



Smallmouth Bass Environmental Assessment Update

Colorado River Authority of Utah Board Meeting
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MARCH 16, 2023
SALT LAKE CITY, UTAH



Why do we Care?

Endangered Species Act

Utah complies with the ESA and participates in programs that mitigate the effects of water development and facility operations on endangered and threatened species

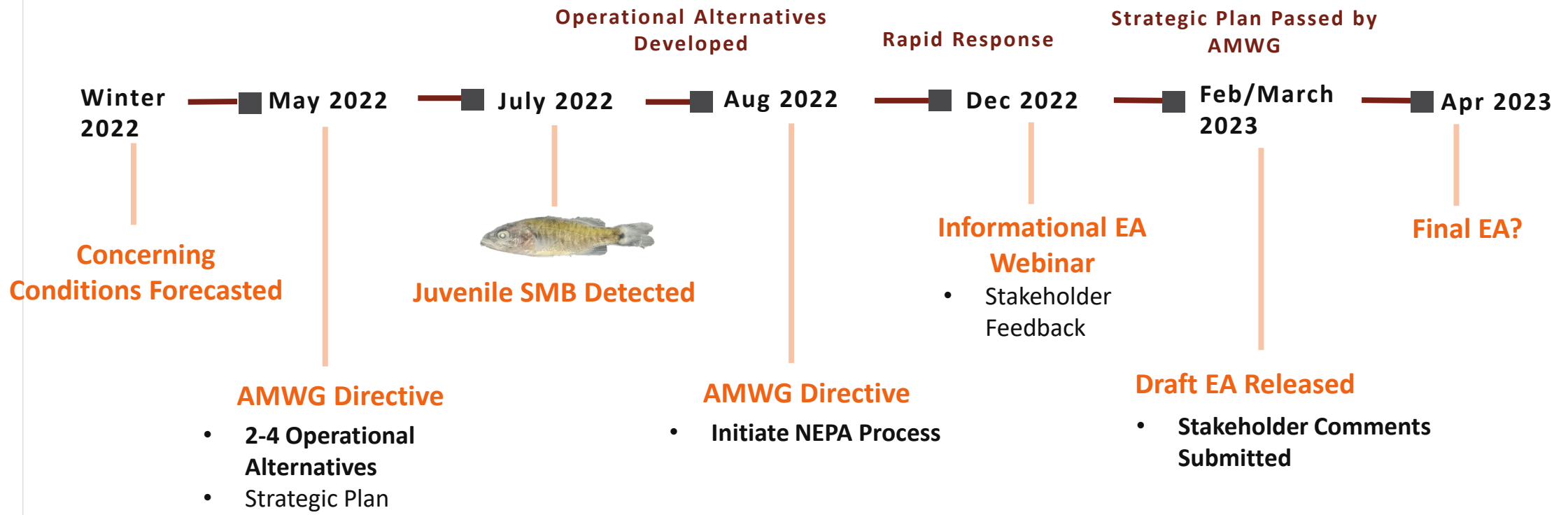


Grand Canyon Protection Act- “Protect and mitigate adverse impacts to and improve the values for which Grand Canyon National Park and Glen Canyon Recreation Area were established”





Review of Key Dates





Purpose and Need

“The proposed action’s purpose and need are to **prevent the establishment of smallmouth bass below the GCD**, which could threaten core populations of humpback chub in and around the Little Colorado River and its confluence with the mainstem.”

“... this targeted EA identifies various GCD flow options **designed to disrupt and prevent smallmouth bass from spawning**... A mix of water releases would be needed to disrupt smallmouth bass spawning behavior, which is expected to begin when water temperatures reach 16°C (Bestgen and Hill 2016). **Reductions in water temperature combined with changes in flow velocity** would be used to prevent smallmouth bass from successfully spawning and establishing downstream of GCD.”





Proposed Action Alternatives

No Action Alternative

Action Alternative

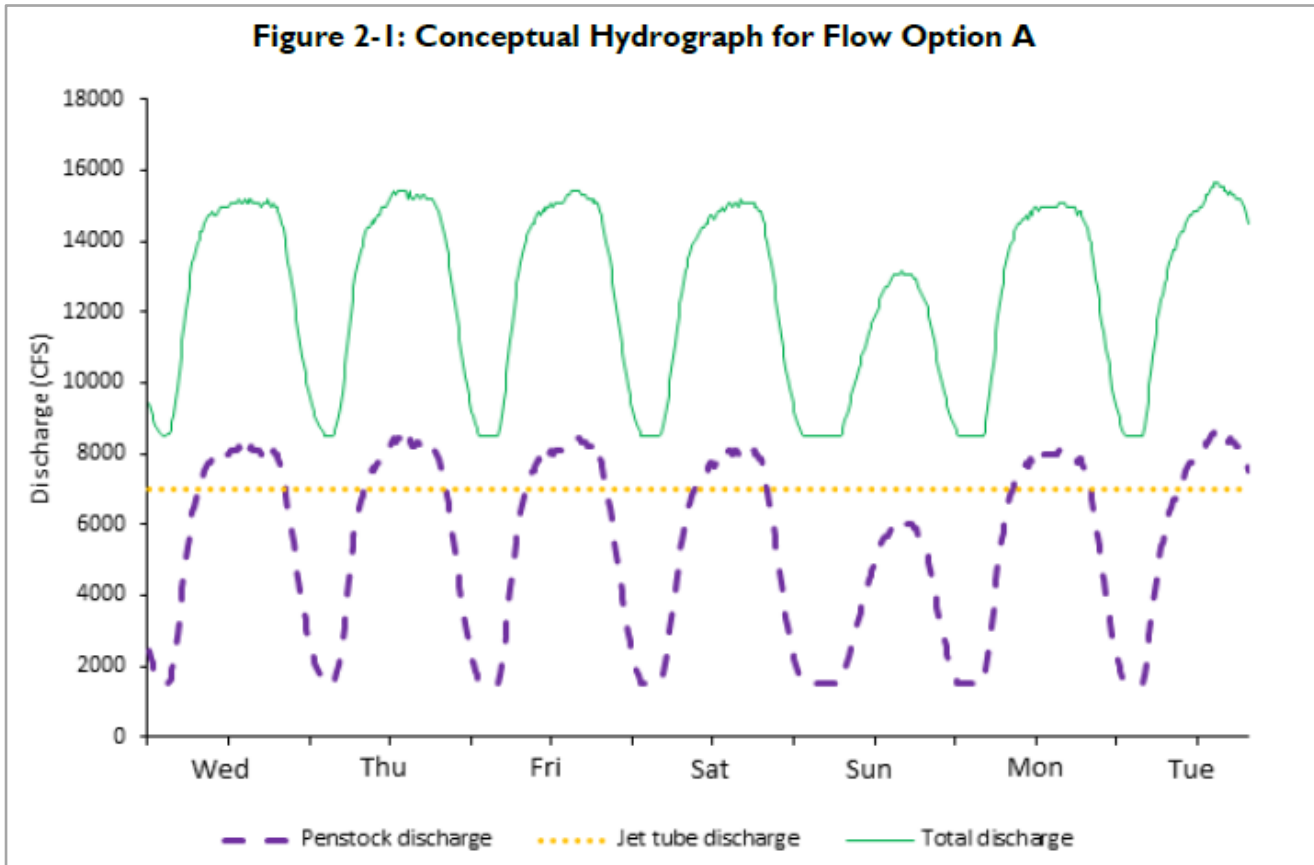
- Flow Option A– Cool Mix
- Flow Option B– Cool Mix with Flow Spikes
- Flow Option C– Cold Shock
- Flow Option D– Cold Shock with Flow Spikes





Flow Option A- Cool Mix

Figure 2-1: Conceptual Hydrograph for Flow Option A



Water is released from **both penstocks and bypass tubes** to maintain a daily average **water temperature below 16°C** from below the dam to the confluence with the Little Colorado River (LCR)

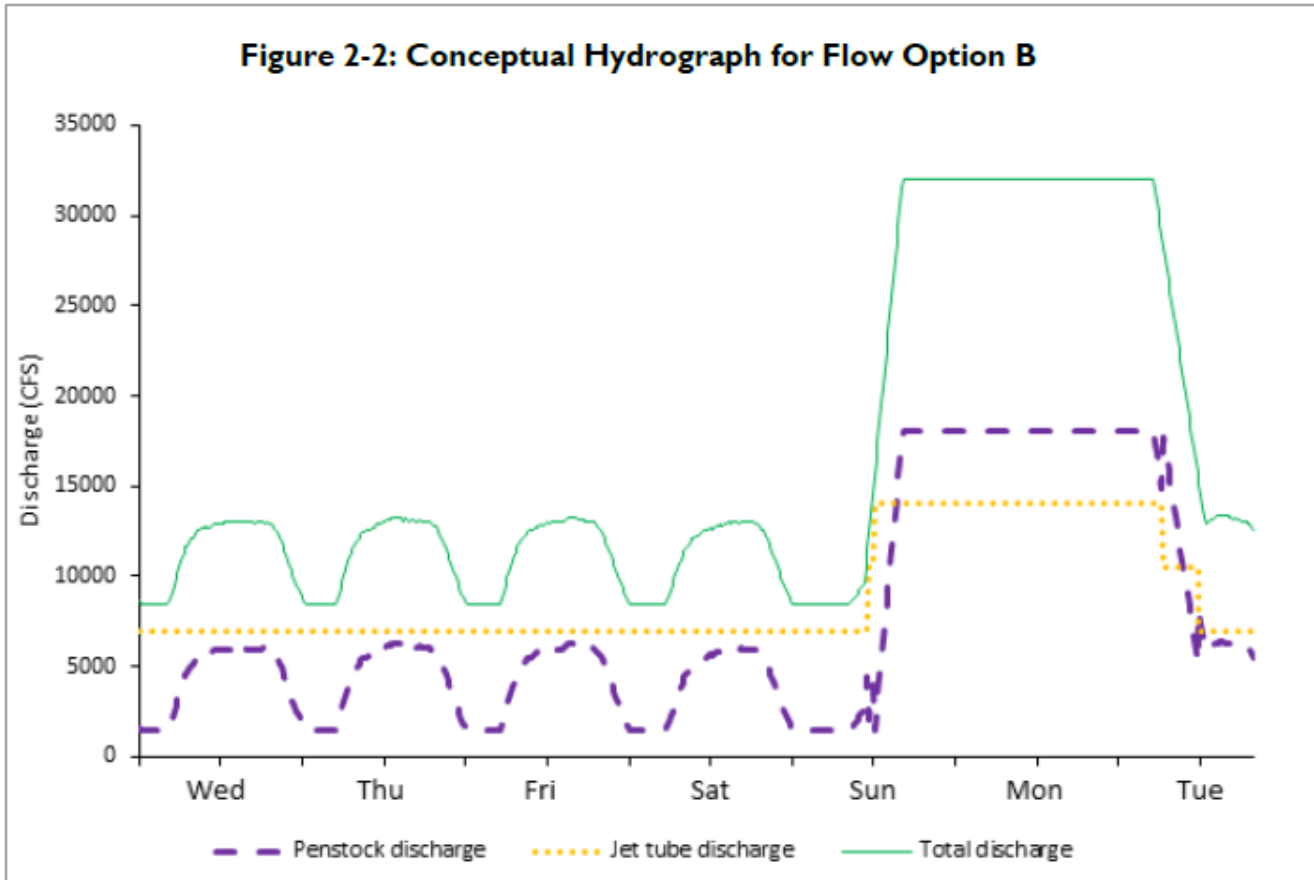
Initiated when temperature at LCR is 16°C





Flow Option B- Cool Mix with Flow Spikes

Figure 2-2: Conceptual Hydrograph for Flow Option B



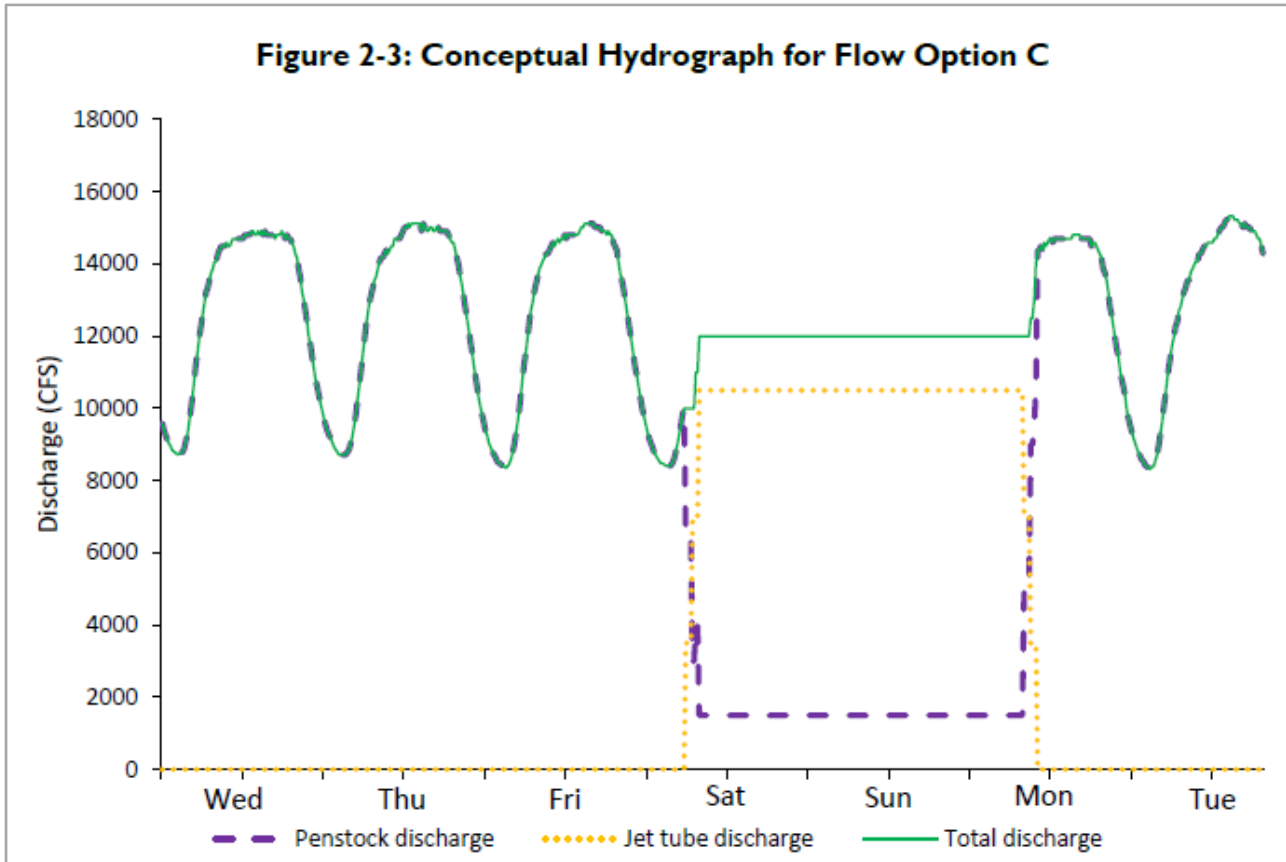
Similar to Flow Option A but would include **up to three 36-hour flow spikes** between late-May and mid-July if **sufficient water is available**

Initiated when temperature at LCR is 16°C





Flow Option C- Cold Shock



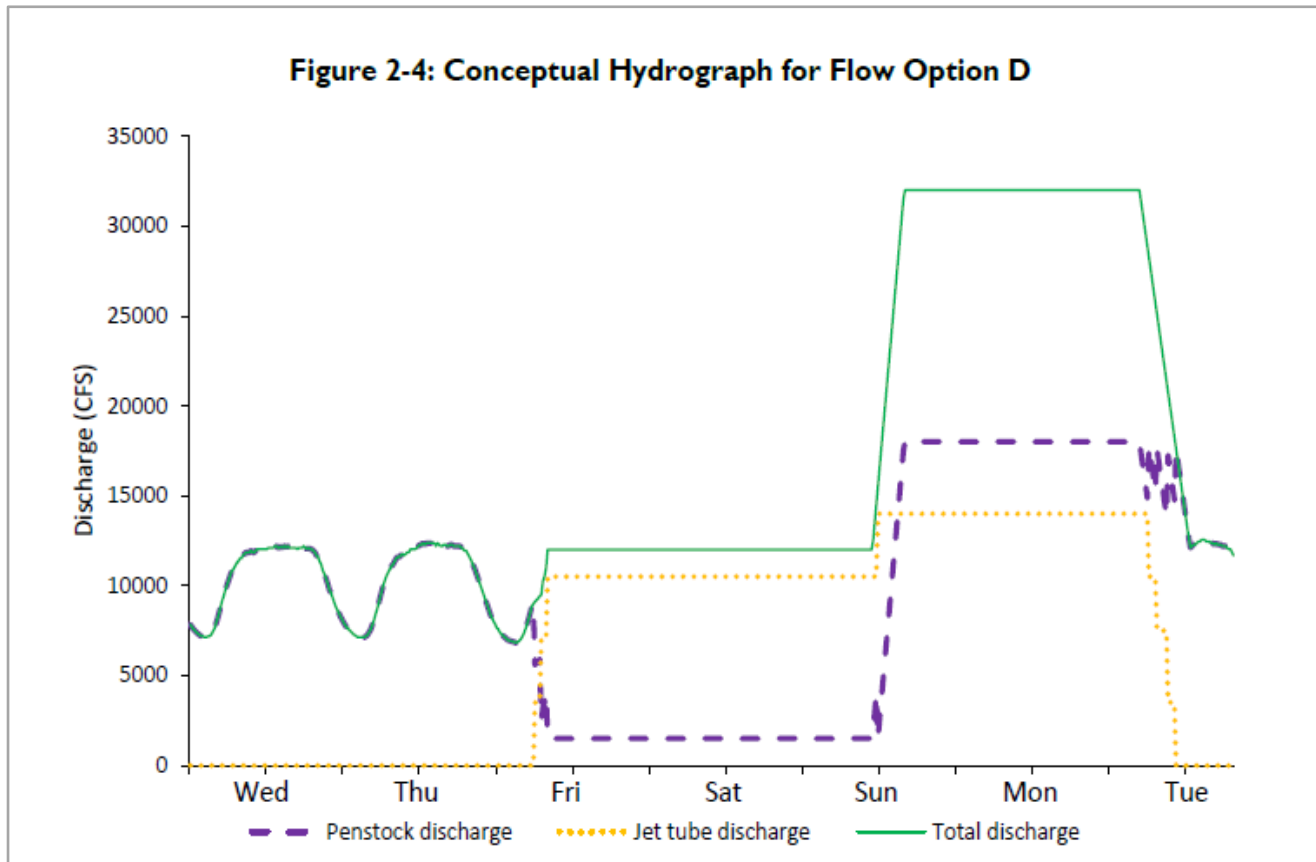
Once a week for at least 48 hours, switch to the minimum amount of bypass needed to create a **cold shock (13°C)** all the way to the LCR

Minimum of 12 weeks starting when daily water temperatures near the LCR approach 16°C





Flow Option D- Cold Shock with Flow Spikes



Similar to Flow Option C but would include **up to three 36-hour flow spikes** between late-May and mid-July if **sufficient water is available.**

Minimum of 12 weeks starting when daily water temperatures near the LCR approach 16°C





Flow Option E- Penstock Only Release (Not Considered)

Once a week for 3 months, GCD discharge through the penstocks would be **lowered to 2,000 cfs and then increased to 25,000 cfs.** This change in flows may create the maximum amount of **disturbance to spawning habitat without the use of the bypass tubes.** Since all the water is released through the penstocks, water temperature would not be changed by Flow Option E.

Initiated when water temperatures reach 16°C at the confluence with the LCR.





Hydropower Impacts and Concerns

Table 3-2: Potential 5-Month Flow Impacts to Power Generation and Firming Expenses, as Estimated by WAPA

	Total Lost Generation (GWh)	Total Firming Expense (\$ millions)
Flow Option A	563.7	78.4 (if implemented for 5 months)
Flow Option B	600.7	81.2 (if implemented for 5 months)
Flow Option C	322.3	41.0 (if implemented for 5 months, however Reclamation only proposes a maximum of 12 weeks)
Flow Option D	380.2	48.6 (if implemented for 5 months, however Reclamation only proposes a maximum of 12 weeks)

*Calculated based on a single trace from the August 24-month study

Other Related Impacts and Concerns

- Impact to the Basin Fund
- Impact to Power Customers
- Availability of Replacement Power





7-State Comment Letter

- Support for actions to prevent SMB establishment; however, **flow actions alone will not prevent establishment**
- Flow options are **experimental** and require **monitoring**
- Process for implementing a decision
 - Process of matching flow options to changing conditions, offramp/ futility criteria, etc.





Upper Division/ UCRC Comment Letter

7-State



- Echoed points in the 7-state letter
- Analysis of **Flow Option E** (penstock only)
- Technical comments on flow options
- Additional analysis of impacts (e.g., hydropower, socioeconomic, cumulative impacts)
- **Mitigation is needed** to avoid significant impacts (mitigated FONSI)



