



Ecosystem Benefit Priorities and Relative Environmental Value

Department of Fish and Game
Water Branch

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Ecosystem Improvements: Incidental or Purposed

- Incidental to construction, operation of water storage
- Required under listed species take permits
- Storage maintains ecosystem functions
- Coequal – human water supply and ecosystem water supply



Qualitative or Quantitative?

- Qualitative selection of restoration, enhancement projects for funding
 - Meet grant program objectives
 - Cost effective? Cost efficient?
 - Include match or cost-share
 - Identified in a plan
 - Feasibility
 - Criteria and ranking/scores = objectivity
- Quantitative criteria
 - Public benefits, public dollars
 - Bang for the buck



Identifying DFG's Priorities

- Surface and ground water storage projects and plans
- Resource protection and management plans
 - Already identify ecosystem improvement priorities
 - Aquatic and terrestrial habitats and species
 - Design water storage projects to deliver water supply and deliver ecosystem improvements



Priority Categories

- Foraging, Nesting (aquatic & terrestrial species, food web)
- Geomorphic (channel, floodplain, depth)
- Habitat (in the stream, terrestrial, reservoir)
- Hydrologic (flow, duration, timing, quantity)
- Invasive Species
- Land (easements, acquisition)
- Monitoring & Assessment (species, habitat)
- Movement and Loss (barriers, screens, corridors, predation)
- Program Staffing & Funding (managing resources)
- Riparian, Wetland, Marsh
- Sport Fish
- Water Quality (pollutants, DO, temp)
- Water Management (levees, flood, groundwater)



Environmental Value

- What does this mean?
 - Is a listed fish in N. California more important than a listed bird in S. California?
 - Is riparian habitat more important than spawning gravel?
 - Is it based on DFG's regulations, statutes, authorities?
 - Is it project and location specific?
 - What does DFG focus on in practice?



Questions to Consider

- Quantitative methods for ecosystem benefits are incomplete. How can qualitative criteria play a role in maximizing public benefit?
- Managing public benefits – what's included? Implementation verification, O & M, effectiveness monitoring?