the vessel (do not assume that what was put down in the case incident record is still accurate)
 - Location of the vessel
 - Information on the insurance carrier for the vessel including an address, phone number and policy number
 - Original witness statements
 - Communication (email, faxes, letters, logs etc)
 - Copies of time cards, premium pay sheets, receipts
 - Copy of time keeping log
 - Copy of third party contracts
 - Dispatch logs
 - m. File/packet should be completed **within 4 weeks of incident**

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- n. Give the **original file** to GLEO. Keep copies for yourself
- o. GLEO will draft letter to operator, owner or insurance concerning the possibility of future liability.
- p. GLEO will obtain signature on letter and mail
- q. GLEO will maintain files
- r. GLEO will coordinate with Resource Management's Resource Damage Recovery Officer to compile the complete package for referral including:
 - Case can be referred to AUSA or NPS Solicitors Office
 - Case referral should include a concurrence memo signed by Superintendent and forwarded through Regional Director and Associate Director of Natural Resource Science and Stewardship.
- s. Upon referral GLEO will research and submit
 - Ownership search on the vessel from the date of the incident up until when the referral is sent to this office.
 - Current location of the vessel
 - Copy of insurance policy
- t. GLEO will coordinate with RDRO on requests from attorneys including discoveries, FOIA, interrogatories etc
- u. GLEO will coordinate with RDRO on settlement and/or litigation
- v. Refer to the Guidelines for Recovery of Cost for procedures on managing funds.

9. Enforcement Options: The selection of the most appropriate enforcement option is a matter of ranger discretion. Ultimately the purpose for enforcement is to gain the public's voluntary compliance with park rules and regulations. The message put forth to the public by rangers on the water should be that violations of park regulations are taken seriously but are dealt with fairly and reasonably.

- A. Written warning
- B. Preservation of natural features - \$150
- C. Negligent operation - \$400
- D. A mandatory court appearance for either preservation of natural features or negligent operation can be issued. The resulting fine amount can be changed by the Magistrate to \$5,000 for an individual or \$10,000 for a corporation.
- E. Combination of any of the above
- F. Criminal Action with Restitution Costs (Restitution case)
- G. Criminal Action with Restitution Costs based on a claim report (Restoration case)

H. Civil Action with Restoration Costs

SECTION IV

RESOURCE MANAGEMENT

1. **Preliminary Situation Assessment** – Resource Management will be notified by Visitor Protection when there has been a vessel grounding. Determine as much of the following information as possible prior to responding to a vessel grounding:
 - A. Where is the boat located (physical location and Lat./Long.)?
 - B. What is the description of the vessel (size, type, color)?
 - C. What type of resource has been injured
 - D. What is the extent of the injury

2. **Level of Response-** Factors to consider when determining the proper **level of response-** the level of response will be determined by the severity, location and circumstances of the reported grounding. Ultimately the decision to respond to a reported grounding site is a matter of the biologist discretion or if a biologist has been requested to respond by the ranger on scene.
 - A. Circumstances that may require a physical response to grounding site:
 1. Grounding is reported to be in coral reef or mangrove area
 2. Grounding report indicates that the vessel operator attempted to power off of the site.
 3. Any other situation when circumstances indicate that resource injury is likely to be major (as defined Section III, 3)
 4. The extent of the injury may require emergency restoration procedures
 5. Grounded Vessel is over 100ft in length

 - B. Other circumstances to consider when determining proper level of response.
 1. Tidal state (e.g. incoming, outgoing, slack, spring).
 2. Proximity of grounded vessel to deep water.
 3. Distance of biologist from grounding site/present work load.
 4. Characteristic of resource injury involved (Pristine grass bed vs. frequently impacted area).
 5. Time of day. Is a night response needed and safe?
 6. Is the ranger still on scene. Is it safe to respond to the area.

 - C. Vessels over 100ft (freighters, tugs, barges, shrimp boats)

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1. Refer to Recommendations for Large Vessel Groundings (Section VI)

3. On-Site Situation and Preliminary Injury Assessment.

*Always consider safety when assessing any situation.

- A. Confirm that there are no concerns or other emergencies (e.g. vessel taking on water, hazardous material spill). These situations take priority over a grounding and therefore, should be addressed first.
- B. Locate injured area and determine (estimate) extent of injury***.
 1. Conduct a preliminary injury assessment
 2. Take photos of resource injury

*** Make sure that all vessels in the area know that there is going to be someone in the water. Verify that the engines have been turned off.

- C. Determine what part of vessel is aground
 1. Is the vessel lightly aground
 2. Is the entire keel touching bottom
 3. Are the props embedded in the resource
- D. Communicate with towing operator to determine his/her plan for vessel removal and express any concerns to the towing operator and the ranger on scene. Notify the towing operator and ranger if the plan for removal has been approved.
- E. Assist in determining the best exit route
- F. Vessels over 100ft (freighters, tugs, barges, shrimp boats)
 1. Refer to Recommendations for Large Vessel Groundings (Section VI)

4. Notification of Resource Management-

- A. Resource management personnel will be notified by visitor protection of incidents involving prop dredging, vessel grounding and any other activity that results in physical injury to park natural resources.
- B. Visitor protection rangers will notify RM personnel immediately in the following situations:

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1. Vessel over 100ft in length
 2. Vessel removal will involve a "Technical Extrication"
 3. Vessel grounding is on the reef or in the mangroves
 4. Vessel grounding has injured a cultural resource
 5. Vessel operator attempted to power off.
- C. RM personnel will be notified within one week of any grounding that does not fall into the categories listed above.
- D. Grounding Documentation Data Sheets will be forwarded to Resource Management within one week of the grounding incident.
- E. **RM Response to Vessel Groundings**

Keep in mind that response to vessel groundings is always subject to your availability, comfort level of that staff and the level of the grounding incident (large vs small, emergency or not). Depending upon the situation RM staff who are on duty have other duties that may take precedence.

1. **VESSELS OVER 100 FT IN LENGTH**

If the vessel is over 100 ft in length (ie: freighters, barges, commercial/recreational fishing vessels) in any resource (coral, seagrass, mangroves) the **RM division chief and RM Resource Damage Recovery Officer (RDRO) will be notified immediately and should respond as soon as possible.**

2. **VESSELS LESS THAN 100 FT IN LENGTH**

- a. The RDRO will respond in an emergency and try to respond to situations listed in Section IV,4,B.
 - b. The response from RM may be different depending upon whether the RM Resource Damage Recovery Officer (RDRO) is on duty or not. If the RDRO is not on duty other RM staff will respond in an emergency.
- F. Resource Management personnel may be contacted to
1. Conduct preliminary on scene injury assessment.
 2. Assist in evidence collection. Evidence collection is the rangers responsibility but if RM staff is on scene in the water collection of evidence can be conducted.
 3. Review and approve removal plans
 4. Help in determining an exit channel through reef area
 5. Take underwater photos of vessel in place

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6. Determine location and extent of damage
7. Determine if props or other sections of vessel are embedded in sediment/coral

5. Removal of Vessel from Grounding Site

- A. Refer to Section III,4 under Visitor Protection
- B. Coordinate with rangers on scene
- C. If the towing operation is causing unnecessary resource injury then stop the operation, inform the towing operator that another method must be used or additional assistance obtained.
- D. At no time will a vessel or salvage company be allowed to use the grounded vessels engines to remove the vessel, dig out sediment to remove the vessel or use water or air hoses to remove sediment without the prior approval of the resource management division. Other methods can be found to remove vessels without causing more damage.
- E. Unusual Situations
 1. Refer to Section III,4,D under Visitor Protection.
- F. Vessels over 100ft (freighters, tugs, barges, shrimp boats)
 1. Refer to Recommendations for Large Vessel Groundings (Section VI)

6. Injury Assessment

The objective of injury assessment is to provide an accurate report of the extent of physical injury to support enforcement cases, civil penalties and management strategies.

- A. Resource Management Biologist will receive grounding information form Visitor Protection. This information will be one of two forms; a Grounding Documentation Data Sheet or a Towing Grounded Vessel Sheet. The following information is necessary to assess the injury and complete the injury assessment report.
 1. Location of grounding (GPS coordinates)
 2. Direction of travel
 3. Number of engines
 4. Size of Vessel
 5. Incident Number
 6. Name of operator and vessel

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7. Date of incident
 - B. The assessment should be completed as soon as possible after the initial grounding incident
 - C. Injury assessments conducted by BNP Resource Management Personnel will consist of the following products:
 1. A measurement of extent of physical injury
 2. Identification of injured species
 3. Diagram of grounding site
 4. 35mm photos and or UW video of site
 5. Determination of level of injury (Section VII)
 - D. Collect evidence (ie: paint samples), for the case officer, if appropriate.
 - E. Notify Case Officer of the extent of injury
 - F. Forward reports to case officer when appropriate.
 - G. Vessels over 100ft (freighters, tugs, barges, shrimp boats)
 1. Refer to Recommendations for Large Vessel Groundings (Section VI)

7. Incident Documentation and Case Management for Resource Management Biologists

The extent of documentation will depend on the nature of the incident, level of injury, and enforcement action. **A copy of all forms are included at the end of this document (Appendices A-D).** Forms to receive and complete include:

- A. Incidents not involving a resource recovery action
 1. Incidents which were handled by a tow company
 - Receive
 - Towing Operator Report (Appendix A)
 - Complete
 - Resource Injury Assessment Form (Appendix C)
 2. Incident in which BNP personnel respond but no resource recovery action will be initiated
 - Receive
 - Vessel Grounding Documentation Data Sheet (Appendix B)
 - Towing Operator Report (Appendix A)
 - Complete
 - Resource Injury Assessment Form (Appendix C)

B. Incidents involving a resource recovery action

1. Restitution cases

Steps to follow when a case falls within the restitution schedule (some cases may be taken out of this category as determined by the Park based on resource or emergency conditions, See Section VIII)

- a. Refer to Section III,8,B,1
- b. Receive from ranger
 - Vessel Grounding Documentation Data Sheet (Appendix B)
 - Towing Operator Report (Appendix A)
- c. Completed by biologist
 - Injury Assessment Report
 - Cover Sheet with total area injured
 - Resource Injury Assessment Form (Appendix C)
 - Drawing of injury
 - Injury calculations
 - Narrative
 - Drawing showing photograph location
 - List describing each photograph
- d. Forward copy of report to GLEO and case ranger
- e. Label all photos taken of vessel. Label negatives.
 - Two labeled copies should be made of all photos.
 - The labels should include:
 - Incident Name/number
 - Date photos taken
 - Photographers name
- f. Start a file/packet for the case coordinating with GLEO
- g. Include in the file:
 - GDDS form
 - Original Assessment report
 - Original photos/video of vessel
 - Tow Company Report if have one
- h. RDRO will coordinate with GLEO for possible court appearances or on settlement.
- i. Refer to the Guidelines for Recovery of Cost for procedures on managing funds.

2. Restoration cases

Steps to follow when a case outside the restitution schedule (some cases may be put in this category as determined by the Park based on resource or emergency conditions, See Section VIII)

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- a. Refer to Section III,8,B,2
- b. Receive from case ranger
 - Vessel Grounding Documentation Data Sheet (Appendix B)
 - Towing Operator Report (Appendix A)
- c. Completed by biologist
 - Injury Assessment Report
 - Cover Sheet with total area injured
 - Resource Injury Assessment Form (Appendix C)
 - Drawing of injury
 - Injury calculations
 - Narrative
 - Drawing showing photograph location
 - List describing each photograph
- d. Begin a keeping a time log for hours worked on case
- e. Keep copies of your time cards and premium pay authorization sheets for all pay periods in which you worked on the case.
- f. Keep copies of all receipts on purchases
- g. Label all photos and negatives
 - Three labeled copies should be made of all photos.
 - The labels should include:
 - Incident Name/number
 - Date photos taken
 - Photographers name
- h. Coordinate with GLEO or case ranger to request a joint RM/LE overflight of grounding site.
- i. Keep log of any communication with owner, operator, insurance company etc.
- j. Coordinate with GLEO to compile all past response and assessment costs.
- k. Determine restoration needs for injury
- l. Develop a claim report including costs allowed under 19jj.
- m. Start a file/packet for the case
- n. Include in the file/packet (see attached Check list)
 - GDDS form
 - Original Assessment report
 - Copy of Incident report
 - Original Photos and negatives
 - Aerial Photos and negatives of site
 - Original video tapes
 - Photocopy of VN including probable cause statement
 - Tow Company Report if have one
 - Copy of navigational chart of area
 - Communication (email, faxes, letters, logs etc)
 - Copies of time cards, premium pay sheets, receipts

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- Copy of time keeping log
- Copy of third party contracts
- Claim Report
- o. File/packet should be completed **within 4 weeks of incident**
- p. RDRO will maintain files
- q. RDRO will coordinate with GLEO to compile the complete package for referral including:
 - Case can be referred to AUSA or NPS Solicitors Office
 - Case referral should include a concurrence memo signed by Superintendent and forwarded through Regional Director and Associate Director of Natural Resource Science and Stewardship.
- r. RDRO will coordinate with GLEO on requests from attorneys including discoveries, FOIA, interrogatories etc
- s. RDRO will coordinate with GLEO on settlement and/or litigation
- t. Refer to the Guidelines for Recovery of Cost for procedures on managing funds.

SECTION V

PREVENTION of Vessel Groundings

Ideas for the prevention of vessel groundings.

1. Identify boaters that are experiencing navigational difficulties and provide assistance.
 - A. Orient them using a chart & visible aids to navigation.
 - B. Advise them on the safest route to their destination (exercise judgment in this regard, especially when communicating over VHF radio, some boaters may accuse authorities of bad advice if they subsequently run aground).
 - C. Distribute brochures explaining impacts of vessel groundings.
2. When practical plan patrol route with problem groundings sites in mind.
 - A. Most groundings take place when low tide occurs in the late afternoon.
 - B. Anticipate when a boaters route is going to take him into shallow water and safely stop him/her prior to running aground.
3. Increase Park staff on holiday weekends to assist in protecting shoals.
4. Encourage boaters to:
 - A. Use the proper navigational chart.
 - B. Wear polarized sunglasses when boating.
 - C. Pay attention to the tide schedule.
 - D. Stay in marked channels.
 - F. Seek local knowledge.
 - G. Review local notice to mariners
 - H. Monitor VHF 16
5. Review effectiveness of aids to navigation in park
 - A. Determine if new AtoNs are needed
 - B. Look for grounding "hot spots"
 - C. Review advances in navigational technology
6. Implement public awareness campaign with other divisions and agencies.

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A. Perform presentations and speaking engagements.

7. Coordinate with agencies dealing with similar issues

SECTION VI

BISCAYNE NATIONAL PARK RECOMMENDATIONS FOR LARGE VESSEL GROUNDINGS

Developed by:

Karen Battle – Marine Biologist – Biscayne National Park

Steve Stinnett – Park Ranger – Biscayne National Park

Between 1970 and 1991, 6 large vessel groundings occurred in Biscayne National Park. In the past three years we have had two additional incidents, Igloo Moon (1996) and Allie B (1998), and it is likely that there will be more in the future. These recommendations have been written in order to learn from past incidents. The ideas put forward are suggestions and will more than likely require adjustment for current conditions. These recommendations can be used to supplement the existing Grounding Protocols and the techniques can be used in smaller groundings or seagrass groundings when appropriate.

Criteria for Large Vessel Grounding – If at least two of the following apply

- ◆ Vessels over 100' long.
- ◆ Vessel will take longer than 24 hours to extricate
- ◆ Assessment will take more than 48 hours to complete
- ◆ Other agencies (ie: Coast Guard, NOAA) are involved in a significant capacity
- ◆ Incident Command needs to be initiated
- ◆ Park requires outside funding to extricate the vessel, conduct the investigation or complete the assessment

INITIAL RESPONSE

The following will be immediately notified of a large vessel grounding

Park Superintendent
NPS Environmental Response Planning Assessment (ERPA)
NPS Solicitors Office

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USCG

Initial response will depend upon the nature of the grounding. Igloo Moon was aground when the park responded where as Allie B had already extricated itself and its barge. These recommendations discuss techniques that may be used to locate the injury, collect evidence and conduct a preliminary injury assessment. The techniques can also be used to assist in determining the footprint of the grounding and in the collection of information necessary for investigation and prosecution.

OBJECTIVES

1. Locating the injury
2. Collecting evidence
3. Preliminary injury assessment

PARK PERSONNEL

1. Response Personnel ***:
One Option is to have a combined Visitor Protection and Resource Management initial response team which would include: One Visitor Protection Ranger (the Investigating Officer) and One Resource Management Biologist (Grounding Program Leader if available)
 - More efficient to complete all objectives
 - Only one boat is needed
 - No overlap of work
 - Less need for other divers
 - Less staff taken from normal duties
 - Limits the number of personnel needed to prosecute the case*** All response personnel as listed above need to be comfortable in the water and need to be dive certified if diving is required.
2. Incident Command Team
 - Depending upon the size and extent of the incident an Incident Command Team may need to be established (refer to Appendix for position descriptions)
 - Limit positions to those that are necessary to complete the objectives
3. Support personnel
 - Other park staff may be used as boat drivers/dive tenders and other support functions.
 - NPS Contractors can be used when other divers or workers are needed but will need to meet all NPS requirements for diving.
4. All Park personnel should understand that the site of the vessel grounding incident is a crime scene and should be dealt with accordingly
5. All Park and non park personnel, except the Investigating officer and Resource Management biologist assigned to case, will get prior approval before visiting grounding location.

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6. Investigating officer will maintain a log of people visiting the site and the purpose of the visit.
7. All site visits should be documented.

MANAGEMENT ACTIONS

1. Closure of the waters around the grounding site should be considered in order to protect personnel, the public, and the crime scene.
 - The closure should be limited in its scope and duration.
 - The closure zone will need to be marked
 - If the decision is made to have a private contractor install the markers for the closure zone, take into consideration the amount of time that the zone may potentially be closed.
 - The markers will need to be maintained for the length of the closure.
 - Removal of the markers should also be included in any contract.
 - The closure must be clearly defined and detailed in the Superintendent's compendium and communicated to all employees.
 - The closure should be broadcast/printed in the Notice To Mariners
 - It may be necessary to provide protection personnel to enforce the closure and document the impact of the closure on visitor use of the park (necessary for later computation of lost services).
2. Depending upon the grounding incident media coverage may be possible
 - Determine what information may be given to media
 - Consult with NPS Solicitors Office
 - Consult with Investigating Officer or Chief Ranger
3. In working with NPS ERPA and Solicitors Office the park management will need to keep in mind what time lines are needed to complete work such as the assessment and or restoration. Decision that will need to be made:
 - If the coordination with the RP is moving too slow, will the park proceed on its own to complete the work.
 - Funding for work if cooperation with the RP is not obtained

INITIAL INVESTIGATION

1. When initiating the investigation the officer should obtain the following information (Appendix D):
 - The latitude and longitude of the grounding
 - Direction of travel when the grounding occurred
 - Position fixes of the vessel while en route to the grounding site, while aground and post grounding
 - These fixes may be documented on charts onboard the vessel as well as in

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electronic navigation equipment, i.e. GPS or LORAN. The officer should consider seizing the chart(s). The vessel may have an automated course recorder printout. If the captain/owner will not consent to the gathering of information from electronic navigational aids the officer should consider seizing the vessel and obtaining a warrant. It may be necessary to send the unit to the factory with a court order to get the data.

- Were they navigating using markers and radar?
 - Was the radar unit turned on and manned by a trained operator?
 - Were they maintaining an adequate lookout?
 - Was anyone on the bridge immediately prior to and during the grounding of the vessel?
 - Who was assigned that duty?
 - What were the sea and weather conditions when they ran aground?
 - Speed of the vessel prior to and when the grounding occurred
 - This may be obtained from the crew but it should also be calculated based on the position fixes from the navigation equipment and/or chart
 - What was the intended route? Were they on course?
 - Was a route plotted on the chart or in the navigation equipment?
 - If so, document what that route was
 - Was a waypoint on the planned route missed?
 - Any actions taken by the captain and crew to avoid grounding
 - All actions taken by the captain and crew once the vessel was aground
 - If the vessel was removed how did they extricate themselves from the reef?
 - Statements from all crewmembers, i.e. “It felt like we were losing power, then I realized that we were dragging on the bottom. I guess that was going on for about thirty minutes before we stopped”
 - Information on the cargo being transported.
4. Gathering this information may require interviewing the crew, the owner and the company representative. Attempt to gather as much information at the scene from the captain and crew, more information can be gathered during the initial response or interviews than at a later time. Some of this information may be incorporated in reports written by other agencies such as USCG Marine Safety Office, FMP, NOAA, or local law enforcement.
 5. It is necessary that this information be gathered in a timely manner so that a response team can begin locating the injury to reefs and reef structure. Timely response to the grounding site increases the percentage of live coral that can be saved and enhances

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the value of the data and evidence collected at the scene.

LOCATING INJURY

In order to locate the injury from a vessel that has run aground but has extricated itself or to find the footprint of a grounding, the following techniques and information may be used.

1. GPS coordinates including the location of the grounding site or the path the vessel traveled.
 - Search at the location of the last set of coordinates (the grounding site)
 - Use all sets of coordinates and a navigational chart to plot out the path traveled before the vessel ran aground thereby identifying possible areas of resource injury.
 - If GPS coordinates are not available use the information listed below
2. Vessels direction of travel and compass bearings
 - Use the information and a navigational chart to identify possible areas of resource injury.
3. Description of grounding incident
 - Use the information and a navigational chart to identify possible areas of resource injury.
4. Plotting on Navigational Chart (See 1-3 above)
 - Use a combination of GPS coordinates, direction of travel, compass bearings and a description of the incident to plot onto a navigational chart
 - Extrapolate for entrance and exit paths
 - From the chart identify possible areas of resource injury.
5. Search patterns by boat
 - Using tow lines attached to stern of vessel, pull snorkelers behind boat
 - Most efficient if pulling two people
 - While pulling snorkelers boat driver should run parallel transects through search area
 - Transects should be approximately 50 ft apart.
 - Have floats and weights ready to drop onto injury sites when located by snorkelers
 - Lobster floats with 5 pound dive weights and parachute cord are suitable for temporary markers
 - Larger buoys with cement blocks and polypropylene cord for more permanent markers
 - Chart Plotter (if available) can be used keep track of the transects the boat has taken
 - Assists in not searching previously searched areas
6. Overflight

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- Helicopters can be used to fly over grounding location
- If good weather they can assist in locating injury, entrance and exit scars
- Photo and video document the site

EVIDENCE COLLECTION

Evidence in a vessel grounding incident may include any of the following:

1. Items seized from the vessel
 - Navigational Charts
 - Navigational Equipment
 - Logs
2. Paint chips/scrapings/pieces of vessel from injury sites
 - Assign exhibit number to sample before collection
 - Take photos of sample before collection
 - Use underwater writing tablet to display the exhibit number for that sample in photos
 - Take close up photo and a photo from distance to give a reference of the location of the sample being collected
 - If possible use the same tool (i.e. dive knife) to collect paint samples from features too large to collect. Document what tool was used to collect each sample.
 - Store samples in sea water and refrigerate
2. Document compass bearings of paint striations or grounding scars
 - Take photos of each compass bearing obtained
 - This information can be used to help determine exit/entrance direction
3. Paint scrapings should be obtained from the vessel
 - Samples should be taken of all colors, layers and types of paint
 - Photos should be taken of each sample obtained
4. Photos and/or video should be taken of any damage to vessel (ie: hull or props)
 - When doing underwater photography or videography, use a color-correcting filter and when taking close-ups a strobe should be used to provide necessary color and detail.
5. Negatives and video tapes should be considered evidence and handled appropriately
6. Evidence should be numbered in the field
 - Carry a copy of evidence log in the field
 - Allows for consistent numbering

PRELIMINARY INJURY ASSESSMENT

Types of injury possible

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- ◆ Barge tow cable markings. Characteristic injury from cable strikes will show as striations in coral and on hard surfaces. The cable will also injure or remove other invertebrates such as soft corals or sponges.
 - ◆ Scraping from bottom of vessel. This injury can be characterized, depending upon the shape of the hull, by overturned coral heads or coral rocks and “flat topped” areas where all living invertebrates and framework have been removed to a certain depth leaving a flat surface.
 - ◆ Scars from propellers or keel of vessel.
 - ◆ Fractured or crushed substrate where vessel hits or runs aground. The fractures to the coral framework can sometimes be less obvious than the crushed substrate.
 - ◆ Blow out hole from vessel propeller wash
 - ◆ Sediment pile or berm from displaced material caused when vessel creates a blow out hole
 - ◆ Displaced features such as whole coral heads or sections of coral heads which have been overturned or framework which has been fractured from its original location
1. Number all injured sites, as they are located.
 - Many people including the investigating officer, biologist and contractors will need to reference the injured sites. By numbering the injured sites immediately as they are found all references to the sites will correspond.
 - Can use metal stakes hammered into the bottom with plastic numbered tags attached or can directly glue numbered tags to surface
 2. Preliminary measurements will need to be taken of all resource injuries
 - The measurements should include length, width and depth
 - Depth of the blow out hole can be obtained using a depth gauge
 - Depth from surface of water for each injured area should also be recorded
 - This information will become very important if the RP will stipulate to damages before a complete assessment is undertaken.
 3. Photos and video should be taken of all resource injuries
 - When doing underwater photography or videography, use a color-correcting filter and when taking close-ups a strobe should be used to provide necessary color and detail.
 - When taking close-ups of injured corals or other organisms, a second photo should be taken at distance to show the location of injured organism in reference to other areas
 - An item of known length should be used in photos to show scale.
 - Photos should be developed and labeled as soon as possible
 - Negatives and slides should be treated as evidence
 4. Photos and video of area around injured areas should be taken to show the baseline conditions before injury had occurred
 - Follow suggestions listed above for photography and videography
 5. Determine species impacted
 - Identify injured corals and other organisms to species if possible.
 6. Determine a preliminary percent cover of species and species diversity
 - If there is available time use randomly placed quadrats

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- This information will normally be obtained when the full assessment is completed
7. Obtain an estimate of three dimensional relief
 - If possible determine the height of the three dimensional relief that was injured
 8. Create photo mosaic of injured area
 - In order to complete a photo mosaic the weather and water visibility will need to be good
 - When time is limited and other technology is not available the mosaic can be completed by one diver/snorkler swimming on surface holding another diver at a consistent arms length below the surface
 - The diver below surface takes continuous overlapping photos
 - Diver on surface guides photographer through injured area
 - Allows for consistent depth for photos.
 9. Upon completion of each days field work the biologist should create sketches of each new injured area. On each sketch the biologist will want to include
 - The location and direction each photo was taken
 - The photo numbers should correspond to the numbers on each labeled photo
 - The direction of each video transects
 - The location that evidence was collected and the corresponding evidence number (obtained from the investigating officer)
 - A drawing of the injured site with the location and identification of injured organisms
 - The storage of original copies of sketches, drawings and field notes should be done in a manner compatible with evidence handling practices.

SECTION VII

INJURY CLASSIFICATIONS

Sea Grass Injury Classifications

Level I: Seagrass is totally removed from the site. The substrate is disturbed with significant voids present (generally 30 centimeters or more in depth). Subsequent erosion may be significant. Restoration of the site to baseline conditions will require sediment replacement and seagrass re-vegetation. Site monitoring and protection (markers and/or public education) will be required to ensure restoration success.

Level II: Seagrass is either totally removed from the site, or is disturbed to an extent that will preclude natural recovery (e.g., rhizomes are cut). The substrate is disturbed, but significant voids are not present (generally less than 30 centimeters in depth). Subsequent erosion may be negligible. Restoration of the site to baseline conditions will require seagrass re-vegetation. Site monitoring and protection (markers and/or public education) will be required to ensure restoration success.

Level III: Seagrass has been covered with sediment (e.g. sediment pile or berm) from an adjacent area. Restoration of the site to baseline conditions will require removal of sediment to a level grade and possibly re-vegetation. Site monitoring and protection (markers and/or public education) will be required to ensure restoration success.

Level IV: Seagrass is disturbed, but will naturally recover. Seagrass blades are removed from the shoal but the substrate is not disturbed. Restoration of the site to baseline conditions can be achieved through natural recovery. Site monitoring and protection (markers and/or public education) will be required to ensure restoration success.

Level V: Seagrass is disturbed, but will naturally recover. Shading and compressing while the vessel remains aground and/or the toxic effects from the bottom paint (characterized by a black color to the blades) have disturbed the seagrass. The substrate is not disturbed. Restoration of the site to baseline conditions can be achieved through natural recovery. Site monitoring and protection (markers and/or public education) will be required to ensure restoration success.

Level VI: Seagrass is disturbed, but will naturally recover. Seagrass blades are cut but not

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Note: Natural resource injury will be classified according to the categories given above and any one site may have areas of differing levels of injury.

Coral Injury Classifications

Level I: Injury has occurred to reef framework: obliteration of spurs and similar formations; cracks in reef framework; excavations caused by propeller; production of rubble, either directly by the ship or secondarily from reef matrix exposed to wave action. The likelihood of secondary injury is high if mediation or restoration measures are not implemented. Restoration of the site to baseline conditions may require filling “blow holes”, removing rubble, rebuilding lost reef framework, salvaging corals and other living organisms to be replaced onto reef tract or in coral nurseries and restoring corals to injured area. Site monitoring and protection (markers and/or public education) will be required to ensure restoration success.

Level II: One or more coral colonies has been destroyed. Individual colonies or “heads” are overturned, fractured or obliterated; branches are broken; although there is substantial injury to individual colonies there is little chance of secondary injury. Restoration of the site to baseline conditions may require rebuilding lost reef framework, salvaging corals and other living organisms to be replaced onto reef tract or in coral nurseries and restoring corals to injured area. Site monitoring and protection (markers and/or public education) will be required to ensure restoration success.

Level III: Injury is limited to superficial scrapes of living tissue and/or broken small branches. There is no chance of secondary injury. Restoration of the site to baseline conditions can be achieved through natural recovery. Site monitoring and protection (markers and/or public education) will be required to ensure restoration success.

Note: Natural resource injury will be classified according to the categories given above and any one site may have areas of differing levels of injury.

SECTION VIII

BISCAYNE NATIONAL PARK VESSEL GROUNDING

RESTORATION

I. Purpose

The guidelines in Section VIII are intended to give a general overview of restoration authorities under PSRPA, restoration options that may be implemented and general park priorities for injured resources. More detailed information concerning restoration can be found in Biscayne's GMP, RMP and resource specific parkwide restoration plans.

II. Scope

This authority applies to the restoration of an injury caused by a vessel grounding incident to any living or non-living resource within the boundaries of Biscayne National Park, except for resources owned by a non-federal entity.

III. Definitions

- A. Restoration:** Any action, or combination of actions used to restore, rehabilitate, replace, or acquire equivalent of injured natural resources and services
- B. Primary Restoration:** Any action including, natural recovery, that returns an injured resource to its baseline condition
- C. Compensatory Restoration:** Any action taken to compensate for interim loss of services that occur from the date of the incident until recovery.
- D. Services:** Functions performed by the resource for the benefit of the natural resources of the park or the public.
- E. Emergency Restoration:** are actions undertaken to minimize the effect of secondary injury. These actions are considered part of the response to a vessel

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grounding incident.

IV. Background

In 1916 Congress created NPS in the Department of the Interior to:

promote and regulate the use of the Federal areas known as national parks, monuments, and reservations..... by such means and measures as conform to the fundamental purpose of said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations. (NPS organic act, 16 USC 1)

Biscayne National Park was established by Congress on June 28, 1980 (P.L. 96-287, 16 USC 410 gg) to "preserve and protect for the education, inspiration, recreation, and enjoyment of future generations a rare combination of terrestrial, marine, and amphibious life in a tropical setting of great natural beauty..." The pristine waters and outstanding underwater features combined with fishing and boating opportunities, and numerous archeological sites make BISC a popular recreational fishing, boating, and diving destination for local, national and international visitors. The loss of resources can comprise the overall ecological function of the protected areas of the park while also threatening the public's ability to enjoy those resources.

Public Law 101-337, Park System Resource Protection Act (104 Stat. 379, 16 U.S.C. 19jj) requires the Secretary of the Interior to assess and monitor injuries to park system resources. The Act specifically allows the Secretary of the Interior to recover response costs and damages from the responsible party (RP) causing the destruction, loss of or injury to park system resources. This Act provides that any monies recovered by the NPS may be used to restore, replace or acquire equivalent resources to the ones that have been injured.

Restoration is initiated to speed the recovery of an injured resource so that the injured area has aesthetic value and is a functional part of the marine environment. Even assuming successful

recovery of the resource, restoration of the injured areas alone is not sufficient to compensate for the total losses incurred. The resource injured may take years to return to its baseline level of service production following restoration, compensation for these interim lost services must be incorporated into the estimate of total damages in order to sufficiently compensate the public for the total losses incurred.

V. RESTORATION

- A. In each case where damage recoveries are made under this directive, the park shall make every effort to replace, restore or acquire equivalent of a park system resource.
- B. Restoration activities include monitoring the success of the resource's recovery whether the area was actively restored or allowed to recover naturally.

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- C. Restoration activities depending upon size of the injury and available staffing may be completed by outside contractors.
- D. The RDRO will coordinate restoration activities
- E. Restoration Priorities (see also GPP, GMP, RMP and specific restoration plans)

1. Seagrass Restoration Priorities

All of the following are considered high priority.

- a. Areas that have a potential for increased erosion if restoration is not completed.
- b. Areas where sediment is loss to a depth of 0.30 meters or greater and must be replaced to allow for seagrass transplanting or recolonization
- c. Areas of greater than 20 cubic meters and/or 500 square meters of injury.
- d. Areas that have the potential to be used by boaters as navigable channels thus possibly increasing the injury.
- e. Pristine areas
- f. Sites in which a non natural materials (eg. vessels, debris, lobster traps) have impacted the seagrass and a timely removal will decrease resource damage.

2. Coral Restoration Priorities

All of the following are considered high priority

- a. Sites where fractured living coral or other marine animals may potentially be recovered.
- b. Extensive injuries that may change the hydrological morphology of an area.
- c. Sites with loss of habitat complexity.
- d. Sites with fractures in reef framework possibly leading to further injury.
- e. Sites with loose rubble that may potentially cause ancillary damage to other reef areas in storm events.
- f. Sites in which a non natural materials (eg. vessels, fishing nets, lobster traps) have impacted the reef and a timely removal will decrease resource damage.

3. Mangrove Restoration Priorities

All of the following are considered high priority

- a. Sites in which a non natural materials (eg. vessels, debris) have impacted the mangroves and a timely removal will decrease resource

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damage.

- b. Areas that have a potential for increased erosion if restoration is not completed.
- c. Areas that provide habitat for threatened and endangered species.

F. Restoration Options (see also GPP, GMP, RMP and specific restoration plans)

1. Coral reef

a. Excavations including loose rubble or sediment

Excavations should be stabilized, either by re-establishing the crust, by repairing the sides and bottom, filling the hole or by reestablishing natural recruitment surfaces. Sediment berms should also be stabilized when necessary.

b. Fractured reef framework

Framework injuries creating fractures can cause secondary injury should be repaired when necessary before other restoration activity begins.

c. Rubble and boulders

Loose boulders or rubble should be stabilized to decrease the potential for secondary injury. Depending upon the characteristics of the injury, rubble/boulders can be removed, cemented in place or reattached to the reef framework.

d. Loss of framework

If possible, natural framework should be replaced when an injury causes a loss of framework, habitat complexity or recruitment surfaces. These injuries may include trenching or an obliteration of reef framework

e. Transplantation of coral colonies

Immediate replacement and recovery of dislodged or threatened reef organisms including coral and toppled reef fragments that survive grounding events should be accomplished. If time constraints prevent this, “survivors” should be removed and set aside in coral “gardens” or “safe areas” until they can be reattached.

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2. Sea Grass

a. Removal of sediment displaced from excavation hole

Sediment displaced from a "blow out" hole will often smother the under lying sea grass if not removed within days of the injury event. Sediment should be removed and placed back into the hole. Care should be taken not to disturb any seagrass or rhizomes under the pile/berm.

b. Fill excavated hole/trench

Ideally the sediment displaced from the "blow out" hole should be used to refill it. If this is not possible an ecologically compatible material that will adequately fill the hole can be considered.

c. Transplanting sea grass

Careful consideration should be given to selection of donor and transplant sites. In addition to the natural growth limitations, consideration should be given to the likelihood of future injury events in the area.

3. Restoration funding sources:

a. Responsible party

Ideally the responsible party should fund the cost of restoring a injured site.

b. Biscayne National Park

Conceivably there may be injury incidents which require immediate action and time does not allow the opportunity to secure external funding sources.

c. Grants

When possible grants can be secured to fund appropriate restoration projects

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APPENDICES

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Appendix A

REPORTING FORM FOR TOWING GROUNDED VESSELS

These materials are draft guidance that have not been adopted. The views presented are those of the author and not necessarily representative of the position of the agency or the federal government

REPORTING FORM FOR TOWING GROUNDED VESSELS

Date: _____ Your Name: _____

Full Name

Tow Company: _____

***** This form must be completed by tow company not by vessel owner/operator**

Owner/Operator Name

Vessel Name

Owner/Operator Address

Telephone

City, State, Zip

FL # and/or Documentation

Vessel Length Color, Make

Type of vessel: Power Sail other _____ (circle one)

DOB DL#
State: _____

Number of engines: 1 2 other _____ (circle one)

Statement from Operator Describing Incident (Please include what direction they were heading):

Latitude _____ Longitude _____ Geographical Location: _____

Time Incident Occurred _____ Time Tow Vessel On Scene _____ Time Vessel was Removed _____

When you arrived on scene the vessel was pointing in what direction:

N S E W other _____ (circle one)

Site should be marked at stern of vessel. Where was site marked (circle one, if other then stern please explain): stern other (bow, port side, starboard side) explain _____

Site marked with ? PVC Stake _____ Other _____ **Number on the stake:** _____

What direction was the vessel removed: N S E W other _____ (circle one)

***** Biscayne National Park Must Be Contacted On All Groundings.**

What Ranger was contacted? _____ When? Date & Time _____
Name or Call Number

Person completing report: _____ Signature: _____

Please fax forms to Biscayne National Park (230-0013) within 24 hours. Revised 3/98

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Appendix B

Grounding Documentation Data Sheet

Grounding Documentation Data Sheet

These materials are draft guidance that have not been adopted. The views presented are those of the author and not necessarily representative of the position of the agency or the federal government

Date: _____ Time: _____ Incident #: _____

Location: _____

Site Coordinates (GPS, Loran, Other): Latitude _____ Longitude _____

Did you respond? Y (complete form) N (attach Towing Operator Report)

Is Towing Operator Report Attached Y N (If No please complete form)

Describe Situation: _____

Does Resource Management need to be contacted: Y N Who was contacted: _____

Did you mark the site? Y N If so how? float stake other _____ Stake Number _____

If not why? _____

Vessel Make: _____ FL #'s: _____ Year: _____ Color: _____

Vessel Length _____ Power _____ Sail (circle one) _____

Engines: I/O O I other _____ (circle one) How Many: 1 2 other _____ (circle one)

Name of Tow Company: _____

Ranger present when the vessel was removed?: Y N

Diagram of scene: (include compass bearings to objects, locations of banks, shoals, and reefs)

Visitor Protection Ranger _____ Date _____

Visitor Protection Review _____ Date _____

Resource Management Review _____ Date _____

Revised 2/98

Name of Operator

Name of Owner

Address

Address

City, State, Zip

City, State, Zip

Home Phone Number

Home Phone Number

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Work Phone Number _____

Work Phone Number _____

Cell Phone Number _____

Cell Phone Number _____

Drivers License Number _____

Drivers License Number _____

Social Security Number _____

Social Security Number _____

_____ M F _____
Birth Date Age

_____ M F _____
Birth Date Age

Vessel Name

Location or address where vessel is kept

Is the vessel insured: Y N Insurance _____

RESPONSE RECORD

Boat Hours Start:_____ End:_____ Total:_____ Engines 1 2 (circle one)

VP Hours Start:_____ End:_____ OT:_____ Ranger _____

VP Hours Start:_____ End:_____ OT:_____ Ranger _____

Film used # of rolls: _____ Other hours spent on case _____
Other Materials:

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Appendix C

BISCAYNE NATIONAL PARK NATURAL RESOURCES INJURY ASSESSMENT

BISCAYNE NATIONAL PARK NATURAL RESOURCES INJURY ASSESSMENT

Incident Number _____ Biologist Completing Injury Report _____

Ranger _____ Incident Date: _____ Stake Number _____

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Other Biologists Involved

In Assessment: _____ Assessment Date: _____

Vessel Name: _____ Location: _____

Heading: _____ GPS Position: _____

Grounding Track/Length: _____

Reef Framework Injury Yes/No _____ sq. m.

Trench/Blow hole excavation: Yes/No _____ sq. m.

Injury:	Level 1 _____ sq. m.	Level 3 _____ sq. m.
	_____ cu. m.	Level 4 _____ sq. m.
	Level 2 _____ sq. m.	Level 5 _____ sq. m.
		Level 6 _____ sq. m.
	Total of Levels 3-6	
	_____ sq.m.	

Diagram of injury site:

NARRATIVE:

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SPECIES INJURED:

Rhizophore mangle (Red Mangrove)
Syringodium filiforme (Manatee Grass)
Montastrea annularis (Star Coral)
Colpophyllia natans (Boulder Brain Coral)
Diploria clivosa (Brain Coral)
Agaricia agaricites (Lettuce Coral)
Porites porites (Club Tip Finger Coral)
Dichocoenia stokesii (Elliptical Star Coral)
Millepora complanata (Platy Fire Coral)
Palythoa caribbea (Golden Sea mat)

Halodule wrightii (Shoal Grass)
Thalassia testudinum (Turtle Grass)
Montastrea cavernosa (Large Star Coral)
Diploria strigosa (Brain Coral)
Diploria labyrinthiformis (Grooved Brain Coral)
Porites asteroides (Mustard Hill Coral)
Porites divaricata (Finger Coral)
Milleporia alcicornis (Encrusting Fire Coral)
Siderastrea siderea (Starlet Coral)
Gorgonia ventalina (Purple Sea Fan)

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Appendix D

Marine Causality Form

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Appendix E

Restitution and Restoration Case Check Lists

Restitution Cases Check List

All items on the following list should be included in a restitution case file.

1. GDDS form
2. Incident report
3. VN - Photocopy original VN including probable cause statement
4. Labeled photos and negatives

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5. Copy of Assessment report
6. Original Tow Company Report if have one

Restoration Cases Check List

All items on the following list should be included in a restitution case file.

1. Original GDDS form
2. Original Incident report
3. Copy of Assessment report
4. Labeled Photos and negatives
5. Labeled Aerial Photos and negatives of site
6. Labeled Original video tapes
7. Photocopy of VN including probable cause statement
8. Original Tow Company Report if have one
9. Weather report for day(s) of incident
10. Tide reports for day(s) of incident
11. Ownership search on the vessel
12. Location of the vessel
13. Information on the insurance carrier for the vessel including an address, phone number and policy number
14. Original witness statements
15. Communication (email, faxes, letters, logs etc)
16. Copies of time cards, premium pay sheets
17. Copy of time keeping log
18. Copy of third party contracts
19. Dispatch logs

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CORAL REEF VESSEL GROUNDING RESPONSE AND ENFORCEMENT GUIDANCE: Initial Response and Investigation

INTRODUCTION

I. Purpose of Guidance

2. Investigation of Incident

1. Preliminary Assessment to Determine Level of Response

C. Initial Steps. Develop a preliminary assessment of incident to determine level of response: whether full blown response/ investigation is necessary or whether it falls below a certain threshold and can be handled by responding agency under simpler process.

1. Determine Level of Response. An important initial step is to assess the nature of the incident and the level and scope of injuries in order to determine the level of response that is appropriate to the grounding. The following list of factors may be considered in determining what course of action to take with respect to injuries to coral. The factors are not meant to be hard and fast but to provide guidance.

1. Cases Lending Themselves to Administrative Civil Penalty or Compensation Table¹ Actions

Factors

2. Cases Lending Themselves to a “Full” Damage Assessment Action

A. Factors

3. Identify lead agency and respective agency responsibilities. The lead agency is often identified based on the events that generate the initial response. For example:

4. Lead agency responsibilities.

5. Incident Command Structure. The agency should create or follow an incident command structure that will ensure coordinated and responsive actions. A suggested approach is set forth in Appendix A, which provides the incident command

¹ NOAA – we will need a description of “compensation table actions” because this may not be a term that is used in other agencies.

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structure of the Florida Keys National Marine Sanctuary. This incident command structure (I.C.S.) contains the following elements, which are described in more detail in the Appendix.

6. Ship-side Investigation

This part should be treated as setting forth guidelines to assist investigators conducting the ship-side investigation of a vessel grounding involving a coral reef ecosystem. In following these guidelines, investigators need to be guided by State and federal legal requirements regarding:

7 Occasions may arise where physical evidence may be available and which will require scientific examination. Some examples are oil, paint/scale, pieces of equipment and machinery, pieces of structure.

8 Before removal, the following steps should be taken:

- ' Evidence should first be photographed *in situ*.
- ' The sample should then be photographed on a clear background before being placed in an appropriate clean container(s), glass bottle, plastic bag, tin container, etc.
- ' The container should be sealed and clearly labeled, showing contents, name of vessel, location from which the evidence was taken, the date and the name of the investigator.
- ' For items of equipment and machinery, copies of the relevant certificates should be obtained.
- ' Chain of custody procedures should be followed

1.1.3 Where paint samples are being taken for identification purposes in collision cases, a sample of paint from the ship's paint drum should also be obtained if possible.

1.1.4 Advice should be sought on the correct container to use. For example, plastic bags are suitable for paint samples, but are not suitable in investigations of fires where materials may need to be tested for accelerant, in which case sealable tin cans are preferred.

For additional guidance on handling evidence, see Part 3 below.

1.2. Voyage data recorders

Where information from a voyage data recorder (VDR) is available, in the event that the State conducting the investigation into a casualty or serious incident does not have appropriate facilities for readout of the VDR, it should seek and use the facilities of another State, giving consideration to the following: the capabilities of the readout facility; the timeliness of the availability of the facility; and the location of the readout facility.

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1.3. Other sources of information

Investigators should bear in mind that external sources of independent corroborating information exists.

- Other Government agencies, such as U.S. Customs, quarantine and State Authorities, may have useful information relating to crew lists, the general condition of the ship, stores lists (including alcohol on board), ship certificates, etc.
- Port authorities and independent surveyors may also hold information of use to an investigation.
- Other independent corroborating information from external sources include radar or voice recordings from vessel traffic systems, shore radar and radio surveillance systems, marine rescue co-ordination centres, coroners and medical records.

1.4 Particulars of the ship

Investigators should obtain the following information during the course of an investigation:

- ' Vessel Name
- ' Coast Guard Document, State Number, or IMO number
- ' Nationality
- ' Port of registry
- ' Call sign
- ' Name, address and telephone number of owners
- ' Name, address and telephone number of operators
- ' Name, address and telephone number of agents
- ' Name, address and telephone number of underwriter or insurer
- ' Type of ship
- ' Color of vessel
- ' Home port
- ' Name and address of charterer, and type of charter
- ' Deadweight, net and gross tonnages, and principal dimensions
- ' Means of propulsion; numbers of propellers; particulars of engines
- ' When, where and by whom built
- ' Any relevant structural peculiarities
- ' Amount of fuel carried, and position of fuel tanks
- ' Radio (type, make)*
- ' Radar (number, type, make)*
- ' Gyro compass (make, model)*
- ' Automatic pilot (make, model)*
- ' Electronic positioning equipment (make, model) (GPS, Decca, etc.)*
- ' Life saving equipment (dates of survey/expiry)
- ' Fire fighting equipment (location/type)

* *Note: When obtaining information about navigational equipment, indicate if it was in use.*

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1.5 Documents to be produced

Any documents that may have relevance to the investigation should be produced. Where possible original documents should be retained, otherwise authenticated and dated photocopies should be taken. A number of these documents will contain details sought under these Guidelines.

- ' Ship's register, Coast Guard Certificate of Documentation, or State Numbers
- ' Current statutory certificates
- ' International Safety Management (ISM) Code certification
- ' Classification society or survey authority certificates
- ' Official log book
- ' Crew list
- ' Crew qualifications (see also 1.4 of these Guidelines)
- ' Deck log book
- ' Port log, log abstract and cargo log book
- ' Engine movement book
- ' Engine-room log book
- ' Data logger print-out
- ' Course recorder chart
- ' Echo sounder chart
- ' Oil record book
- ' Soundings book
- ' Night order book
- ' Master's/Chief Engineer's Standing Orders
- ' Company Standing Orders/Operations Manual
- ' Company Safety Manual
- ' Compass error book or records
- ' Radar log book
- ' Planned maintenance schedules
- ' Repair requisition records
- ' Articles of Agreement
- ' Bar records - daily purchases - voyage receipts, etc.
- ' Records of drug and alcohol tests
- ' Passenger list
- ' Radio log
- ' Ship Reporting records
- ' Voyage Plan
- ' Charts and record of chart corrections
- ' Equipment/machinery manufacturer's operational/maintenance manuals (Including those for oily water separator, ballast system)
- ' Coast Pilot
- ' Tide Tables

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- ' Notice to Mariners
- ' Automatic course recorder printout
- ' Fathometer printout
- ' Cargo contract or invoice
- ' Cargo loading plan (plan showing placement of cargo)
- ' Any other documentation relevant to the inquiry

1.5.1 Authentication of documents

The master should be asked to authenticate all documents and to sign all copies taken of documents as being true copies, also to authenticate relevant dates and times

1.6 Particulars of voyage

Investigators should also obtain the following information:

- ' Port at which voyage commenced and port at which it was to have ended, with dates
- ' Details of cargo
- ' Last port and date of departure
- ' Drafts (forward, aft and midships) and any list
- ' Port bound for at time of occurrence
- ' Any incident during the voyage that may have a material bearing on the incident, or unusual occurrence, whether or not it appears to be relevant to the incident
- ' Plan view of ship's layout including cargo spaces, slop tanks, bunker/fuel lube oil tanks (diagrams from IOPP Certificate)
- ' Details of cargo, bunkers, fresh water and ballast and consumption

1.7 Particulars of personnel involved in incident

Obtain this information for the vessel operator, crew, and passengers:

- ' Full name
- ' Date of birth
- ' Social Security Number
- ' Address
- ' Phone Number
- ' Union Affiliation
- ' If full time employee for a company, name of employer
- ' Citizenship
- ' Personal identifying information
- ' Shipboard duties
- ' Details of injury (if applicable)
- ' Description of accident (if applicable)

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- ' Person supervising activity
- ' First aid or other action on board
- ' Capacity on board
- ' Certificate of Competency/Licence: grade; date of issue; issuing country/authority; other Certificates of Competency held
- ' Time spent on vessel concerned
- ' Experience on similar vessels
- ' Experience on other types of vessels
- ' Experience in current capacity
- ' Experience in other ranks
- ' Number of hours spent on duty on that day and the previous days
- ' Number of hours sleep in the 96 hours prior to the incident
- ' Any other factors, on board or personal, that may have affected sleep
- ' Whether smoker, and if so, quantity
- ' Normal alcohol habit
- ' Alcohol consumption immediately prior to incident or in the previous 24 hours
- ' Whether under prescribed medication
- ' Any ingested non-prescribed drugs
- ' Records of drug and alcohol tests
- ' Evidence of operator impairment (indicate type of impairment – alcohol, drugs, physical, other)

1.8 Particulars of sea state, weather and tide

Obtain the particulars of the sea state, weather and tide at the time of the grounding, but also obtain this information during the course of the voyage (through interviews), and after grounding event

- ' Direction and force of wind
- ' Direction and state of sea and swell
- ' Atmospheric conditions and visibility
- ' State and height of tide
- ' Direction and strength of tidal and other currents, bearing in mind local conditions
- ' Wind speed/ Direction

1.9 Particulars of the incident

Obtain the following information about the particulars of the incident:

- ' Type of incident
- ' Date, time and place of incident
- ' Details of incident and of the events leading up to it and following it
- ' Details of the performance of relevant equipment with special regard to any malfunction
- ' Persons on bridge

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- ' Persons in engine-room
- ' Whereabouts of the master and chief engineer
- ' Mode of steering (auto or manual)
- ' Extracts from all relevant ship and, if applicable, shore documents including details of entries in official, bridge, scrap/rough and engine-room log books, data log printout, computer printouts, course and engine speed recorder, radar log, etc.
- ' Details of communications made between vessel and radio stations, SAR centers and control centers, etc., with transcript of tape recordings where available
- ' Details of any communications made by cell phone; who were contacted
- ' Details of any injuries/fatalities
- ' Voyage data recorder information (if fitted) for analysis
- ' GPS tracking function information

1.10 Assistance after the incident

- ' If assistance was summoned, what form and by what means
- ' If assistance was offered or given, by whom and of what nature, and whether it was effective and competent
- ' If assistance was offered and refused, the reason for refusal

1.11 Engine-room orders

In all cases where a collision or a stranding is the subject of an investigation, and the movements of the engine are involved, the master or officer on watch and other persons in a position to speak with knowledge are to be asked whether the orders to the engine-room were promptly carried out. If there is any doubt on the matter, the investigator shall refer to it in his report.

1.12 Grounding Events

Obtain the following information for any grounding events:

- ' Details of voyage plan, or evidence of voyage planning
- ' Location of incident/ grounding (latitude, longitude, loran TD's, bearings)
- ' Depth at grounding site (bow, stern)
- ' Tides at time of grounding (time/high, time/ low, any unusual tidal conditions)
- ' Speed and course of vessel prior to grounding
- ' Last accurate position and how obtained
- ' Subsequent opportunities for fixing position or position lines, by celestial or terrestrial observations, GPS, radio, radar or otherwise, or by lines of soundings and, if not taken, why not
- ' Chart datum comparison to WGS datum
- ' Subsequent weather and tidal or other currents experienced
- ' Effect on compass of any magnetic cargo, electrical disturbance or local attraction

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- ' Radar/s in use, respective ranges used, and evidence of radar performance monitoring and logging
- ' Charts, sailing directions and relevant notices to mariners held, if corrected to date, and if any warnings they contain had been observed
- ' Depth sounding taken, when and by what means
- ' Tank soundings taken, when and by what means
- ' Draft of ship before grounding and how determined
- ' Position of grounding and how determined
- ' Cause and nature of any engine or steering failure before the grounding
- ' Readiness of anchors, their use and effectiveness
- ' Anchor status; number of anchors; anchor position if engaged
- ' Nature and extent of damage
- ' Action taken, and movements of ship, after grounding

1.13 Foundering Events

Investigators should bear in mind the IMO damage cards and intact stability reporting format.

- ' Draft and freeboard on leaving last port and changes consequent upon consumption of stores and fuel
- ' Freeboard appropriate to zone and date
- ' Loading procedures, hull stresses
- ' Particulars of any alterations to hull or equipment, since survey, and by whom such alterations sanctioned
- ' Condition of ship, possible effects on seaworthiness
- ' Stability data and when determined
- ' Factors affecting stability, e.g. structural alterations, nature, weight, distribution and shift of any cargo and ballast, free surface in tanks or of loose water in ship
- ' Subdivision by watertight bulkheads
- ' Position of, and watertight integrity of, hatches, scuttles, ports and other openings
- ' Number and capacity of pumps and their effectiveness; the position of suctions
- ' Cause and nature of water first entering ship
- ' Other circumstances leading up to foundering
- ' Measures taken to prevent foundering
- ' Position where ship foundered and how established
- ' Life-saving appliances provided and used, and any difficulties experienced in their use

1.14 Pollution resulting from the incident

If the incident involves any pollution, investigators should obtain the following information:

- ' Type of pollutant
- ' UN number/IMO hazard class (if applicable)

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- ' Type of packaging (if applicable)
- ' Bill of lading; hazardous waste manifests; material data safety sheets (if applicable)
- ' Quantity on board
- ' Quantity lost
- ' Method of stowage and securing
- ' Where stowed and quantities in each compartment/container
- ' Tanks/spaces breached
- ' Tanks/spaces liable to be breached
- ' Action taken to prevent further loss
- ' Action taken to mitigate pollution
- ' Dispersant/neutraliser used, if any
- ' Restricting boom used, if any
- ' Oil Discharge Monitor printout
- ' Operations manual for oily water separator

4 Below Water Investigation

The following section provides guidelines on conducting a below-water investigation where a vessel grounds upon a coral reef ecosystem. Specific guidelines on documenting damage to coral reef ecosystems will be provided in a separate guidance document, though some references are included here.

2.1 Vessel

- 2.1.1. Paint scrapings should be obtained from the vessel
 - ' Samples should be taken of all colors, layers and types of paint
 - ' Photos should be taken of each sample obtained
- 2.1.2. Photos and/or video should be taken of any damage to vessel (ie: hull or props)
For more details about photographic evidence, see Part 3.4 below

2.2 Injured Areas

- 2.2.1 Document injured areas of coral reefs. *A separate guidance will provide additional specifics. This section provides only a few pointers that relate to gathering evidence.*
 - ' Number all injured sites, as they are located. Many people including the investigating officer, biologist and contractors will need to reference the injured sites. By numbering the injured sites immediately as they are found all references to the sites will correspond. One can use metal stakes hammered into the bottom with plastic numbered tags attached or can directly glue numbered tags to surface
 - ' Take preliminary measurements of all resource injuries
 - The measurements should include length, width and depth
 - If a blow hole has been created, obtain the depth at the bottom of the

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hole.

- Depth from surface of water for each injured area should be recorded
- ' Take photos and videos of all resource injuries (*See additional guidelines in Section 3.4 below*)

2.2.1. Paint chips/scrapings/pieces of vessel from injury sites

- ' Assign exhibit number to sample before collection
- ' Take photos of sample before collection
- ' Use underwater writing tablet to display the exhibit number for that sample in photos
- ' Take close up photo and a photo from distance to give a reference of the location of the sample being collected
- ' If possible use the same tool (i.e. dive knife) to collect paint samples from features too large to collect. Document what tool was used to collect each sample.
- ' Store samples in sea water and refrigerate

Document compass bearings of paint striations or grounding scars

. Take photos of each compass bearing obtained. This information can be used to help determine exit/entrance direction

2.2.3 Evidence should be numbered in the field

- ' Carry a copy of evidence log in the field
- ' Allows for consistent numbering

III. Physical Evidence Check List

The following section provides detailed guidance regarding collection, storage and handling of evidence, both for the above and below water investigations. The procedures outlined in this section represent suggested best practices. The failure in any particular instance to follow one or more of the steps listed here does not necessarily render evidence either inadmissible or unusable.

3.1 Evidence Collection

3.1.1. Evidence/Investigation Logbook

- ' An evidence/investigation logbook should be maintained throughout the investigation
- ' All evidence should be listed on the log and given a unique evidence number
- ' The collector should specifically label the incident logbook pertaining to a particular grounding event by vessel name, case number, and event date and should keep the logbook in a secure location which can be easily located at a later time.

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- ' If the collector maintains several different incident logbooks, care should be taken to identify the location of such logbooks to other members of the case team so that the logbook may be easily located by others. The purpose of the logbook is to maintain a general history/summary of the grounding investigation and the evidence collected.
- ' Field measurements and other pertinent information should be recorded in the logbook. These notes will be used to refresh the sample collector's memory in the event he or she later testifies regarding his or her actions. Data entered into the logbooks are recorded with ball-point pen or waterproof ink. Each page is signed by the sample collector and any available witness.
- ' Logbooks should be retained by a responsible member of the case team.
- ' Any errors in entries should be lined out with a single line and initialed and dated so a later reader can read what was written before the correction.

3.1.2. All Evidence Should be Labeled

- ' All physical evidence collected from the grounding scene should be placed in a suitable container and labeled with the sample ID number, contents, time and date of collection, location of collection, name, address, and telephone number of the collector, and the incident name (e.g., "R/V Mary Jane") or an assigned case number.
- ' The date, time, and location of collection should also be recorded on the container label and in a logbook maintained by the collector (the "incident logbook").
 - If the size of the evidence prohibits its placement in a container, the item should be labeled in a fashion which does not alter the item, e.g., string tag or adhesive tag.
 - If there is insufficient space to record all information on the container label, this information should be recorded in the incident logbook. However, some distinguishing information should be placed on the container label so the collector may unequivocally identify the sample as one collected by him/her at or in relation to a particular grounding scene.
- ' Sample tags are filled out in water-proof ink

3.1.3 Mark location from which evidence is collected

- ' If possible, the location from which evidence is collected should be marked with a fixed marker (e.g., stainless steel stake or buoy) and identified by global positioning system ("GPS") coordinates (differential GPS is preferred). The GPS coordinates should be recorded in the incident logbook next to the date and time entry for that specific item of evidence.

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- ' If several similar pieces of evidence are collected from the same location, each container or item label should be marked with a unique identification number or letter so that it may be distinguished from other similar evidence. For example, if two paint chips or scraping samples are collected from one general location and placed in separate containers, the sample containers could be labeled as sample 1 and sample 2. This designation number or symbol should be recorded in the incident logbook alongside the other collection information.

3.1.4 Sample Collection Generally

- ' As few people as possible should handle the sample from its taking through laboratory analysis

3.2 Evidence Storage

3.2.1 Conditions of Storage

- ' Thought should be given to the storage conditions the container will be subject to during the period of storage when considering the type of container, labeling material and marking instrument used.
- ' Store paint samples in sea water in a secure refrigerator

3.2.2 All evidence should be secured

- ' Evidence gathered during the course of an investigation should be kept in a secured location.
- ' Access to secured evidence should be monitored by a responsible case team member.
- ' All movement of evidence should be logged on chain of custody form.
- ' Field Notes from investigating officer, biologist and contractors should be obtained and secured
- ' Diagrams or sketches developed by the biologist should be given to investigating officer as evidence and secured

3.3. Establish Chain of Custody for Each Item of Evidence

3.3.1 Generally. Chain of custody procedures are followed to “authenticate” a sample or piece of evidence from the time it is taken until the results are introduced as evidence in court. A sample is in a person’s custody when:

- ' It is in the person’s actual physical control and presence
- ' It is in the person’s view
- ' It is not in the person’s physical presence but is secured in a place of storage to which only the person has access
- ' It is not in the person’s view or physical presence but is secured in a place of storage to which only the person and identified others have access

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3.3.1 Storage Recording. A separate chain of custody form for each item of evidence collected should be completed at the time an item is placed in storage so that the location and custodian of each piece of evidence may be known at any given point in time. The chain of custody form should contain blanks for the following information:

- ' case identification name or number
- ' item identification number
- ' description of sample
- ' signature, identity, and address of the individual placing the item in storage
- ' date the item was placed in storage
- ' signature and identity of the custodian of the item if different from the collector.

3.3.2 Transfer of Custody. Any time an item of evidence is removed from the storage location or transferred to another, the item should be accompanied by the original chain-of-custody form. A copy of the chain-of-custody form should be kept by the field or project coordinator. (Alternatively, the field or project coordinator could keep the original and a copy would be sent with the evidence.) The following information should be added to the form upon transfer of custody or shipment:

- ' date, time, and identity and signature of both the transferer and transferee (person removing the item from storage and person receiving the item)
- ' reason the item is being removed from the storage location
(for example, if paint scrapings are being sent for analysis to determine if they match paint found on a vessel's hull, the person conducting the analysis and the type of analysis to be performed should be recorded on the chain of custody form)
- ' The condition of the sample.

3.3.3 Shipment.

- ' Samples are to be packed and sealed for shipment in appropriate containers to avoid damage.
- ' A sample seal should be attached across the lid of each shipping container in such a manner that the container cannot be opened without breaking the seal
- ' The seal is not to be removed until the shipping container is opened by the laboratory custodian or designee
- ' If sent by mail, the package should be sent via Registered Mail with Return Receipt Requested. If sent by common carrier, all shipping receipts should be retained as part of the permanent chain-of-custody documentation.
- ' Couriers picking up samples should sign the shipping documents to acknowledge receipt of the samples.

3.3.3 Laboratory Custody Procedures.

When samples are sent to a laboratory for analysis the chain of custody form should

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include:

- ' The name of the person conducting the analysis
- ' The type of analysis to be performed
- ' The airbill number of the shipping envelop, if times items of evidence are sent by express mail to a contractor for analysis
- ' The physical condition of the shipping container and evidence sample.

The designated custodian at the laboratory should do the following:

- ' Accept and receive custody of the shipped samples
- ' Make appropriate entries in the chain of custody form
- ' Enter information contained on the sample tags and other records into a logbook
- ' Store all received and unused portions of samples in a secure area
- ' Distribute samples to appropriate analysts
- ' Retain all identifying tags, seals, or stickers from the sample container
- ' Ensure that analysts are responsible for the care and custody of each sample
- ' Obtain authorization from the project coordinator and the case attorney for sample disposal for civil cases. No criminal case samples are to be disposed of until the case is closed and all appeals have been heard. The prosecuting attorney must be consulted prior to disposal of any evidence for criminal cases.

3.3.4 Laboratory Documentation. The procedures generally recognized by professional chemists and laboratories for documenting work are acceptable for documentation for damage assessment work.

- ' All sample data, laboratory observations and calculations should be recorded in logbooks or bench sheets. Each lab document should, on its first page, reflect the project number, date of composing, names of analysts and assistants participating, and any other information concerning the identity of the sample being analyzed. Any document reflecting results of analysis should have similar identifying data on the first page. Charts or printouts from instrumentation, graphs, and other "display" documents should have similar identifying information. Both draft and final copies should be retained.
- ' Correspondence, report notes, methods, references, sample inventories, checkout logs, etc. should be part of the permanent lab records.
- ' Any logbook or bench sheet should contain (1) clear identification of who made what entries, and (2) information sufficient to enable the entry-maker to recall and describe each step of the analysis performed (in subsequent testimony). Irregularities (if any) observed or deviations made during the analytical process should be noted and explained.
- ' Logbooks or comparable permanent records should be kept which reflect each instance in which lab instruments or instrumentation are calibrated.
- ' Any continuous monitoring records (e.g. charts showing temperatures of storage cabinets where storage samples are stored) should be kept for some years.

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- ' Before a final lab report is sent out, the lab personnel will assemble and cross-check information on sample tags, custody records, bench sheets, analysts' logbooks and/or notes, and in any relevant permanent records to ensure that data pertaining to each particular sample is consistent throughout all lab documents.

3.3.5 Return of Sample to Storage

- ' When the item is returned to the original storage custodian, the completed chain of custody form should be returned as well. The date the original storage custodian receives the item from the contractor should be recorded on the original chain of custody form.
- ' If the item of evidence is destroyed during analysis, this fact should be noted in the incident logbook and on a chain of custody form. Both should reference any documents providing the results of the analysis.
- ' To the extent possible, a portion of the original sample should be preserved so that the responsible party may have the ability to duplicate any testing.
- ' Even if the item of evidence is not destroyed during analysis, the test results should be recorded in the incident logbook or a reference to a particular document which provides an analysis of the item should be made in the logbook.

3.3.6 Storage of Chain of Custody Form

- ' All chain of custody forms for each item of evidence relating to a particular incident should be kept at the storage location.
- ' Copies should be provided to the responsible case team member.

3.4 Photographic Evidence

Still Photography

3.4.1 What Photos Should Be taken.

- ' Photographs of the incident scene, above and below water, should be taken both while the vessel is aground and after the vessel is removed.
- ' Photographs of the vessel(s) involved in the incident and involved in removal of the grounded vessel should also be taken.
- ' If possible, photographs of the captains and crew or other relevant witnesses present aboard the vessels involved in the incident should be taken and the names of those individuals recorded in the incident logbook.
- ' Photographs and videos of the injured areas (see below)

3.4.2 Recording Photographs

- ' The identity of the photographer, location, and the date and time the photographs were taken should be recorded either in the incident logbook or in a memo circulated to the case team or agency legal counsel assigned to the matter.
- ' If possible, information concerning the individual frames on the roll of film used

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should be recorded. For example, if three rolls of film are shot of the grounding scene, the photographer should record specific information for each numbered frame on rolls one, two, and three.

If possible, a written description of what individual photographs depict should be maintained by the photographer or a person present at the time the photographs are taken. In this way, when the photographs are being examined by those not familiar with the grounding scene they can better understand what the photographs depict. For example, if photographs are taken of sections of a vessel's hull, what the photographs depict may not be readily apparent to the person examining the photographs without a brief description written by someone present at the time the photographs were taken.

Photos should be developed and labeled as soon as possible. Labels should include:

- Vessel Name
- Date of Incident
- Location
- Camera
- Film type
- Camera Lens

3.4.3 Aerial Photography. Aerial photography of the grounding scene is also quite helpful. The placement of fixed targets with known GPS (differential GPS is preferred) coordinates along with some means of scale (a board with known dimensions) within the area depicted by the photograph are an excellent means of locating the area spatially and, when geo-referenced, for determining the area of damage.

3.4.4 Photographing injured areas

When doing underwater photography or videography, use a color-correcting filter and when taking close-ups a strobe should be used to provide necessary color and detail.

When taking close-ups of injured corals or other organisms, a second photo should be taken at distance to show the location of injured organism in reference to other areas

An item of known length should be used in photos to show scale.

Photos should be developed and labeled as soon as possible

Negatives and slides should be treated as evidence

Take photos and video of area around injured areas to show baseline conditions

Create a photomosaic of injured areas. In good weather, when time is limited and other technology is not available the mosaic can be completed by one diver/snorkler swimming on surface holding another diver at a consistent arms length below the surface. The diver below surface takes continuous overlapping photos and the diver on the surface guides photographer through the injured area. This allows for consistent depth for photos.

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Video Photographs

- 3.4.4 Generally. High Density or Digital video recordings of the grounding scene, both while the vessel is aground and during any subsequent site visits are invaluable.
- 3.4.5 Labeling videotapes.
 - ' Information concerning the identity of the photographer, the date, time, and location filmed must be recorded either in the incident logbook or in a memorandum created by either the photographer or someone present when the film was taken. If in memo form, a copy of the document should be provided to the case team leader or agency counsel assigned to the matter.
 - ' This information may also be provided at the beginning of each tape by, for example, writing it on a waterproof tablet and filming the tablet.
- 3.4.6 Geographic points of reference. Filming fixed targets or transects with known DGPS information are extremely helpful for establishing geographic points of reference.

Securing Photographic Evidence

- 3.4.7 Secure evidence. As with other forms of physical evidence described above, still photographs and videos must be maintained in a secure location by a member of the case team.
- 3.4.8 Label/Record evidence. The location and a brief description of all photographic evidence should be recorded on a log sheet and maintained by a case team member. A copy of this list should be provided to the case team leader or agency counsel assigned to the matter. Moreover, if photographs are removed from storage, this fact should be recorded on the log sheet so that this evidence can be located at a later time.

2 Witness Statements

4.1 The Statement

- 4.1.1 Generally. The more statements taken of witness to the grounding event, the more likely the investigating agency will be able to determine the events surrounding the grounding and, hence, its cause.
- 4.1.2 Who Should be Interviewed.
 - ' Masters and relief captains
 - ' Members of crew and passengers
- 4.1.3 What information should be obtained. Witnesses should be asked to describe
 - ' their position on board the vessel

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- ' as much detail surrounding the grounding event as possible
- ' to provide the time certain events occurred and course location at those times, even if approximate.
- ' Information concerning weather conditions and sea state is also helpful.

4.1.4 Written or Photographic Evidence. The witness should also be asked if any logbooks or other written or photographic materials exist concerning the grounding or events preceding the grounding. If such documents were created by the witness, that fact, and the identity of their custodian should be noted in the incident logbook. The witness should be asked to produce copies of all such documents in their possession.

4.2 Written Statements

4.2.1 Generally. Statements of witnesses at the scene of a grounding event may be handwritten. While it is preferable that the witness write, sign, and date his/her own statement of events/facts, it is not essential. The case team member may write the statement for the witness and then have the witness read, sign, and date the statement.

4.2.2 Signature. Whether the witness writes his or her own statement or the case team member writes the statement, the witness should sign a concluding paragraph at the end of the statement which provides as follows:

I declare under penalty of perjury that the foregoing is true and correct.
Executed on (date). Signature

The witness' acknowledgment of this paragraph will permit entry of the statement in judicial proceedings.

4.3 Recorded Statements

4.3.1 Generally. Witness statements may also be tape recorded, video taped or recorded stenographically.

' If the statement is tape recorded, the witness must be asked permission to record the statement. That the witness was asked and gave his/her permission should be recorded.

' Subsequently the statement can be typed and sent to the witness for his/her review. The witness should be asked to correct any errors they find in the typed statement.

' At the conclusion of the statement, the acknowledging paragraph provided above should be added and the witness should be asked to sign the statement and return it to the investigator.

4.3.2 Videotapes. Video taped statements are preferred.

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- ' As with tape recorded statements, the witness should be asked on tape for permission to record the statement.
- ' Ensure sound and visual quality by periodically checking the recording during the interview
- ' At the conclusion of the statement the witness should be asked if the information he/she has given is true and accurate under the penalty of perjury.

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IV. INJURY ASSESSMENT

Preliminary Injury Assessment

When the vessel is still aground and it is feasible, a preliminary assessment of injury should be undertaken. The purpose of the preliminary injury assessment is to (a) provide evidentiary documentation of the causation of injury and (b) provide information to help make decisions regarding vessel removal. The preliminary assessment may be accomplished during steps (x-y) of the Vessel Grounding Response and Enforcement Guidance. *This guidance is directed toward assessment of physical injuries only, and does not address injuries from fuel or other hazardous substances.*

1. Injury Location. Vessel Still Aground

The location of the injury should be precisely documented to facilitate injury assessment and restoration planning. When the vessel is still aground, the following steps should be taken.

1.1 (d)GPS coordinates including the location of the grounding site or the path the vessel traveled. Search at the location of the last set of coordinates (the grounding site) Use all sets of coordinates and a navigated chart to plot out the path traveled before the vessel ran aground thereby identifying possible areas of resource injury, examination of the areas adjacent to the vessel while it is still on the reef can yield critical information for the removal of the vessel, as well as damage assessment.

1.2 Vessels direction of travel and compass bearings Use the information and a navigational chart to identify possible areas of resource injury.

1.3 Description of grounding incident

Use the information and a navigational chart to identify possible areas of resource injury.

1.4 Plotting on a Navigational Chart Use a combination of GPS coordinates, direction of travel, compass bearings and a description of the incident to plot onto a navigational chart extrapolate for entrance and exit paths. From the chart identify possible areas of resource injury

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1.5 Overflight

Helicopters/fixed wing aircraft can be used to fly over grounding location

If good weather they can assist in locating injury, entrance and exit scars

Photo and video document the site

1.6 Samples/photographs and video should be taken of relevant debris and injuries as noted under section (X,Y) in the enforcement guidance. All appropriate chain of custody protocols should be followed.

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2. Removal of Vessel (Coral Reef Specific Advice)

Address considerations for removing vessels specific to coral reef groundings, such as removing vessels at high tide; using incoming tract for outbound removal, not powering grounded vessel off site; obtaining as much assistance as necessary; conducting operations so that damage is minimized etc.

- Determine direction and whether likely to refloat at high tide
- Whether refloating/removal likely to cause spills
- Consider whether necessary to lighten/remove fuel/cargo
- Ensure salvage lines do not cause collateral damage

3. Injury Location: Vessel No Longer Aground

When the formerly grounded vessel has been removed or has extricated itself, the following information and techniques may be used to establish the footprint of a grounding.

3.1 (d)GPS coordinates including the location of the grounding site or the path the vessel traveled. Search at the location of the last set of coordinates (the grounding site)
Use all sets of coordinates and a navigated chart to plot out the path traveled before the vessel ran aground thereby identifying possible areas of resource injury
If GPS coordinates are not available use the information listed below

3.2 Vessels direction of travel and compass bearings
Use the information and a navigational chart to identify possible areas of resource injury.

3.3 Description of grounding incident

Use the information and a navigational chart to identify possible areas of resource injury.

3.4 Plotting on a Navigational Chart
Use a combination of GPS coordinates, direction of travel, compass bearings and a description of the incident to plot onto a navigational chart, extrapolate

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for entrance and exit paths. From the chart identify possible areas of resource injury

3.5 Search patterns by boat

Using tow lines attached to stern of vessel, pull snorkelers behind boat. Most efficient if pulling two people. While pulling snorkelers, boat driver should run parallel transects through search area. Have floats and weights ready to drop onto injury sites when located by snorkelers. Lobster floats with 5 pound dive weights and parachute cord are suitable for temporary markers. Larger buoys with cement blocks and polypropylene cord for more permanent markers transects the boat has taken, assists in not searching previously searched areas

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3.6 Overflight

Helicopters/fixed wing aircraft can be used to fly over grounding location. If good weather they can assist in locating injury, entrance and exit scars. Photo and video document the site. Aerials need to be georeferenced to be useful in calculating injury size. Inclusion of a vessel of a known size and (d)GPS location or targets laid on the bottom at known locations, that may or may not include an north pointing arrow etc.

4. Injury Assessment: Coral

I.Types of Injury possible

- Barge tow cable markings. Characteristic injury from cable strikes will show as striations in coral and on hard surfaces. The cable will also injure or remove other invertebrates such as soft corals or sponges.
- Scraping from bottom of vessel. This injury can be , depending upon the shape of the hull, by overturned coral heads or coral rocks and "flat topped" areas where all living invertebrates and framework have been removed to a certain depth leaving a flat surface.
- Scars from propellers or keel of vessel.
- Fractured or crushed substrate where vessel hits or runs. The fractures to the coral framework can sometimes be less obvious than the crushed substrate.
- Blow out hole from vessel propeller wash
- Sediment pile or berm from displaced material caused when vessel creates a blow out hole
-

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Displaced features such as whole heads or sections of coral heads which have been overturned or framework which been fractured from its original location

- Anchor injuries can include scrapes, strikes, fracturing, or toppling of individual heads.

4.2 Number all injured sites, as they are located. Many people including the investigating officer, biologist and contractors will need to reference the injured sites. By numbering the injured sites immediately as they are found all references to the sites will correspond.

Can use metal stakes hammered into the bottom with plastic numbered tags attached or can directly glue numbered tags to surface

4.3 Measure the nature and extent of injuries. Recommend specific procedures by which to take measurements of length, width and depth of injured resources.

4.4 Take photos and videos of all resource injuries

- When doing underwater photography or videography, use a color-correcting filter and when taking close-ups a strobe should be used to provide necessary color and detail. (35 mm, VHS, digital)
- When taking close-ups of injured or other organisms, a second photo should be taken at distance to show location of injured organisms in reference to other areas
- An item of known length should be used in photos to show scale.
- Photos should be developed and labeled as soon as possible
- Negatives and slides should be treated as evidence. Identify other photo requirements.

4.5 Take photos and video of area around injured areas to show the baseline conditions before injury had occurred. Provide guidelines on how to select

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representative areas for baseline. This is very important.

Follow suggestions listed above for photography and videography

4.6 Determine species impacted

Identify injured corals and other organisms to species if possible.

4.7 Determine a percent cover of species and species diversity

Specify techniques to determine percent cover of species and species diversity. Techniques may vary for different size groundings. Video transects may be most appropriate for large sites, random Braun-Blanquet transects may be appropriate for small to medium sites.

4.8 Obtain an estimate of rugosity/three dimensional relief

4.9 Create photo mosaic of injured area

In good weather, when time is limited and other technology is not available the mosaic can be completed by one diver/snorkler swimming on surface holding another diver at a consistent arms length below the surface. The diver below surface takes continuous overlapping photos. Diver on surface guides photographer through injured area. Allows for consistent depth for photos

4.10 Upon completion of each days field work the biologist should create sketches of each new injured area. On each sketch the biologist want to include:

- The location and direction each photo was taken
- The photo numbers should correspond to the numbers on each labeled photo
- The direction of each video transects
- The location that evidence was collected and corresponding evidence number (obtained from the investigating officer)
- A drawing of the injured site with the location identification of injured organisms
- The storage of original copies of sketches, drawings and field notes should be done in a manner compatible with evidence handling practice.

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Development of Primary Restoration Plan

Make determination as to whether physical/structural restoration is necessary to include but not be limited to:

- Removal of debris from vessel
- Righting and reattachment of heads that have been broken loose, toppled etc.
- Immediately stabilization of coral fragments, coral framework
- Clearing of coral fragments if necessary, to other grounding sites or nearby areas for reattachment
- Removal of loose rubble

Development of Monitoring Plans

Monitoring should be over a long enough time period to address any potential changes in structural stability of the restoration. Monitoring should also assess general coral health and recruitment on the restored area over a significant period of time. (This will vary dependent on the coral species and general health of the area, 10-20 years is a good benchmark, with monitoring at Yr 1,3,5,10 and post catastrophic weather events.)

Miscellaneous/Evidence Collection (should be consistent with early doc)

2.2.1 Plant chips/scraping/pieces of vessel from injury sites

2Assign exhibit number of sample before collection

3Take photos of sample before collection

4Use underwater writing tablet to display the exhibit number for that sample in photos

5Take close up photo from distance to give a reference of the location of the sample being collected

6If possible use the same tool (i.e. dive knife) to collect paint samples from features too large to collect. Document what tool was used to collect each sample.

7Store samples in sea water and refrigerate

2.2.2 Document compass bearings of paint striations or grounding scars

- Take photos of each compass bearing obtained
-

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This information can be used to help determine exit/entrance direction

2.2.3 Evidence should be numbered in the field

- Carry a copy of evidence log in the field
- Allows for consistent numbering

EMERGENCY VESSEL DISPOSAL GUIDELINES

For Alien Migrant Interdiction Operations Vessels

PURPOSE AND OBJECTIVES. The goal for this Emergency Vessel Disposal Guidelines/ Protocol is to promote effective response to situations where immediate movement and disposal of vessels posing a substantial threat to the marine environment within the Guam Captain of the Port (COTP) Zone occurs. The key objective of these guidelines is to develop pre-approval between Federal and local agencies within the Territory of Guam (Coast Guard; EPA; National Park Service; Fish & Wildlife Service; U.S. Army Corps of Engineers (ACOE); U.S. Marshal and Civil Defense) and within the Commonwealth of the Northern Mariana Islands-CNMI (Coast Guard; Department of Environmental Quality (DEQ); Office of Emergency Management (EMO); Coastal Resource Management Office (CRM); Port of Saipan; Fish & Wildlife Service; U.S. Marshal and U.S. Army Corps of Engineers (ACOE).

The Emergency Vessel Disposal Checklist, page 2, will be used to determine if emergent conditions exist, if emergency disposal is necessary and if necessary the appropriate place and route to dispose of the vessel.

LEGAL AUTHORITY

A. This document covers Ocean Dumping of Vessels, covered under the category “emergency conditions.” This pre-approved policy satisfies the need for the Responsible Party (RP) or emergency responders to fulfill the Environmental Protection Agency (EPA) requirements under 40 C.F.R. 229.3(1).

B. Under 40 C.F.R. 229. 3, “The Coast Guard and U.S. Army Corps of Engineers, shall determine if the vessel’s situation is deemed emergent in nature.” Under 33 CFR 165, “The Coast Guard shall direct the movement of vessels through the ports or waters of the Zone when determined by the Captain of the Port.”

Action Guidance

A. This protocol will be used:

- 1) To determine when **vessel damage, bad weather conditions, night-time performance limitations, and pollution mitigation concerns** warrant it unfeasible to delay vessel removal and disposal operations;
- 2) To annotate at which EPA dump site disposal will take place; and
- 3) To determine which route will be utilized to get to the disposal site.

B. Route to the nearest emergency disposal site shall be charted to avoid transit:

- 1) Through established shipping lanes,
- 2) Through a designated marine sanctuary,
- 3) Through a dredged material disposal site, or
- 4) Through a location where it may present a hazard to commercial trawling or national defense.
- 5) Through established fishing grounds.

C. If seaworthiness is in question proceed to head straight out to sea to 1000 fathoms then head toward disposal site.

The RP or lead emergency response agency shall report the exact coordinates of the disposal of the vessel to the National Ocean Survey, National Oceanic and Atmospheric Administration, 6010 Executive Boulevard, Rockville, Maryland 20852 so the location can be marked on appropriate navigational charts.

EMERGENCY VESSEL DISPOSAL CHECKLIST

RISK VESSEL POSES IN PRESENT LOCATION (LOW/MEDIUM/HIGH)

1. POTENTIAL RISK OF OIL BEING SPILLED ON THE REEF: _____
2. POTENTIAL RISK OF HAZARDOUS MATERIAL BEING RELEASED INTO THE REEF: _____
3. POTENTIAL RISK OF OIL/HAZMAT BEING DRIVEN DOWN INTO THE REEF BY THE SURF:

4. POTENTIAL RISK OF MECHANICAL DAMAGE TO REEF AS VESSEL WORKS ON THE REEF: _____
5. POTENTIAL RISK OF MECHANICAL DAMAGE TO THE REEF WHEN VESSEL BREAKS UP AND THE PIECES MOVE ALONG THE REEF: _____
6. POTENTIAL HAZARD AS ATTRACTION FOR SWIMMERS: _____
7. POTENTIAL DAMAGE TO CULTURAL RESOURCES ALONG SHORELINE (I.E. GUN EMPLACEMENTS, BUNKERS, AND CONCRETE MONUMENTS) _____
8. POTENTIAL RISK TO RECREATIONAL RESOURCES (I.E. WALKWAYS, PICNIC SITES, ETC.) _____

RISK OF EMERGENCY REMOVAL OF VESSEL

1. POTENTIAL FOR ADDITIONAL DAMAGE TO THE REEF AS THE VESSEL IS PULLED OFF THE REEF: _____
2. POTENTIAL FOR ADDITIONAL DAMAGE TO THE VESSEL WITH A RESULTING RELEASE OF OIL OR HAZMAT: _____
3. POTENTIAL FOR VESSEL TO SINK ENROUTE TO APPROVED DISPOSAL SITE: _____

PROCEDURE

- A. OBTAIN PERMISSION OF OWNER TO CONDUCT EMERGENCY DISPOSAL OF THE VESSEL
- B. OBTAIN WRITTEN CONCURRENCE FROM THE DIRECTOR, OR A PERSON SO DESIGNATED BY HIM, FOR THE AREA COMMITTEE CO-CHAIR (GUAM –EPA, CNMI EMO) BY COMPLETING THE ATTACHED “EMERGENCY VESSEL DISPOSAL GUIDELINES”

EMERGENCY VESSEL DISPOSAL INFORMATION

The following vessel information is required upon receiving notification of an emergency vessel operations incident. This information will be used to conduct notifications and to make decisions regarding emergency disposal vice regular vessel disposal as defined in 40 C.F.R. 229.

TIME OF REPORT: _____ PERSON/VESSEL REPORTING: _____

DESCRIPTION OF DISTRESS VESSEL: _____ - _____

VESSEL NAME: _____ FLAG: _____

OFFICIAL NUMBER: _____ CALL SIGN: _____

LENGTH: _____ GROSS TONS: _____

OWNER: _____

_____ TELEPHONE: _____

OPERATOR: _____

_____ TELEPHONE: _____

AGENT: _____

_____ TELEPHONE: _____

POSITION/LOCATION OF EMERGENCY: _____

NATURE OF THE EMERGENCY: _____

DATE/TIME OF POSITION: _____

DRAFTS BEFORE GROUNDING: FWD: _____ MIDSHIP: _____ AFT: _____

DRAFTS AFTER GROUNDING: FWD: _____ MIDSHIP: _____ AFT: _____

CARGO ONBOARD

TYPE: _____

AMOUNT: _____ LOCATION: _____

ANY HAZARDOUS MATERIAL? _____

EXTENT OF DAMAGE: _____

IS VESSEL TAKING ON WATER/LEAKING CARGO? YES _____ NO _____

IF SO, AT WHAT RATE? _____

PERSONNEL INJURIES? _____

PERSONNEL ONBOARD: _____

PRESENT WEATHER CONDITIONS

WIND: _____ SEAS: _____ CURRENT: _____

SKIES: _____ VISIBILITY: _____

NEXT HIGH TIDE: _____ RADIO FREQ. CAPABILITY: _____

DESTINATION ENROUTE/DATE & TIME OF DEPARTURE/DEPARTURE POINT: _____

FUEL ONBOARD: _____

S. J. GLOVER
Captain, U.S. Coast Guard
Commanding Officer
Marine Safety Office Guam

J. T. SALAS
Administrator
Guam Environmental Protection Agency

CARGO ONBOARD

TYPE: _____

AMOUNT: _____ LOCATION: _____

ANY HAZARDOUS MATERIAL? _____

EXTENT OF DAMAGE: _____

IS VESSEL TAKING ON WATER/LEAKING CARGO? YES _____ NO _____

IF SO, AT WHAT RATE? _____

PERSONNEL INJURIES? _____

PERSONNEL ONBOARD: _____

PRESENT WEATHER CONDITIONS

WIND: _____ SEAS: _____ CURRENT: _____

SKIES: _____ VISIBILITY: _____

NEXT HIGH TIDE: _____ RADIO FREQ. CAPABILITY: _____

DESTINATION ENROUTE/DATE & TIME OF DEPARTURE/DEPARTURE POINT: _____

FUEL ONBOARD: _____

S. J. GLOVER
Captain, U.S. Coast Guard
Commanding Officer
Marine Safety Office Guam

G. A. DELEON GUERRERO
Director, Emergency Management Office
Commonwealth of Northern Mariana Islands

Grounded Vessel Removal

A *DRAFT* Resolution of the 5th Meeting of the U.S. Coral Reef Task Force
August 5 and 7, 2000 – American Samoa

Whereas vessel groundings on coral reefs can cause extensive environmental degradation from the spilling of oil to the grinding and scarring of coral reef habitat; and

Whereas the current Oil Pollution Act of 1990 sets up a response for oil and hazardous material removal but does not fund the removal of the vessel from the reef; and

Whereas studies have shown that leaving the wreck on the reef has the potential to cause further degradation of the reef ecosystem; and

Whereas it has been difficult to collect money from the vessel owners to assist in the wreck removal, therefore vessels are left to break apart and scatter wreckage across the reef; and

Whereas the recent cooperative efforts between the federal agencies and the states and territories to deal with vessel removals in American Samoa and Hawai‘i have set an important precedent for dealing with future groundings;

Be it therefore resolved:

That the U.S. Coral Reef Task Force recommends the following actions:

1. Require a bond or surety for all fishing vessels entering U.S. territorial waters for the purposes of conducting business at U.S. ports adjacent to coral reefs, as appropriate;
2. Make recommendations for additional legislation and a funding mechanism in addition to the Oil Pollution Act to broaden the ability to remove grounded vessels as needed;
3. Establish national legislation for coral reef damage assessment, including cultural losses, to serve as a guideline for both fines and restoration costs; and
4. Develop federal assistance protocols to augment the Islands' ability to initiate rapid response for vessel damage assessment and removal including training, prearranged access to DOI, DOC, DOT and DOD assistance in the event of immediate and critical environmental damage.

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The PACIFIC BASIN DEVELOPMENT COUNCIL (PBDC), a regional economic development organization for American Samoa, Guam and Northern Mariana Islands, co-sponsored the Vessel Groundings Workshops through support from the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), Office of Ocean and Coastal Resource Management (40AANC1A4070, September 1, 2001). The statements, findings, conclusions, recommendations, or other data contained herein do not necessarily represent the official views of the PBDC Board of Directors.