BUREAU OF RECLAMATION

Long-Term Experimental & Management Plan (LTEMP) Biological Opinion – Humpback Chub Trigger Review & Current Status Update

Technical Work Group Meeting
April 14, 2021

Kerri Pedersen
Bureau of Reclamation

Incidental Take Parameters – Tier 1 Action Initiation Triggers

TIER 1 – Early Intervention	TRIGGER	2018	2019	2020	3-year average
1A. Combined adult (≥200 mm) humpback chub (HBC) in the mainstem Little Colorado River (LCR) aggregation and LCR	≤ 9,000	15,000	12,000	11,000	
OR					
1B. Recruitment of sub-adult HBC (150-199 mm) does not equal or exceed estimated adult mortality					
1) Sub-adult population estimate in LCR in spring*	3-year average <1,250	1,800	2,600	1,000	1,800
OR					
2) Sub-adult abundance in mainstem in Juvenile Chub Monitoring (JCM) Reach in fall	3-year average <810	1,100	500	200	600

Two-Tier Approach

- **Tier 1** – emphasis on conservation actions in response to adult or sub-adult population declines.
- **Tier 2** - predator removal if conservation actions unsuccessful and adult population declines to ≤7,000 adult HBC.

Humpback Chub – Tier 1 Action Triggers

- If the combined point estimate for adult HBC (≥200 mm) in the Colorado River mainstem-Little Colorado River (LCR) aggregation and LCR <9,000

OR

- If recruitment of sub-adult HBC (150-199mm) ≤ estimated adult mortality such that:
  - a) Sub-adult abundance <1,250 fish (3-yr average) in the spring LCR population estimates.

OR

  - **b) Sub-adult abundance <810 fish (3-yr average) in the fall mainstem Juvenile Chub Monitoring reach.**

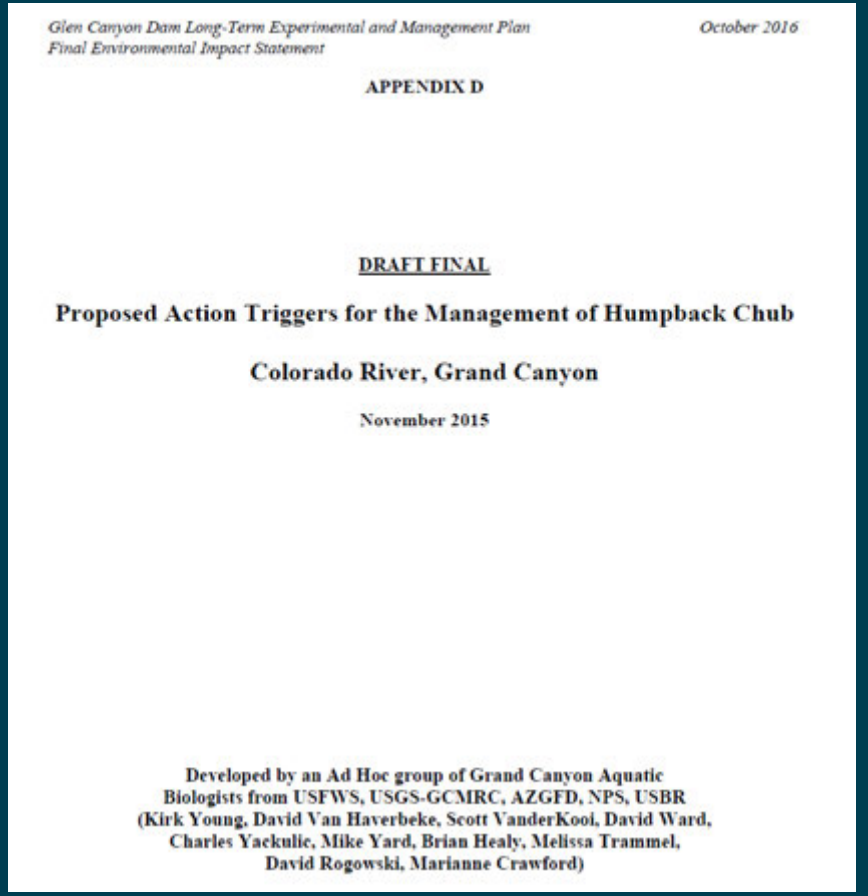
LTEMP -Tier 1 Trigger Response

Appendix O of EIS/Appendix D of BA

1. *Expand translocation actions in the LCR by collecting an additional 300-600 young of the year HBC and move above Chute Falls in October.*
2. *Assess efficacy of transporting larval HBC (April/May) into Big Canyon and above Blue Springs in the LCR system. Evaluate growth and survival of these transplants.*
3. *Larval fish will be removed from LCR (April/May) and head-started at SNARRC. Once fish reach 150-200 mm they will be translocated to the mainstem LCR reach the following year.*
4. *Additional conservation actions as identified and evaluated.*

Evaluation of Potential Response Actions

- Assembled fish biologists that developed action triggers
- Reviewed LTEMP proposed trigger responses
- Identified additional conservation actions consistent with # 4 (additional conservation actions as identified and evaluated)
- Several ideas
- Consensus to focus on least invasive ideas



Glen Canyon Dam Long-Term Experimental and Management Plan
Final Environmental Impact Statement

October 2016

APPENDIX D

DRAFT FINAL

Proposed Action Triggers for the Management of Humpback Chub

Colorado River, Grand Canyon

November 2015

Developed by an Ad Hoc group of Grand Canyon Aquatic Biologists from USFWS, USGS-GCMRC, AZGFD, NPS, USBR (Kirk Young, David Van Haverbeke, Scott VanderKooi, David Ward, Charles Yackulic, Mike Yard, Brian Healy, Melissa Trammel, David Rogowski, Marianne Crawford)

Discussion of Potential Response Actions

- **Objective**
  - Focus on immediate conservation actions
- **Discussion Points**
  - Potential explanations for poor production
    - Role of spring runoff/summer monsoons
  - Reviewed what was learned since trigger document
  - Key uncertainties
  - Benefits/risks of translocations & other potential actions

Status of Response to Trigger

- Evaluating options
- Next steps
  - Submitted annual report and formal notification to FWS
  - Focus on least invasive options (e.g., Chute Falls)
  - Additional info (spring river trips, runoff & # of YOY)
  - Discussion regarding 5-yr review of triggers – summer 2021


Questions?
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