



DAMAGE ASSESSMENT, REMEDIATION, and
RESTORATION PROGRAM (DARRP)



Origins and Evolution of NRDA in the United States: An Economic Perspective

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NOTE: THE OPINIONS EXPRESSED HEREIN ARE THE AUTHOR'S, ALONE, AND DO NOT NECESSARILY REPRESENT THE OFFICIAL POLICY OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION.



Origins of NRDA in the United States

- **Equity and Ethics**
 - *Public trust doctrine in Roman Law*
 - *Parens Patriae*

- **Common Law - Torts**
 - *Nuisance*
 - *Negligence*
 - *Trespass*



Origins of NRDA in the United States (continued)

■ Social Evolution

- *Chemical revolution (1940s)*
- *Water resources management (1940s)*
- *Paley Commission on scarcity of strategic resources (early 1950s)*
- *Extensive Use of Pesticides (1950s)*
- *Human rights (1960s ...present)*
- *Environmental sciences (1960s ...present)*



Origins of NRDA in the United States (continued)

- **Environmental Policy**
 - *Creation of the Environmental Protection Agency (1970)*
 - *Clean Water Act (1972)*
 - *Deep Water Port Act (1974)*
 - *Comprehensive Environmental Response, Compensation, and Liability Act (1980)*
 - *Oil Pollution Act (1990)*



Economics and NRDA

■ Key Developments

- *Welfare economics – Pareto, Pigou, Marshall, ...*
- *Kaldor-Hicks compensation principle*
- *Valuation of non-market goods and services*
- *Passive/existence values*
- *Pollution regulation*
- *NRDA*



NRDA Compensation: Ecological versus Monetary Metrics

- **Common law and early CERCLA emphasized monetary compensation**
 - *Simple, common denominator - especially for pecuniary losses*
- **Some individuals/groups are uncomfortable with placing monetary values on non-market environmental resources**
 - *Some view it as just another tax (on industry or to pollute)*
 - *Some see it as a penalty*
 - *Others are concerned whether money over or under compensates*
- **Ecological currency**
 - *Compensating with same or comparable resources as those injured – HEA/REA*
 - *Encourages early selection of appropriate restoration projects*



Economic Efficiency

- **A central question: does NRDA improve the efficiency of resource allocation?**
 - *NRDA - correcting a market failure*
 - *Potential Pareto improvement*
 - *Transaction costs – “reasonable assessment costs” – simplified methods*
 - *Restoration costs cannot be “grossly disproportionate” to the damage*
 - *Cost-effective restoration*
 - *Importance of accuracy of estimates and full recovery of damages*
 - *Fairness/equity are also goals of NRDA*



Concluding Remarks

- **NRDA – and it's potential**
- **Cooperative assessments and incentives**
- **Verifying industry-lead assessments**
- **Pollution trust funds**