Ecosystem Services in the Context of Natural Resource Damage Assessment and Restoration: Historical Perspective & Legal Framework

Thomas A. Campbell
Pillsbury Winthrop Shaw Pittman, LLP
Introduction of Panel

- More than 70 years of NRDA experience
- More than 60 NRD settlements
- Broad Experience
  - Economists (government/private sector),
  - Government Policy Maker,
  - Industry Policy Maker,
  - Corporate NRD Decision-maker and
  - Scientist
  - Lawyers
- Program
  - Law
  - Economics
  - Science
  - Innovation
  - 3 Case Studies
NRD Authorities

- CWA § 1321 - liable for costs to restore or replace of natural resources damaged or destroyed
- CERCLA § 107(a) & (f) - liability and recovery for natural resource damages
- CERCLA § 106 - imminent and substantial endangerment; trustees now have 106 authority
- OPA § 1002 – liability and recovery for natural resource damages
- 16 USC § 19 JJ - Park System Resource Protection Act
- National Marine Sanctuary Act
NRD Authority

- Regulations:
  - DOI 43 C.F.R. 11 (Type A and Type B Assessments) (CERCLA)
  - NOAA 15 C.F.R. 990 (OPA)

- State Programs:
  - CERCLA/OPA “me too”
    - i.e., Model Toxics Control Act (Washington State)
  - CERCLA/OPA “plus”
    - Florida and New Jersey
Outline

- Historical Perspective
- CERCLA
  - SARA Amendments
  - Ohio vs DOI
- Settling Cases
  - MegaBorg
  - A > B
- Challenges and Opportunities
  - Recovery of cost vs Damages (Washington vs. Oklahoma)
  - 113(h)
  - Private Attorneys General
- Policy Considerations
  - Fixing CERCLA
A Challenge to Eco-services Professional

- CERCLA is broken and needs to be fixed
- CERCLA Ecological Risk Management policies and procedures don’t work
  - Remedies are often conducted in the name of ecological risk without consideration of ecological service losses associated with that remedy
  - Remedies conducted often do more harm than good
  - Site closure are delayed
CERCLA

- Passed in December of 1981
  - Created Fund to conduct
    - RI/FS
    - NRDA
- Through Executive Order 12316 (1983) as superseded by Executive Order 12580 the Department of the Interior was delegated the task of drafting regulations
- SARA Amendments in 1986
  - Excluded NRDA from access to the Superfund
- Two types of procedures in 1986 and 1987
How Do You Value Something that is Not Traded in any Marketplace?
The Environment
The day the environmental world changed

- The birth of Natural Resource Damage
- The birth of Eco-Risk Assessment
- Ecosystem Services
What is the Value of Wildlife?
Injuries from Exposure to the Spill

- Estimated that from 100,000 to 300,000 birds were killed
  - some common murre colonies in the affected area were reduced by half
- Estimated a loss of 2,650 sea otters in Prince William Sound
- Impaired south-central Alaska's fisheries
The Exxon Valdez Damage Assessment

- Exxon contributed $20 million to conduct the NRD for the spill
  - a seat at the table as the assessment was being designed and implemented
    - The federal government reneged
    - “more than sufficient”

- “Assessment War” ensued
  - Federal and State governments spent $120m
  - Exxon spent a reputed $70m

- Unexpected Benefit - Understanding
  - Government Scientist – Consultants - Academics
The Exxon Valdez Damage Assessment

- The Science/Process/Expert pool was funded by Exxon
- Funds appropriated by Congress for Valdez Settlement were placed into a revolving fund and used to fund other Assessments
- EPA attempted to become the Federal trustee
  - John Sununu turned them down
- EPA began to conduct true Ecological Risk Assessments
  - At first EPA competed with the Trustee and now they tend to cooperate
Natural Resource Damages

- Cost of Restoration, Replacement or Acquisition of Equivalent
- Loss of Use
  - Actual
  - Passive
- Trustees’ Assessment Costs
Contingent Valuation Methodology

- Passive Use Loss
  - Option Value
  - Bequest Value
  - Existence Value
- Nobel Panel on CVM
- Unique Resources

WHAT’S IT WORTH?
Restoration-Based Compensation

- 1990 Marine Restoration Conference – Yes we can!
- NOAA economists Brian Julius application of 404 wetland mitigation model to an oil spill - Exxon-Bayway
- Habitat based /ecological barter
- Quantify the injury to an ecological system and the resources who use it
- Translation of injury into in-kind restoration
- Focus on the benefit created and not the cost to create the benefit
- Service-to-service scaling
- Habitat Equivalency Analysis (HEA)
  - Compensation of interim losses by replacement with equivalent services
  - Compensatory restoration
Oio Polution Act of 1990 (OPA)

- Responsibility for promulgation given to NOAA
- Based upon experience gained with HEA, ecological services concepts were incorporated into OPA NRD regulations
Natural Resources and Services

- Injury to natural resources can be defined as the sum of discounted present values of the service flows lost.

![Graph showing recovery timeline]

Baseline

- Start
- Full Recovery
- Years

% of Services

- 100
- 80
- 60
- 40
- 20
The value of a restoration project can be defined as the sum of discounted present values of the services flows created or enhanced.

- Natural Recovery: [Loss of 800 DSAY]
- Off-Site Restoration: [Gain of 2000 DSAY]
Habitat Equivalency Analysis application to Remediation

- Natural Recovery [Loss of 800 SAY]
- Invasive Remediation [Loss of 2,500 SAY]

% of Services

Years

Start

Full Recovery
Habitat Equivalency Analysis

- **Natural Recovery**
  - [Loss of 800 SAY]

- **Invasive Remediation**
  - [Loss of 2,500 SAY]

- **Off-Site Restoration**
  - [Gain of 5,000 SAY]
Getting to Settlement/Restoration

- Mega Borg
  - Preservation of the Public Trust
  - Internalization of the Negative Externalities associated with Commercial Activity
  - Not punitive

- A Trustee can accept more
  - $A > B$ not $A = B$
  - Price of Certainty

- A vision of the Future can often bridge the gap
  - Restoration
Resolving Claims in a Down Economy

- Less cash
- Need for greater creativity
- Allow companies to become Ecological Entrepreneurs
  - Service Benefits not Cost should be the ultimate consideration
- It’s the Services Stupid
- Win – Win – Win is still possible
Natural Resource Damages

- Cost of Restoration, Replacement or Acquisition of Equivalent
- Loss of Use
  - Actual
  - Passive
- Trustees’ Assessment Costs
Natural Resource Damages

- Cost of Restoration, Replacement or Acquisition of Equivalent
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Comparison of *Yakama* and *Quapaw*

<table>
<thead>
<tr>
<th>Yakama</th>
<th>Quapaw</th>
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<tbody>
<tr>
<td>Court held that NRD and NRDA are two separate claims controlled by two separate portions of CERCLA</td>
<td><em>Court noted that</em> <em>Yakama</em> court held that Yakama Nation could assert a claim for costs already expended</td>
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<td>NRD claims subject to 42 U.S.C. § 9613(g)(1)(ii) requirement that remedial action be selected before commencing action</td>
<td>Court said that “[e]ven if the Court were to apply <em>Yakama Nation</em>, . . . the Tribe has not alleged that it has actually incurred any assessment cost and</td>
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<td>NRDA costs claim is not subject to that provision but instead comes under § 9613(g)(2) which allows for recovery of costs “at any time after such costs have been incurred”</td>
<td>that future costs only are not allowed before EPA’s work is completed. 42 U.S.C. § 9613(g)(2)</td>
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<td>The court would entertain action for NRDA costs, but not NRD</td>
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Department of Interior Revised Natural Resource Damage Assessment Regulations
Prior NRDA Regulations

- CERCLA and CWA NRDA recovery allows for:
  - Cost of a restoration plan which returns injured resources to their “baseline condition”
  - Recovery of public losses pending restoration to baseline
    - Combined: “Compensable values” (amount of money to compensate for lost “services”)
    - “Services” (physical/biological functions performed by resources)

- Gap: Prior regulations provided that “compensable value” should be measured by the economic value of public losses
  - Arguably excluded restoration-based approaches
  - Trustees did not need to consider restoration actions to address interim losses until they had already determined and recovered damages
Revised NRDA Regulations

- 73 FR 57259, October 2, 2008 (Published)
- Final: November 3, 2008
- Seven general categories of changes
  1. Revises the “Type B” rules to provide trustees with the option of estimating compensable values by utilizing the cost of projects that restore lost natural resource services rather than by estimating the economic value of such lost services
  2. Revises and adds to the current list of criteria that restoration and compensable value estimation methods should meet in order to ensure that those methods are feasible and reliable
  3. Adds four examples of “project-based” assessment methods to the Rule’s list of recognized methods
NRDA Revisions – Emphasis on Restoration

- Expands options to include the cost of restoration actions
- A trustee may “use the cost of restoration actions that address service losses to calculate all damages, including all interim losses.”
- Modifies 43 C.F.R. 11.83(c) “to provide trustees [the] option of estimating compensable values for losses pending restoration utilizing the cost of implementing projects that restore those lost natural resource services.”
Proposed Revisions –
“Type B” Assessment Changes

- Includes four new examples of project-based assessment methodologies:
  - Conjoint analysis
  - Habitat equivalency analysis
  - Resource equivalency analysis
  - Random utility models

- Does not sanction or bar any methodology so long as it complies with “acceptance criteria” for relevance
  - Acceptance criteria: feasibility and reliability, reasonable cost, avoidance of double-counting and cost-effectiveness

- Methodologies for assessing “compensable value” remains non-exclusive
Implications for Future NRDAs

- Increased openness to restoration-based compensation and related options early in process
- Greater potential for early settlement with federal NRD trustees
  - No longer need to wait for damages determination and recovery
- Trustees now have additional methodologies for determining damages and “factors” for evaluating the methodologies
  - No methodology favored over another
NRD Injury ≠ Restoration

- Nothing in NRD statutes/regulations requires that NRD injury be equal to restoration
  - > or = is all that is required
- Public entitled to more compensation to account for uncertainty
Exception to Rule?

- Restoration and/or remediation either will not work or is not financially appropriate
- Compensable value
Chilling Effect of CERCLA 113(g)(1)(B) on Early Natural Resource Damage Settlements

- “In no event may an action for [natural resource] damages…be commenced…(ii) before selection of the remedial action if the President is diligently proceeding with a remedial investigation and feasibility study under section 9604(b) of this title…” 42 U.S.C. 9613(g)(1)(B)

- “This Court has not found any authority permitting a natural resources trustee to file a natural resource damages claim under CERCLA while remedial work is underway at a Superfund Site.” Quapaw Tribe v. Blue Tee Corp., 2008 U.S. Dist. LEXIS 51476 (N.D. Ok., July 7, 2008)

- “…natural resource damages actions and cost recovery actions could not be integrated if damages actions were brought before a remedy was selected, because cost recovery suits could not be brought before that point.” State of California v. Neville Chemical Co., 358 F.3d 661, 669 (9th Cir. 2004)
Chilling Effect of CERCLA 113(g)(1)(B) on Early Natural Resource Damage Settlements

- **Statutory Intention:** “…integrate the remedial investigations under section 104 with natural resource assessments and the selection of the remedial plan itself with the selection of a natural resource restoration plan.” 99 Cong. House Debates 1986 (Oct. 8, 1986)

- **Conflict with implementing regulations (43 C.F.R. 11):**
  - “…trustees have the authority to settle their damage claims at any time during the administrative process and the Department continues to encourage trustees and PRPs to pursue settlement.” 61 Fed. Reg. 20560 (May 7, 1996)
  - Statute trumps implementing regulations

- **Reality:**
  - Trustee perception: no NRD claim at NPL site until ROD issued
  - No NRD claim – no NRD settlement
    - Could Judge “sign off” on NRD settlement prior to ROD given statutory limitation?
    - Reluctance of DOJ to approve
  - Delayed recovery of NRD and encouragement of protracted litigation
CERCLA 113(h)

- With an existing response action, an NRD claim may be barred
  - prohibits federal court jurisdiction until response activities are completed

- Ways around jurisdictional bar?
  - Clean Water Act
  - Cost recovery claim
A Challenge to Eco-services Professional

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- Solution:
  - The application of Eco Service analysis methods and approaches to the remedial decision making
  - The opportunity for Eco Service debits associated with alternative remedies to be calculated and compared
End of Presentation