National Oceanic and Atmospheric Administration
National Ocean Service

OFFICE of RESPONSE and RESTORATION

2001 IOSC Short Course

NRDA Cooperative Efforts

FLORIDA DEPARTMENT of ENVIRONMENTAL PROTECTION

Cooperative Assessments: Overview of Statute and Regulations

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Goals of OPA*

- Make environment and public whole
- Restore, rehabilitate, replace, and acquire the equivalent of injured natural resources and services

Private Claims under OPA

- Damages to real or personal property
- Net loss of taxes, royalties, rents, fees, and other lost revenues by federal or state governments
- Loss of profits or loss of earning capacity due to injury to natural resources
- Loss of subsistence use of natural resources
- Net costs of public services

OPA Natural Resource Damages

- Trustees may assess damages
- Recovered sums must be used to restore
- NOAA to develop regulations

Focus and Goals of OPA Regulations*

- Focus is on restoration
- Expanded role available to Responsible Party
- Open process with public involvement

Overview of NRDA Process

- Three phases
  - Preassessment Phase
  - Restoration Planning Phase
  - Restoration Implementation Phase

Preassessment Phase

- Determination of trustee jurisdiction
- Likelihood of injuries to restore

Restoration Planning Phase

- Injury assessment
- Injury determination
- Injury quantification
- Restoration selection
  - Develop range of restoration alternatives
  - Scale restoration actions
  - Select preferred alternative
- Develop restoration plan

Restoration Implementation Phase

- Responsible party carries out restoration

  OR

- Responsible party pays trustees to do restoration

Emphasis on Cooperation and Settlement

- Focus on restoration, not monetary damages
- Trustees required to invite responsible party into assessment
- Encourage expedited assessments to:
  - Achieve restoration more quickly
  - Reduce interim losses

Benefits of OPA Regulations

- Lower costs with focus on restoration
- Sound restoration plan developed
- Consensus approach to resolving liability
- Litigation avoided

Trustee Needs

- Focus on faster restoration
- Less litigation
- Identified framework for cooperative planning
- Consensus decisions
- Data sharing
- Public participation
- Funding

For Further Information

- Visit Web Site at:
  - www.darp.noaa.gov
- Call Program Coordinator at:
  - (301) 713-3038, extension 192

NATURAL RESOURCE DAMAGE ASSESSMENT FOR COASTAL OIL SPILLS IN FLORIDA

Phil Wieczynski
Chief, Bureau of Emergency Response

Florida DEP Division of Law Enforcement

Topics for Discussion

- Florida NRDA overview
- Calculating assessments by formula
- Cooperative efforts

Current Program

- Spills of pollutants into coastal waters require a NRDA
- Assessments made for all coastal oil spills
- Formula based damage assessment used for minor spills

Current Program (con't.)

- Close cooperation with Federal Trustees for any significant spill
- For spill > 30,000 Gallons, the RP can opt out of the formula
- Bill RP when identified

NRDA Actions to Date

- 5,328 spills with a NRDA
- $1.79 M billed to RP
- 2,002 spills collected
- $1.5 M collected & deposited in Coastal Protection Trust Fund

(Data current to February 2001)

Determining State Natural Resource Assessment Value

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Florida NRDA Formula*

[(B x V x L x SMA) + (A x H x SMA)] x PC + ETS + AC =

[(Base Rate X Volume X Location X SMA) + (Area X Habitat)] X Pollutant Characteristic + Endangered and/or Threatened Species + Admin Costs = Assessed Value

- Spills of gasoline or diesel oil < 25 Gallons = $50.00

Cooperative Efforts

- Formula provides starting point for state consideration
- No double recovery of damages
- Will consider damage assessments performed in conjunction with federal trustees
- State is interested in dialogue with responsible parties regarding damages

Expenditures Allowed under Florida Statutes

- Restore damaged resources
- New restoration & enhancement tools
- Develop and update sensitivity atlas
- Improved tools for containment & removal of oil
- Wildlife rescue & Rehabilitation
- Education
- Studying long term effects of oil spills
- Restoration of old sites
- Other marine projects

Florida Marine Spill Analysis System (FMSAS)

- Relies heavily on GIS information managed by the Florida Marine Research Institute
- Data available statewide
- Data regularly updated
- Future plans to make the data available on-line

Factors Leading to Successful Cooperative Assessments

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Summary

- OPA 90 encourages cooperative assessments
- Role of the Responsible Party is evolving and form of cooperation is flexible
- There are benefits and drawbacks to cooperation
- Structuring and maintaining a successful cooperative assessment require effort by both the Trustees and Responsible Party

Introduction

- What is a cooperative assessment?
- NOAA Philosophy
- Mega Borg Example

OPA Provisions on Cooperative Assessments

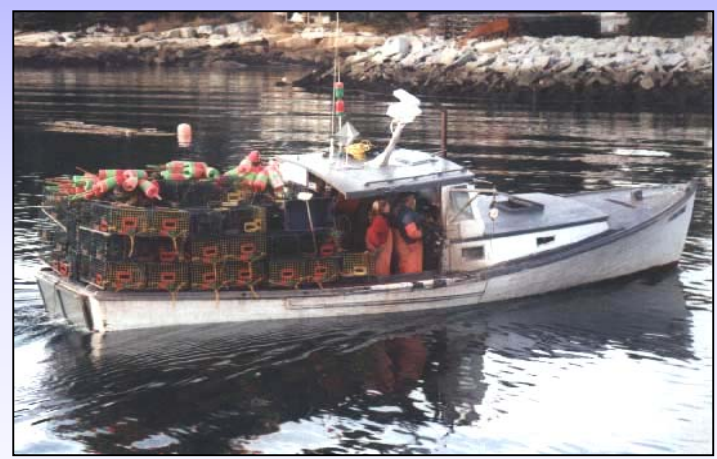
- Form of cooperation is negotiable. OPA regulations provide basic guidance on:
  - Timing and duration
  - Control and decision-making
  - Level of participation
  - Formal agreements
  - Public involvement

Factors That Make Cooperation Work*

- Trust and integrity
- Commitment to restoration
- Focus on most important impacts
- Advance funding
- Stipulations to narrow scope of investigations

Factors That Make Cooperation Work- 2

- Clear Record of Decisions
- Common laboratory
- Using joint experts
- Shared information
- Injury specific technical working groups



Factors That Make Cooperation Work- 3

- Strong leadership
- Common PR
- Agree to disagree
- Early technical cooperation
- Willingness to conduct early restoration

What are the Benefits?

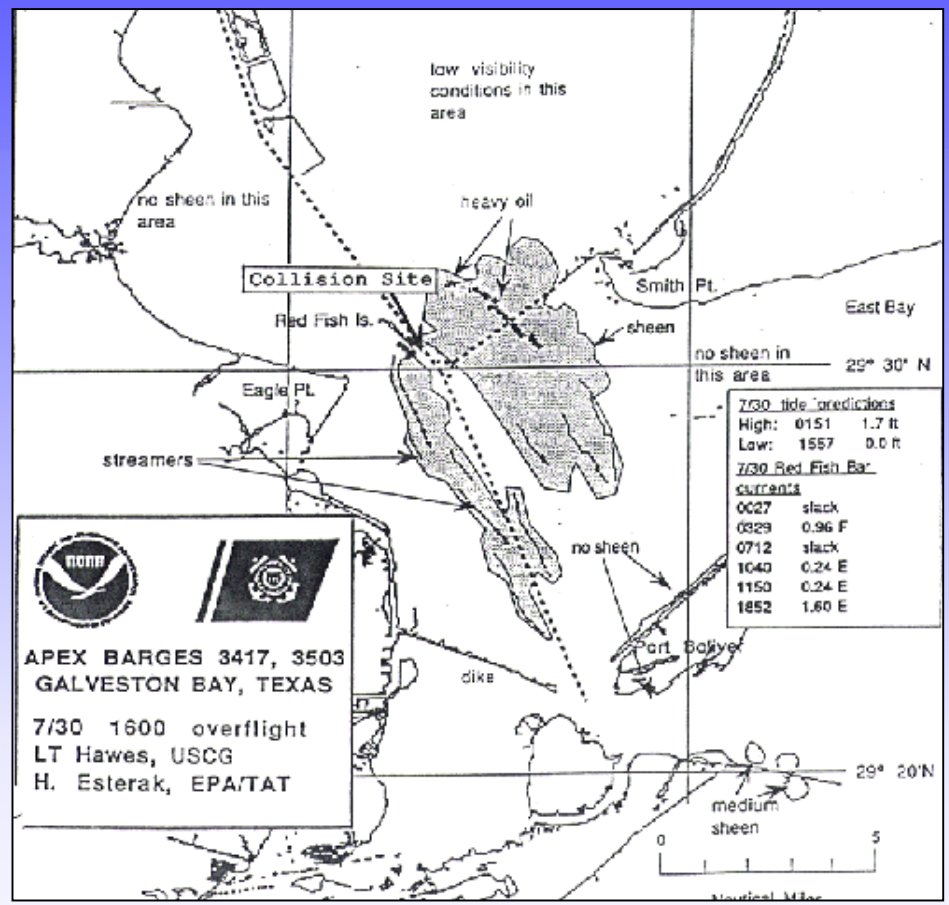
- Cost sharing
- Logistics sharing
- Response benefits
- Open public process
- Focus on restoration
- May speed process
- May avoid litigation

What are the Benefits? (con't.)

- Early cooperation may reduce or eliminate need for NRDA

What are the Drawbacks ?

- Distrust may be warranted
- Relationship may dissolve
- Critical time may be lost negotiating the terms of the cooperative assessment



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What are the Drawbacks ? (con't.)

- Still need for both parties to invest oversight time
- May appear to be a conflict of interest to outside parties
- Cooperation may complicate other claims.

Conclusions

- Cooperative assessments have benefits, challenges and pitfalls.
- NOAA believes that the advantages outweigh the disadvantages.
- Need to be honest, flexible, and committed to the goal of restoration.

Mechanisms for Facilitating Cooperative NRDAs

Brian Julius

Gulf Coast Branch Chief

Damage Assessment Center

David Chapman

Pacific Coast Branch Chief

Damage Assessment Center

NOAA's Office of Response and Restoration

General Principles in Facilitating Cooperative Assessments

- Cases should not be viewed as isolated events, but part of an ongoing developmental process
  - Role played by RP contractors
- All parties should carefully balance the need to reduce uncertainties versus incurring additional costs
- RPs should not be made worse off by choosing to implement restoration themselves, rather than "cashing out"
- Restoration projects should not be held to higher standards of performance than appropriately chosen control areas

General Principles in Facilitating Cooperative Assessments (con't.)

- Documentation should be a real-time process, recording agreements as they occur, not just at the end of the assessment process
- Opportunities abound for win-win outcomes
  - Expedited assessment approaches that reduce time to restoration implementation phase, while minimizing assessment costs
  - Creative restoration approaches that generate high-quality, cost-effective projects

Cooperative Mechanisms Related to the Assessment and Settlement Processes

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Specific Mechanisms to Facilitate Cooperative Assessments

- Pre-Spill Planning
- Documentation of Decisions/Agreements
- Use of Third Parties
- Sharing Risk/Uncertainty

Pre-Spill Planning

- On-going Opportunities
  - Joint Assessment Team
  - Environmental Functional Team
  - Rapid Assessment Program
  - Science of Spills Training

Pre-Spill Planning

- Ad-Hoc Opportunities
  - Spill Drills
  - Area Contingency Plans
  - Site NRDA contingency plans
  - Document Review
  - Conference Presentations

Joint Assessment Team (JAT)*

- "*The Joint Assessment Team seeks to enhance effectiveness and efficiency of conducting natural resource injury and damage assessments and restoration*"
- Trustee, industry representatives
  - Have purposely left out attorneys and consultants
- Meets quarterly on the west coast
  - Attempts to initiate in other regions

Environmental Functional Team*

- Established by Chevron in 1992
- Manages and provides expert technical advice on environmental issues that emerge during an oil spill
- Provides periodic technical training on specific issues:
  - Open to both Industry and Trustee reps.
    - Chemistry
    - Annual training on general spill response

Rapid Assessment Program

- Designed to train and coordinate NOAA damage assessment early responders, co-trustees and consultants
- Annual training at alternate coastal locations
- Fosters consistency in response and assessment nationwide

Science of Oil Spills Workshops

- Designed to help spill responders understand the complex, interrelated issues that decision-makers face during oil spill incidents
- Held approx. every 9 months in Seattle
- Focus on:
  - Oil impacts to living resources
  - Physical processes in spill response
  - Tools for spill response

Spill Drills

- Periodic training exercises to test all the pre-spill planning efforts
- Facilitate cooperation and effectiveness during actual spill event
- SONS drill in Gulf, August 2001

Spill Drills Issues*

- Drills need to specifically address NRDA
  - Currently an afterthought in many drills
- Separate from response issues
  - Goals of response and NRDA are related but distinct
  - Staffing is always an issue
- USCG may not address trustee/RP issue
  - Short term goal of CG not always the same as trustee/RP long term goals

Pre-Spill Agreements*

- Texas - NOAA Spill Response MOU*
  - Coordinate response/assessment activities
- NOAA - P&I Club MOU*
  - Foster clear communication
    - periodic meetings
  - Exchange of technical information
    - use of ITOPF during spills
    - joint training exercises

Conference / Presentations

- IOSC
- SETAC
- API Meetings

- ERF (Estuarine Research Federation)
- Ecological Society

Documentation of Decisions/Agreements

- Focuses discussion on items to resolve
- Memorializes interim agreements
- Provides a reference record |for the future
- Allows for 3rd party review of process
- Examples of agreements

Examples of Ways to Formalize Agreements

- Stipulations
  - aka Expedited Technical Consensus (Tampa)
- MOU/MOA
  - Technical Memorandum attachments (Lavaca)
- Summary of Meeting Agreements
  - Lake Barre
- Phased DARP
  - Tampa Bay
  - Lavaca Bay

Risk Sharing of Agreements

- Restoration Implementation Contingencies
- Use of Control Areas
- Design Standards
- Performance Standards
- Insurance

Use of Third Parties

- Shared Experts
  - North Cape lobster expert
- Alternative Dispute Resolution
  - Mediation - Torch spill in CA
- ITOPF
  - Technical expertise
  - P&I Club / NOAA MOU

Cooperative Mechanisms Related to Injury Assessment, Restoration Project Selection and Restoration Scaling

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Sensitivity Analysis

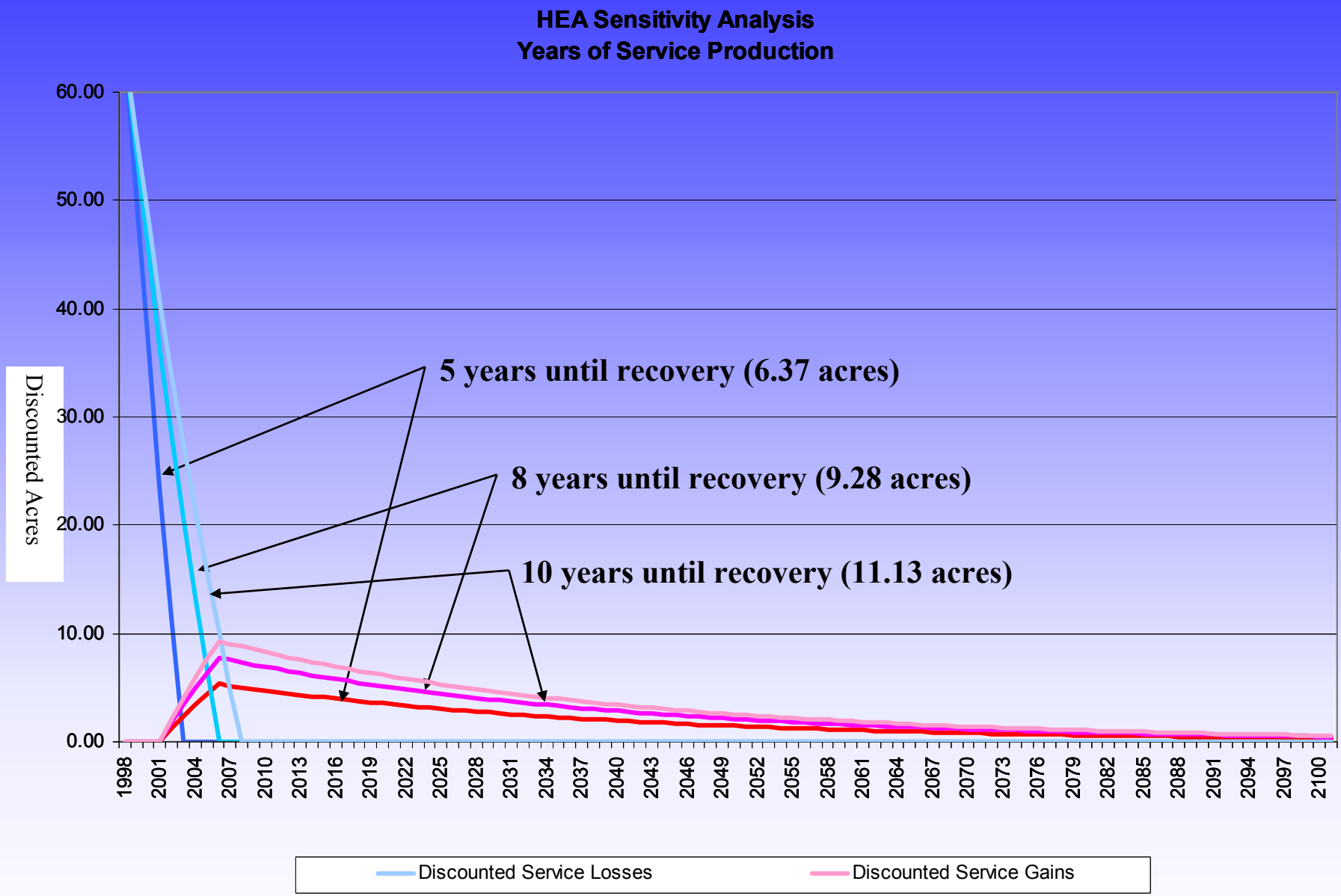
- Essential tool for determining which assumptions have a major impact on the scale of restoration
  - Reduces costs and expedites restoration by identifying potential analyses or studies that would have little impact on the outcome
  - Can help identify data gaps/uncertainties to be addressed by targeted analyses or studies
- Avoid performing arbitrary sensitivity analyses
  - Certain assumptions/parameters are likely highly correlated

HEA Sensitivity Analysis

HEA Formula:

$$P = \left[\sum_{t=0}^{B} \rho_t \left(b^j - x_t^j \right) / b^j \right] * J / \left[\sum_{t=I}^{L} \rho_t \left(x_t^p - b^p \right) / b^j \right]$$

Which parameters most heavily influence the scale of compensatory restoration?


HEA Sensitivity Analysis
Years of Service Production
Discounted Acres
60.00
50.00
40.00
30.00
20.00
10.00
0.00
1998
2001
2004
2007
2010
2013
2016
2019
2022
2025
2028
2031
2034
2037
2040
2043
2046
2049
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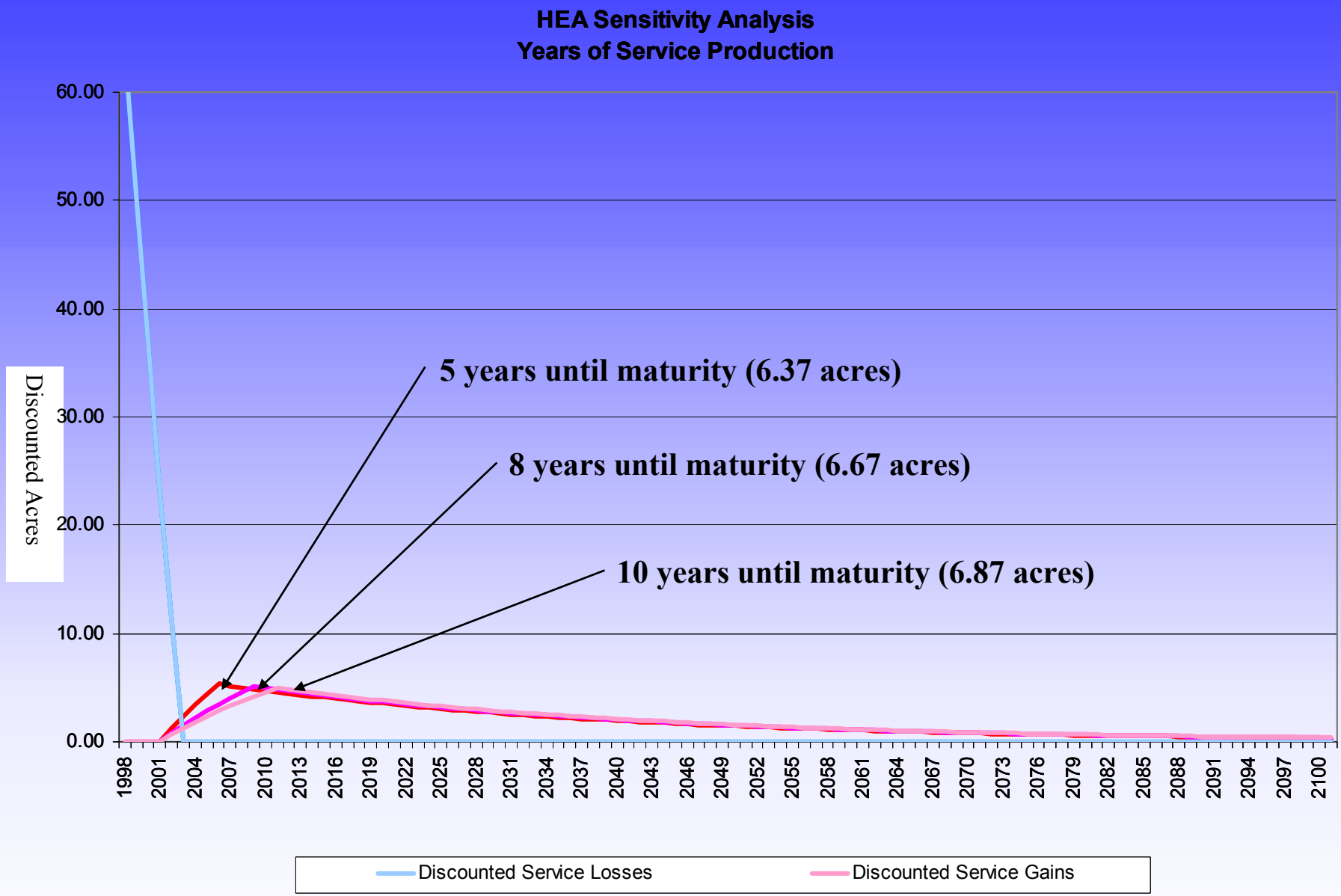
2058
2061
2064
2067
2070
2073
2076
2079
2082
2085
2088
2091
2094
2097
2100
5 years until recovery (6.37 acres)
8 years until recovery (9.28 acres)
10 years until recovery (11.13 acres)
Discounted Service Losses
Discounted Service Gains


HEA Sensitivity Analysis
Years of Service Production
Discounted Acres
60.00
50.00
40.00
30.00
20.00
10.00
0.00
5 years until maturity (6.37 acres)
8 years until maturity (6.67 acres)
10 years until maturity (6.87 acres)
1998
2001
2004
2007
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2016
2019
2022
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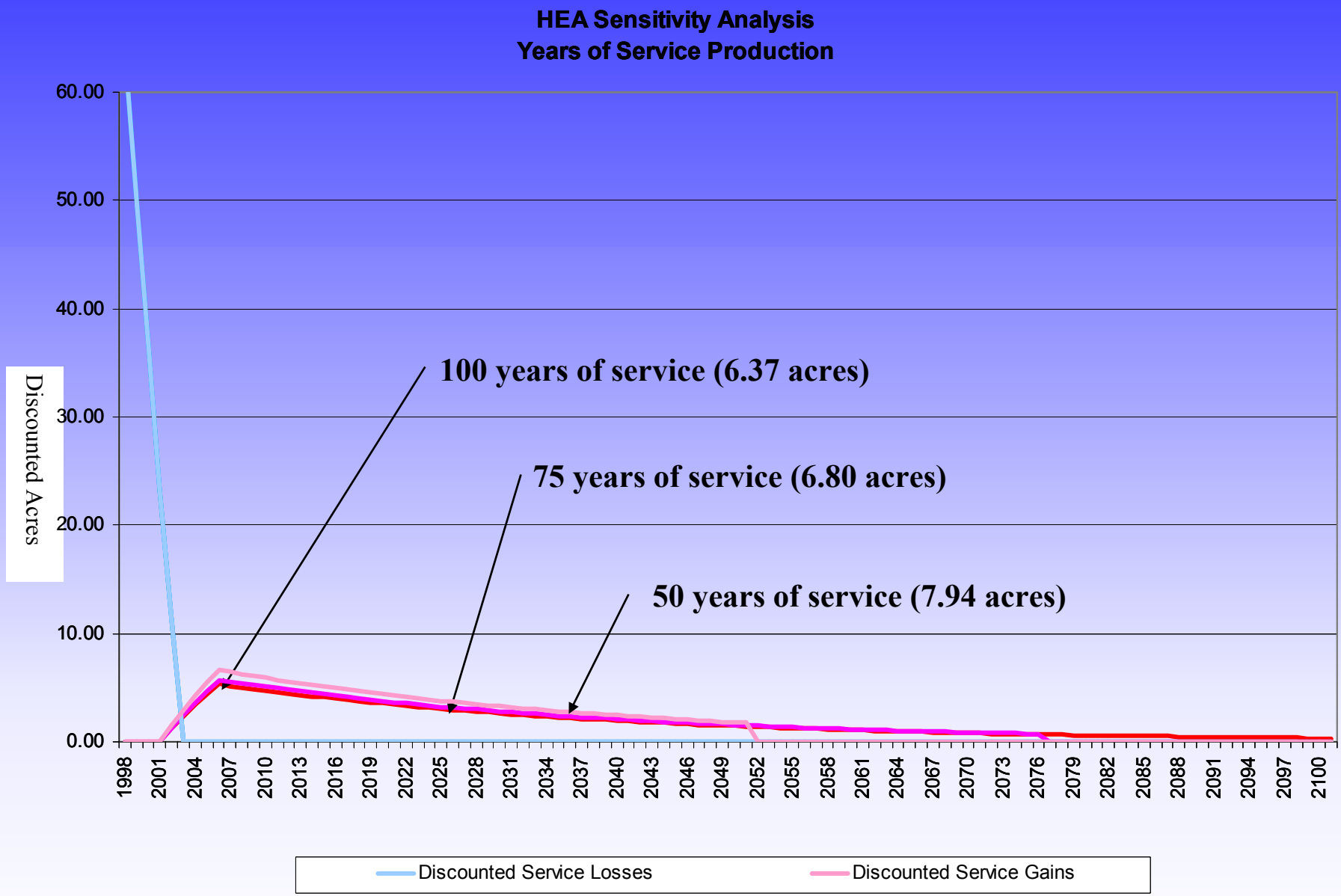
Discounted Service Losses
Discounted Service Gains


HEA Sensitivity Analysis
Years of Service Production
Discounted Acres
60.00
50.00
40.00
30.00
20.00
10.00
0.00
100 years of service (6.37 acres)
75 years of service (6.80 acres)
50 years of service (7.94 acres)
1998
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2100
Discounted Service Losses
Discounted Service Gains

"Reasonable Worst Case" Scenario Approach*

- Approach used to minimize assessment costs and the need for site-specific studies, while ensuring that the public is adequately compensated for resource injuries
- Applicable to CERCLA and OPA cases
- Relies on conservative (i.e. protective) assumptions

"Reasonable Worst Case" Scenario Approach (con't.)

- Identify resources/services potentially adversely affected
- Collect and analyze relevant data on the risk of injury to each resource/service
  - Existing site-specific data, prior scientific studies, literature reviews, data from similar cases, data from RI process, etc.
- Based on existing data, determine whether injury is likely for each category of resources/services erring on side of conservatism (i.e. in favor of finding injury)
  - For categories with little or no reasonable likelihood of injury - no "further consideration required" determination
  - For resources with a likelihood of injury, apply same conservatism to predict extent and severity of injury

Intentional Overcompensation

- Highlights a critical distinction between cooperative and non-cooperative assessments:

  What trustees can claim vs. what they can accept

- Why would an RP ever intentionally choose to overcompensate the public?
  - Cost-effectiveness
  - Reduce time "on the hook" for monitoring, performance standards, mid-course corrections, etc.
  - Public relations and/or relations with trustees

Example #1: Dixon Bay Oil Spill

- Inactive well owned by Chevron blew out in Jan 1995
- Oil spill resulted in lost ecological services within 200-250 acre area of *Spartina* and *Phragmites marsh*
- Natural recovery was preferred primary restoration alternative
- For compensatory restoration, HEA indicated that creation of 5 acres of compensatory marsh was necessary to compensate the public for interim lost services
- Instead of typical "fill and plant" marsh restoration, trustees and Chevron agreed on a freshwater diversion project to restore restoration site's original hydrology

Example #1: Dixon Bay Oil Spill

March 1996

5 acres required

October 1997

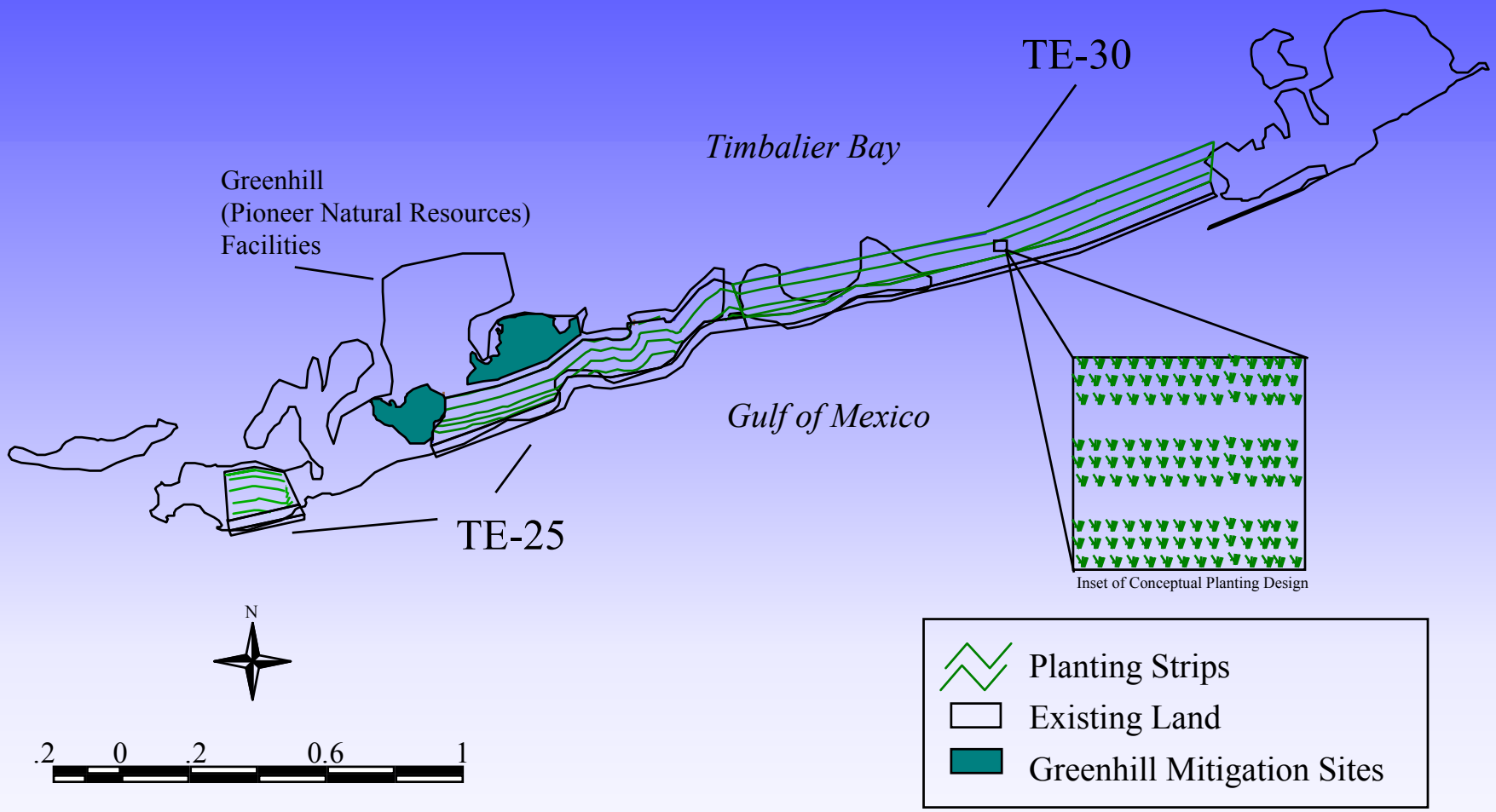
21 acres created as of 1997, with potential for 50+

Example #2: Lake Barre Oil Spill

- Pipeline operated by Texaco ruptured May 1997
- Released 6,561 bbl crude oil into Lake Barre, a shallow estuarine lake

- 4,300+ acres of marsh exposed to slicks/sheens
- Bird and aquatic fauna mortality observed
- PAHs in water column exceed concentrations shown to be toxic to aquatic fauna

East Timbalier Island Planting Project



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Example #2: Lake Barre Oil Spill

- Had Texaco done all of compensatory restoration in one concentrated area, requirement would have been ≈22 acres of marsh
- With strip/gap planting design, 18.6 acres were planted, with an additional 39.4 acres enhanced through accelerated colonization by the planted areas
- Ultimately ≈ 58 acres of compensatory marsh will provide services to the public and the environment, as opposed to the ≈ 22 acres that could have been required by the trustees

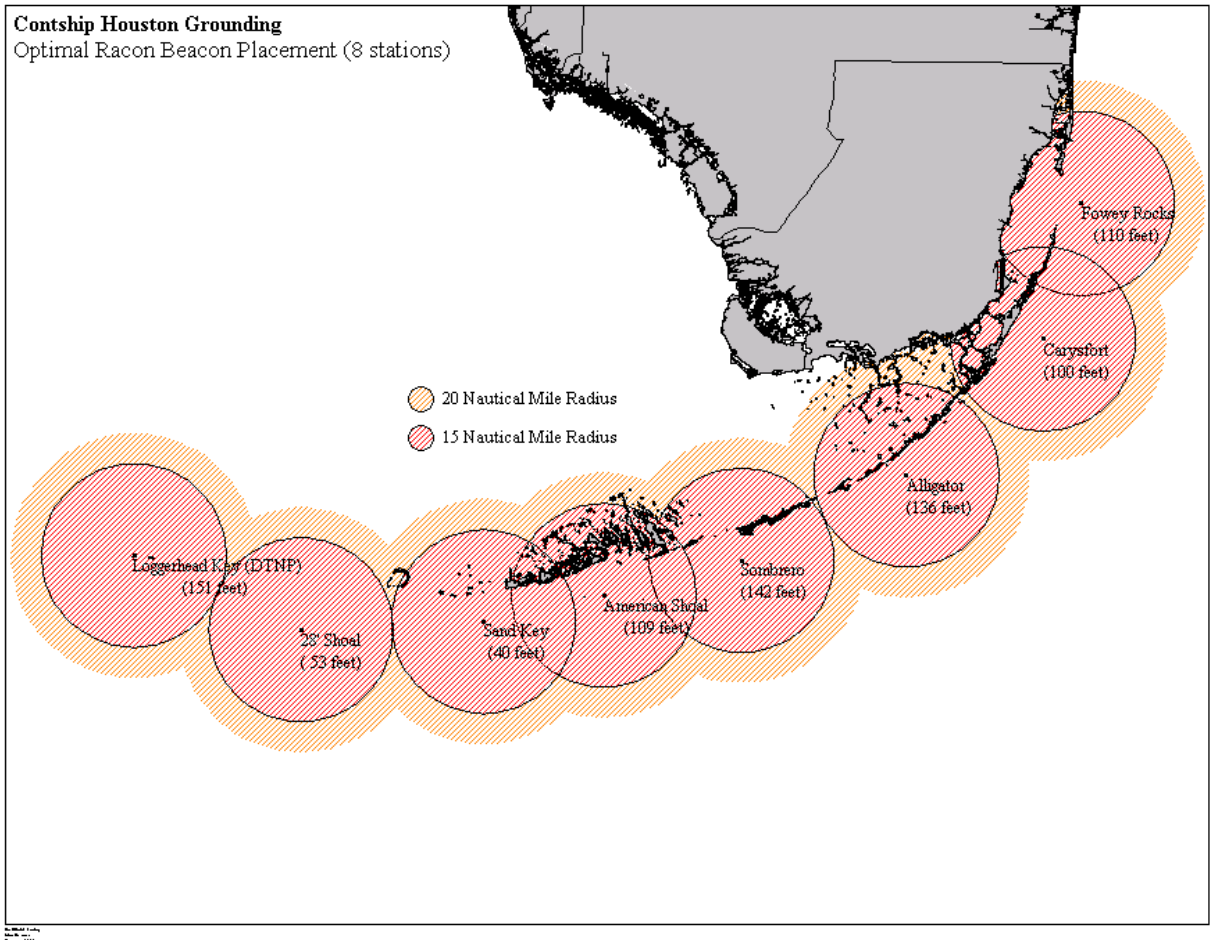
Creative Restoration Project Development and Application of OPA Nexus Criterion

- Under OPA, there must be a strong linkage ("nexus") between the resources and services injured, and those provided by the restoration project(s)
- Projects aimed at preventing future incidents that would injure the same or similar resources may meet this criterion
  - Form of "acquisition of the equivalent" under OPA
  - Often argued that "natural" resources are better than "created/restored"
  - Prevention-oriented projects may be cheaper and faster to implement than traditional habitat restoration projects

Example #3: *Contship Houston* Grounding

- Injury: 600 ft. freighter destroyed 5,500 sq. m coral reef due to navigational error
- Restoration: Preferred restoration alternative was a Racon-based navigational system aimed at preventing future groundings and assoc.resource loss
  - HEA was used to determine that expected prevention benefits equaled or exceeded resource/service losses
  - Case did include a large primary restoration component

Example #3: *Contship Houston* Grounding



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Caveats - Preventative Projects

- The benefits of the restoration must be quantifiable and supported by data
  - Avoid projects with ambiguous benefits
- Be careful not to count "sham benefits", i.e., incidents not likely to be prevented by project
  - In *Contship Houston* analysis, removed all groundings caused by negligence from expected benefit calculation
- In using historical data to project benefits, evaluate whether past patterns are likely to hold in the future
- Account for lifespan of project in expected benefit calculation and add necessary maintenance expenses

Conclusions

- Individual incidents don't happen in isolation
  - Long-term professional relationships
  - Tenor set during response will often last through the entire assessment
- Understand the constraints each party operates within
- Communication and documentation
- Pre-spill planning goes a long way

Conclusions (con't.)

- Balance between need for additional information and acceptable uncertainty
- Focus on restoration
  - Need strong nexus between injury and benefits
  - This is the goal of the trustees
- Statutes and regulations leave room for creativity and flexibility