

Increase Effective Use of Frenchman Reservoir

Reservoir management for storage and release could perhaps be optimized by the following considerations:

- Avoiding winter and spring “environmental” releases above the required 2 cfs minimum fish flows, as may have occurred in 2015 and 2016
- When possible, avoiding water storage through the hotter summer months, when evaporation increases
- Refining the timing and magnitudes of water deliveries during the irrigation season to better match crop water requirements by using soil moisture sensors and other irrigation efficiency improvement strategies
- Using reservoir spill to support Managed Aquifer Recharge (MAR) and on-farm storage as feasible and appropriate

Managed Aquifer Recharge (MAR) Opportunities in Sierra Valley

Opportunity Area	Potential Avg. Yield	Pilot Est. Cost	Notes
A Smithneck	177-295 AF	\$1.1 M	<ul style="list-style-type: none"> • Format: diversion to off-stream infiltration basin • Water sources <ul style="list-style-type: none"> - Diversions at >90 percentile, Dec. – March - Opportunity for diversions after Sept. 30 (decreed rights) - Perhaps high flow opportunities in April and May • Land ownership: CA DFW in upper watershed, private parcels below • Advance through permitting to pilot implementation project
B Little Last Chance	250 AF	\$0.6 M	<ul style="list-style-type: none"> • Format: large diversion structure to off-stream infiltration basins • Water sources: spill capture from Frenchman Reservoir <ul style="list-style-type: none"> - Perhaps high flow opportunities prior to spill • Land ownership: involves up to 12 private parcels and 1 federal parcel • Advance technical, preliminary design, and permitting
C East Ephemeral	20-30 AF	TBD	<ul style="list-style-type: none"> • Format: small in-channel infiltration basins • Does not involved decreed water rights • Low implementation costs • Could provide local benefits • Land ownership: private
D Mapes / Grizzly	72 AF	TBD	<ul style="list-style-type: none"> • Water Sources <ul style="list-style-type: none"> - Diversions at >90 percentile, Dec. – March - Opportunity for Mapes diversions after Sept. 30 (decreed rights) - Perhaps high flow opportunities in April and May • Could benefit northern wetland areas • Land ownership: private and CA DFW • Grizzly Creek source does not appear to be viable based on elevation of stream and recharge area

Recommendation

As a preliminary recommendation, the Smithneck Creek opportunity area could be prioritized to advance at the feasibility evaluation and pilot program level. Discussions and initial steps are also recommended for the next level of reviews for the Little Last Chance opportunity area.