

# Reduce Impacts of Coastal Uses

Program Review

NOAA Coral Reef Conservation Program

September 25<sup>th</sup>, 2007

# Overview

- Increasing coastal populations leads to increasing impacts from human activities:
  - Land-based pollution, maritime activities, recreational overuse, coastal construction





# Overview (cont.)

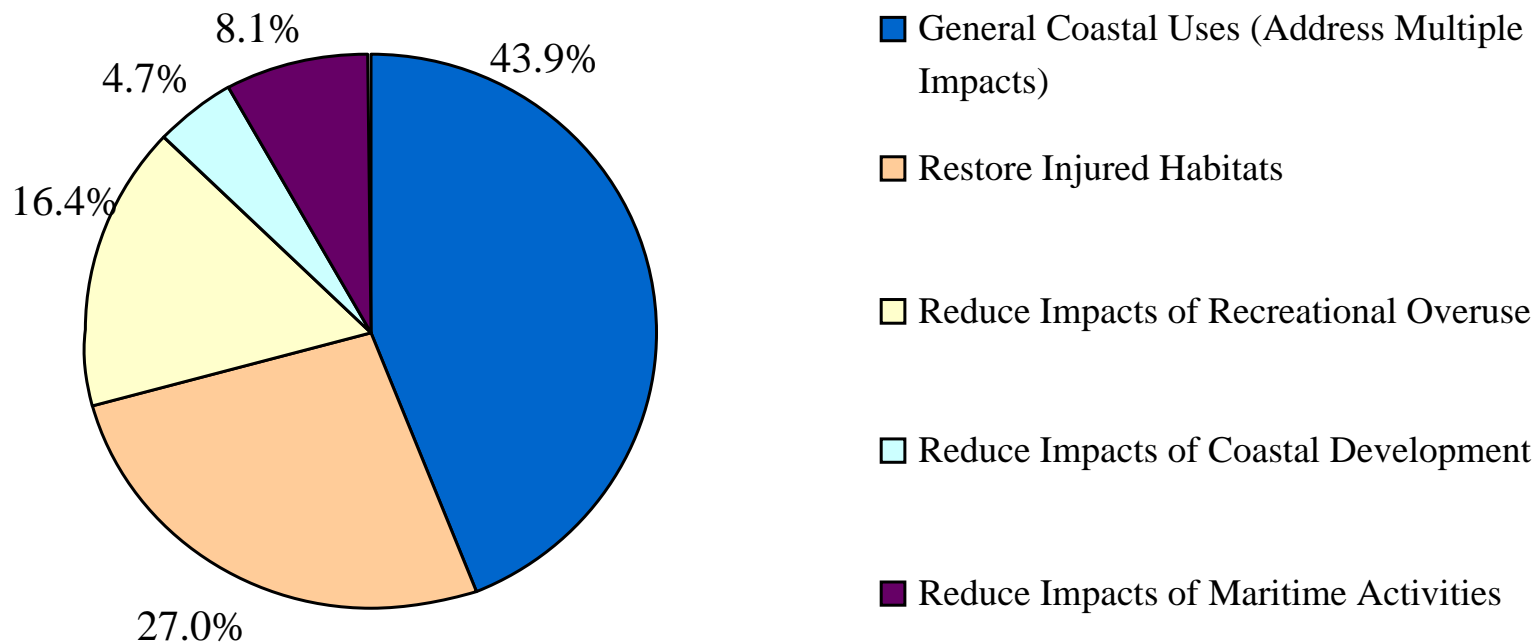
- Legal mandates:
  - CRCA, OPA, NRDA, CZMA, MSFCMA, ESA, CWA, NEPA, FWCA
- Goals/targets:
  - Habitat restoration, reduction in land-based habitat impacts, reduction in maritime and recreational vessel impacts
- Specific CRCP capacity in this area
  - Review of water resource development projects, addressing LAS priorities, coordinated restoration

# Overview (cont.)

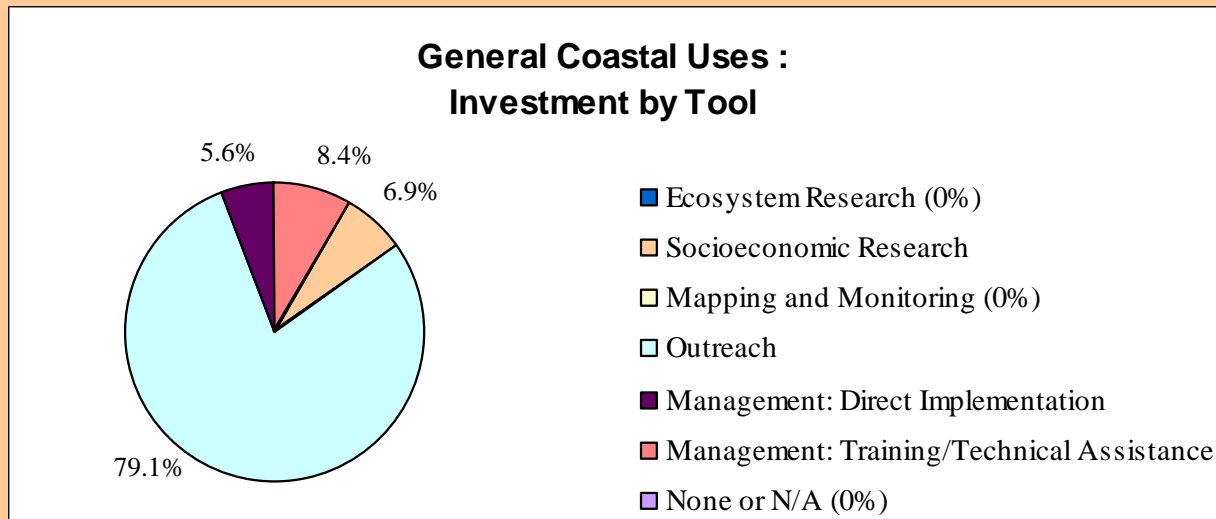
- Funding: \$9.2 M (7% total CRCPC)
  - Small investment but large impact in terms of products and outcomes
- Projects: 265 (20% total CRCPC)
- Major tools: 66% funding in outreach and direct management implementation used in maritime, recreational overuse, injury response
- Key NOAA offices were: NMFS, NOS, OAR
- 37 grant recipients including states and territories, universities and NGOs

# Subcategories

## Reduce Impacts of Coastal Uses: Investment by Subcategory



# General Coastal Uses



- 2002 – 2006: \$4.0M, 3.1% of total CRCP funding
- 80% grants (62) to external partners who used outreach as the primary tool
- Matching: \$2.6M
- Multiple aspects of protection and conservation, including capacity building for students, stakeholders, general public
- Primary impacts: local coral reef valuation studies leading to educational materials and support from decision-makers, local capacity building for MPA support and marine conservation and management

# General Coastal Uses – Examples

- Rare Pride
  - Collaboration with Conservation Society of Pohnpei, education campaign to raise awareness of MPAs and build community support for coral conservation
  - “Changing Tides” radio drama in Palau, Guam, FSM, Marshall Islands to influence Micronesians regarding environmental conservation
  - American Samoa campaign focusing on sea turtle and MPA awareness, long-term trash and sand mining reduction
  - Campaign to launch in CNMI
- Importance: local leaders design campaigns, resulted in increased support for MPAs and creation of additional MPAs



# General Coastal Uses – Examples

- Makai (Seaward) Watch (Hawaii)
  - Official enforcement lacks capacity to enforce existing rules
  - Most Makai Watch communities are adjacent to an MPA and support site management
  - Report violations
  - Published community stewardship guide
  - Conducted training workshops through “Management Better Together Learning Network”
- Importance: engaging community leading to better compliance with existing rules and stronger conservation in 5 communities (3 new ones being added)

**HAWAII'S COASTAL COMMUNITIES WORKING DIRECTLY WITH RESOURCE MANAGERS TO CONDUCT MONITORING, OUTREACH, AND VOLUNTARY COMPLIANCE ACTIVITIES**

**M A K A I W A T C H**

**Biological and Human Use Monitoring**



Makai Watch participants collect information on the human use of marine resources (fishing, kayaking, collecting, etc.) and on the biological condition of those resources.

The Makai Watch program is based on the following concepts:

- Community members are the 'eyes and ears' that look out for their resources
- Direct community involvement reduces inappropriate uses of resources and increases locally acceptable resolutions to resource management issues
- People who use a resource ultimately are responsible for its long-term health
- Community involvement allows for better informed decision-making for resource management

**Observation and Compliance**



Makai Watch participants observe the area, encourage users to learn and obey area regulations, and identify and report illegal activities to state enforcement offices.

**Makai Watch responsibilities of the NOAA Coral Fellow include:** project support and development, collaboration and planning with program leaders, and public outreach.

**Awareness Raising and Outreach**

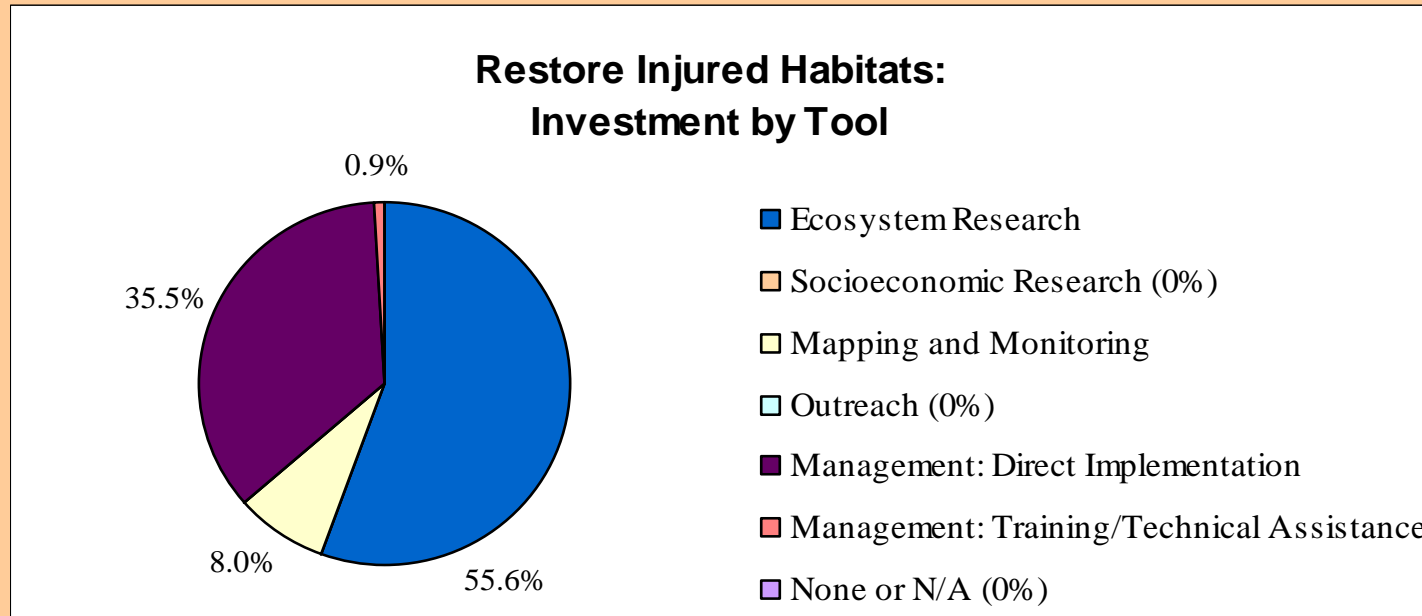


Makai Watch participants provide beach users with information about marine ecology, culture, history, regulations, safety, and appropriate behavior.

**For more information on Makai Watch communities or other programs and projects being implemented through Hawaii's Local Action Strategies, contact Petra MacGowan, NOAA Coral Fellow at: Petra.MacGowan@hawaii.gov**



# Restore Injured Habitats



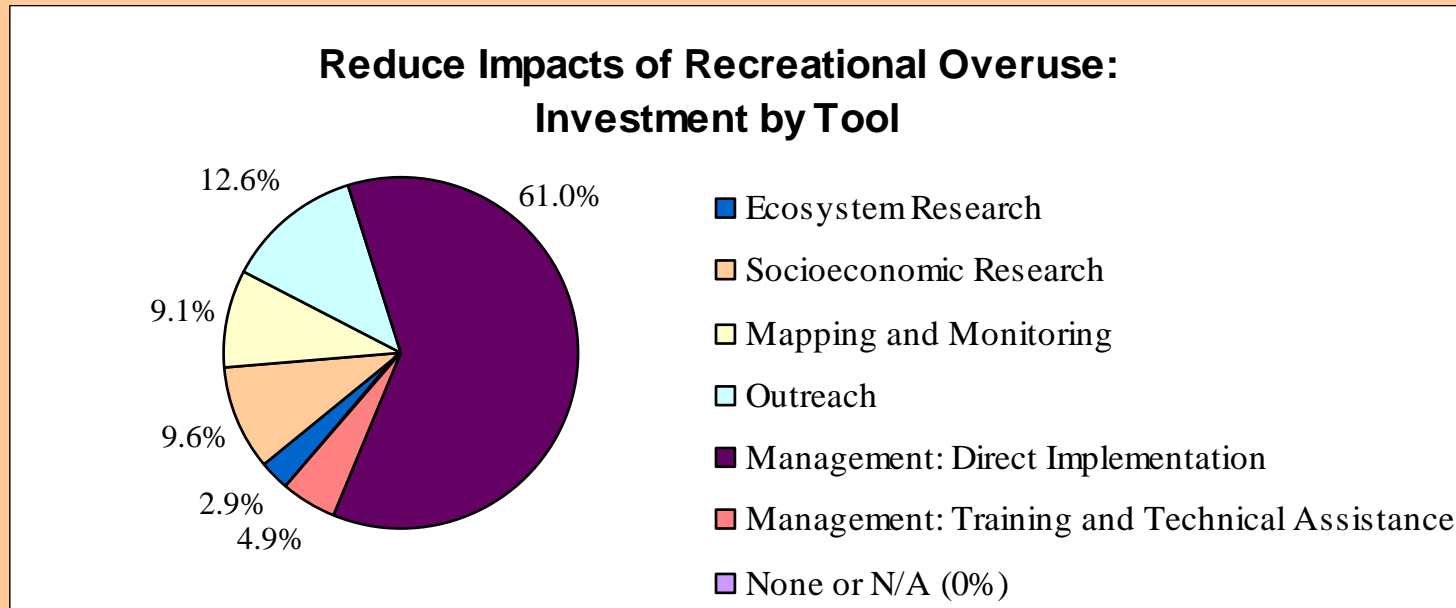
- 2002 – 2006: \$2.5M, 1.9% of total CRCP funding
- Ecosystem research and direct management implementation main tools
- Included invasive species removal for restoration of natural habitats
- Primary impacts: enhanced restoration of marine habitats, improvements in restoration techniques and local restoration efforts, improvements to invasive species response in Hawai'i

# Restore Injured Habitats – Example

- M/V Fortuna Reefer Restoration
  - NOAA involved under OPA
  - OPA doesn't allow for long-term monitoring so CRCP supported this effort
  - Multi-agency restoration to attach 1800+ fragments of elkhorn coral
  - Tracked health and success of restoration over time
- Importance: several lessons leading to improvements in restoration techniques



# Reduce Impacts of Recreational Overuse



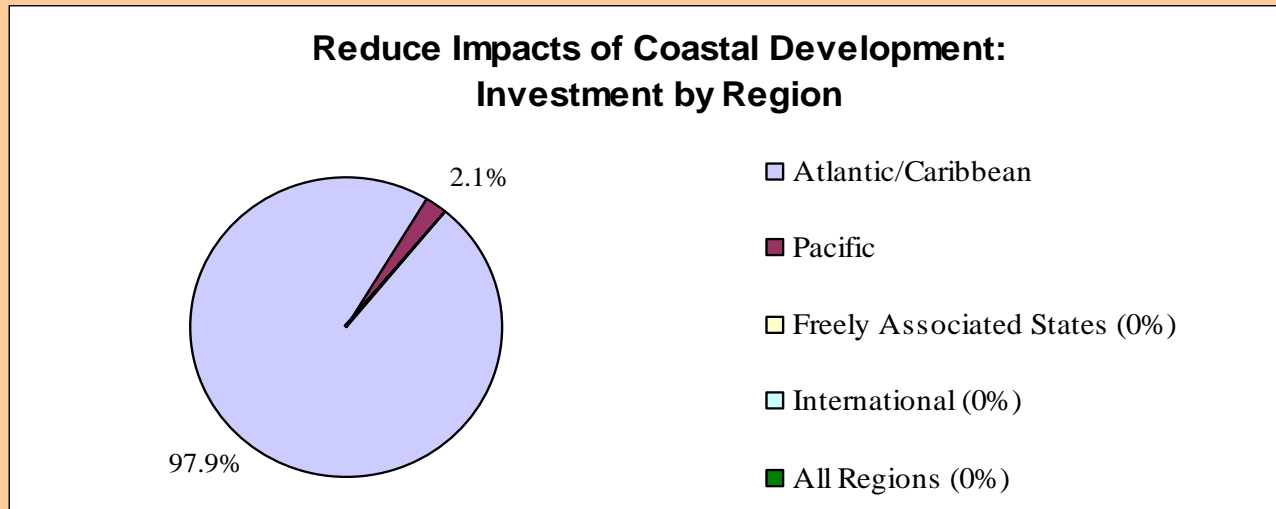
- 2002 – 2006: \$1.5M, 1.2% of total CRCP funding
- Direct management implementation primary tool
- Many projects supporting LAS (1 of 5 LAS priority categories), other projects supported management and MPAs
- Primary impacts: changes in attitudes of recreational boaters regarding mooring buoys and importance of marine habitats, changes in diver practices, education of local and foreign tourists regarding protection of marine habitats

# Recreational Overuse – Example

- La Cordillera Reefs Natural Reserve
  - Survey of shallow seagrass beds within the reserve to determine physical impacts of boating
  - Impacts found at Cayos Icacos and Palominito and Palomino Island
- Importance: results of survey used to determine management actions taken in support of the new reserve management plan, including installation of buoys and signage and development of an education plan for the reserve to reduce anchorage impacts



# Reduce Impacts of Coastal Development



- 2002 – 2006: \$430K, 0.3% of total CRCP funding
- Majority of projects supported by grants, particularly to state and local resource agencies
  - American Samoa: project in 2002; PR: projects in all years; FL: projects from 2004 on
- Small suite of projects, largely in Atlantic/Caribbean
- Primary impacts: new methods for local resource agencies to evaluate potential impacts of coastal development, changes in land use planning in American Samoa

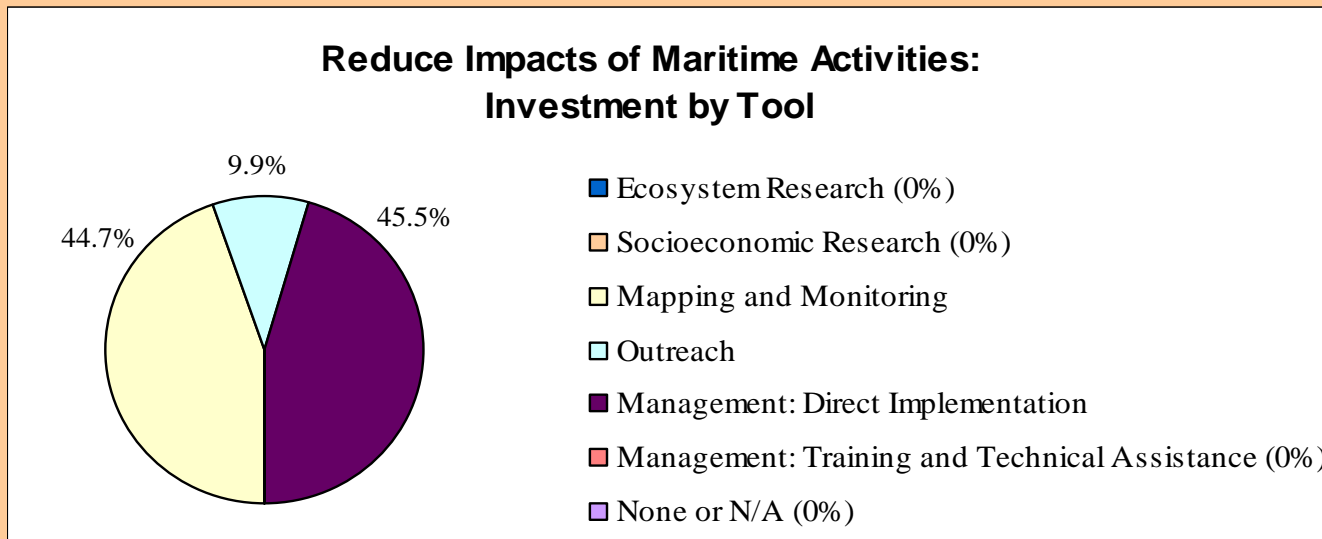
# Coastal Development – Example

- Puerto Rico Grant
  - Compiled land use change analysis for PR and trained personnel on use of GIS to access these data
  - Held exhibitions at shopping malls, presentations at marinas, and visited users in their boats
- Importance: analysis of development impacts to marine habitats necessary for local agencies to effectively plan and manage natural resource use, increasing public awareness leads to increasing compliance and conservation





# Reduce Impacts of Maritime Activities



- 2002 – 2006: \$750K, 0.6% of total CRCP funding
- Projects mainly utilized mapping and monitoring and direct management implementation
- Main focus is to reduce groundings and respond to abandoned vessels
- Primary impacts: better understanding of scope and extent of maritime impacts, increased capacity of managers to prevent and restore impacts, abandoned vessel project has led to national guidance to assess and enforce issues related to vessel groundings and removal of abandoned vessels

# Maritime Activities – Example

- Abandoned Vessel Inventory
  - Began in 1999 in collaboration with USCG and American Samoa; 9 abandoned fishing vessels on Pago Pago reef
  - Database of abandoned vessels
  - Review of existing legal authorities
  - Site visits, vessel surveys, prioritization
  - USCG used report to remove several vessels in Puerto Rico
- Importance: assisted jurisdictions in aggressively addressing the problem, including through legislation, assessment protocols are used at national level







# Coastal Uses – Challenges

- Need for greater partnering with NOAA entities and other agencies who have responsibilities for maritime and coastal development activities
- Need for legal and other support to coral jurisdictions for derelict vessels, controlling coastal development, responding to groundings, and other human impacts

# Coastal Uses – Future Directions

- Increase the success of restoration activities through:
  - better understanding of ecosystem functioning and causes of degradation
  - research on and monitoring of restoration techniques and mitigation effectiveness
- Increase effectiveness of mitigation through improved Habitat Equivalency Analyses (HEA)



# Coastal Uses – Future Directions

- Continue promotion of environmental stewardship at local level (village, community, agency, etc.) using education and outreach
- Continue efforts to successfully implement LAS projects

# Coastal Uses – Future Directions – Highlight on Legislation

- Estimated that hundreds of small and large vessels ground or cause anchor damage outside MPAs where NOAA has no ability to respond unless an oil spill occurs
  - Oil spill legislation doesn't allow for long-term monitoring
- Pending CRCA amendments of 2007 to strengthen response to all impacts to marine habitats
  - Specific language to address vessel groundings
  - Specific language addressing abandoned vessels
  - Protects important habitats from unauthorized coastal use impacts
- Pending 4(d) rule for threatened coral species and pending critical habitat designation will define take under ESA and protect against adverse modification of habitat

# Conclusion

Human activities along the coast (or island wide in the case of island countries) all affect the marine environment.

Cooperative relationships between local communities, local government agencies, and Federal agencies will be critical to improving coral reef ecosystem condition



# Discussion

