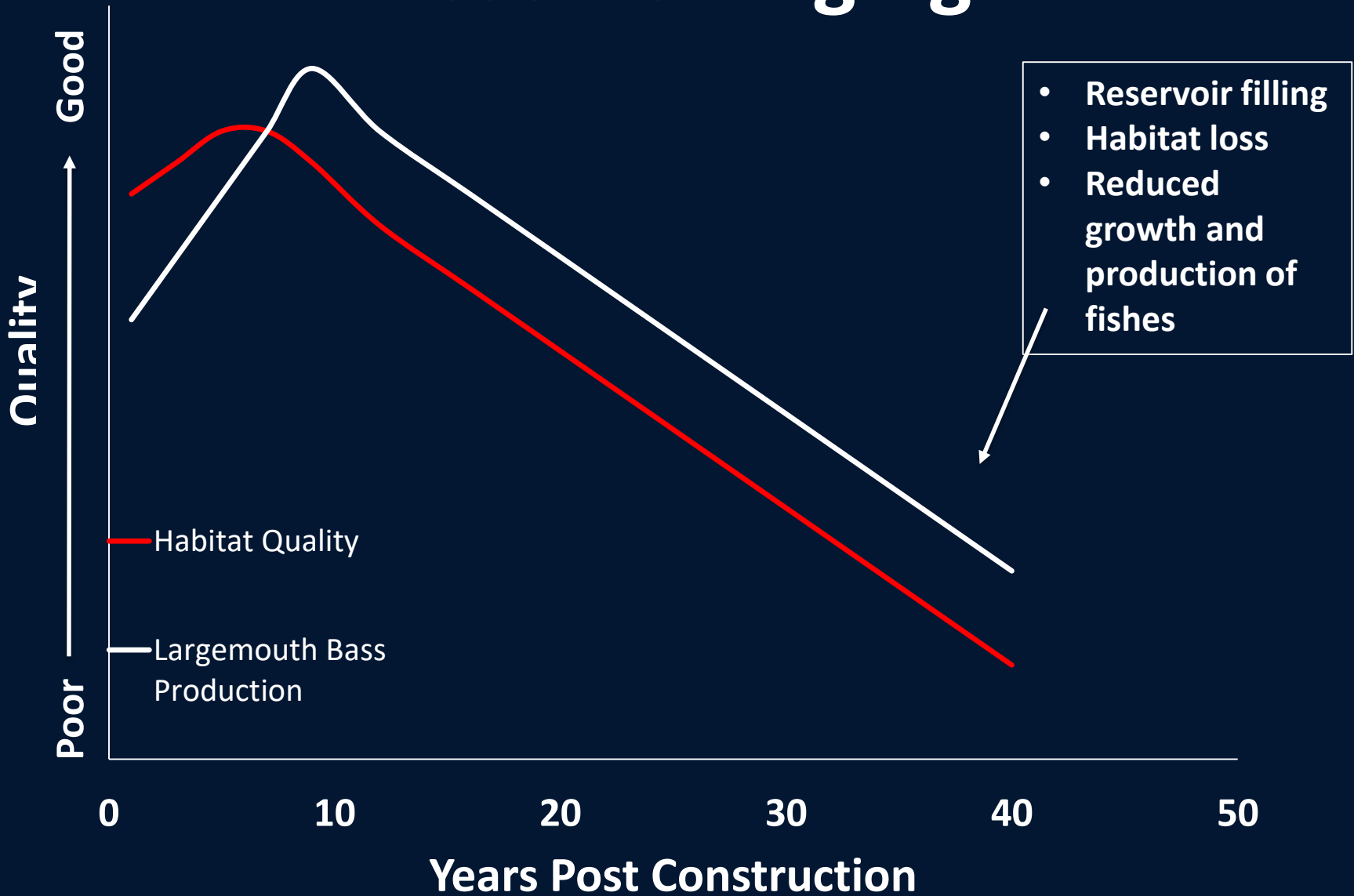
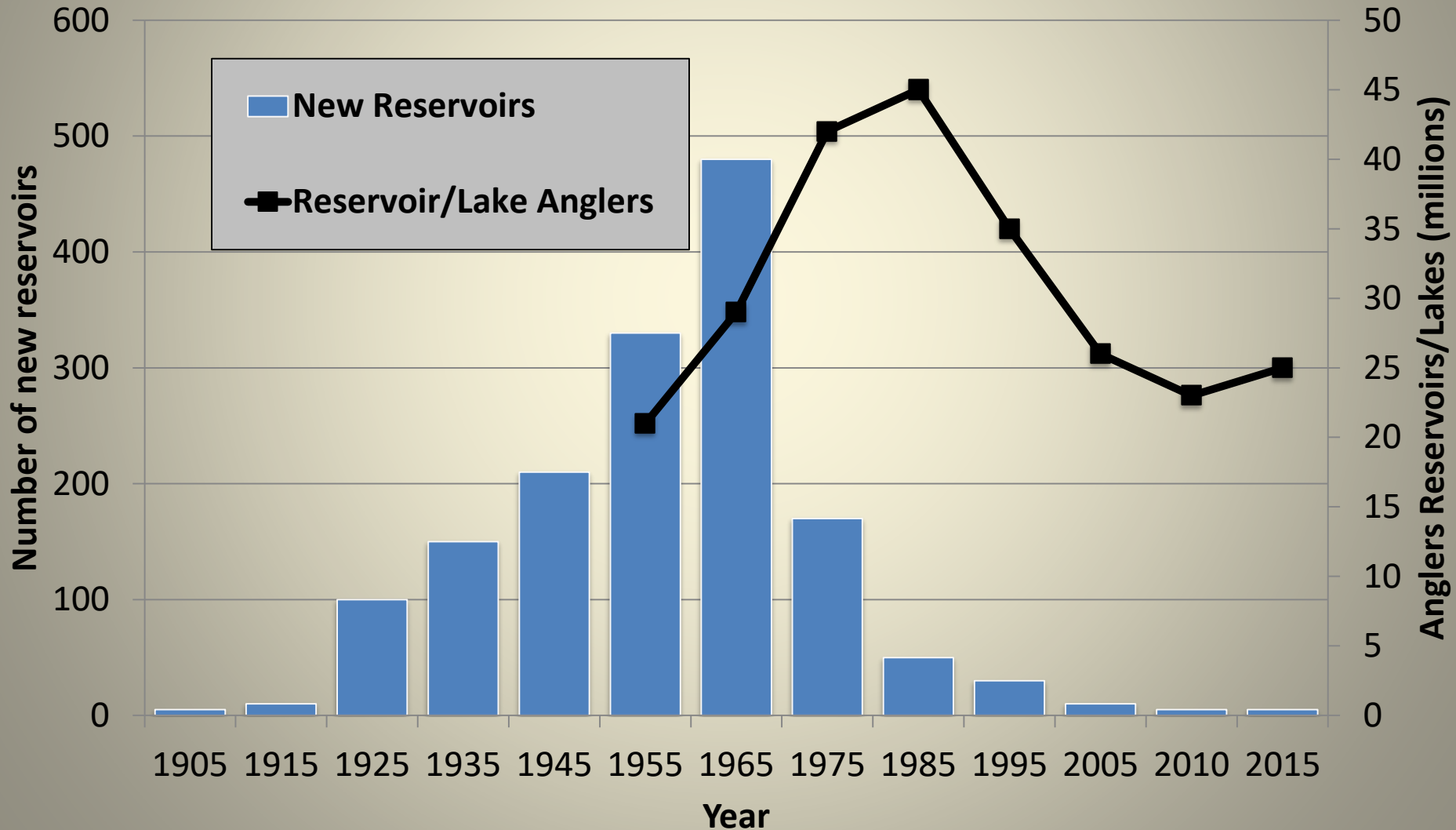


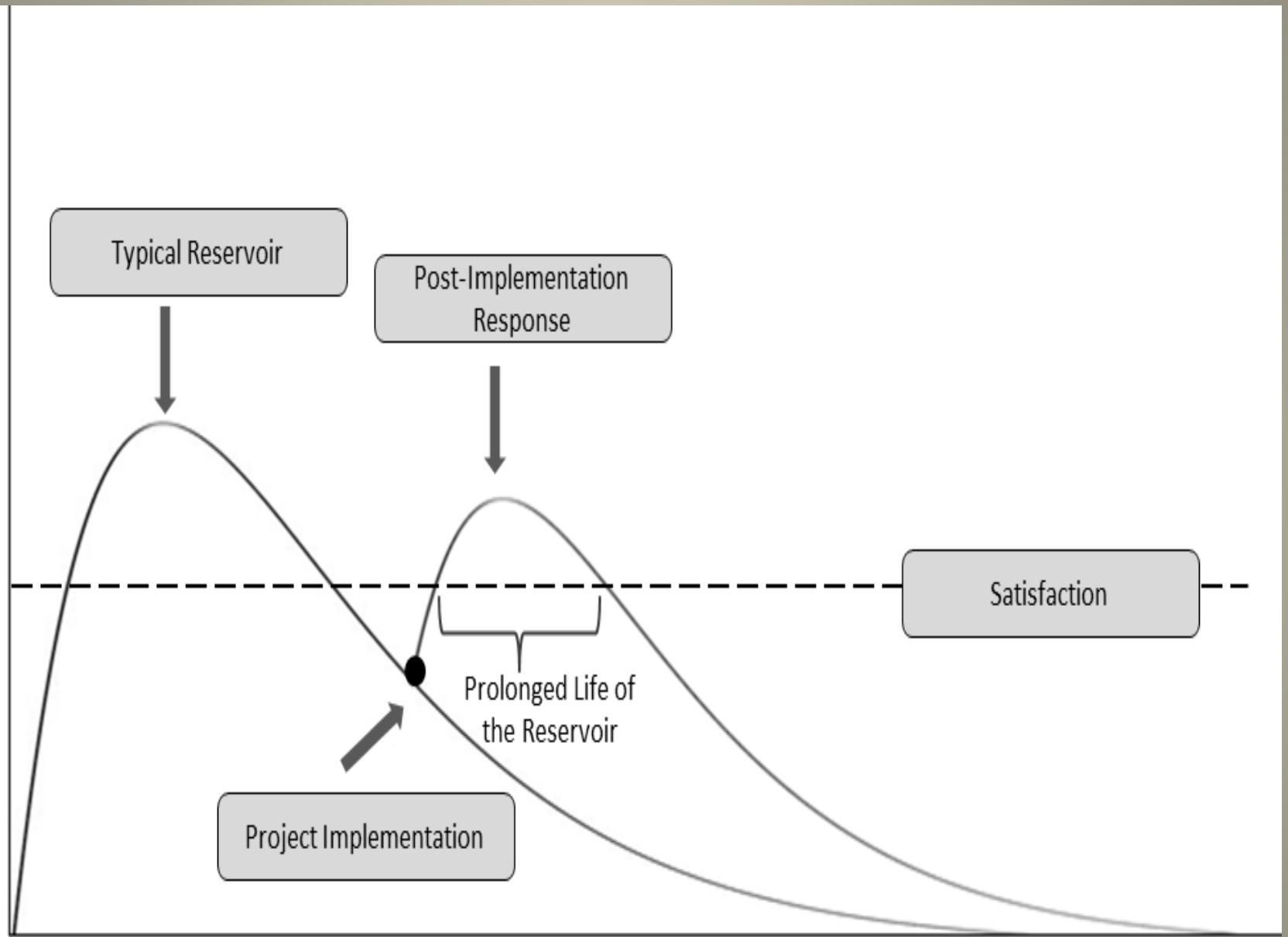
Reservoir Aging



Reservoir Construction vs. No. Anglers Fishing Reservoirs & Lakes



Measure of Quality



Typical Reservoir

Post-Implementation
Response

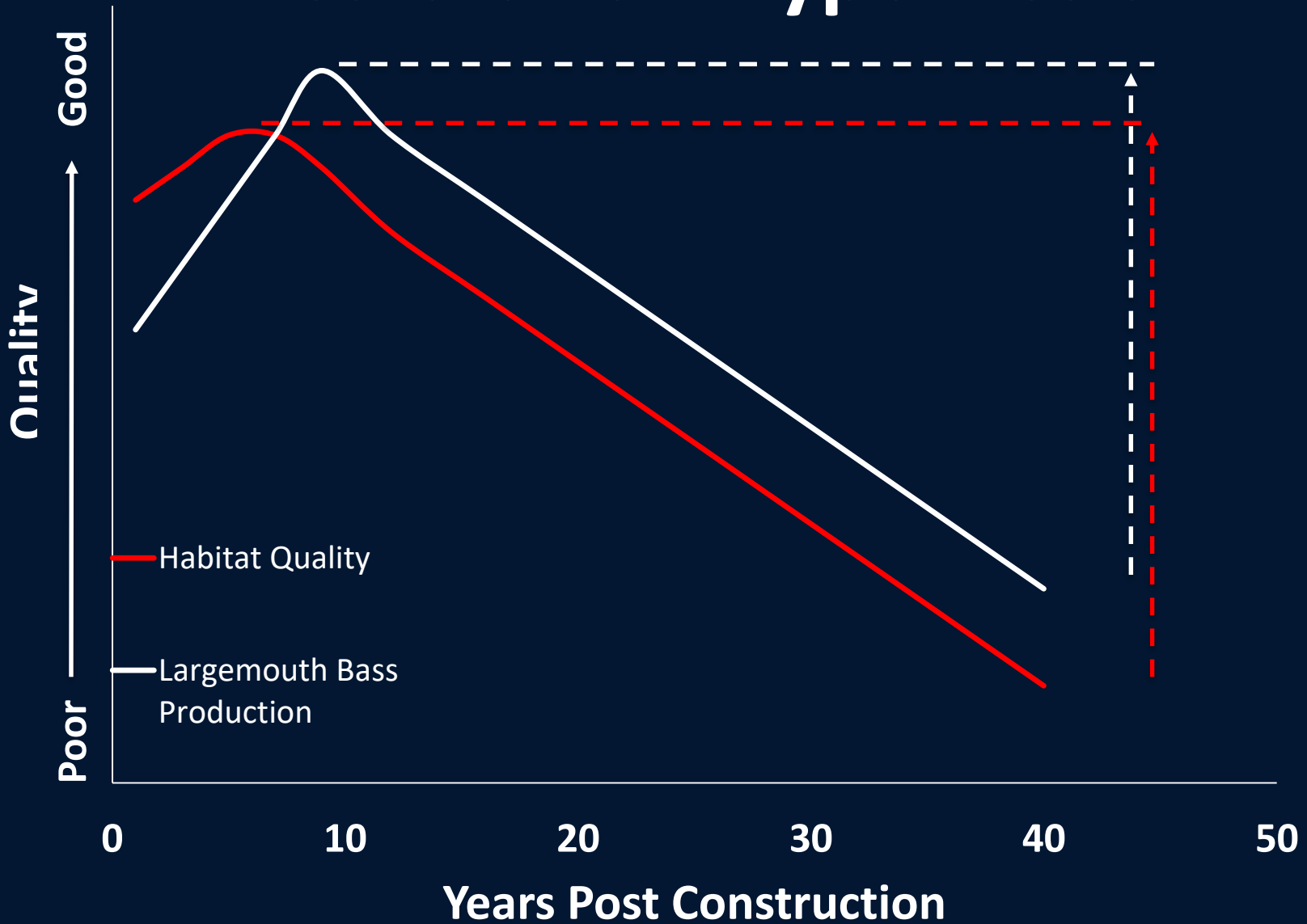
Satisfaction

Prolonged Life of
the Reservoir

Project Implementation

Reservoir Age

Restoration Hypothesis



SOUTH DAKOTA STATE UNIVERSITY

Department of Natural Resource Management

**We Decided that we Need to Focus
on Habitat:**

How do we get started?

**No one is better equipped to know
the problems than the fisheries
biologist.**

Purpose of the Workshop

- **Discuss BMPs**
- **Challenges to accomplishing your habitat restoration goals**
- **Provide resources:**
 - **Restoration techniques**
 - **Who to go to with questions**

www.friendsofreservoirs.com/science

Science Behind FOR

Science and Data Goals

Reservoir Assessment

- Ecoregions
- State Assessment Results
- Priority Habitat Impairments
- Priority Fish Species

Best Management Practices Manual

- Introduction
- Chapter 1 : Sources of Reservoir Fish Habitat Problems
- Chapter 2 : Partnerships for Watershed Management
- Chapter 3 : Sedimentation
- Chapter 4 : Eutrophication
- Chapter 5 : Water Clarity
- Chapter 6 : Water Quality
- Chapter 7 : Water Regime
- Chapter 8 : Riparian Zone
- Chapter 9 : Lateral Connectivity
- Chapter 10 : Artificial Reefs and Structures
- Chapter 11 : Aquatic and Terrestrial Plants
- Chapter 12 : Habitat Management Decisions
- Chapter 13 : Stakeholder Engagement

Reservoir Morphology Data Series

In the News

2018 Friend of Reservoirs Award Winners

The Reservoir Fisheries Habitat Partnership (RFHP) and Friends of Reservoirs (FOR) are proud to announce the winners of the annual... [Read More](#)

Recent Projects

Science

Reservoirs are inextricable parts of our landscapes. Constructed to meet a variety of human needs, reservoirs impact almost every major river system in the United States, affecting habitat for fish and other aquatic species and, in turn, being affected by the health of the watershed upstream. Reservoirs, their associated watersheds, and their downstream flows constitute an interdependent, functioning system. Effective management of these reservoir systems – maintaining their ecological function and biological health- is essential to the conservation of our nation's aquatic resources and habitats. It requires that we minimize the adverse impacts of reservoirs on their watersheds and maximize their utility for aquatic habitat.

Multiple impairments are found in reservoir systems. These impairments, exacerbated by human population growth and projected changes in temperature and rainfall caused by climate change, adversely affect fish, other aquatic species, and their habitats and diminish the quality of life for people.

Science and Data Committee

In order to develop better understanding of the habitat issues in U.S. reservoirs and their solutions, Friends of Reservoirs' administrative side (Reservoir Fisheries Habitat Partnership) set up a Science and Data Committee. The Science and Data Committee includes fisheries scientists from across the nation who are actively working on reservoir fish habitat issues. This group identifies research priorities, conducts or supports reservoir fisheries research, and provides recommendations to improve the effectiveness of FOR projects. Past and present research priorities include:

- Assessment of reservoir habitat impairments across the U.S.
- Compilation of reservoir metrics from various databases, facilitating better evaluation of reservoir conditions
- Revision of the habitat scoring methodology for FOR projects
- Establishment of Best Management Practices for various reservoir habitat impairments
- Assessment of effectiveness of Best Management Practices

Committee members include fisheries and aquatic scientists from across the nation who work on reservoir habitat issues:

- Jeff Boxrucker, Coordinator
- Dr. Leandro (Steve) Miranda, U.S. Geological Survey Mississippi Cooperative Fish and Wildlife Research Unit/Mississippi State University
- Dr. Reed Green, U.S. Geological Survey Lower Mississippi-Gulf Water Science Center
- Dr. Kirk Rodgers, University of Arkansas – Little Rock
- Rebecca Krogman, Iowa Department of Natural Resources

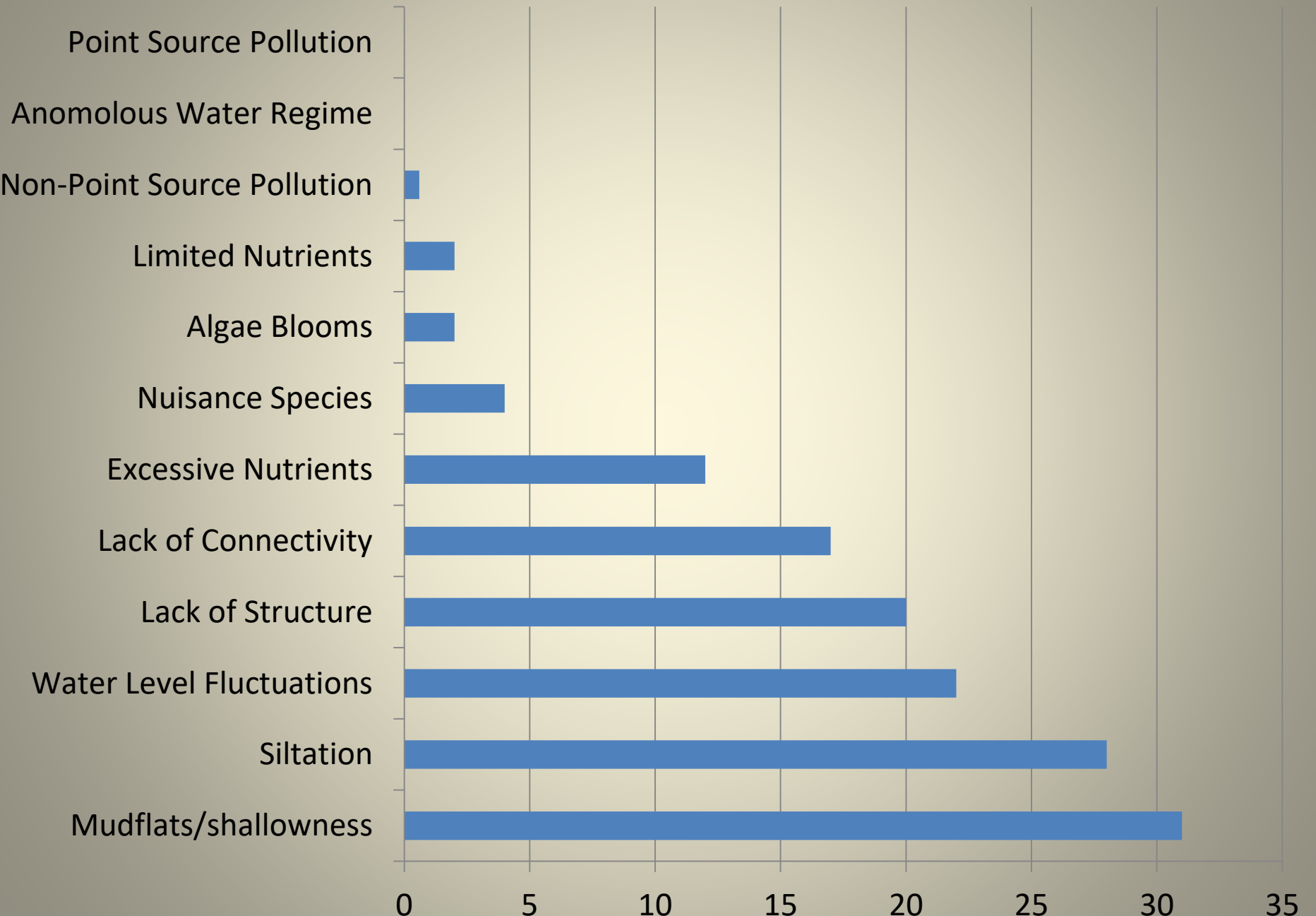
Science and Data Goal

As part of the National Fish Habitat Plan's planning process, the Reservoir Fisheries Habitat Partnership manages an ever-evolving "Science and Data Goal" including objectives and strategies for achieving that goal. To read the current goal, please see [Science and Data Goal](#).

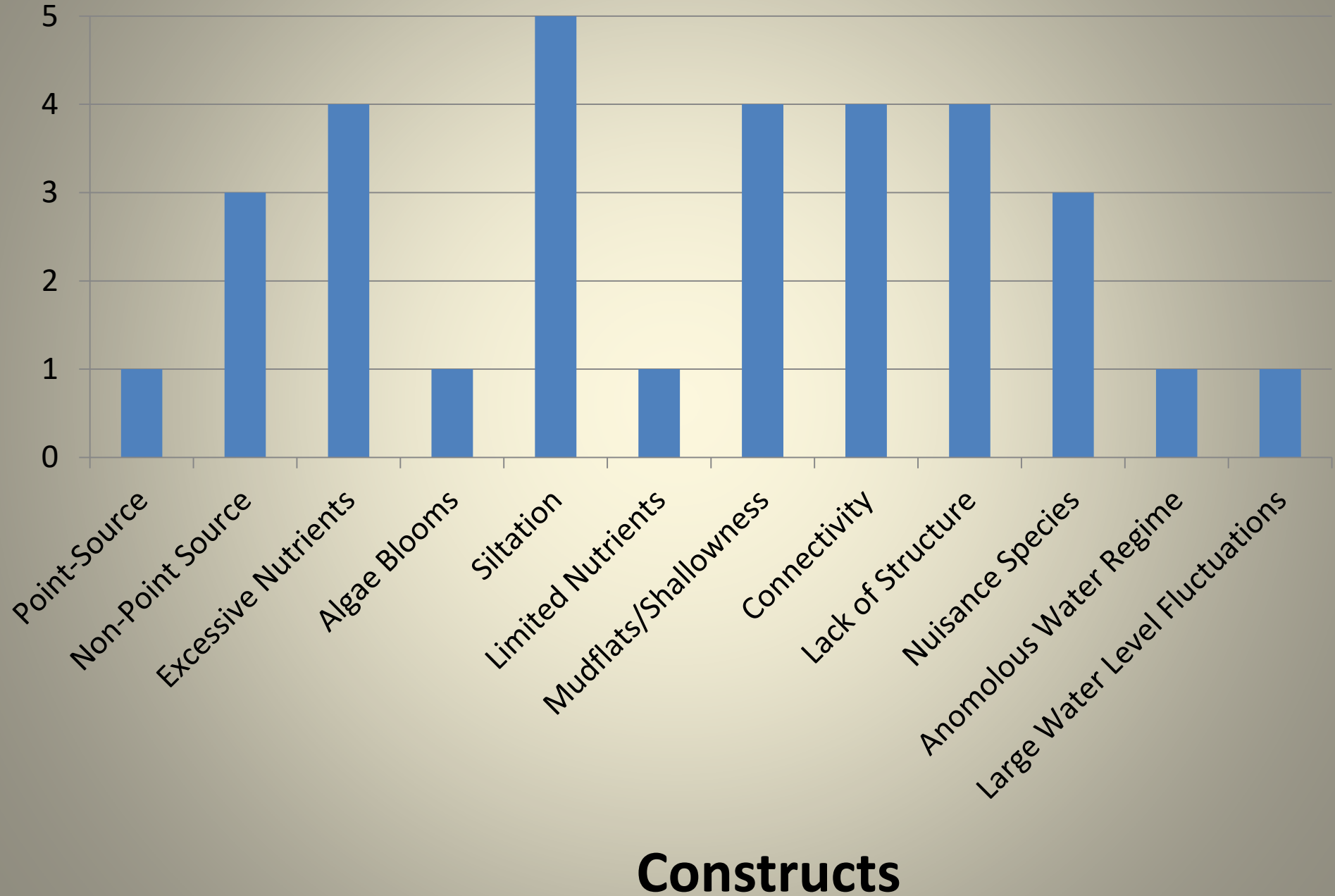


Regional Priority Impairments (in ranked order) from RFHP Reservoir Impairment Assessment

% TX Reservoirs Scoring 4 or 5



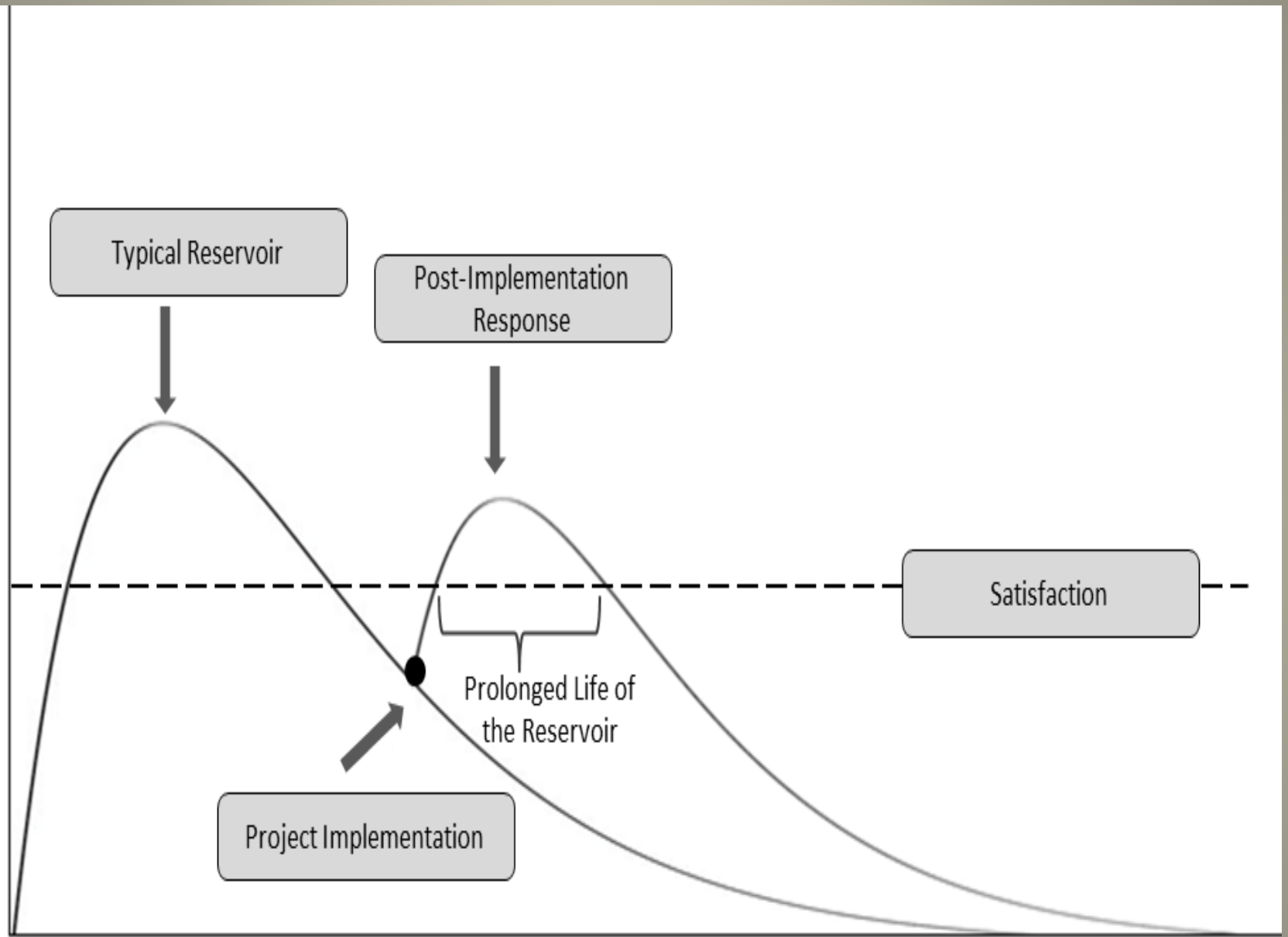
Livingston



Livingston Priority Impairments

- Excessive Nutrients
- Siltation
- Mudflats/Shallowness
- Connectivity
- Lack of Structure (including littoral vegetation)

Measure of Quality



Typical Reservoir

Post-Implementation
Response

Satisfaction

Project Implementation

Prolonged Life of
the Reservoir

Reservoir Age

Rehabilitation Technique	Cost	Amplitude	Rate	Duration
Aeration	\$	↑	↓	→→→→→
Breakwaters	\$\$\$	↑↑	↓↓	→→ →→
Dredging	\$\$\$\$	↑↑↑	↓	→→
Fish Barrier	\$\$\$\$	↑	↓	→→→→→
Fish Community Manipulation	\$\$\$	↑↑↑↑	↓↓	→→
Fringe Wetlands	\$\$	↑	↓↓	→→→→→
Headwater Wetlands	\$\$	↑↑	↓↓	→→→
Nutrient Sequestration	\$\$\$\$	↑↑↑↑	↓↓↓	→→
Sediment Basins	\$\$\$	↑	↓↓↓	→
Shoreline Stabilization	\$\$\$\$	↑↑	↓↓↓	→→→→→
Spawning Beds	\$\$	↑	↓	→→
Water Level Manipulation	\$	↑↑↑↑	↓↓	→→→→→



Low Hanging Fruit:

- Mudflats/Shallowness
 - Shoreline Stabilization
 - Identify the highly eroded shorelines and work with the reservoir managing agency to address them
- Connectivity
 - Are there some backwater areas (spawning habitat) that can be reconnected to the mainstem of the reservoir
- Lack of Structure/Native Vegetation
 - Where we have spent most of our effort to date