

San Juan River Recovery Implementation Program
Environmental Flows Workshop #2
USFWS NM Ecological Services Field Office
Albuquerque, NM
5-6 April 2016

Draft Agenda

Recap of Flow Workshop #1

Consensus was reached on a target reservoir elevation of 6,063 ft (with an option to lower the elevation to 6,050 ft in some years). The volume of water in excess of the target elevation is deemed “available water” that can be released from Navajo Dam (given the release constraints of the dam). The previous decision tree resulted in frequent low-magnitude spring releases as well as not releasing large spring peaks when there was available water to do so. It was determined that a new decision tree was needed to more effectively utilize available water for the benefit endangered fish recovery.

Flow workshop #1 also suggested:

- (1) Evaluating the effects of flows from the Flow Recommendations
- (2) Revising the existing Flow Recommendations as necessary
- (3) Determining how to “use” available water

Recap of Flow Workshop #2 Workgroup Meeting

A flexible end of water year storage target (EWYST) was introduced whereby an EWYST of 6,050 ft is used to determine available water. If available water allows for a Type 3 or Type 4 release, a spring release from Navajo Dam is made to match the Animas River peak. If there is insufficient available water for a Type 3 or Type 4 release, an EWYST of 6,063 ft is used and operational spill will be implemented to reach an EWYST of 6,063 ft by the end of the water year. The group agreed to eliminate all Type 1 and Type 2 releases as operational targets in favor of achieving more frequent Type 3 and Type 4 releases and to further develop the Flexible EWYST and determine the desired shape of the peak (and associated ramp-up [nose] and ramp-down [tail]) and appropriate target base flows. The group accepted that lower magnitude flow targets can still be attained without Type 1 and Type 2 releases. The group recognized the basis of the existing flow recommendations (mimicry of the natural hydrograph) and any current modification of the flow recommendations is intended to better implement those recommendations to better attain the high flow metrics identified in the flow recommendations.

The workshop #2 workgroup also identified outstanding tasks and suggestions:

- (1) What is the role of temperature in the revised flow recommendations? Releases from Navajo Dam can suppress downstream temperatures but the biological impact of temperature suppression is unclear. Coordinating releases from Navajo Dam with high flow in the Animas River should minimize the effect of temperature suppression downstream of the Animas River confluence with the San Juan River.
- (2) How should spring peak releases be shaped? The ramp-up (nose) and ramp-down (tail) rates that provide the appropriate habitat and fish response need to be determined.
- (3) Maintaining base flows above 500 cfs was discussed. Agreement needs to be reached on the duration (timing) of elevated target base flows and the magnitude of base flows that would provide the appropriate habitat and fish response.
- (4) The specific monitoring metrics and protocols to evaluate the hypotheses and assumptions of the flow recommendations need to be identified.

Goals and Objectives of Workshop #2

- 1) Reach consensus on the implementation of a decision tree
 - Review model run results comparing various decision trees
- 2) Determine the duration of spring peak releases and the shape, magnitude, and volume of nose and tail of releases (i.e., the ascending and descending limbs of a spring peak hydrograph)
- 3) Agree when to implement elevated target base flows in any revised decision tree
 - Determine the timing, duration, and magnitude of base flow targets > 500 cfs
- 4) Develop a monitoring program to evaluate the hypotheses and assumptions of the flow recommendation benchmarks
- 5) Develop a structure for the end product for the revised flow recommendations and operations
- 6) Discuss operations for 2016

Draft Agenda for Environmental Flows Workshop #2

Tuesday 5 April

Introductions and overview

- 8:00-8:15 Introductions
- 8:15-8:45 Summary of environmental flow workshops to date and overview workshop #2 goals and objectives – Scott Durst

Decision trees and model runs

- 8:45-10:00 Detail model runs using (1) 2015 interim operation decision tree, EWYST 6,063, (2) Flexible EWYST decision tree releasing Type 3 and Type 4 releases, and (3) Flexible EWYST decision tree releasing maximum days at 5,000cfs. Each model run was conducted with varying summer base flows (500 cfs, 750 cfs, and 1,000 cfs) – Susan Behery
- 10:00-10:15 Break
- 10:15-11:30 Discussion of model runs based on decision trees developed to date, the need for alternative decision trees, and biotic and abiotic responses
- Desired outcome: Decide when we implement a spring peak release and how long we maintain a spring peak release.

11:30-1:00 Lunch (out)

Additional uses of available water

- 1:00-2:30 Volume of available water to elevate target base flows > 500 cfs and modify shape (magnitude and duration) of nose and tail releases around spring peak – Susan Behery
- 2:30-2:45 Break
- 2:45-4:30 Discussion of elevated base flows, spring peak release nose and tail options, and biotic and abiotic responses
- How do we use available water when there is no spring peak release?

- Desired outcomes: Decide shape of spring peak release (nose and tail).
Decide how and when to implement elevated baseflows.

Wednesday 6 April

8:00-8:15 Recap of previous day's progress

8:15-10:00 Discussion to finalize a decision tree for implementation of spring peak releases, spring peak nose and tail, and elevated base flows (including any additional operation spill releases)

Desired outcomes: Finalize operations for 2016.
Decide on a decision tree to implement beyond 2016.

10:00-10:15 Break

Monitoring to evaluate the flow recommendations

10:15-10:45 Hypotheses and assumptions behind flow recommendation benchmarks – Nathan Franssen

10:45-11:30 Start discussion of developing a monitoring program to evaluate the hypotheses and assumptions of the flow recommendations

- What kind of monitoring do we need to address these hypotheses and assumptions?

11:30-1:00 **Lunch** (out)

1:00-2:30 Continue discussion of developing a monitoring program to evaluate the hypotheses and assumptions of the flow recommendations

- How do we determine the effect of flow on habitat and fish? How do we identify the metrics to evaluate flow?

Desired outcome: Determine a monitoring program to move forward with evaluating the flow recommendations.

2:30-2:45 Break

Finalizing revised operations and flow recommendations

2:45-4:30 Review structure of draft end product for revised flow recommendations and operations

Desired outcome: Determine a process and assignments needed to finalize the environmental flow workshops.

4:30 **Adjourn**