Resource Significance

Issues in Report Documentation

Leigh Skaggs
HQUSACE, Office of Water Project Review

Greg Steele
National Planning Center of Expertise for Ecosystem Restoration (ECO-PCX)

May 26, 2010

What are we going to cover?

- What's the problem?
- Quick review of definition of "significance"
- Examples – mostly good, but room for improvement
- Some suggestions

Bottom Line Up Front

- In decision documents reviewed by ATR Teams and at HQ, resource significance is often…
  - Not addressed *at all*
  - Not adequately addressed
  - Not documented (i.e., basis, reference, or support not cited)
  - Not collected & summarized in the decision document; rather, the info is dispersed throughout document and reviewers have to search for it.

Why are significant resources important?

- For NED projects:
  - Significant resources are often constraints to NED projects, and if adversely impacted, require mitigation
  - They can also prove to be positive factors to drive NED alternative selection

Why are significant resources important?

- <u>For NER projects:</u>
  - ► They drive Federal Interest decisions!
    - Without significant resources, you don't have problems and opportunities or objectives and constraints for ecosystem restoration
    - Helps answer: why are we concerned with a resource in the first place?
    - Critical information to answer, "How much is enough? What level of investment is appropriate or justified?"
    - ***Is it worth it?***

Selection of the NER Plan

- Per ER 1105-2-100, E-41:
  - When selecting a single alternative plan for recommendation from all those that have been considered, the criteria used to select the NER plan requires careful consideration of:
    - Plan that meets planning objectives and REASONABLY maximizes environmental benefits
    - While passing tests of CE/ICA, significance of outputs, acceptability, completeness, efficiency, and effectiveness
    - Other factors:
      - Partnership context
      - Reasonableness of costs
      - Rarely will the NER plan not be among the best buys

What makes a resource significant?

- Per P&G, “significant” means likely to have a material bearing on the decision-making process
  - ▶ It may be covered by a law
  - ▶ People may care about it
  - ▶ Experts may have good scientific reason to think it’s important
    - i.e., the role it may play in an ecosystem

Significant Resources may be recognized in three areas:

- Institutional Recognition
  - Importance is recognized in law, plans, or policy statements of public agencies, tribes or private groups
    - ▷ CWA's Special Aquatic Sites
    - ▷ ESA's Critical Habitats
    - ▷ NMFS's Essential Fish Habitats
    - ▷ Migratory Bird Treaty Act
    - ▷ WRDA 86's Bottomland Hardwoods
    - ▷ Principles & Guidelines (P&G)
    - ▷ EO 11990's Protection of Wetlands

Institutional Recognition (cont)

- Federal examples:
  - Endangered Species Act; Wild and Scenic Rivers Act; Anadromous Fish Conservation Act
- State/Regional examples:
  - Chesapeake Bay Program & Chesapeake Bay Protection & Restoration (EO 13508)
  - State WQ regulations, state F&W mgt. plans
  - NGOs such at TNC, DU
- Local/Tribal examples:
  - Budgets allocated funds to restore, preserve, etc.
  - Local ordinances protecting a resource
  - Local environmental organizations

Significant Resources may be recognized in three areas:

- Public Recognition
  - ► Grass Roots Support Groups
    - Save the Bay, Save the Whales, Friends of _____ , non-profits, volunteer groups working to identify and preserve a resource
    - Local taxes levied to support a resource
  - ► Controversy over use of resources
    - Opposition to destruction of a resource
  - ► National/regional/local expressions of public value judgments (formal & informal)

Significant Resources may be recognized in three areas:

- Technical Recognition
  - ► Based upon scientific or technical knowledge or judgment of critical resource characteristics
    - Contribution of SAVs to a blue crab nursery
    - The role of vernal pools in amphibian life cycles
    - Migratory corridors
    - Critical habitats for listed species

Technical Recognition (cont)

- Scarcity: relative abundance, rareness
- Biodiversity: species richness, genetic variability
- Status and trends: occurrence and extent over time, how and why changed
- Connectivity: habitat corridors, fragmentation, barriers
- Limiting habitat: essential to species survival
- Representativeness: exemplifies natural, undisturbed habitat

References for Resource Significance

- Review and Evaluation of Programs for Determining Significance and Prioritization of Environmental Resources, IWR Report 94-R-7
- Resource Significance: A New Perspective for Environmental Project Planning, IWR Report 95-R-10
- Significance in Environmental Project Planning: Resource Document, IWR Report 96-R-7
- *Resource Significance Protocol for Environmental Project Planning, IWR Report 97-R-4*

IWR Web Site: http://www.iwr.usace.army.mil/inside/products/pub/iwrreports/

Specific Examples from ATR & HQ Reviews

- Coastal wetlands project from Comprehensive Everglades Restoration Plan (CERP)
- Projects from the Illinois River Basin
- Coastal wetlands projects from Louisiana Coastal Area (LCA)

An Example from CERP

- "Wetlands are significant from an institutional perspective because they are a rare and unique resource.
- This resource is technically significant due to the economic value of increased productivity of commercial shrimps and fishes.
- Wetlands, estuaries, and nearshore coastal areas are significantly important to the public for aesthetic and recreational purposes.
- *Thus, the overall significance of restoring wetland and nearshore habitats is because the public cares about them, because they perform an important function in our ecosystem, and because they are protected by law.*"

- *How could these statements be improved???*

CERP Example

Significance Statements: How to fix/improve?

- Institutional: Yes, wetlands are rare & unique, but cite the laws and regs.
  - Clean Water Act, EO 11990 (Protection of Wetlands), Coastal Zone Management Act, Estuary Protection Act, Marine Mammal Protection Act, etc.
  - Are there any laws at state or local level?
- Technical: Should not be economically-based (if commercial fishing $ benefits, these effects would fall under NED). What about scarcity, connectivity, biodiversity, representativeness, limiting habitat, status & trends?
- Public: Aesthetic and recreational values are good to cite, but how else (specifically) has the public expressed support/interest for wetlands restoration?

CERP Example - How to improve?

- Actual significance examples from elsewhere in report…
- Technical + Institutional:
  - The survival of many estuarine organisms depends on a stable seasonal availability of low salinity environments, and the reduction or loss of these environments has resulted in concomitant reduction or loss of species dependent on such conditions.
    - Spotted sea trout, once common, is now uncommon. (Trends) Why is spotted sea trout important?
    - Red drum was once abundant, but this species, which requires stable mesohaline habitat conditions, has been lost from Biscayne Bay because of disruption of natural freshwater flow patterns and loss of appropriate salinity regime. (Trends, Limiting Habitat, Representativeness) Is red drum an indicator species?
    - The absence of continuous low to moderate salinity habitat has impacted life stages of many estuarine species, such as blue crabs, that depend on these zones for portions of their life cycles. Fish biomass is positively affected by freshwater inflow to the coastal ecotone. Even endangered species such as juvenile crocodiles and manatees are likely affected by the absence of these low to moderate salinity habitats. (Technical: Limiting Habitat, Biodiversity) + (Institutional: ESA)

CERP Example - How to improve?

- Actual significance examples from elsewhere in report…
- Technical:
  - There are tens of thousands of acres of sea grass beds and hard bottom communities in the bay that are at risk from degraded water quality. (Question: Does SAV represent a scarce resource? What is the trend – how much has SAV been reduced due to degraded WQ?)
  - Ecosystem functions of the bay are supported by sea grass beds, algal beds, and mixed hardbottom species of plants and animals (sponges, corals, and algae). These highly productive sea grass beds are important not only in terms of the plant biomass produced to supply the bay food web, but also as a physically stable refuge and nursery ground for fish, shrimp, crabs, and their predators. (Limiting Habitat, Biodiversity, Representativeness)
  - Species diversity and densities of organisms are typically very high in sea grass beds. The majority of commercial and recreational fish species (e.g., stone crab, shrimp, and lobster) spends at least some portion of their history (nursery and adult habitat) using sea grass beds. Sea grass meadows provide important habitat for wading birds, waterfowl, and manatee. (Limiting Habitat, Biodiversity, Representativeness)

CERP Example - How to improve?

- Actual significance examples from elsewhere in report…
- Technical + Institutional:
  - Mangroves provide habitat for numerous species. For example, bald eagles and ospreys are top carnivores that utilize mangrove forests. Wading birds such as great blue herons and roseate spoonbills feed on small forage fish that occupy the tidal creeks and open areas of mangrove forests. The presence of mangroves may also have a strong positive influence on coral reef fish community structure and biomass. (Biodiversity) Question: Do mangroves represent a scarce resource? What is the trend – how much have mangroves been reduced due to degraded WQ?
  - Table X lists 15 federally listed T&E animal species as either known to exist or potentially exist within the project area and may be affected by the proposed action. (Institutional – ESA)
  - The project area includes designated critical habitats for both the endangered American crocodile and the West Indian manatee. (Limiting Habitat + Institutional – ESA)
  - The project area provides habitat for several state-listed endangered species… (ESA)

Illinois River Example: Institutional Sources

- **Water Resources Development Act of 1986 (Sec 1103) -** The U.S. Congress identified the Illinois River, as a significant ecosystem

- **The Upper Mississippi River System - Environmental Management Program -** Federal agencies monitoring activities along the Illinois River

- **Conservation Reserve and Enhancement Program (CREP) –** Through NRCS program, opportunities for farmers to implement land conservation practices

- **The Midwest Natural Resources Group -** Federal Agencies working with local governments and stakeholders, to restore the natural balance of the Basin

Illinois River: Institutional (cont)

- **Integrated Management Plan for the Illinois River Watershed (1997) and the Illinois River Watershed Restoration Act -** $50 million in state funds and $271 million in Federal funds will go toward repair of the Illinois River Basin

- **The Integrated Management Plan for the Illinois River Watershed (1997) -** Federal, state, and local governments, and other stakeholders will tackle restoration, economics, and recreation objectives

- **Illinois River Watershed Restoration Act -** Creates an organization of stakeholders to encourage efforts to refurbish the Illinois River Watershed

- **USDA Conservation Reserve Program (CRP)** - Since 1998, over 100,000 acres have been enrolled in Federal CRP easements

Illinois River: Institutional (cont)

- **Illinois Rivers 2020 -** An incentive-based, cooperative restoration effort between state and federal agencies

- **The Nature Conservancy** and **The Wetlands Initiative** have made major investments by purchasing levee and drainage districts in order to restore them

- **Local Communities** - Over 35 plans to restore the Illinois River Basin have been developed and implemented by local communities and other stakeholders

- **The Tenth Biennial Governor's Conference on the Management of the Illinois River System** - Emphasizes a systems approach to management of the river. Over 250 government officials and many residents were present

Illinois River: Public Sources

- 52% of the State of Illinois' Conservation 2000 program investments have come from **citizens and organizations**. The project provides funding for ecosystem projects.

- Government agencies and stakeholders provide **recreational activities** in the Basin area including fishing, boating, swimming, hiking, camping picnicking, and bird watching. Outdoor recreational activities provide more than $4 billion, over 40,000 jobs, and $315 million in State and local revenues.

Illinois River: Technical Sources

- **The U.S. Dept. of the Interior** listed large streams and rivers, especially large floodplain-river ecosystems, such as the Illinois River ecosystem, as endangered ecosystems.

- **The Nature Conservancy** stated, “The Illinois River remains one of a handful of world-class floodplain-river ecosystems, where biological productivity is enhanced by annual flood pulses that advance and retreat over the floodplain and temporarily expand backwaters and floodplain lakes.” (TNC 1998)

- The **Upper Mississippi River System Environmental Management Program** performed a Habitat Needs Assessment in 2000 which highlighted the need to increase depth diversity and repair hydrologic conditions to restore and preserve backwater habitats on the Illinois.

Illinois River: Technical (cont)

- The Illinois River has historically been a spawning area and nursery for many species of fish, and its tributaries are currently home to over 100 species of such as bass, bluegill, catfish, carp (!!!) and many other species. (Biodiversity, Representativeness)

- The Illinois River is one of the main elements of the Mississippi River Flyway, a migratory bird route between Canada and the Gulf Coast. It serves as home to over 40 species of water birds. Shorebirds traveling between the Arctic and South America rest in the basin. And as many as 375 endangered bald eagles make there winter home along the river valley every year. (Connectivity, Limiting Habitat, + ESA)

Example from Louisiana Coastal Area - Institutional

- These resources are institutionally recognized by the Coastal Barrier Resources Act of 1990 (16 U.S.C. §§3501-3510). Section 3501 of the act describes the Congressional statement of findings that:

  - Coastal barriers provide habitats for migratory birds, wildlife, finfish, shellfish and other aquatic organisms;
  - Coastal barriers contain resources of extraordinary scientific, recreational, natural, historic, and ecologic importance;
  - Coastal barriers serve as natural storm protective buffers and are generally unsuitable for development because they are vulnerable to hurricane and other storm damage and because natural shoreline recession and the movement of unstable sediments undermine human structures;
  - Certain actions and programs of the Federal Government have subsidized and permitted human development on coastal barriers and the result has been the loss of barrier resources, threats to human life, health, and property, and the expenditure of millions of tax dollars each year; and
  - A program of coordinated Federal, state, and local governments is critical to the more appropriate use and conservation of coastal barriers.

- *Could other laws and regs be cited??*
  - e.g., Clean Water Act, EO 11990 (Protection of Wetlands), Coastal Zone Management Act, Estuary Protection Act, Marine Mammal Protection Act, etc.
  - Any state or local laws?

LCA Example - Public

- "These resources are publicly significant because of the high value the public places on wildlife and fisheries in the area and because of their present economic value or potential for future economic value."
  - Is this really "public significance?"
  - How could you demonstrate "high public value?"
  - Recreation values can be a demonstration of public significance
  - Maintenance of fish habitat to allow ongoing lifestyle heavily reliant on fisheries can be a demonstration of public significance
  - Other economic values (commercial fishing) would fall under NED account
- "These resources (barrier islands) are publicly significant because of the high value the public places on the maintenance and restoration of barrier islands for storm protection."
  - Is this really "public significance?"
  - How could you demonstrate "high public value?"
  - Other economic values (coastal storm damage reduction) would fall under NED account
- "Bottomland hardwood forests are publicly significant because of the high priority that the public places on their aesthetic, recreational, and commercial values."
  - How could you demonstrate "high priority value?"
- "Wildlife resources are publicly significant because of the high priority that the public places on their aesthetic, recreational, and commercial value."
  - How could you demonstrate "high priority value?"
- "EFH is publicly significant because of the high value that the public places on the seafood and the recreational and commercial opportunities EFH provides."
  - EFH should fall under Institutional (protected habitat) and Technical significance (limiting habitat)

LCA Example - Technical

- "These resources (soils) are technically significant because of the habitat provided for both open and forest-dwelling wildlife, and the provision or potential for provision of forest products and human and livestock food products."
- "These resources (barrier islands) are technically significant because they serve as natural storm protective buffers and provide critical habit for migratory birds, wildlife, finfish, shellfish and other aquatic organisms."
- "Bottomland hardwood forests are technically significant because: they provide necessary habitat for a variety of species of plants, fish, and wildlife; they often provide a variety of wetland functions and values; they are an important source of lumber and other commercial forest products; and they provide various consumptive and nonconsumptive recreational opportunities."
- "Wildlife resources are technically significant because they are a critical element of various coastal habitats, they are an important indicator of the health of coastal habitats, and many wildlife species are important recreational and commercial resources."
- All of these statements may be correct/accurate, but could they be improved??
  - What has happened to barrier islands, bottomland hardwoods, & wildlife resources over time (scarcity, connectivity, limiting habitat, trends)?
  - To LCA report's credit, elsewhere in report the loss of coastal wetlands is well-documented… 1.2 million acres loss during 20th century, -19% in specific basins since 1985, these wetlands provide winter habitat for >50% duck population of the Mississippi Flyway, etc…

TAKE AWAY Points:

- Concept of “Significance” is always important to Corps project planning (e.g., NEPA), but particularly so for NER projects – and is REQUIRED by ER 1105-2-100
- Significant resources relate to problems, opportunities, objectives and constraints and, most importantly, federal interest
- Critical information to describe the “worth” of projects -- reflects an effort to measure the value of ecological structures and functions to the nation
- Determinations of significance (i.e., sources, as supported by…) need to be clearly described
- Put some effort into summarizing and documenting significance
- Consider including a section in report on significant resources