



U.S. Fish And Wildlife Service

Southwest Region

Biological Opinion for the Near-term Colorado River Operations Final Supplemental EIS: Glen Canyon Dam Operations

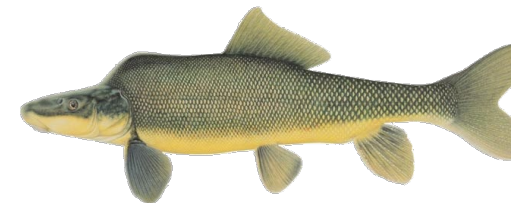
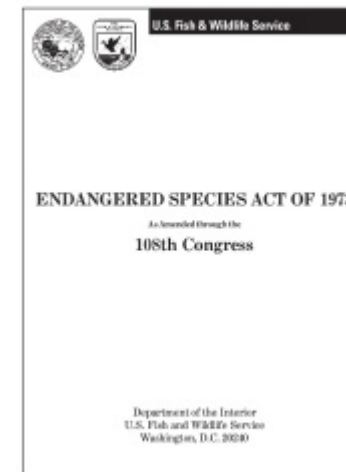
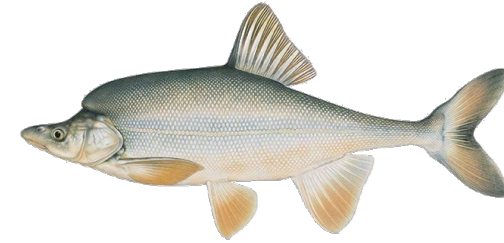
Dan Leavitt, Arizona Ecological Services Office

April 10, 2024



Outline

- Endangered Species Act Compliance
- Consultation History
- Description of the Action
 - Conservation Measures
- Species and Critical Habitat
- Environmental Baseline
- Effects of the Action
- Cumulative Effects
- Jeopardy Analysis
- Conclusion
- Incidental Take
- Conservation Recommendations
- Reinitiation Notice

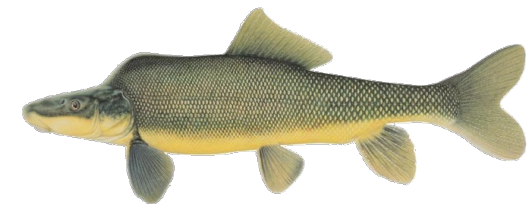
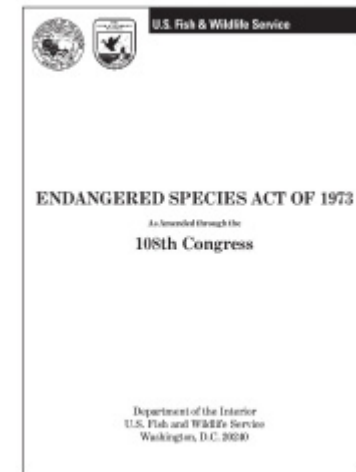
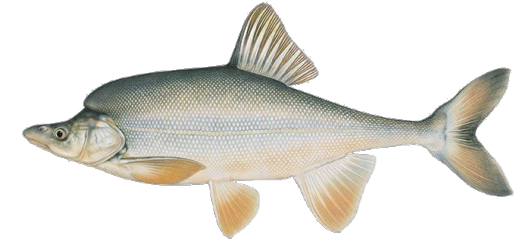


Endangered Species Act Compliance

Endangered Species Act, Section 7 – Interagency Cooperation

7(a)(1) – all Federal agencies...use their
authorities...for the conservation of
endangered and threatened species

7(a)(2) – each Federal agency...in
consultation...insure that any action...is not
likely to jeopardize the continued existence



Consultation History

- 2007: Interior signs ROD for Interim Guidelines. Service issues BO.
- 2008: Service issues BO for Operations of GCD.
- 2011: Service issues BO for Operations of GCD, HFEs and non-native fish control.
- 2016: Interior signs ROD for LTEMP. Service issues BO.

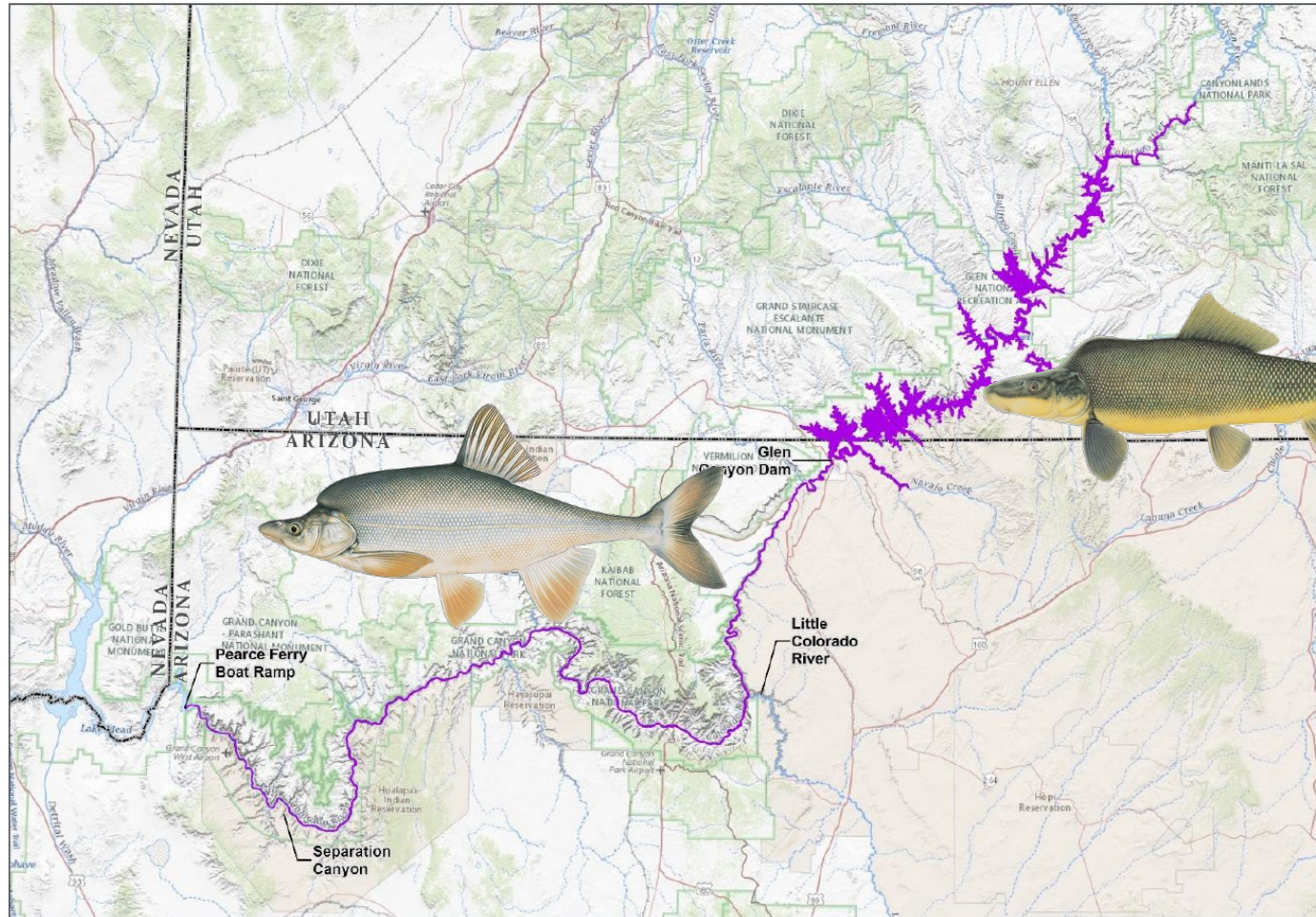


Description of the Action

- Revision of operational guidelines for Glen Canyon Dam to include the ability to reduce annual water releases from 7.0 to 6.0 maf year
- The LTEMP BO evaluated monthly, daily, and hourly operations based on minimum annual releases of 7.0
- Conservation Measures (if action occurs)
 - Fish entrainment study at GCD
 - Monitor backwaters and low-velocity habitat for non-native fish
 - Pursue flow manipulations to disadvantage warm-water species
 - Coordinate w MSCP to understand fish passage at Pearce Ferry
 - Expert Science Panel: western Grand Canyon Humpback Chub triggers



Species and Critical Habitat



Environmental Baseline (Current)

- Climate change
 - Most extreme period of drought in 800 years
- Non-native fish entrainment
 - Entrainment of warmer-water, ichthyoplankton, fishes, etc.
- Anticipated federal projects
 - Short & mid-term measures
- Status of the species and critical habitats in the action area

nature
climate change

BRIEF COMMUNICATION

<https://doi.org/10.1038/s41558-022-01290-z>

Check for updates

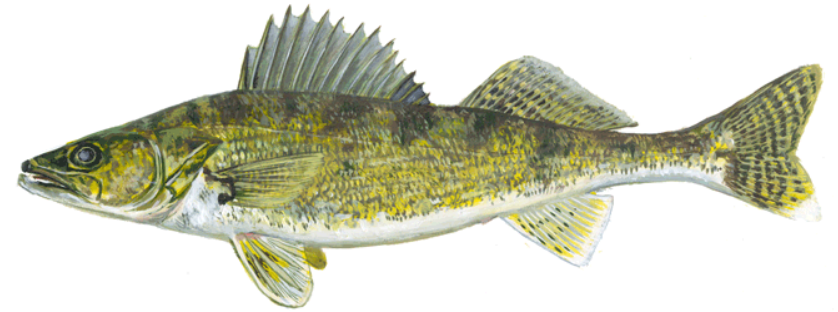
Rapid intensification of the emerging southwestern North American megadrought in 2020–2021

A. Park Williams^{1,2}, Benjamin I. Cook^{2,3} and Jason E. Smerdon²



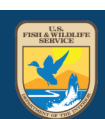
Effects of the Action

- Reduced annual flow → reduced turbidity → increased predation pressure
- Reduced annual flow → reduced habitat → increased competition and predation pressure
- Reduced annual flow → warmer water → increased parasitism
- Also, beneficial effects of conservation measures



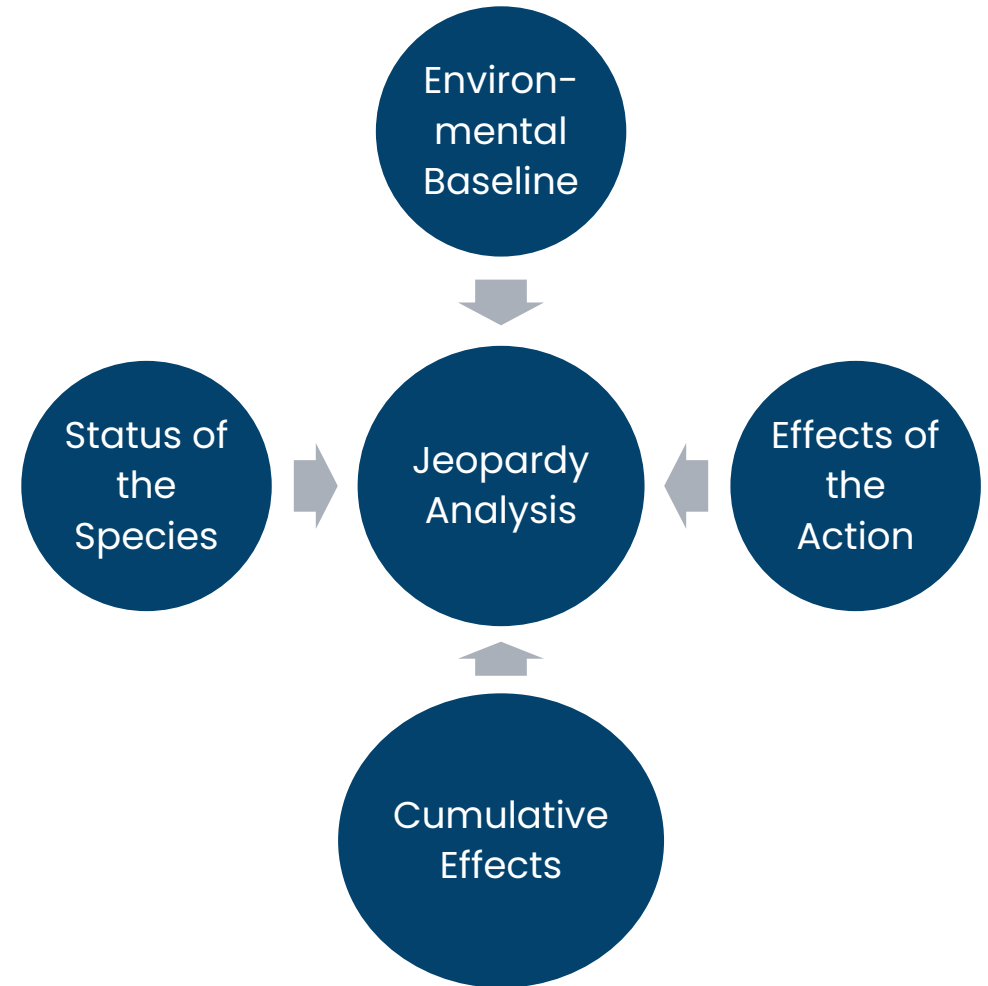
Cumulative Effects

- “effects of future State or private activities, not involving federal activities, that are reasonably certain to occur within the action area”
 - Urban runoff, industrial release, and municipal discharge
 - Agricultural runoff
 - Uranium mining
 - Response to climate change



Jeopardy Analysis

- “Jeopardize the continued existence of” means to engage in an action that “reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species”



Conclusion

- Humpback Chub: not likely to jeopardize the continued existence
 - Tipping Point: action will not preclude recovery or tip the species beyond the point of recovery
- Critical Habitat for Humpback Chub: not likely to adversely modify
- Razorback Sucker: not likely to jeopardize the continued existence
 - Tipping Point : action will not preclude recovery or tip the species beyond the point of recovery
- Critical Habitat for Razorback Sucker: not likely to adversely modify



Incidental Take

- “Incidental take” is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.
 - Humpback Chub: Should estimates of adult Humpback Chub decline to <6,000 fish and the prescribed conservation measures and remedial actions under each trigger do not mitigate a decline in the Humpback Chub population, then incidental take is exceeded under this BO
 - Razorback Sucker: a decrease of greater than 14% CPUE of Flannelmouth Sucker population in the identified sampling reaches would provide for reasonable inference of a concomitant reduction in the current Razorback Sucker population

Conservation Recommendations

- Pursue a Temperature Control Device at Glen Canyon Dam as described in previous consultations (U.S. Fish and Wildlife Service 1978, 1995, 2016).
- Work to understand the tributary inflows of both Lakes Powell and Mead. Research that defines the permanence of earthen barriers, fish passage, and fish populations will be a value to future consultations.
- Support a monitoring trip to obtain capture probability data to estimate abundances of Humpback Chub in select sites (i.e., primarily western Grand Canyon sites). This will increase accuracy of the relative abundance estimates based on catch per unit effort (CPUE) and enhance the post-2026 operations planning.
- Support development of a plan for translocation of Humpback Chub from western Grand Canyon into the Little CR or other areas.
- Support pilot studies for translocation of Humpback Chub into new areas such as Big Canyon or above Blue Springs (Little CR). This effort would include monitoring to evaluate growth and survival of transplanted fish.
- Support Razorback Sucker pilot translocation actions and monitor growth and survival primarily in tributaries to Grand, Marble, and Glen Canyons.



Reinitiation Notice

- The amount or extent of incidental take is exceeded
 - In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.
- New information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion
- The agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this biological opinion or written concurrence
- A new species is listed or critical habitat designated that may be affected by the action.



Thank you

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