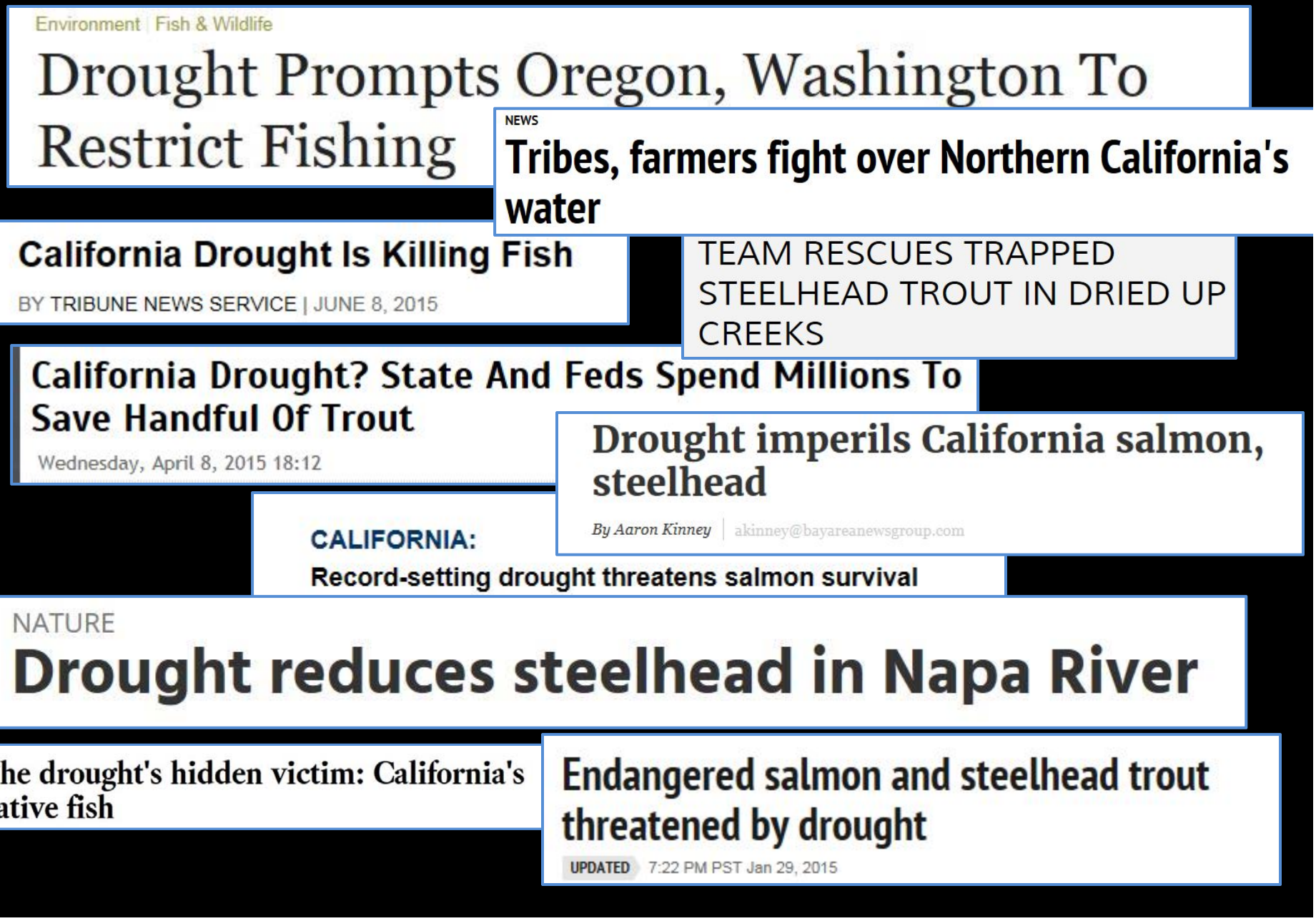
Use of flow enhancement to improve late summer rearing habitat for juvenile steelhead in the Potlatch River, ID

DeYoung, 2015

Brian Knoth and Tiege Ulschmid

Drought and Steelhead



Environment | Fish & Wildlife

Drought Prompts Oregon, Washington To Restrict Fishing

NEWS

Tribes, farmers fight over Northern California's water

California Drought Is Killing Fish

BY TRIBUNE NEWS SERVICE | JUNE 8, 2015

TEAM RESCUES TRAPPED STEELHEAD TROUT IN DRIED UP CREEKS

California Drought? State And Feds Spend Millions To Save Handful Of Trout

Wednesday, April 8, 2015 18:12

Drought imperils California salmon, steelhead

By Aaron Kinney | akinney@bayareanewsgroup.com

CALIFORNIA:

Record-setting drought threatens salmon survival

NATURE

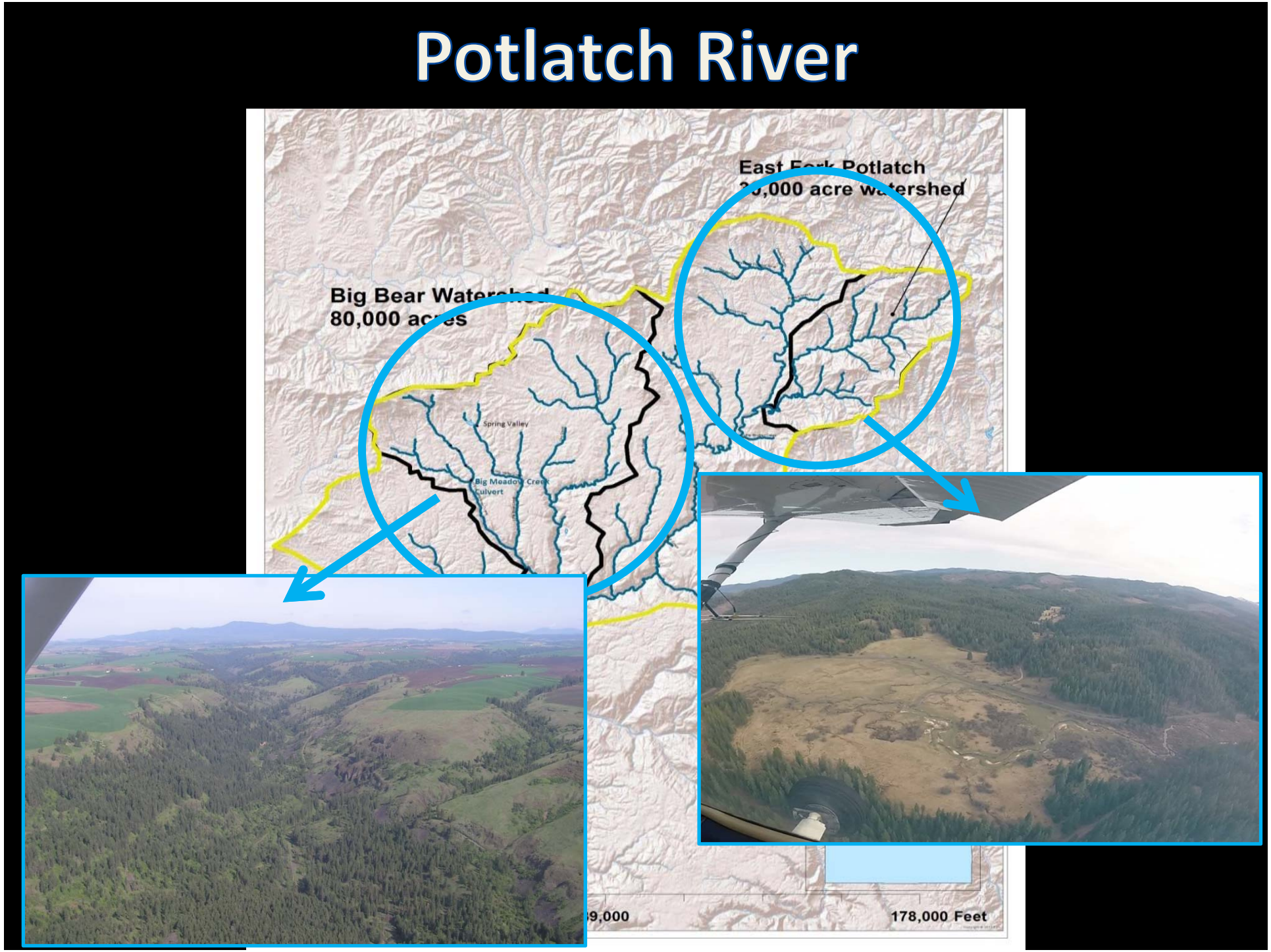
Drought reduces steelhead in Napa River

The drought's hidden victim: California's native fish

Endangered salmon and steelhead trout threatened by drought

UPDATED 7:22 PM PST Jan 29, 2015

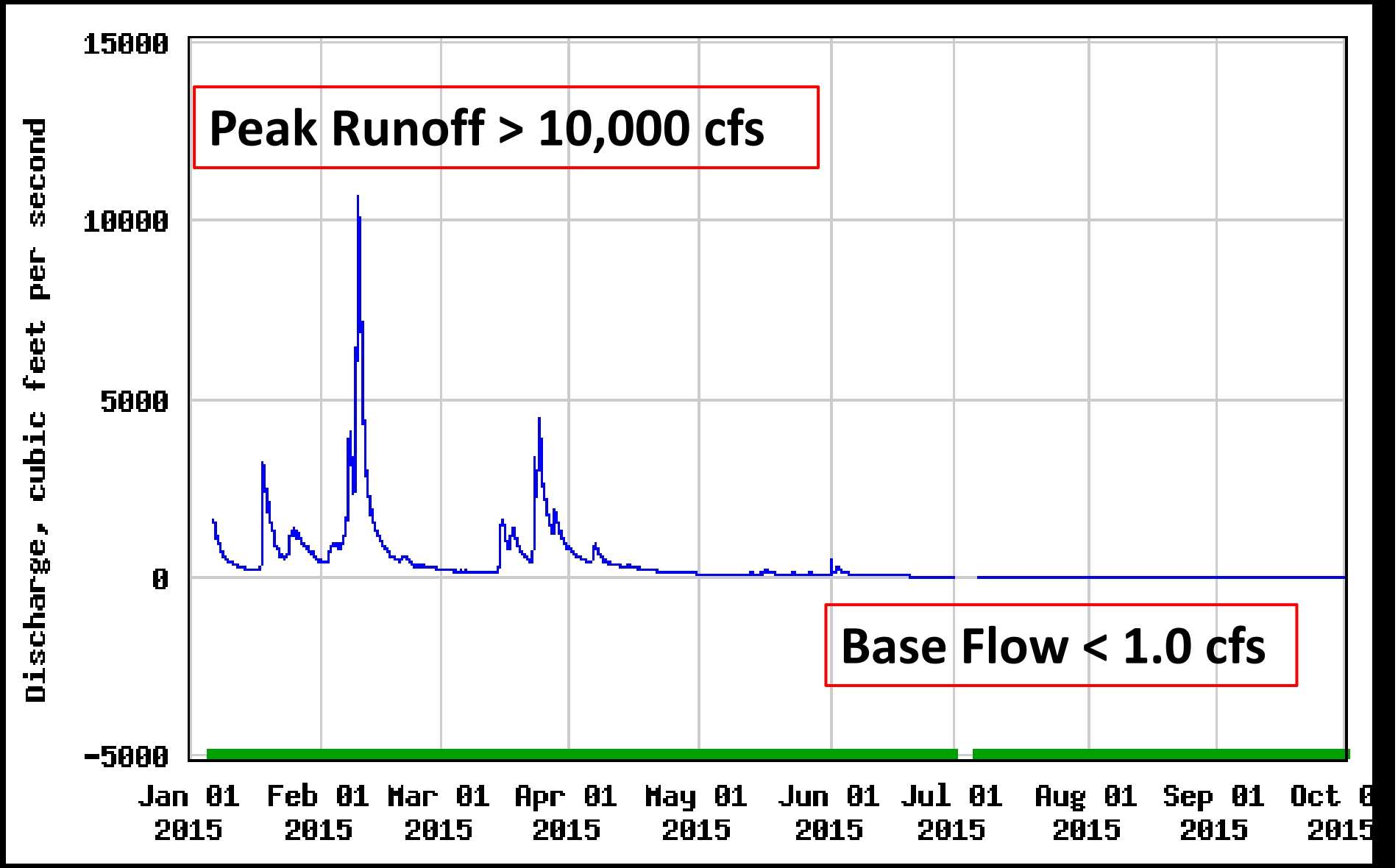
Potlatch River



Potlatch River Steelhead

- **Viable wild population**
  - Local and regional importance
- **Habitat restoration in watershed**
  - Intensively Monitored Watershed

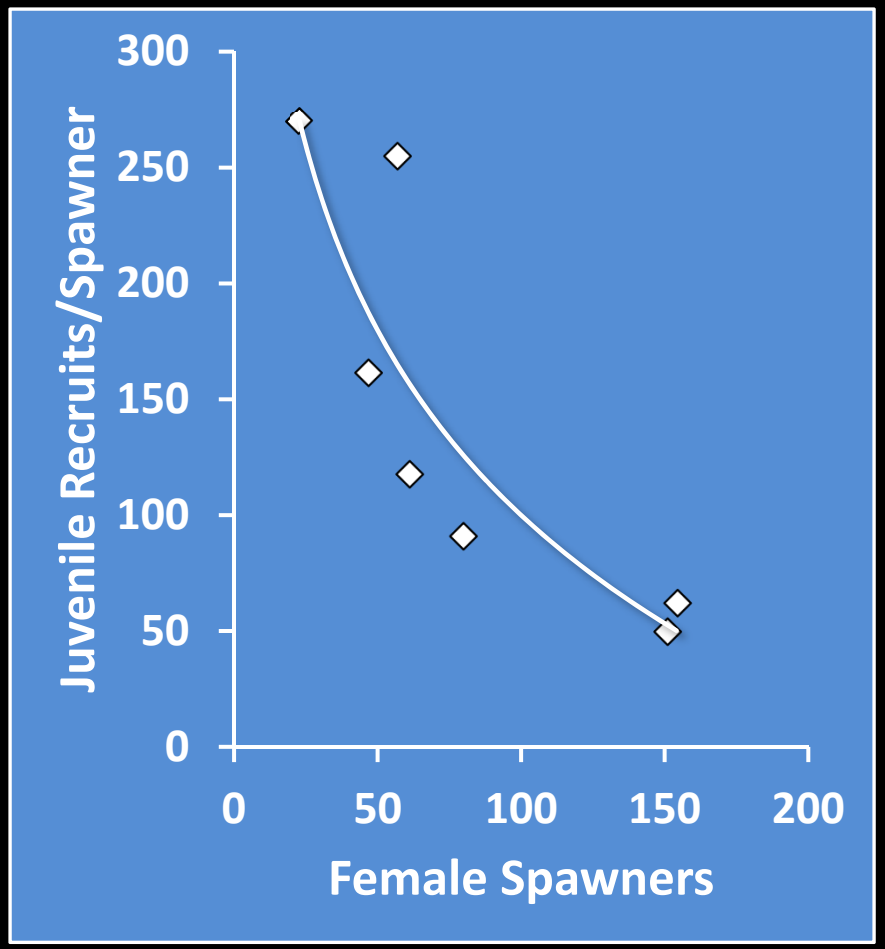
Limiting Factors- Lower Basin



Impacts on Steelhead

Limited rearing habitat

Density dependent effects



Flow Enhancement Project

ring Valley Cr.

ittle Bear Cr.

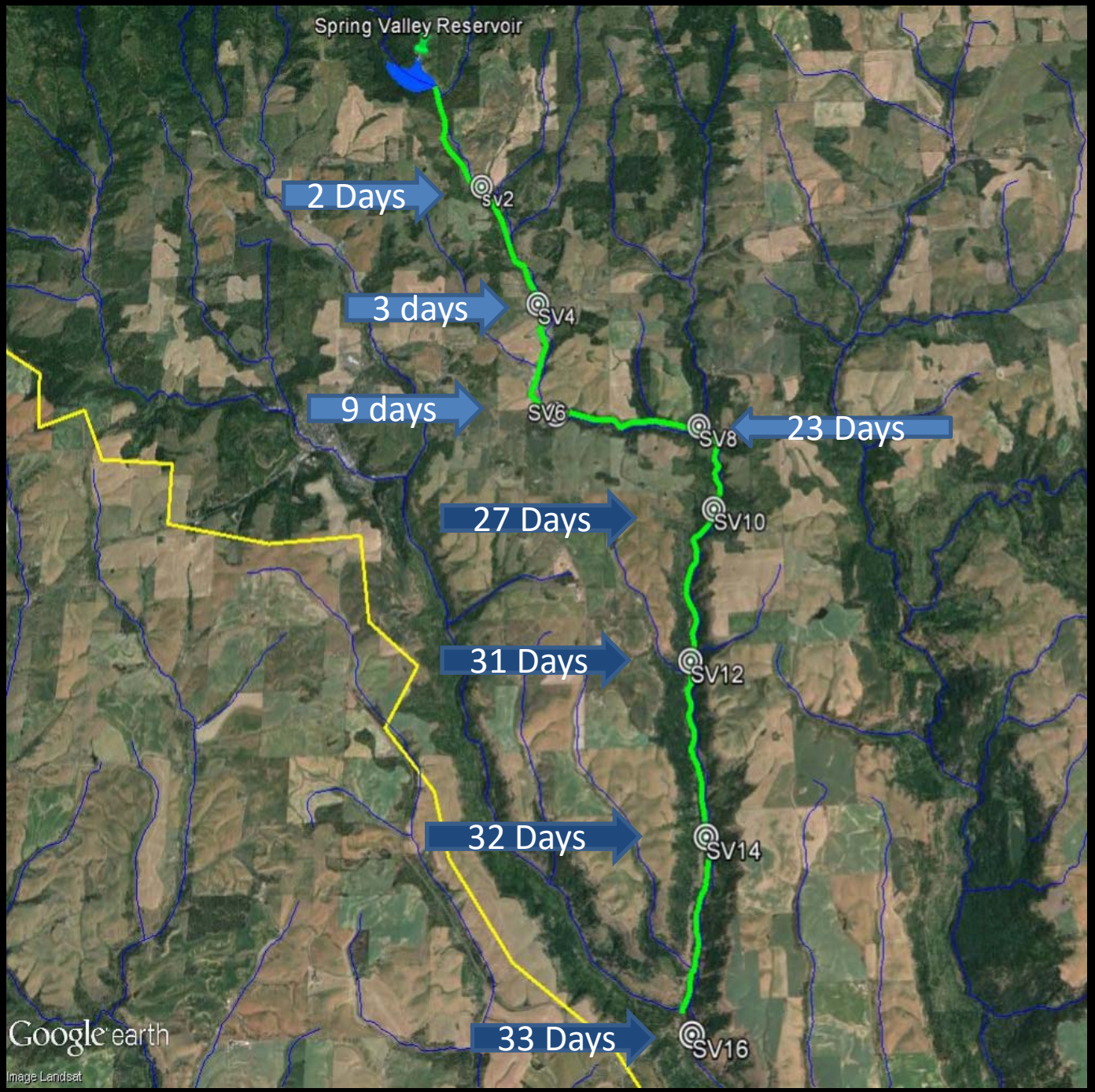
Study Design

Habitat and Fish Surveys

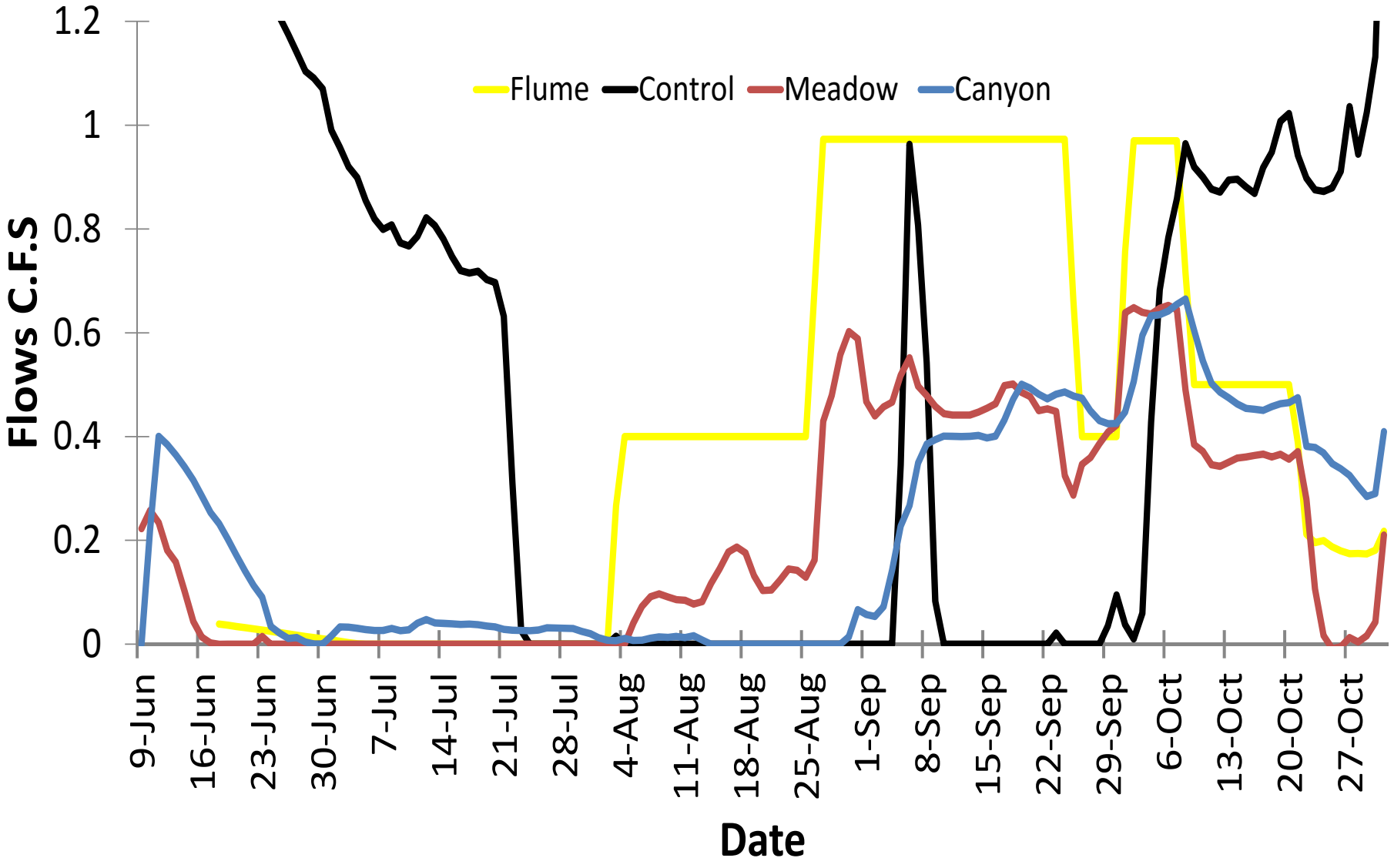
Release Strategy

- 0.5 cfs for 3-4 weeks
- 1.0 cfs for 3-4 weeks
- 0.5 cfs for 2 weeks

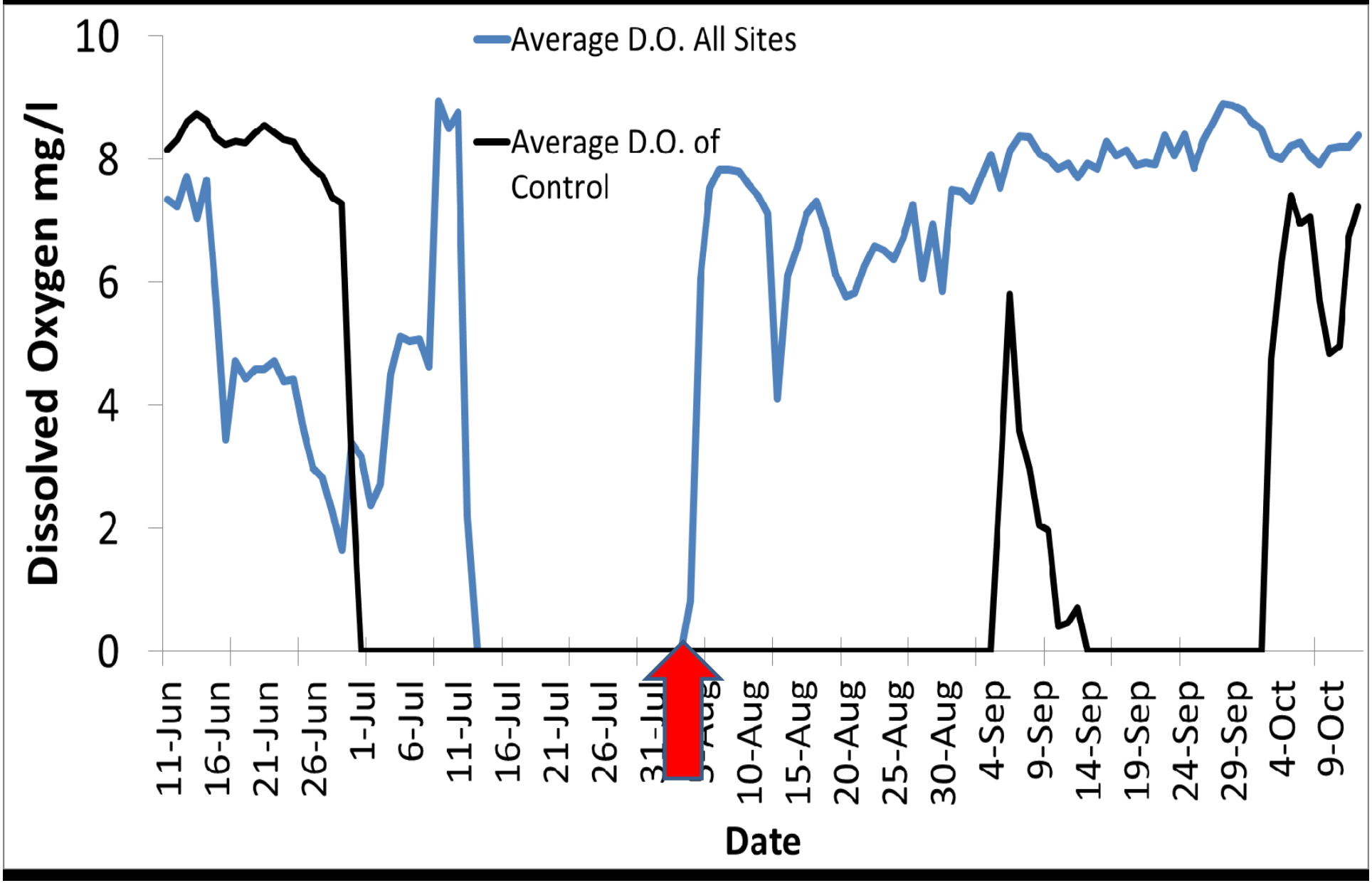

MOULTRIE
89°F 27.14inHg
EFP2
04 AUG 2015 01:28 pm


Spring Valley Reservoir
2 Days
SV2
3 days
SV4
9 days
SV6
SV8
23 Days
27 Days
SV10
31 Days
SV12
32 Days
SV14
33 Days
SV16
Google earth
Image Landsat

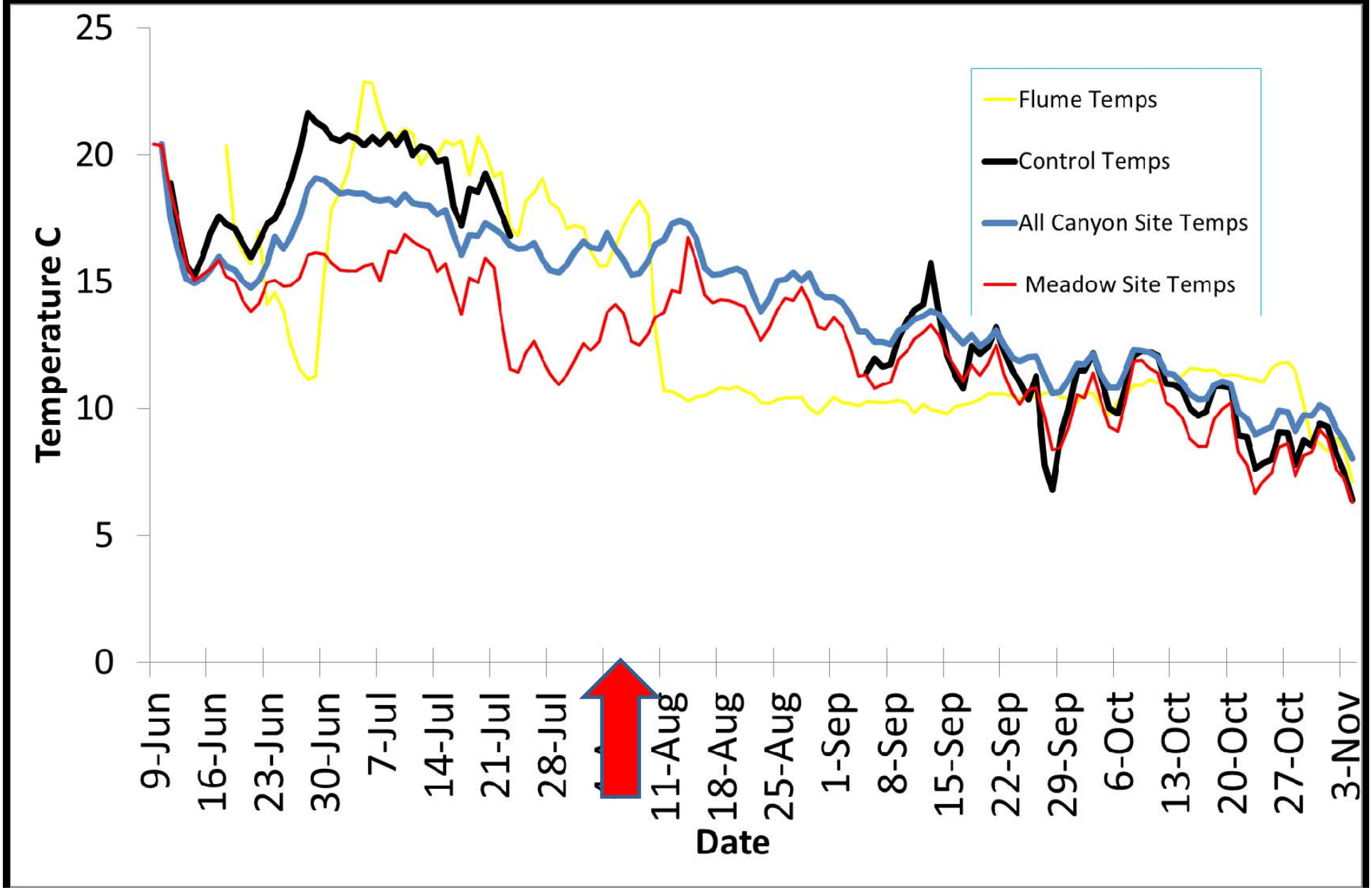
Flows (Meadow and Canyon)



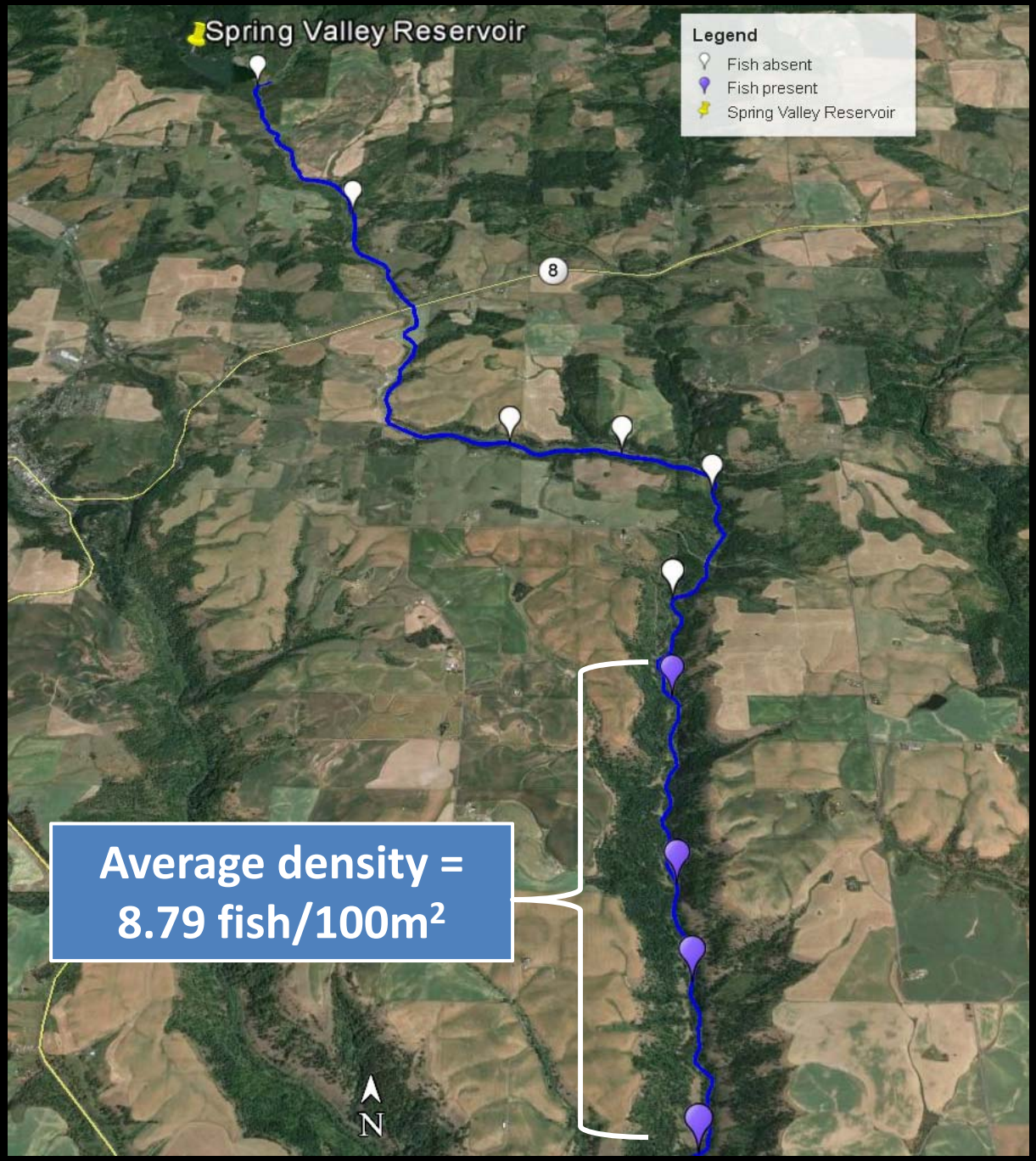
Dissolved Oxygen (upper 10 km)



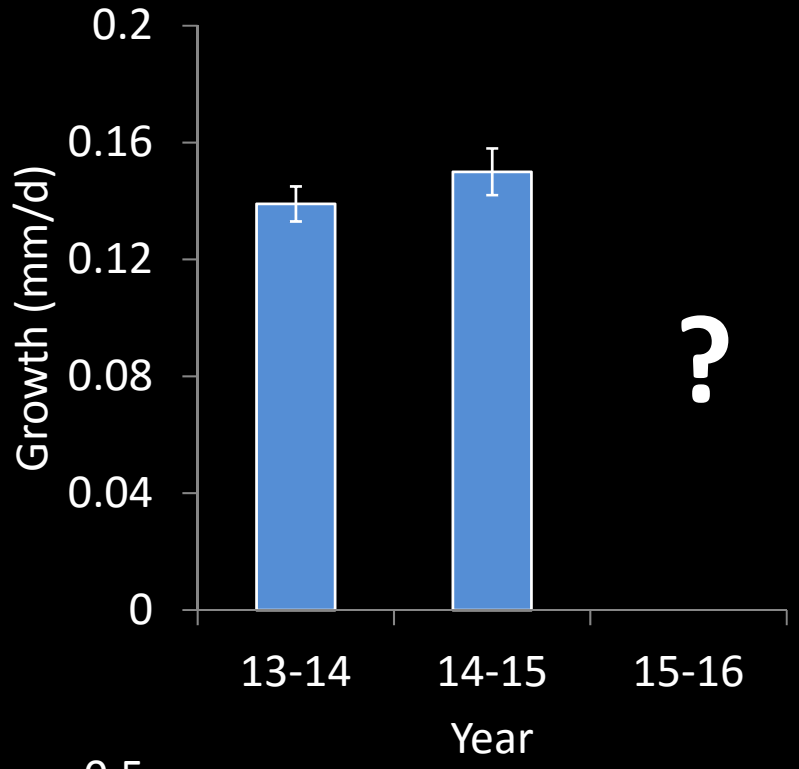
Stream Temperatures

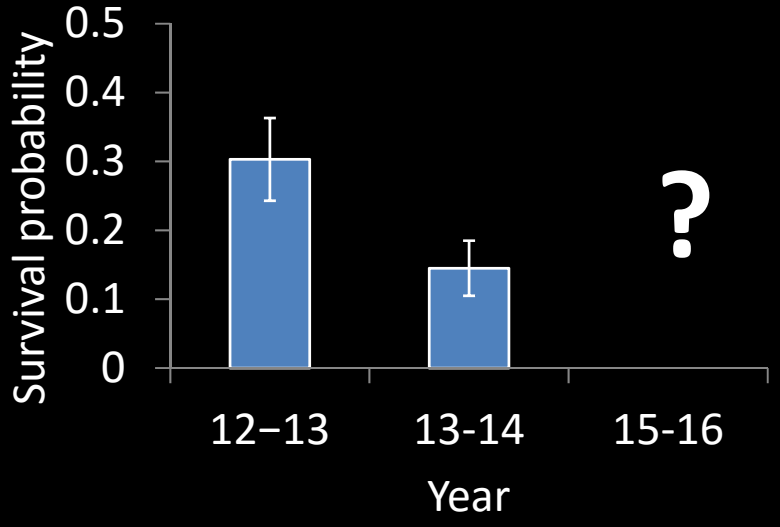


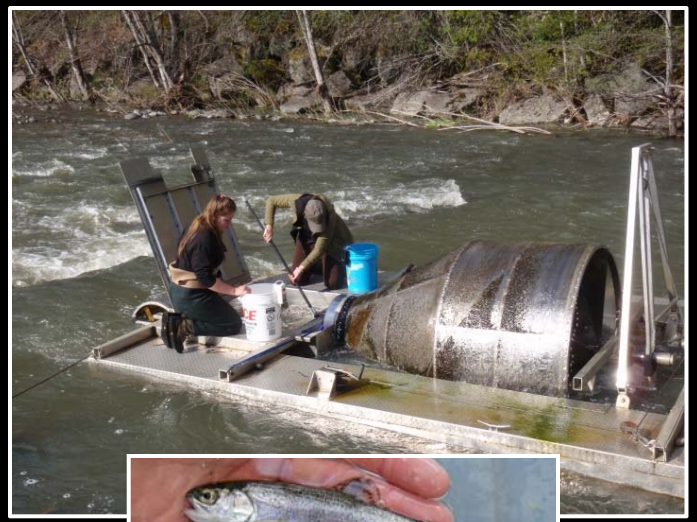
Juvenile Steelhead Distribution

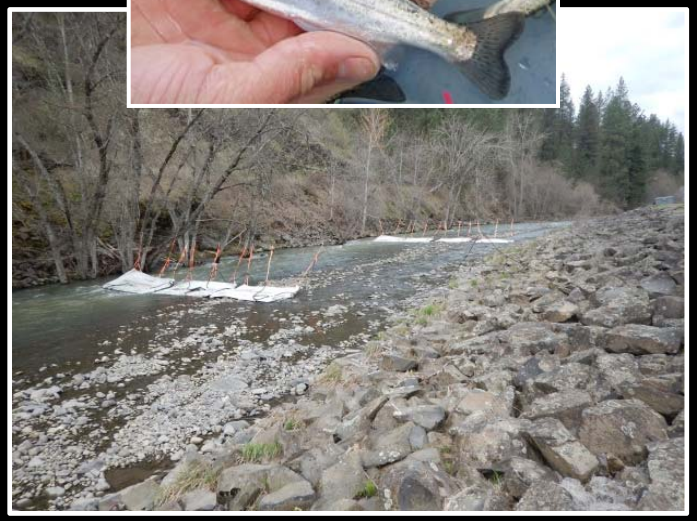


Growth and Survival



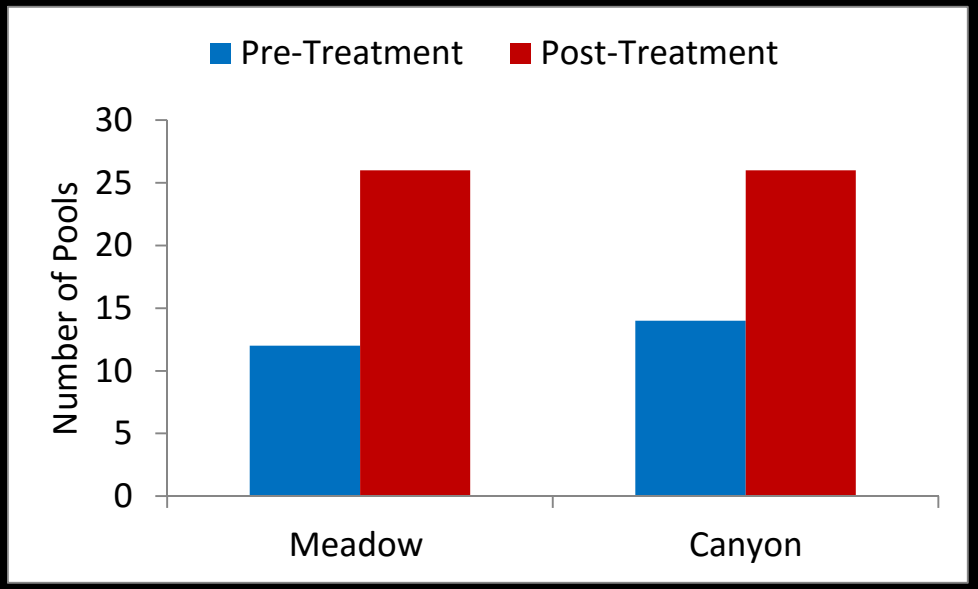






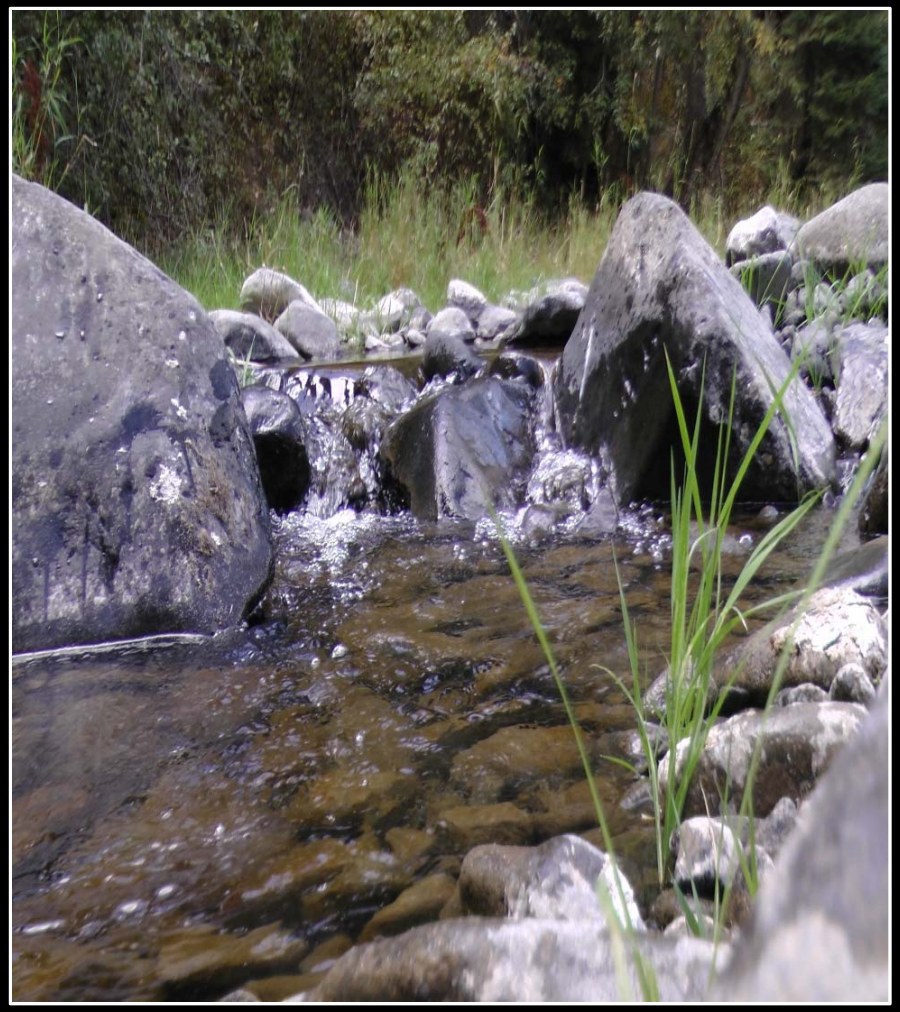
Juvenile Rearing Capacity

- How much did the increase in rearing habitat increase carrying capacity?
- Model rearing capacity as a function of available habitat



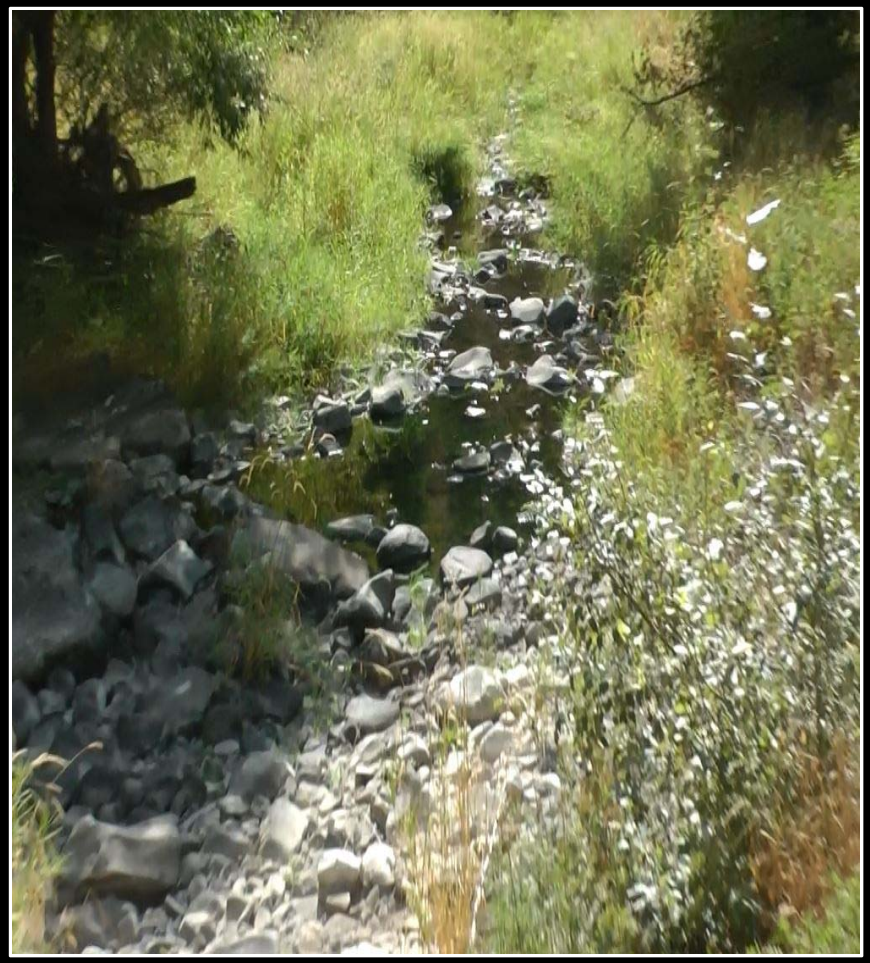
Conclusions

- 100% wetted Spring Valley and Little Bear Creeks
- Opened additional 8-10 km habitat
- Improved physical habitat metrics for entire 16 km
- Lower cost alternative to address low flow limitations



Future Directions

- Can we provide perennial flows throughout summer without exceeding drawdown limitations?
- Determine the optimum release that give us "biggest bang for the buck"
- Secure funding to increase capacity of reservoir and/or improve access at drawdown



Acknowledgements

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POWER ADMINISTRATION


Questions?