Technical Work Group
Chair Report

Adaptive Management Work Group Meeting
May 19, 2021

Seth Shanahan
TWG Chairperson
Meetings

• Past
  • April 13-14, 2021

• Future
  • June 16-17, 2021
  • October 13-14, 2021 (in-person?)
Items Reported Elsewhere on AMWG Agenda

- Monitoring metrics (!)
- Chub trigger status
- Budget and work plan
- Program funding
- Basin hydrology and operations
- Potential experimental and management actions in the next 12 months and recent actions
- Brown trout IH program
Congratulations, Vice-Chairpersons!!

Michelle Garrison

Clarence Fullard
Budget Ad Hoc Group

- Develop budget prioritization criteria for consideration
Distribution and Impacts of Benthic and Hyporheic Anoxia on the Colorado River Ecosystem Downstream from Glen Canyon Dam, Arizona

Benthic & Hyporheic Anoxia (BHA)
- Hyporheic zone = river sediments where surface and groundwater are exchanged
- Benthic zone = shallowest portion of hyporheic zone
- Anoxia = lacking oxygen
- Characteristics:
  - Stinky!
  - Fine sand/organic particles
  - Just below the surface sediments
  - AKA “maenke”

Conclusions
- BHA most prevalent in dam tailwaters
- BHA development limited by:
  - Aeration
  - Turbidity
  - Lower temperature
  - Decreased aquatic vegetation
- Some aquatic invertebrates may be impaired by BHA
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Conclusions

- Large river macroinvertebrates disproportionately use edge habitat for oviposition
  - Large emergent mineral substrates
- Load following can reduce the availability of optimal oviposition habitats
- During load following, high and low flows have the potential to reduce population recruitment, but by differing mechanisms
  - High: loss of emergent substrates
  - Low: egg desiccation
- Timing of load following, both seasonally and within day, could be managed to increase recruitment
Phased implementation

i. planning and developing pilot projects and experiments related to each objective through science-based prioritization of management locations and objectives;

ii. implementation of pilot projects and experiments;

iii. monitoring, evaluation, and dissemination of pilot project and experiment outcomes;

iv. use of adaptive management principles to subsequently (iteratively) develop, implement, and evaluate site-specific riparian vegetation management projects throughout the program life.
Summary of Results

- Lowest spring CPUE for Rainbow Trout since monitoring was standardized in 1990
  - Few juvenile Rainbows in system
  - Adults in relatively good condition
- Small increase in relative abundance of Brown Trout
  - % of catch increase factor of low Rainbow Trout abundance
  - Large recruitment class from 2019
  - Lower recapture % observed
- No other rare non-natives

Lees Ferry Spring Monitoring

Trip Report
Ryan Mann, David Rogowski, Jan Boyer
April TWG Meeting 2021
Other Items at the April TWG Meeting

- Colorado Pikeminnow reintroduction feasibility study
- Responding to low dissolved oxygen conditions
- Temperature control methods technology search
- Bug flows – evaluation document, Science Advisors Program role, etc.
Future TWG Agenda Items

- Monitoring metrics
- Temp. control and fish passage
- Western and indigenous world views
- Tier 1 conservation actions status
- Pearce Ferry Rapid
- Power purchase costs – bug flows
- System-wide native and nonnative fish monitoring

- Changes in the Little Colorado River
- Pikeminnow feasibility study report
- Nearby uranium mining
- Foodweb concentrations of mercury
- Admin. history project
- Budget prioritization criteria