NOAA Damage Assessment and Restoration Program

Resolving Natural Resource Liability: Suggestions for Ports

Mary Baker

NOAA Office of Response & Restoration

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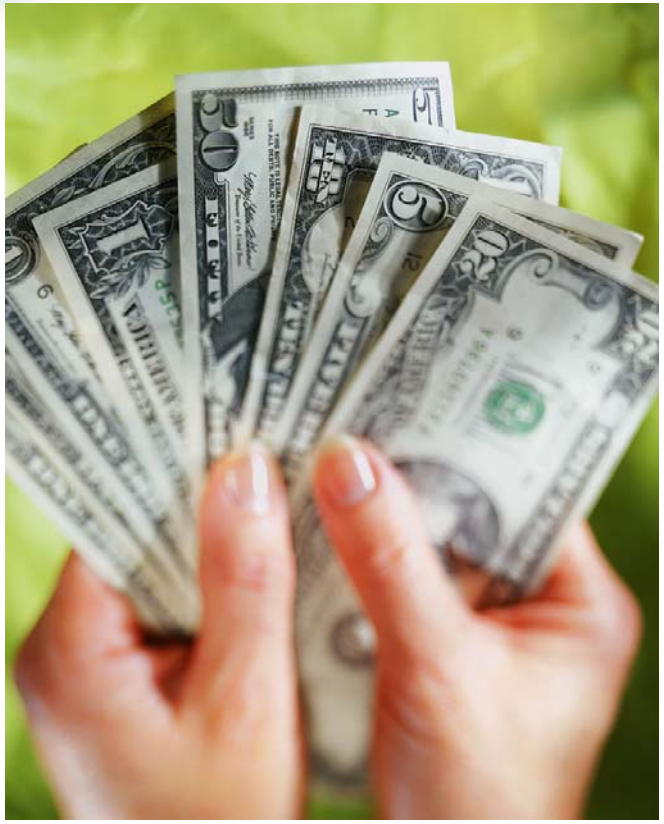

Successfully Resolving NRDA Liability:
Is it all about money or relationships?

The NRDA four-fold path

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- Right Intentions
- Right Relationships
- Right Process
- Right Outcome

Overview

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1) The Trustees' Mandate
2) Working with the remedial process: Characterizing Exposure, Effects, and Risk
3) Developing Protective Cleanup Actions
4) Evaluating and Scaling Injury
5) Identifying Restoration Options
6) Restoration Scaling
7) Restoration Implementation
8) Assessment Costs
9) Documenting Agreement

The Trustees' Mandate

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CERCLA 122j: Release for natural resource liability can be granted if appropriate steps are taken to protect and restore natural resources

The Trustees' Objectives:

1. Prevent future injury
2. Return injured natural resources and services to baseline (condition but for release)
3. Compensate for interim losses of natural resources and services from date of release until recovery to baseline

Port Interests

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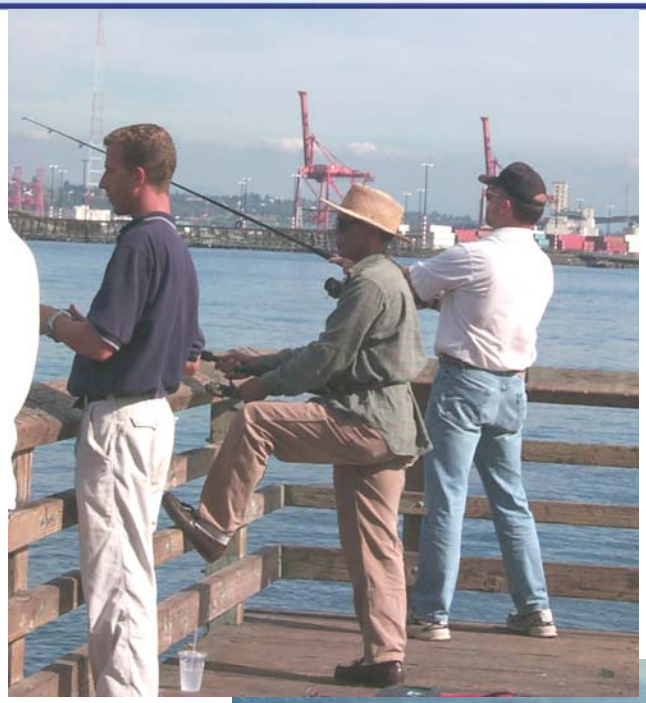
- Competition for property with other uses
- Public Interest
- Business Interests (maintaining competitiveness)
- Environmentally sound redevelopment



Changes in Resource Services Over Time

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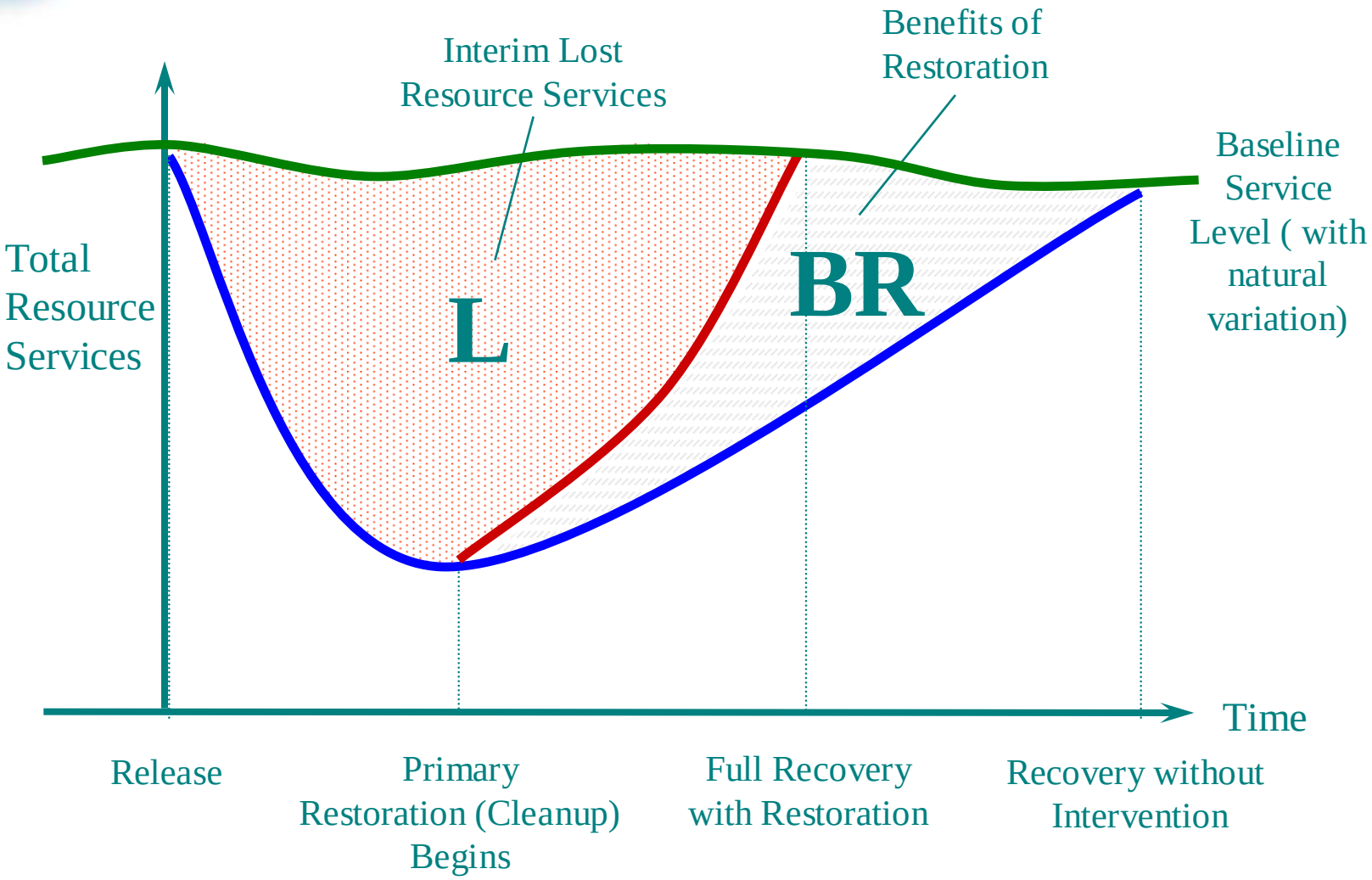

Characterizing Exposure, Effects, and Risk

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Work with trustees within the remedial process
(state or federal)

- Characterize extent and magnitude of contamination
- Identify receptors of concern
- Evaluate exposure to receptors
- Evaluate effects to receptors
- Quantify risk (risk includes potential for effects in addition to predicted or observed effects)

Trustee's Goal: Protection for natural resources
Risk assessment can also provide injury information
Risk assessment should quantify all risks, and identify those attributable to the specific releases of concern

Developing Protective Cleanups

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Consider Trustee Perspective

- Base actions on risk to natural resources
- Control ongoing sources (and reservoirs of contamination) that drive risk
- Apply “environmentally sensitive” cleanup methods
- Develop monitoring based on risk drivers
- Incorporate restoration where feasible

Responsible parties must address the harm their releases caused
not all other insults to the ecosystem

Evaluating and Scaling Injury

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Conduct as part of the risk assessment, or separately
Consider collaborative assessment

- Identify injury categories based on contaminant characterization (e.g. sediment and benthos, birds, mammals, fish, etc.)
- Identify injury metrics
  - Representative population traits (e.g. sculpin disease or reproduction)
  - Habitat service indicators (sediment contamination predicted to affect invertebrates, or area of pore water in excess of AWQC)
- Characterize service losses for each category
  - Over Time and Space
  - Magnitude (compared to baseline)—generally presented in terms of percent loss of service

Consider what data is needed to reach agreement between parties

Restoration Definition

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- Any action to restore, rehabilitate, replace, or acquire the equivalent of injured natural resources and services
- Natural recovery can be part of primary restoration

Identifying Restoration Options

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- For each injury type, is it possible to restore the injured or a comparable resource?
- If not, are there other resources that can be restored or provided to compensate for services lost?
- Identify options, characterize benefits of each project
- Provide opportunity for public input

Evaluate port owned property
Consider port logistical ability
Consider maintenance dredging as a source of restoration material
Consider adding to mitigation requirements

Restoration Nexus

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- Trustees must develop a reasonable range of options and identify preferred alternative based on (15 CFR 990.54)
  - Cost
  - Extent to which alternative returns injured resources to baseline or compensates for lost services
  - Likelihood of success
  - Prevention of future or collateral injury
  - Multiple resource benefits
  - Effect on public health and safety
- Additional criteria
  - Cost effectiveness
  - Geographic connection
  - Partnerships
  - Compliance with laws and policies

Restoration Scaling

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Trustee's goal: restoring the resource, compensating for lost use

- Scaling: the process of determining how much restoration is required to make the public whole

- Scaling Methods:
  1. Service-to-Service (most preferred)
  2. Value-to-Value
  3. Value-to-Cost (least preferred)

OPA regs developed restoration based approach to scaling damages
CERCLA regs provide process to achieve "rebuttable presumption"

1. Service-to-Service Scaling

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Service **Losses** due to Primary Injury	=	Service **Gains** from Compensatory Restoration
Discounted, in **Service** Units		Discounted, in **Service** Units

- Use when injured and restored resources are the same type, quality, and of comparable value
- Example: intertidal habitat is injured & intertidal habitat is the compensatory restoration habitat

2. Value-to-Value Scaling

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Value of Service **Losses** due to Primary Injury

Discounted, in **$$$** Units

=

Value of Service **Gains** from Compensatory Restoration

Discounted, in **$$$** Units

- Use when service-to-service method is not applicable
- Example: value lost recreational trips & value expected increase in trips after improving recreational access

Basic Scaling Steps

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A. The Injured Site:

1. Quantify the injury losses (services lost-extent, magnitude, duration)
2. Estimate the recovery function
3. Sum the discounted losses over time

B. The Restoration Site:

4. Quantify the benefits of 1 acre
5. Estimate the service provision function
6. Sum the discounted benefits over time
7. Divide #3 by #6

Selecting the Units of Measurement

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If $$ are not the units, what is used?

- Most habitats provide a complex suite of services, so choosing just one is difficult
- The most common unit is the DSAY

Discounted Service-Acre-Years

- A dollar today is not worth a dollar tomorrow- same for environmental services
- All of the complex goods provided by the habitat
- Physical area measurement
- Measure of time

Required Inputs for HEA

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Injury Quantification

1. Area of Injury
2. Measurement Metric
3. Baseline Service Level
4. Post-Injury Service Level
5. Recovery Function
   a. Shape
   b. Max Service Level
   c. Time to Max Service Level
   d. Duration

Benefits Quantification

1. Measurement Metric
2. Baseline Service Level
3. Service Provision Function
   a. Shape
   b. Max Service Level
   c. Time to Max Service Level
   d. Duration

Restoration Implementation

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- Combine with cleanup actions where possible
- Public involvement required in selection of alternatives
- Take advantage of public relations and partnership opportunities
- Include monitoring

Port can implement projects or provide funds to trustees to implement

Assessment Costs

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- Poor relationships are expensive (but good ones are not free)
- CERCLA is adversarial, but not punitive
- Use the lawyers and consultants appropriately
  - Consider independent experts to help resolve disputes
- Allocation of liability and costs can be complex

Tolling agreements are beneficial when site does not have NPL status
Get involved early
Avoid/Prevent duplication of effort

Assessment Costs

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- Define up front what cooperative assessment means to you
- Funding and participation agreements can be as simple or as complex as you like (but complexity may not bring cost control)
- Discuss what activities will be included in costs
- Invest in relationship building
- Discuss indirect rates

Benefits of Collaboration

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- Public Relations Benefits
- Shared Control
- Payoff at other sites/future events
- Ability to leverage resources
- Litigation Avoidance
  - Unpredictable outcomes
  - Expensive
  - Time consuming

Documenting Agreement

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- Consent Decree
  - Reopeners/Contingencies
- Restoration Plan
  - Documentation of injury
  - Evaluation of alternatives
  - Documentation of preferred alternative
  - Addresses public comment
  - Outreach plans
  - Monitoring

Contact

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Mary.Baker@noaa.gov