Grand Canyon Comprehensive Fish Management Plan

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What’s going on with the fish?

Outline

- Background
- Goals
- Process
- The Plan
  - Emergency Response
  - Rainbow Trout
  - Brown Trout
  - Humpback Chub
  - Razorback Sucker
  - Colorado Pikeminnow

Outline

- Background

Background

- Prior to CFMP, fish were managed under a variety of plans and agencies
- Conducted monitoring, experimentation, and management of fish
- Grand Canyon Fish Plan expired in September 2013
- Called the Comprehensive Fish Management Plan (CFMP)

Outline

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Goals

- Maintain the recreational trout fishery in Glen Canyon Reach
- Maintain native fish populations in Grand Canyon National Park

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Process

- This plan falls under NEPA
- The process requires transparency and public comment
- Received ~90 comments from the public, fishing advocacy groups, fishing guides, and tribal, state, and federal agencies.
  - Most were in support of the plan

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Rapid Response to detected expansion

- Relies on current monitoring programs
- If non-native fish expand their range, it allows for short-term removal

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Rainbow Trout

- Stocking only allowed at Glen Canyon National Recreational Area
- Option to stock sterile fish (Pers. Comm.)
- Less than 1% of rainbow trout travel more than 20km (Josh, Yard, & Yackulic 2015)

Conclusion: Minimal management has been required!

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Brown Trout Control

- Mechanical removal with electrofishing, nets, angling (option to expand)
- Potential for chemical control

Brown Trout Control

- Focused control in Bright Angel Creek
- Successful!
- Fish are put to beneficial use

Pers. Comm.

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Why all the chubbub?

Why all the chubbub?

- HBC has been declining steadily since the 1980s

Why all the chubbub?

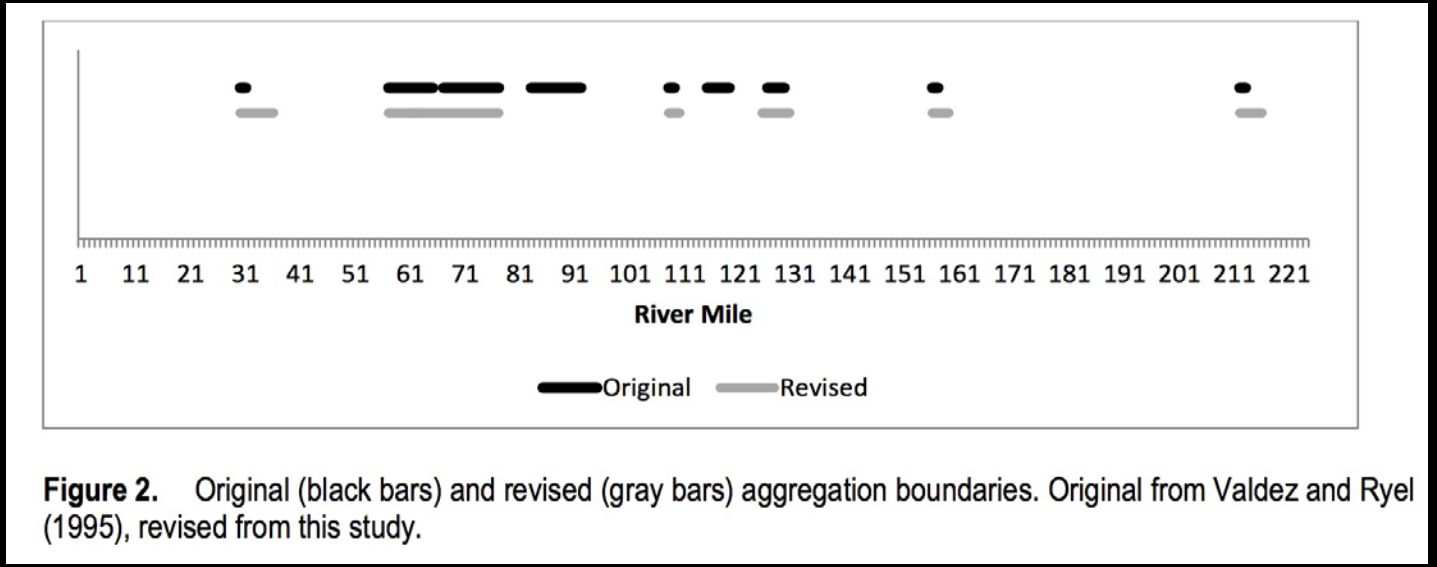


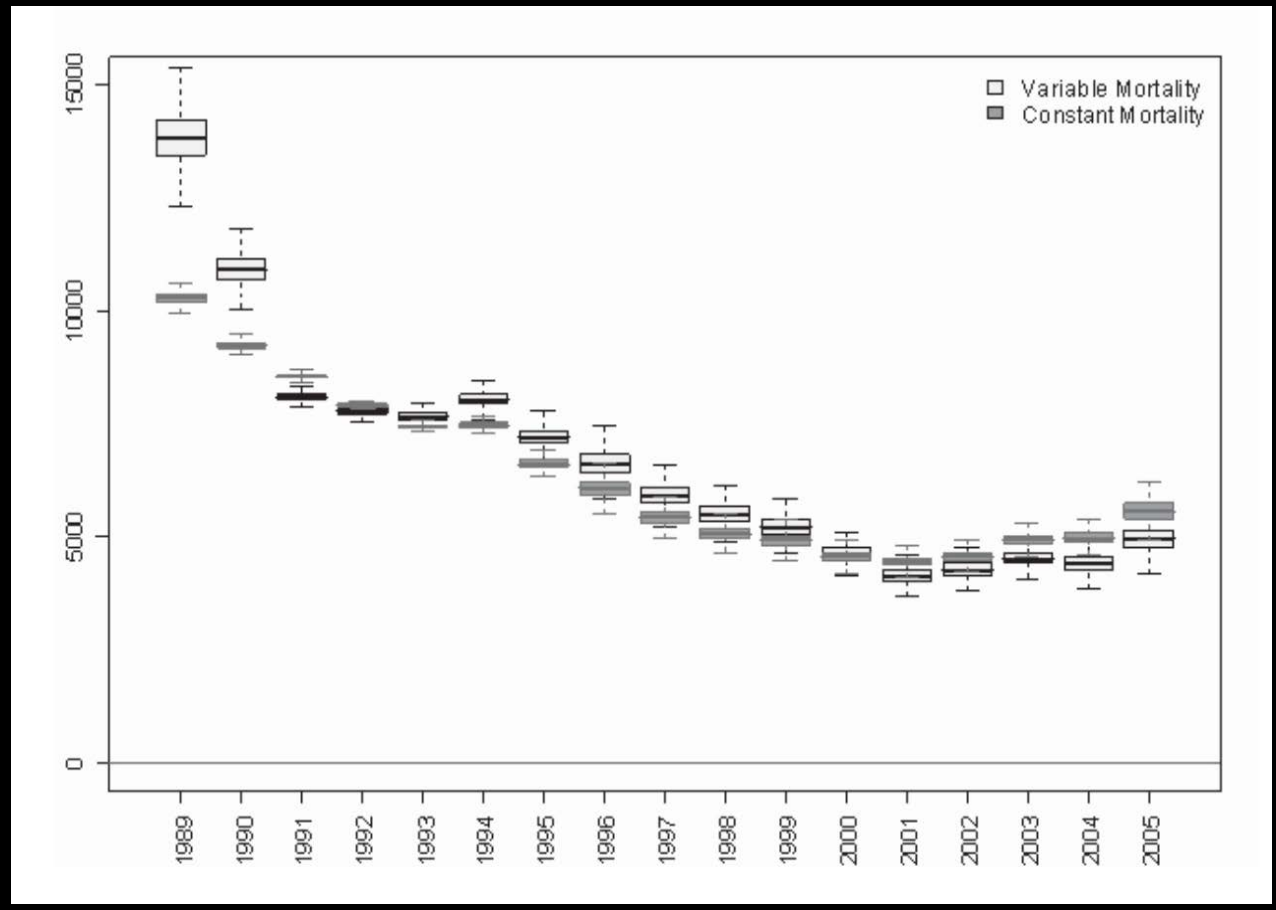
Figure 2. Original (black bars) and revised (gray bars) aggregation boundaries. Original from Valdez and Ryel (1995), revised from this study.

- Populations disappeared between 1995 and 2014
- Aim to reestablish populations

Persons, Haverbeke, & Dodrill 2017

Why all the chubbub?

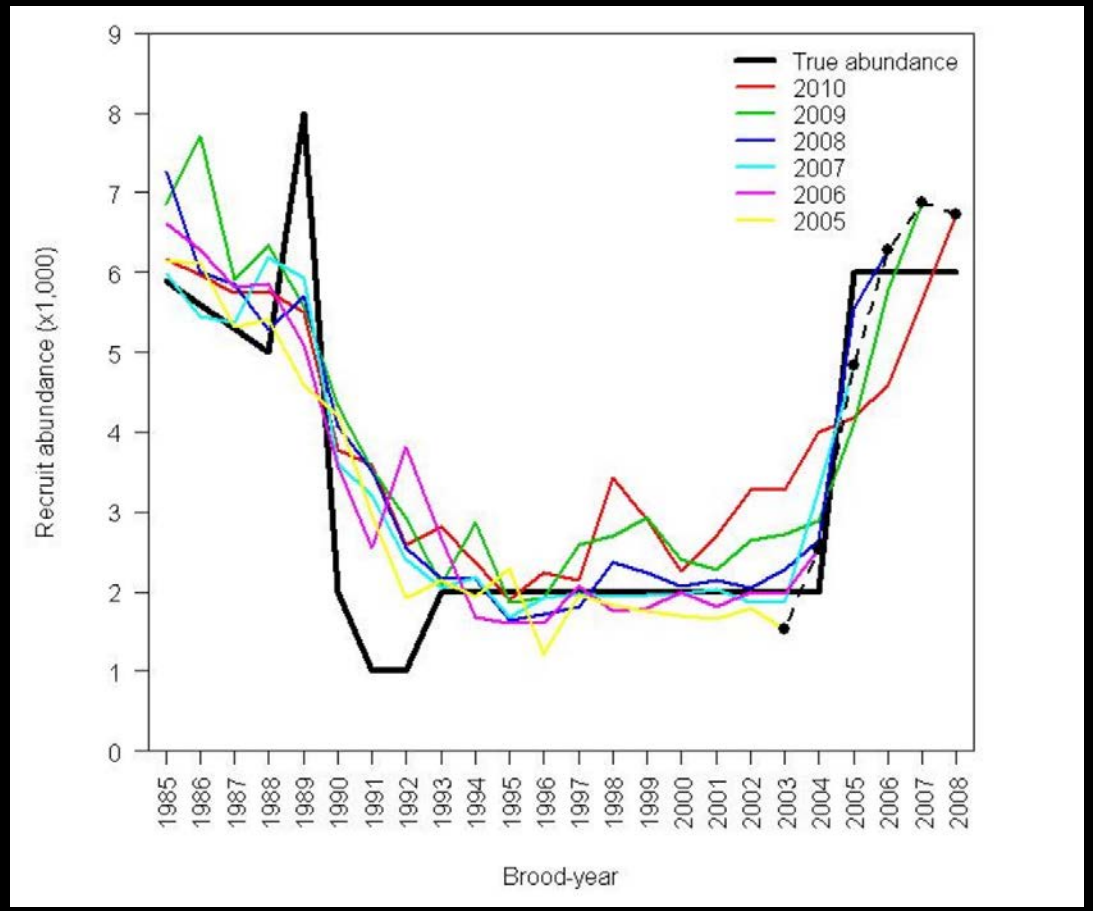
- Age 4+ populations started to recover in early 2000s
- Good metric for stable population



Coggins et al. 2006

HBC Recovery

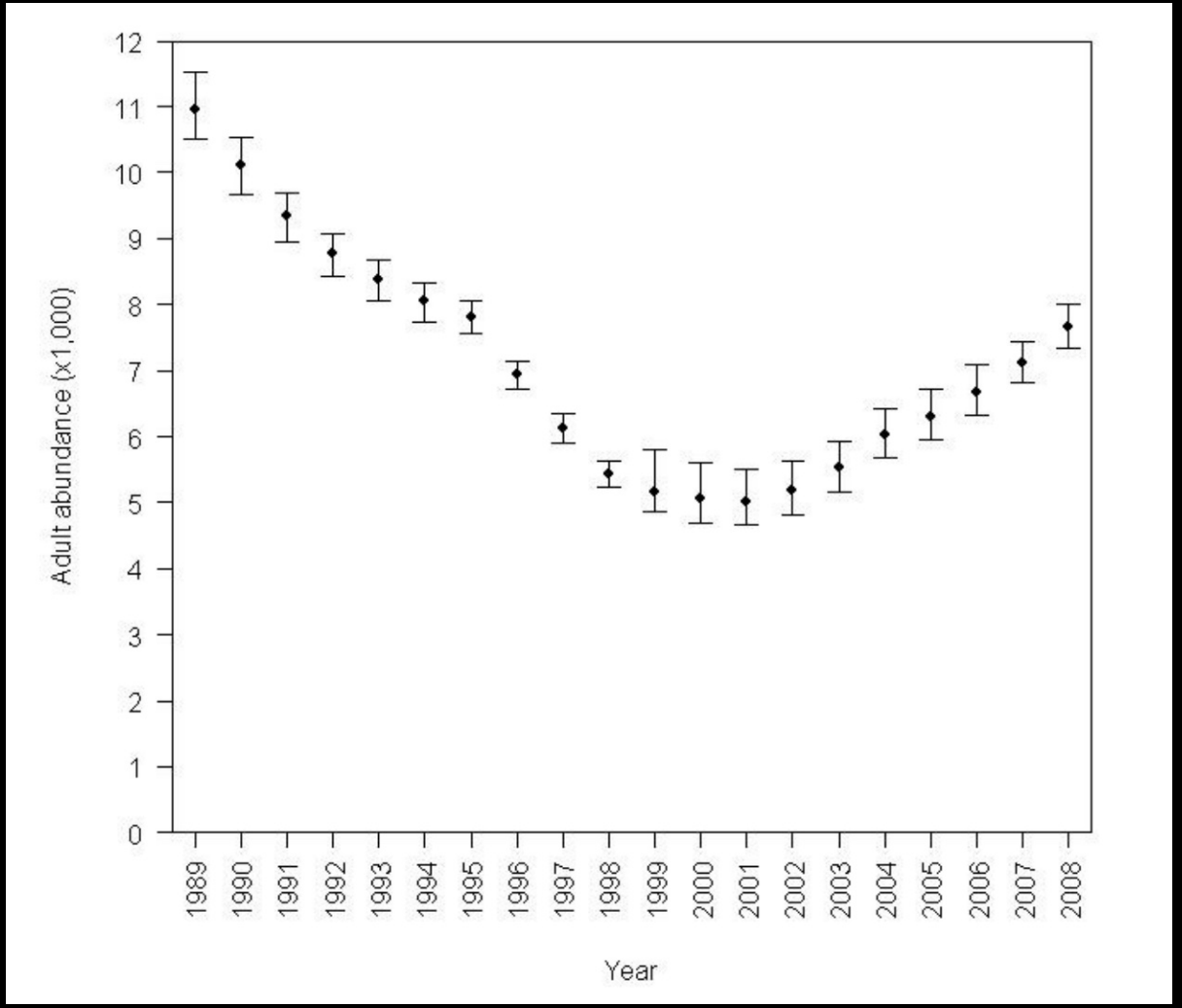
- Tracking age 2 individuals
- Uptick in reproduction in 2003-2004
- Attributed to warmer waters and large-scale rainbow/brown trout control efforts



Coggins & Walters 2009

HBC Recovery

- Examining age 4+ individuals
- 2003-2004 individuals are now 4+



Coggins & Walters 2009

HBC Translocation

- Removing young fish and rearing them in the lab
- Releasing HBC in areas to reestablish a population
- Successful reestablishment at Havasu Creek

Pers. Comm.

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Razorback Sucker

- Thought to be extirpated in mid-1990s
- Discovered 5 individuals in 2012
- Migrating from Lake Mead
- Discovered larvae 2014-present
- However, no juvenile fish

Pers. Comm.

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Colorado Pikeminnow

- Only extirpated species considered for reintroduction
- Requires habitat and feasibility study
- Currently seeking funding

Pers. Comm.

Works Cited

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- Moore, S. E., M. A. Kulp, B. Rosenlund, J. Brooks, and D. Propst. (2008). A field manual for the use of Atimycin A for restoration of native fish populations. Natural Resource Report NPS/NRPC/NRR – 2008/001. National Park Service, Fort Collins, Colorado
- National Parks Service (2013). Environmental Assessment.
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Questions?
USGS

Antimycin A

- The main piscicide under consideration
- Degrades in <8 hours
- Degrades <500m downstream
- Doesn’t affect salamanders or crayfish
- Needs more data

Moore et al. 2008