

Economic Evaluation of Floodplain Natural and Beneficial Values

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Considerations

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Caveat

- These are my personal observations and not necessarily those of IWR or the Army Corps of Engineers

Corps of Engineers Water Resources Project Context

- Corps water resources project decisions are governed by the 1983 Principles & Guidelines for Water & Land Resources Implementation Studies as well as many other laws (e.g. NEPA, Water Resources Development Acts) and Policies (Executive Orders)
- Non-monetary valuation does not mean placing a zero value on environmental impacts (+/-}
- Corps use of non-monetary valuation may be “suggested” by law, but definitely policy
- Federal Objective is to Maximize National Economic Benefits subject to environmental and other constraints reflected in law and policy.

Corps of Engineers Water Resources Project Context (Cont)

- 1986 WRDA added environmental restoration to major Corps Missions (flood risk management, navigation improvement as well as cost-sharing);
- SEC. 907. BENEFITS AND COSTS ATTRIBUTABLE TO ENVIRONMENTAL MEASURES. In the evaluation by the Secretary of benefits and costs of a water resources project, the benefits attributable to measures included in a project for the purpose of environmental quality, including improvement of the environment and fish and wildlife enhancement, shall be deemed to be at least equal to the costs of such measures

Corps Water Resources Project

Decision context (continued)

- 1996 (Sec 206) WRDA stated that that Aquatic Restoration could be pursued if it improves quality of environment, is in the public interest and cost effective
- Analysis of aquatic environmental improvements as well as mitigation of potential project negatives is conducted with non-monetary metrics (habitat units, acres of wetlands, acres of increased spawning habitat for anadromous fish, stream miles restored to provide fish habitat, increases in number of breeding birds, increases in target species and diversity indices.)
- Decisions consider the environment and ecosystem services (Millennium Ecosystem Assessment Studies 2003-5)

Revisions to P&G will alter Corps Decision Context

- Dec 2009 CEQ draft P&S part of P&G (Principles, Standards, and Procedures)
- The National Objective for water resources planning is to develop water resources projects based on sound science that maximize net national economic, environmental, and social benefits.
- Consistent with this objective, the United States will demonstrate leadership by modernizing the way the Nation plans water resources projects by:
 - (1) protect and restore natural ecosystems and the environment while encouraging sustainable economic development;
 - (2) avoiding adverse impacts to natural ecosystems wherever possible and fully mitigating any unavoidable impacts; and
 - (3) avoiding the unwise use of flood plains, flood-prone areas and other ecologically valuable areas.

P&G Revisions and Corps Project Decisions (continued)

- Summer 2011 – final Principles and draft guidelines expected with multi-criteria objective
- Issue: Making project decisions with a multi-criteria objective
 - Different Metrics for each objective (monetary and non monetary)
 - Informal project specific balancing
 - Formal Multi-Criteria weighting systems
 - Shared Vision Planning
 - More monetary metrics for environmental values

Using Monetary Metrics for Environmental Services

- Very seductive to me as an economist, but the path is steep
- Theoretical issues of measuring willingness to pay as a measure of value for a non-marketed service
- You would have to measure change in services times value per unit
 - Change in services is hard to measure
 - Average vs .marginal value per unit –how to allow for scarcity and diminishing marginal returns
 - Benefit Transfer Issues

See many articles

- Past experience using monetary measures (FERC, Natural Resources Damages-DOI, NOAA) is Uneven (Administrative and legal reasons.
- Today
 - NOAA uses Habitat Equivalency Analysis
 - EPA Clean Water Act—303 planning for Quality Standard Setting, 404 Permits, ESA etc. does not use monetary values