Scott Valley
Stream Depletion SMC Development
Scott Valley GSA Advisory Committee
November 17, 2020
Agenda

1. Questions from the last meeting and responses
2. New bookend management scenario(s)
3. New metric for evaluating scenarios
4. New proposed MT strawman
5. January meeting preview
   ➢ Paired MTs and scenarios
GSP Chapters

1. Introduction

2. Plan Area and Basin Setting

3. Sustainable Management Criteria

4. Projects and Management Actions

5. Plan Implementation
Questions from the last discussion, and responses

• What flowrate reduction is attributable to groundwater pumping (outside the adjudicated zone)?
  • New “bookend” scenario (preliminary)

• When do fish need the water in the fall?
  • New flow timing metric

• Legal authority questions:
  • Relation of MT to the Forest Service water right? GSA legal authority to set lower threshold?
  • What flow increases are theoretically possible under the GSA’s authority?
  • New “bookend”, maximum legal authority scenario (preliminary)
Questions from the last discussion, and responses

- **Open questions** - should the MT definition be based on:
  - Water year type?
  - Streamflow? Groundwater levels?
  - Stream depletion attributable to groundwater pumping (outside the adjudicated zone)?
  - Technical team is proposing a water-year-type-modified streamflow-based MT definition (strawman) today, but this can certainly be discussed further
New scenario

“Bookend”, maximum legal authority scenario (preliminary)
(Not suggesting this is feasible or likely)
New scenario: turn off pumping outside adjudicated zone
Basecase FJ flow (for comparison)
Preliminary Results – native vegetation on fields outside Adjudicated Zone

Native Vegetation Outside Adjudication

NVOA

Scenario

Basecase

Streamflow Difference (cfs)

Average Daily Streamflow (cfs)

Dry (2014)
Average (2010)
Wet (2017)
Preliminary Results – native vegetation on fields outside Adj. Zone with GW or Mixed water source

Native Vegetation on GW and Mixed Water Source Fields Outside Adjudication

NV-GWM-OA
Clarifying questions on these scenarios?
Solicited feedback

• Objective: capture all contributions to streamwater depletion from groundwater pumping outside the adjudicated zone.
  • “Maximum legal authority” endmember scenario
  • Does this scenario design accomplish that?

• Natural Vegetation, on Groundwater and Mixed-water-source fields, Outside the Adjudicated zone

• If so, the GSA could use this to inform feasibility of MT definition options.
New metric

“Days gained” above threshold flowrates
Fort Jones Average Daily Flow, observed [cfs]

Below 10 cfs
10-20 cfs
20-30 cfs
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Above 40 cfs
Fort Jones Average Daily Flow, observed [cfs]

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80% ET

- Sep 1
- Oct 1
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Below 10 cfs
10-20 cfs
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Above 40 cfs
**NVOA**

Natural vegetation everywhere outside adjudicated zone

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**NV, GWM, OA**

Natural vegetation in current groundwater or mixed-source irrigated fields, outside adjudicated zone

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Fort Jones Actual Average Daily Flow, observed [cfs]

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**Scenarios**

**Average Number of Days to Earlier Exceedance of 10, 20, 30, and 40 cfs Threshold**

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Proposed Streamflow MT

• Previous UR/MT:
  • Aug-Oct FJ flow dropping below 20 cfs for more than 60 days in >1 of 10 years.

• New MT definition option:
  • An UR will occur if the flow at FJ is below 20 cfs on Oct. 1st (with possible modifications by water year type).

• In January, we’ll present paired management scenarios + MT definitions that would be achievable for each one.
Solicited feedback

• Is the structure – setting a **date** at which the MT is a **flow** excepting extremely **dry years** – an acceptable approach?
  - Is Oct. 1 the right day to set the MT?
  - Is 20 cfs the right threshold value?
  - What else should we consider when refining the date/flow threshold?

• Is the committee comfortable with no MT for summer flows?

• What would be constructive next steps for setting the MT at a level that is both physically possible and economically feasible?
  - What are the next-highest-priority management scenarios to simulate?
Solicited feedback

• Outstanding question – are there more thoughts on whether the MT definition should be based on:
  • Streamflow?
  • Groundwater levels?
  • Stream depletion attributable to groundwater pumping (outside the adjudicated zone)?
Solicited feedback (cont.)

• Preferred methods for calculating “extremely dry” water years?
  • Snowpack
  • River flow
  • Oct-Mar rainfall
  • Date of determination (April 1? Oct 1?)
January meeting preview

• Propose 3 MTs, as well as:

  • Costs (the management action[s] necessary to achieve them)

  • And benefits (i.e., using metric of average # of days gained above the MT relative to the baseline scenario)

• for each MT.
Open discussion
Acronyms:

**UR** – Undesirable Result
  - Informed by Sustainability Goal, but must be tied to metric(s)

**MT** – Minimum (or Maximum) Threshold.
  - The MT is the boundary beyond which a UR occurs.
  - *Note:* MT and UR definitions are linked.

**MO** – Measurable Objective
  - Ideal operating range

**SMC** – Sustainable Management Criteria (includes URs, MO and MTs)

**RMP** – Representative Monitoring Point