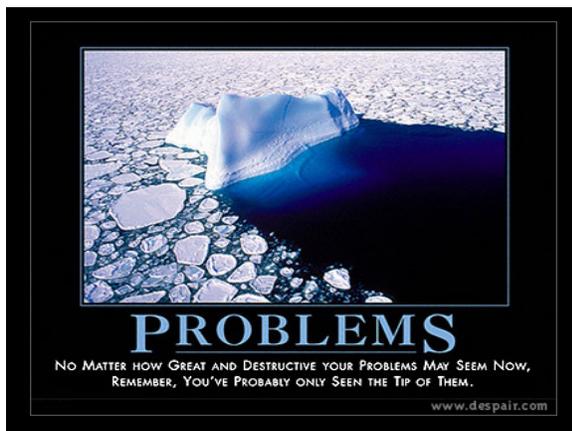


## Allocation of Fiscal Resources to American Shad Conservation in Region 5



July 23, 2008



## The Problem

R5 Fisheries Program needs to develop a tool to support allocating externally-determined budgets to best assist meeting shared USFWS and partner management objectives for American shad populations on a Region-wide scale.

## OBJECTIVES

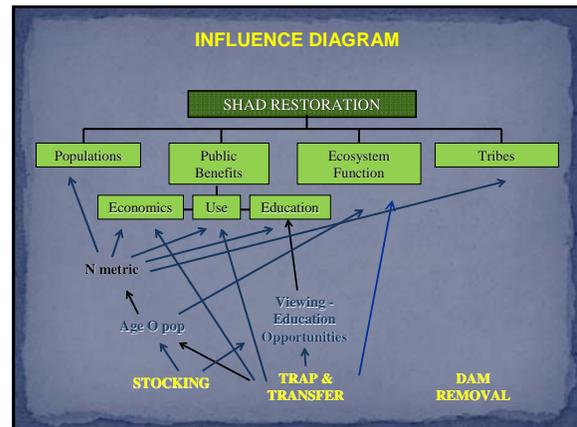
- Population Persistence
  - Population size by river range-wide
- Public Benefit
  - Economic (\$/yr)
  - Use and Appreciation (# anglers/yr)
  - Education (# visitor contacts/yr)
- Ecosystem Function
  - Index (% hist. habitat opened X % pop. goal met)
- Tribal Trust Responsibility
  - Tech Assistance (# of requests addressed)

## Actions

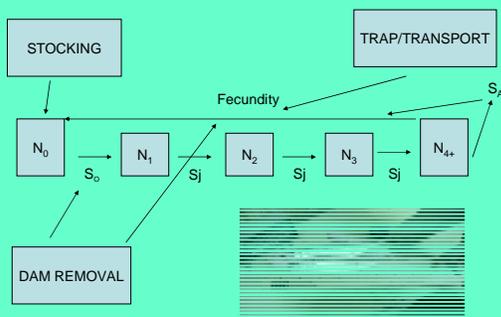
- Culture
- Trap and transport
- Fish passage
- Habitat restoration
- Dam removal
- Monitoring and assessment
- Technical assistance
- Cooperative agreement/grants
- Policy board, ASMFC
- Outreach and education
- Applied research and development

## CONSEQUENCES

- Analyze Effects of Sets of Activities on Objectives
- Developed an Influence Diagram
- Focused on a Population Metric (N) (Population persistence)
- Developed a Population Model
  - Predicted Effects of Sets of Activities/Alternatives on (N)
  - Focused on Two Hypothetical Rivers
  - Weighted Importance of Rivers
  - Specified Activities (3) and Budget (\$1.25 M)
  - Identified Alternative that Maximizes (N) within Budget



## Shad Population Model



## POPULATION MODEL

- Three Activities, 2 Rivers
- Cost of All Three Exceeded Budget
- 8 Sets of Activities (Alternatives)
- Projected Average (N) Over 25 Years
- Alternative Yielding Highest Average (N) Within Budget = Dam Removal

## ISSUES

- Model Complexity and Data Demands
  - Too Complex / Insufficient Quantitative Data
  - Too Simple / Overly Subjective
- Consider a "Hybrid" Model
  - Use Available Quantitative Data
  - Inform/Develop Qualitative Model

