

Population trends of Redband Trout and Brown Trout in habitat improvement reaches of Whychus Creek, Oregon

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and

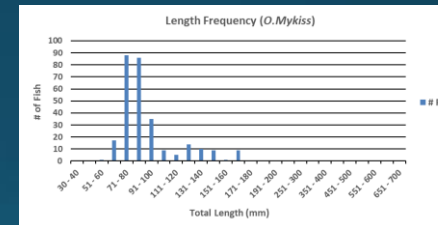
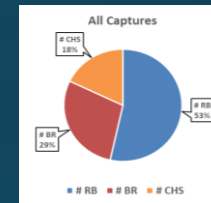
Erik Moberly, Oregon Department of Fish and Wildlife*

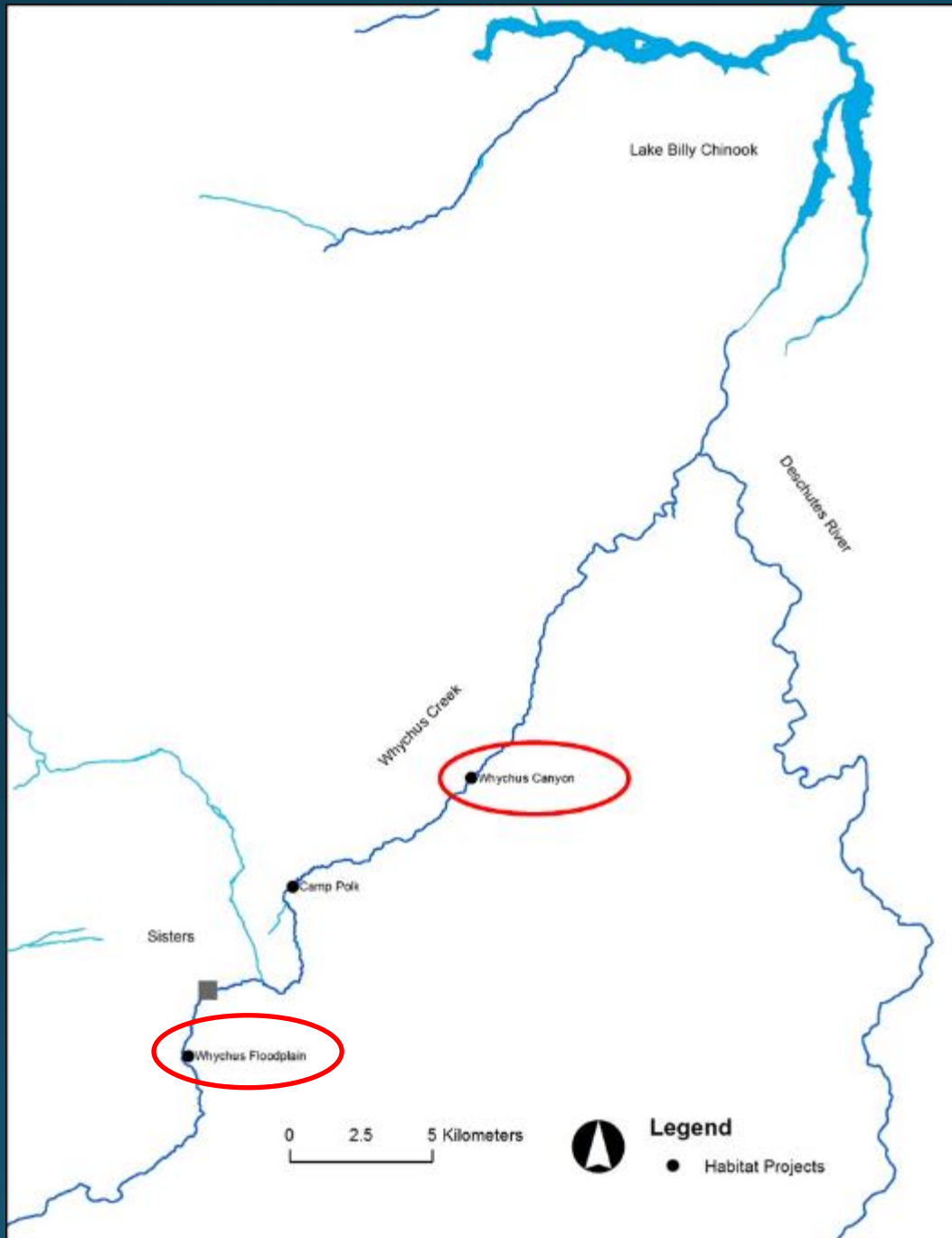


* Currently with Oregon Department of Forestry

Population trends of Redband Trout and Brown Trout before and after habitat improvement and steelhead fry releases

- Species Composition
- Population densities
- Length frequency
- Summary
- Next Steps





**Location of Habitat
Projects Sampled
in 2022**

Floodplain Upper- 2016

many side channels
many log jams
some larger pools

Sisters – PGE Monitoring Reach

some pools
no side channels
large substrate



Whychus Canyon R3- 2018

pre-project
Few pools
No side channels
Large substrate



Whychus Canyon R4 Upper- 2018

Many pools
Many side channels
Abundant Large wood



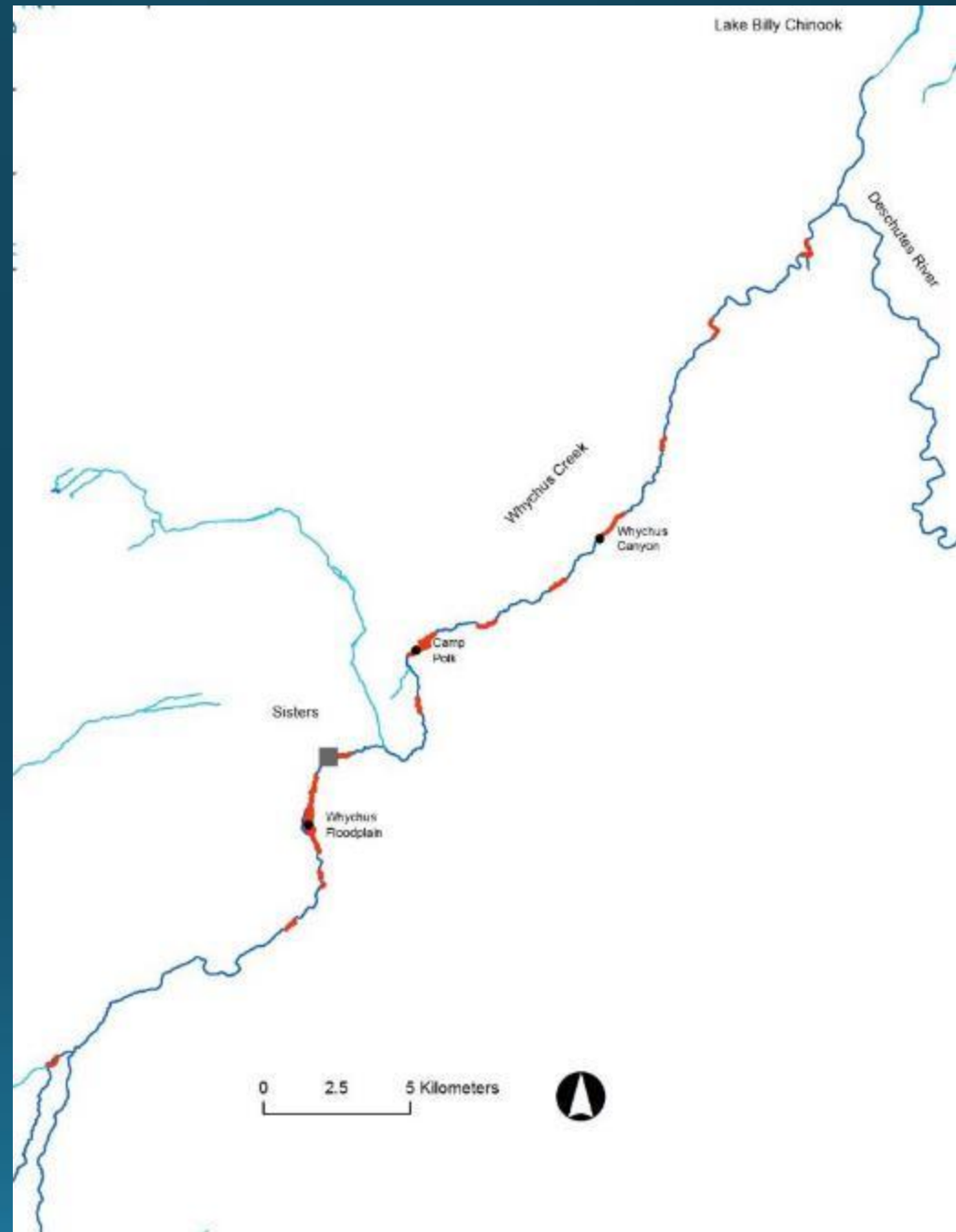
Fish Density Monitoring Methods

- ~200m long sample reaches.
- Block nets on upper and lower end.
- Mark-recapture with caudal fin clip.
- Two passes in same day with 2 hours rest between passes.
- 20% recapture goal or third pass required.
- Same protocol as PGE annual redband trout monitoring.
- All electrofishing reaches were surveyed for habitat using ODFW protocol



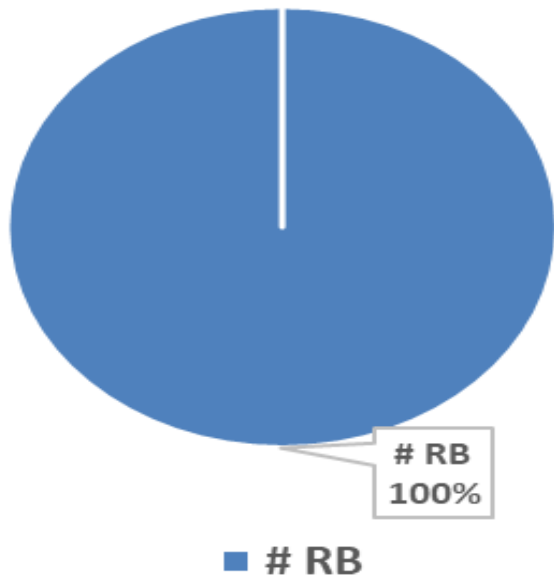
Steelhead fry release locations (red) in relation to habitat projects on Whychus Creek

- 112,000 to 311,000 fry/annually
- 2007 to 2018

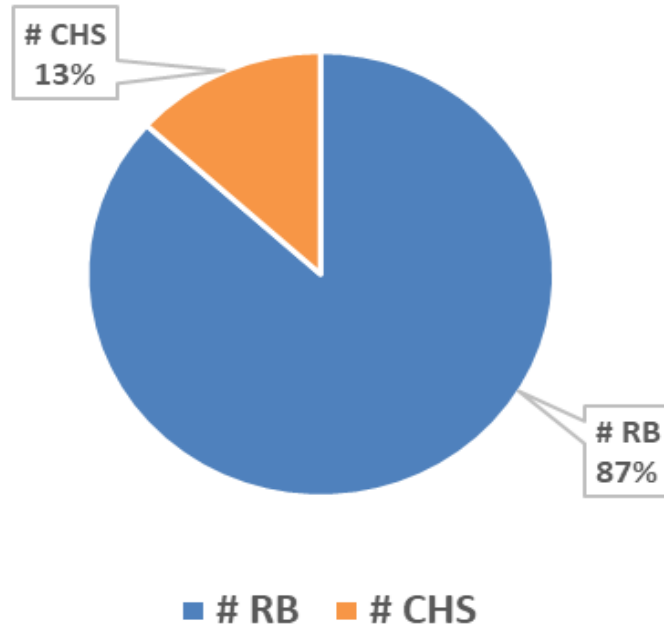


Species Composition

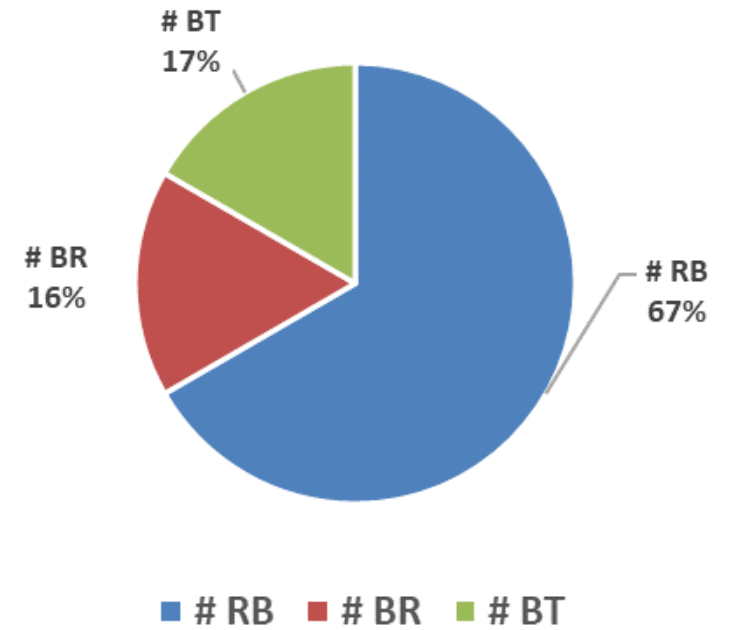
Percent of catch at Floodplain Project



Floodplain Before 2014



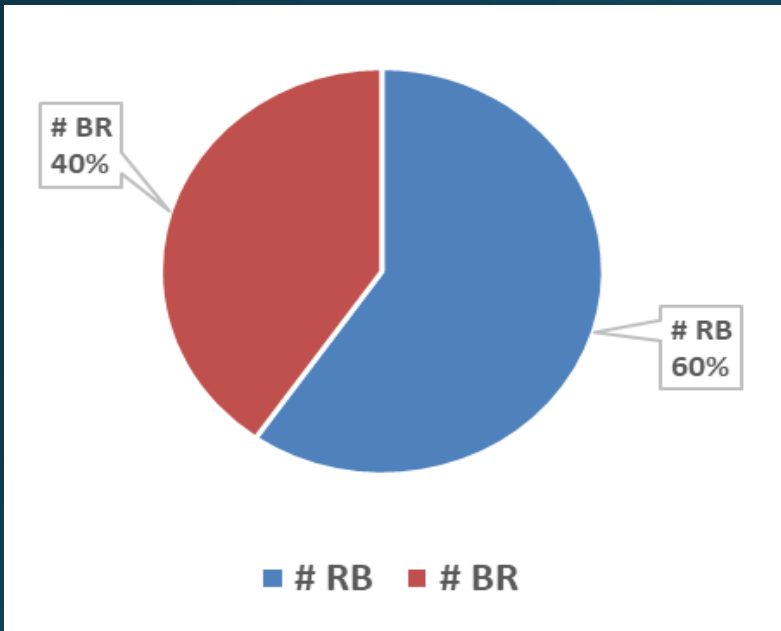
Floodplain Upper After 2016



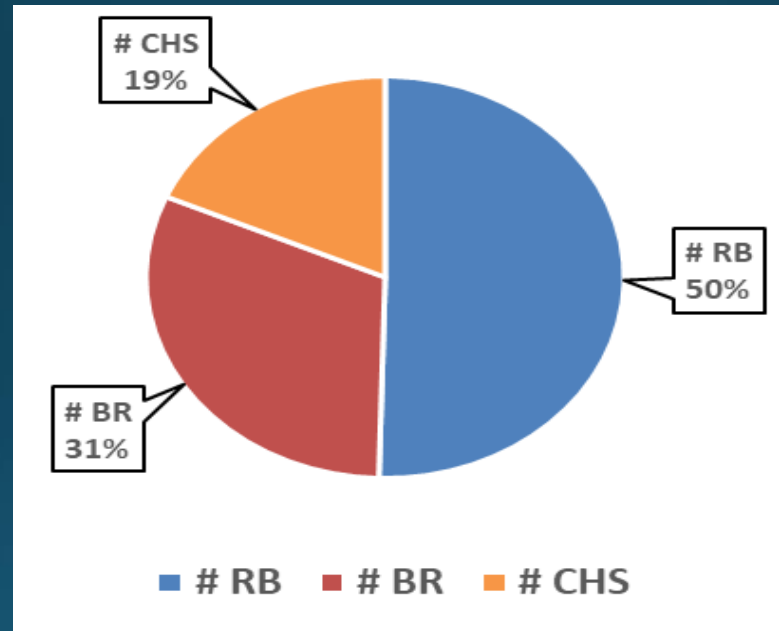
Floodplain Upper After 2022

Species Composition

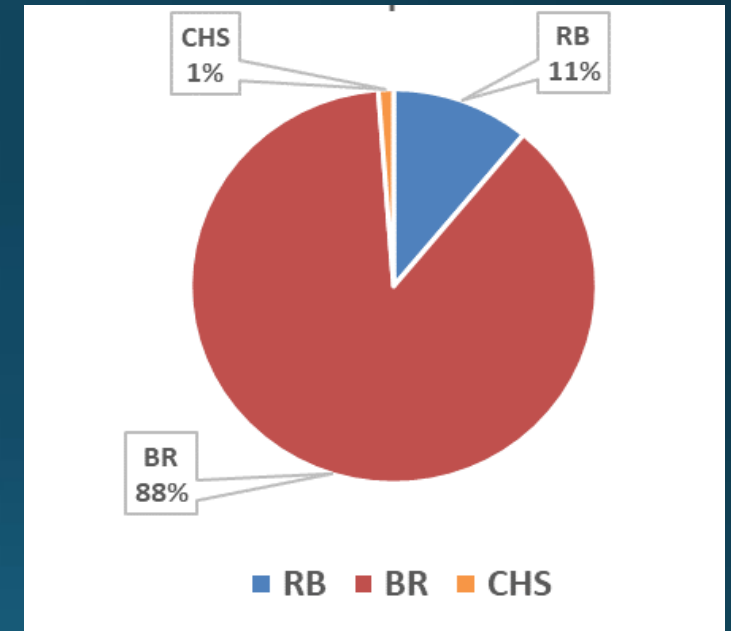
Percent of catch at Whychus Canyon Project



Whychus Canyon R4
Before 2015

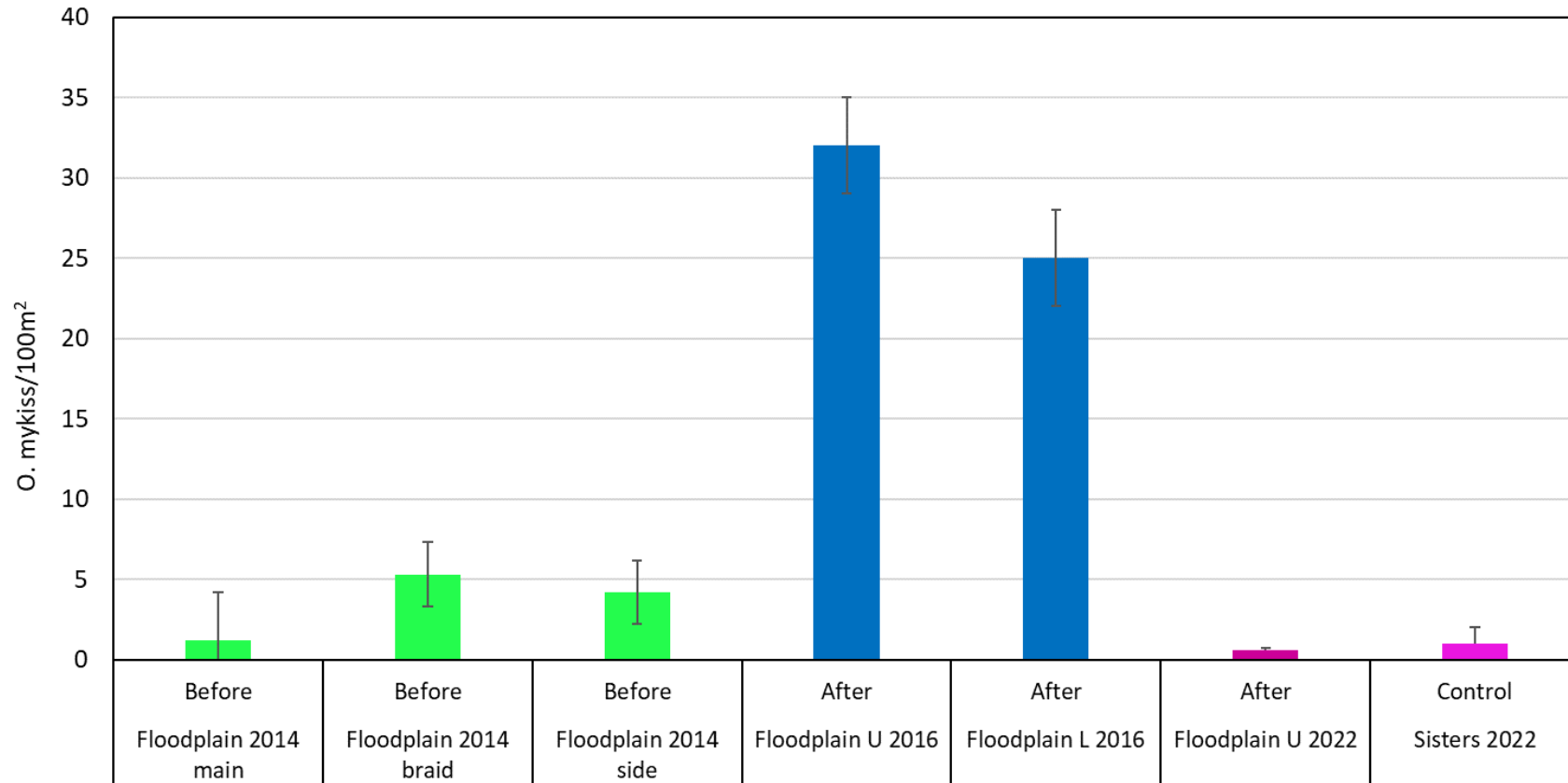


Whychus Canyon R4
Upper After 2018



Whychus Canyon R4
Upper After 2022

O. mykiss/100m² Floodplain Project



O. mykiss/100m² Whychus Canyon Project

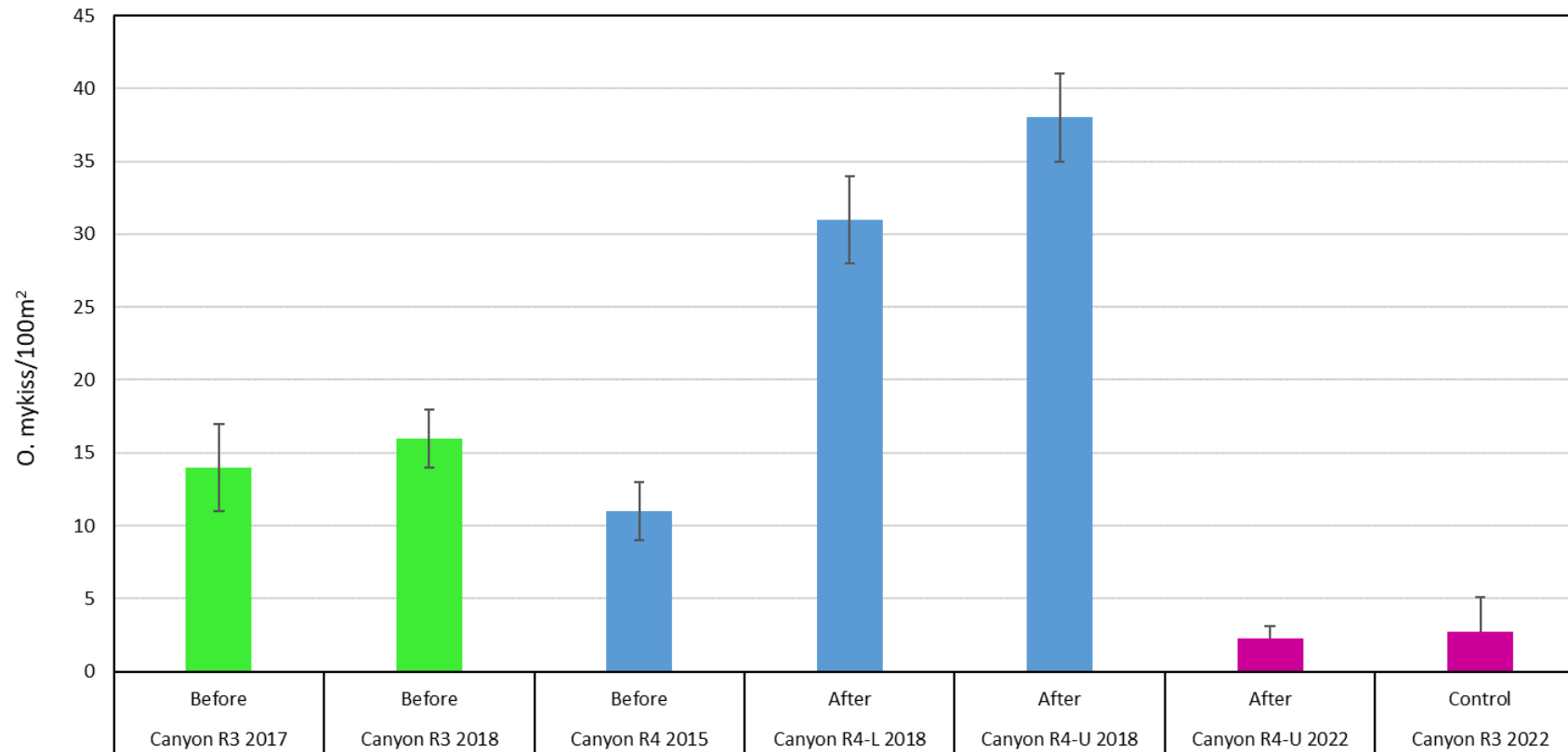
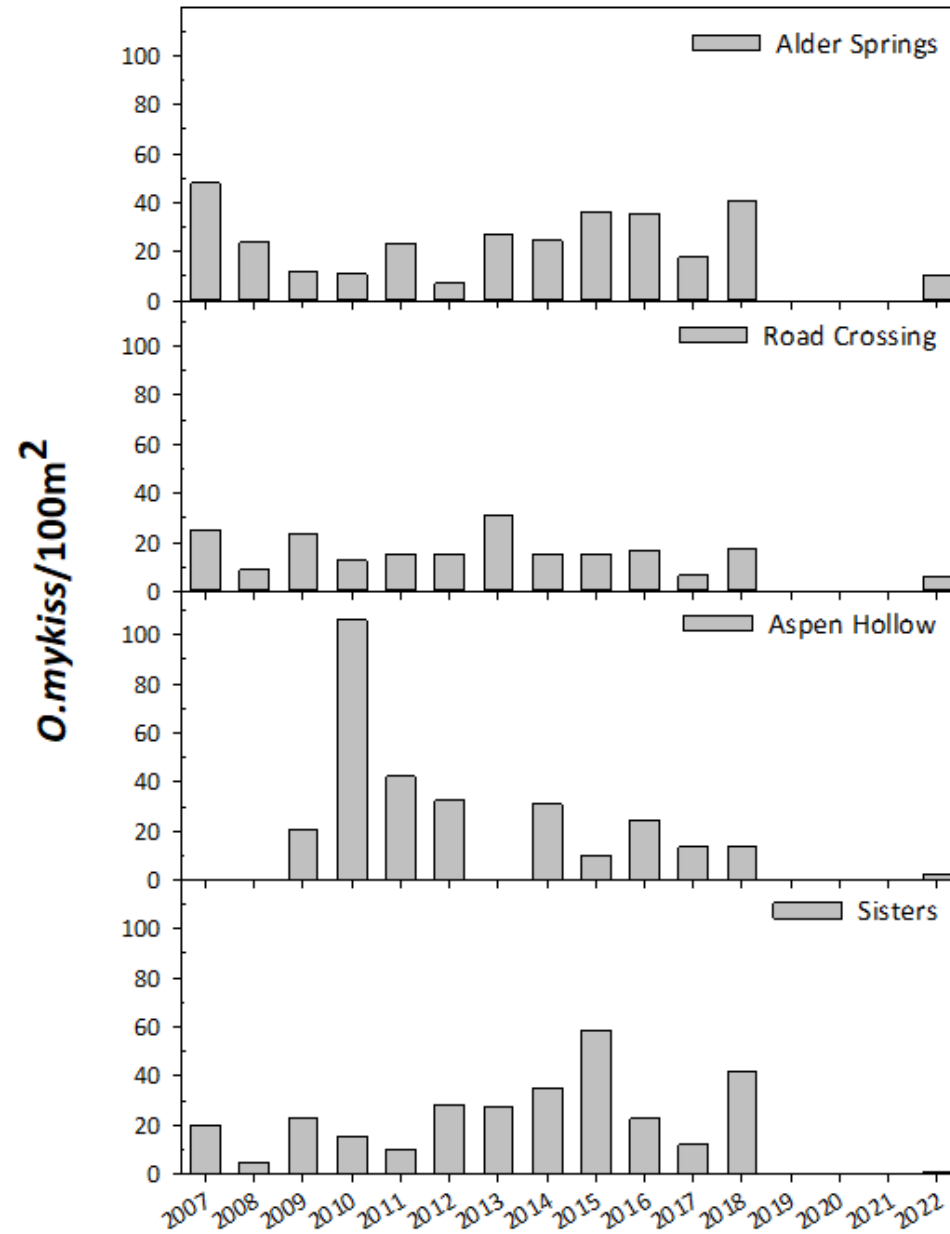
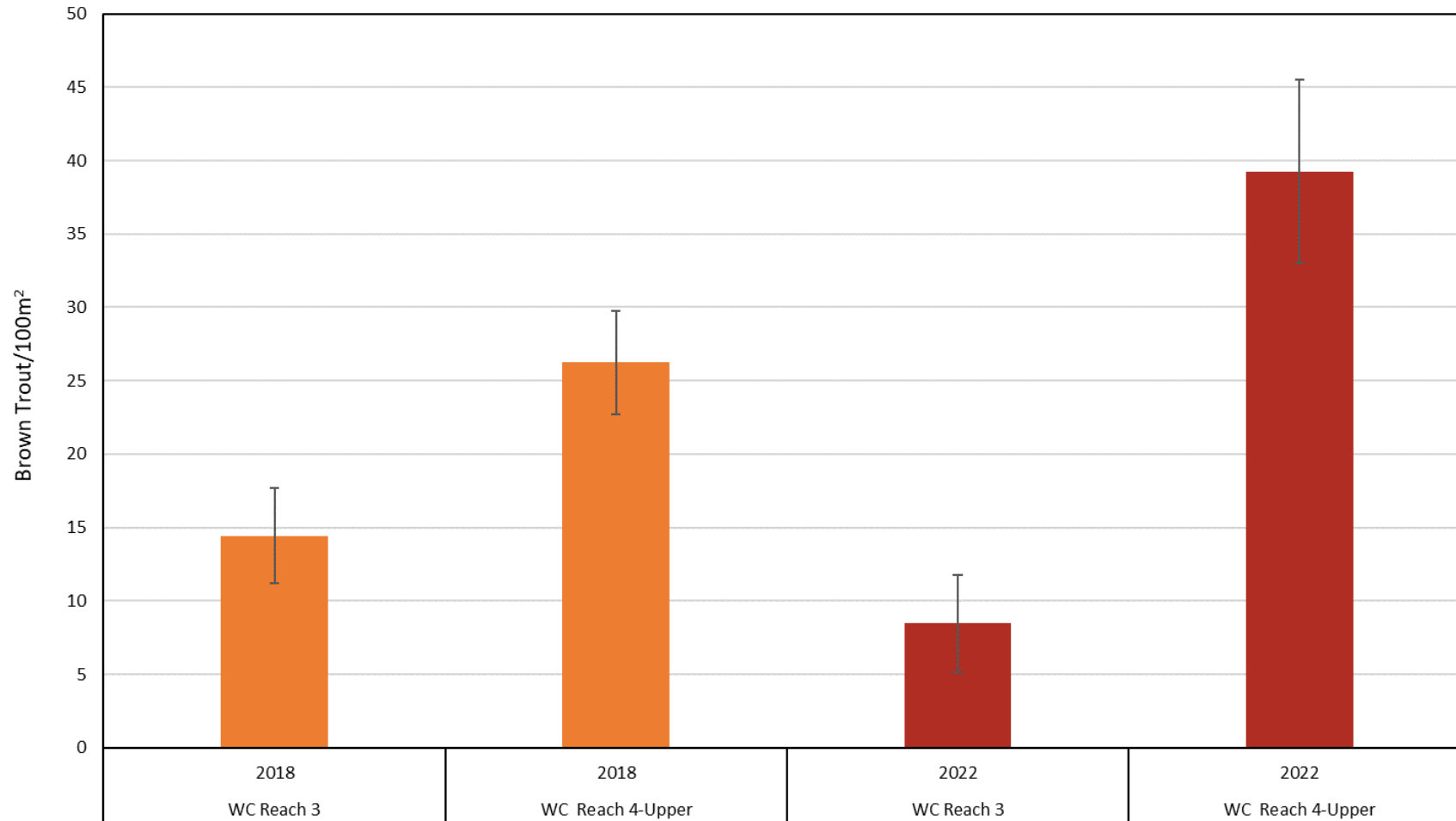


Figure 4. Estimated *O. mykiss* densities estimates per 100m² from 2007 - 2022 at four sites in Whychus Creek. Note, no surveys were conducted 2019-2021. Last year of fry stocking in Whychus Creek was 2018 (From Madden, Bennett and Burcell 2023).



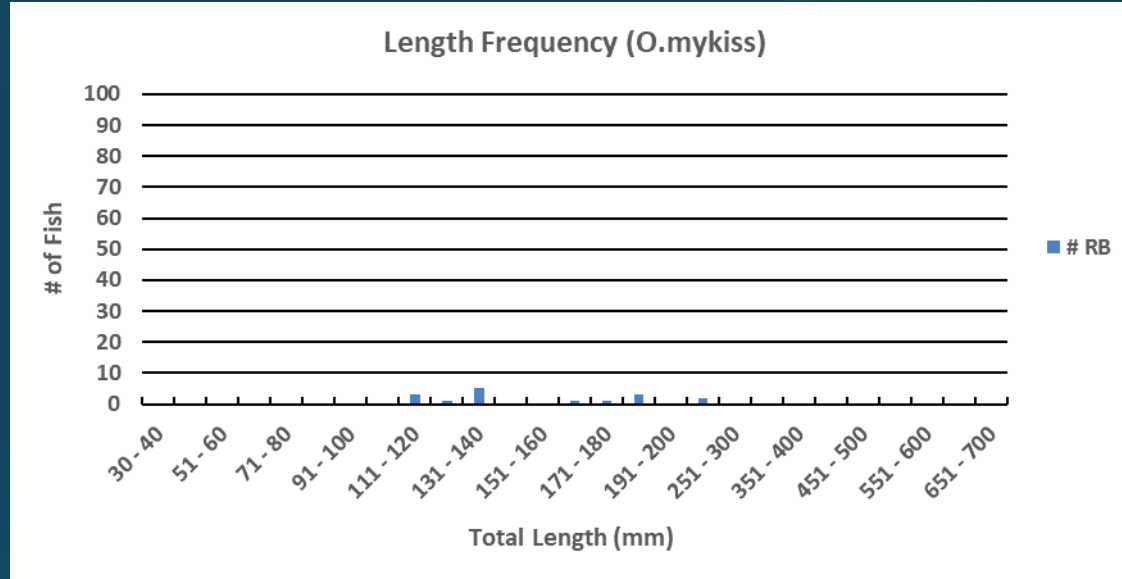
Brown Trout /100m² Whychus Canyon 2018 to 2022



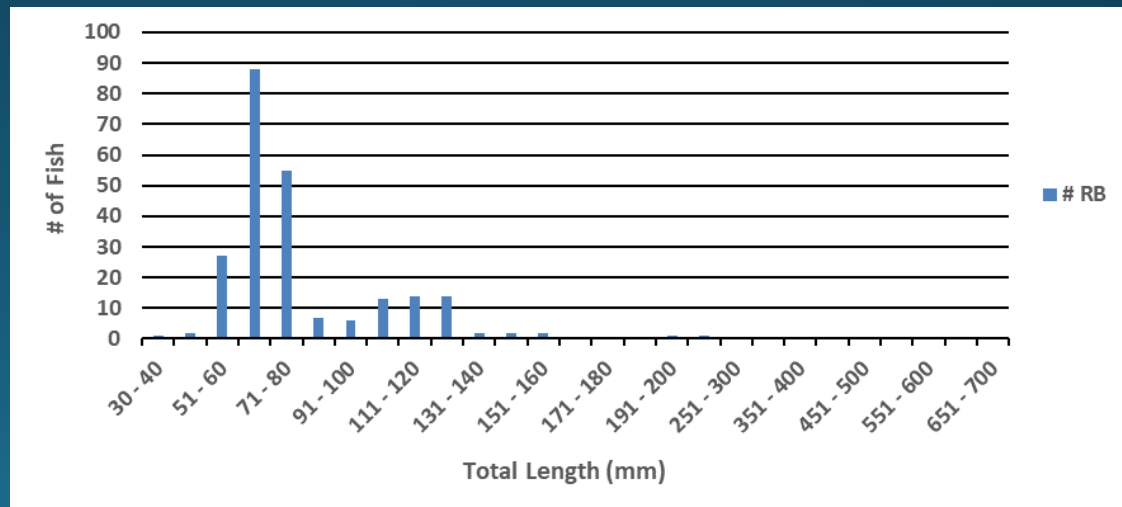
Length Frequency Redband Trout- *O. mykiss*

at Floodplain Upper

2022

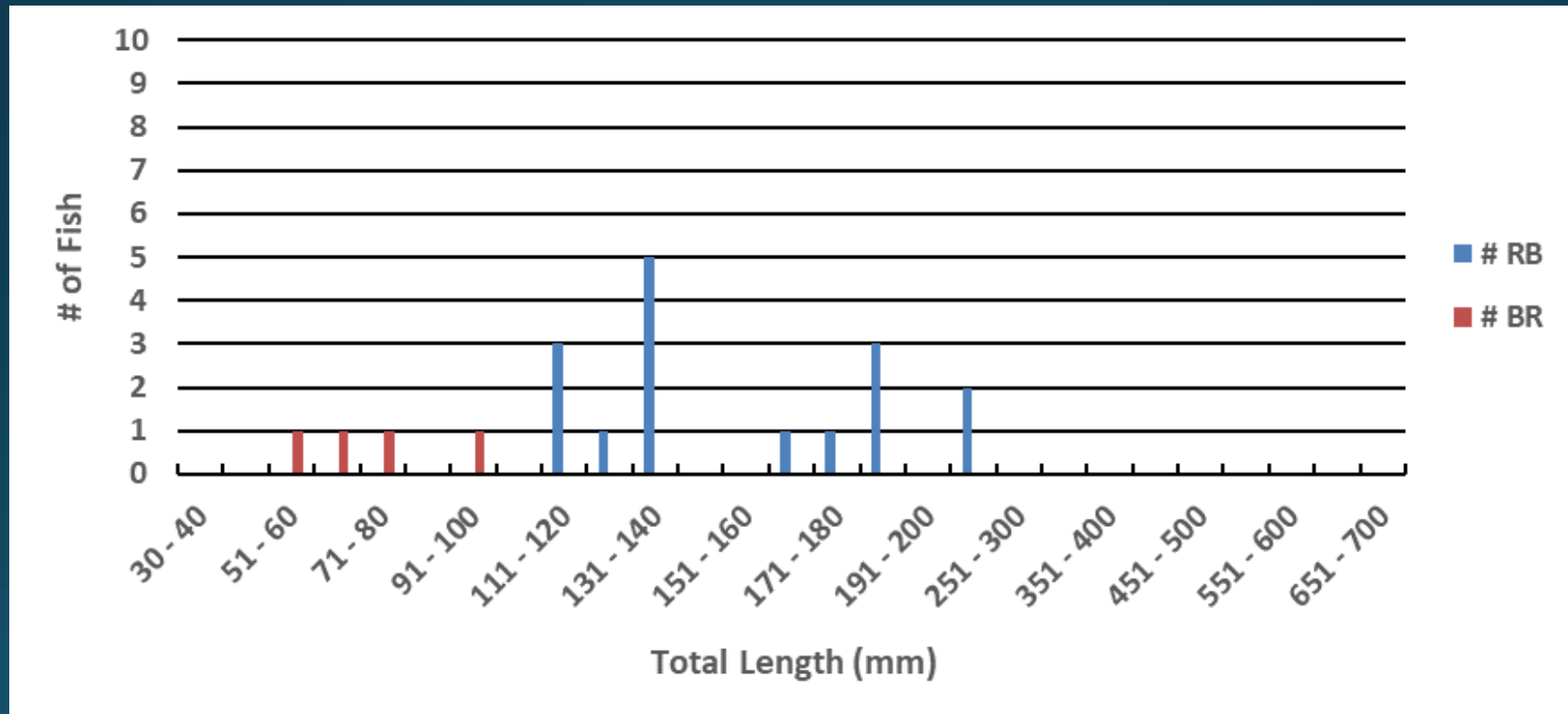


2016



Length Frequency Brown Trout and *O. mykiss*

at Floodplain Upper 2022



Length Frequency

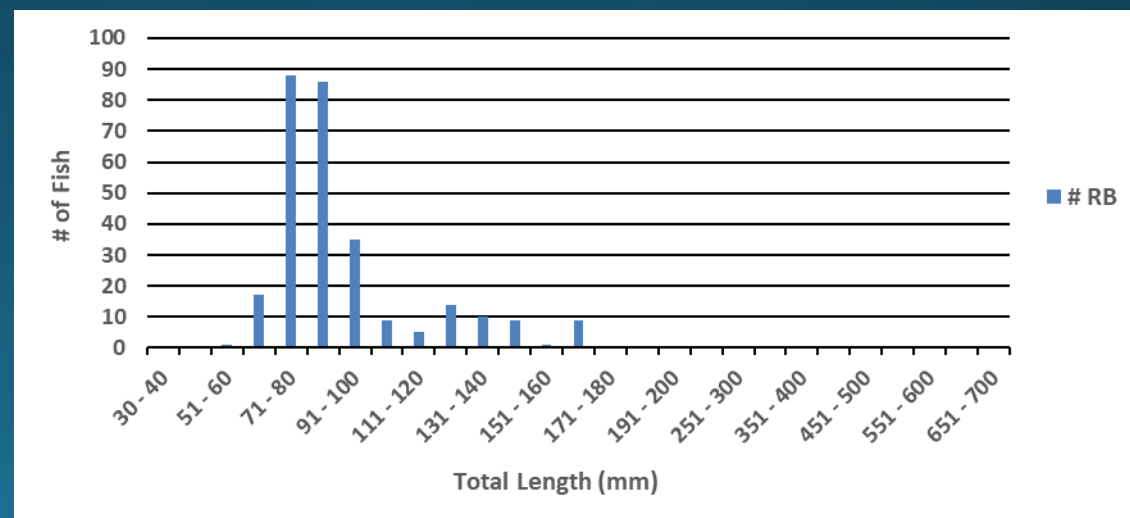
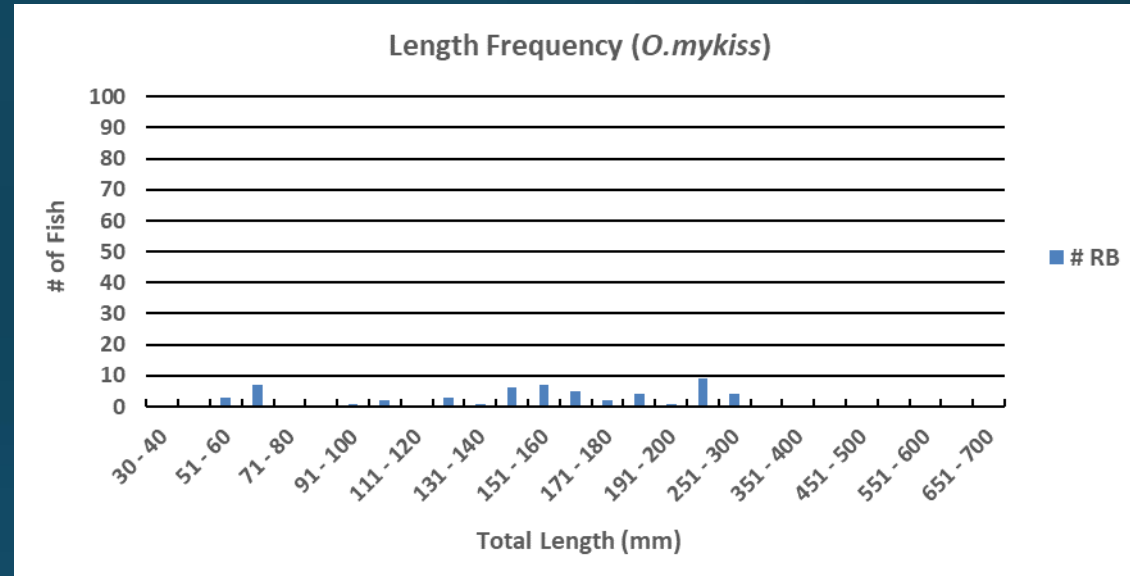
Redband Trout- *O. mykiss*

Whychus Canyon
R4 Upper

2022



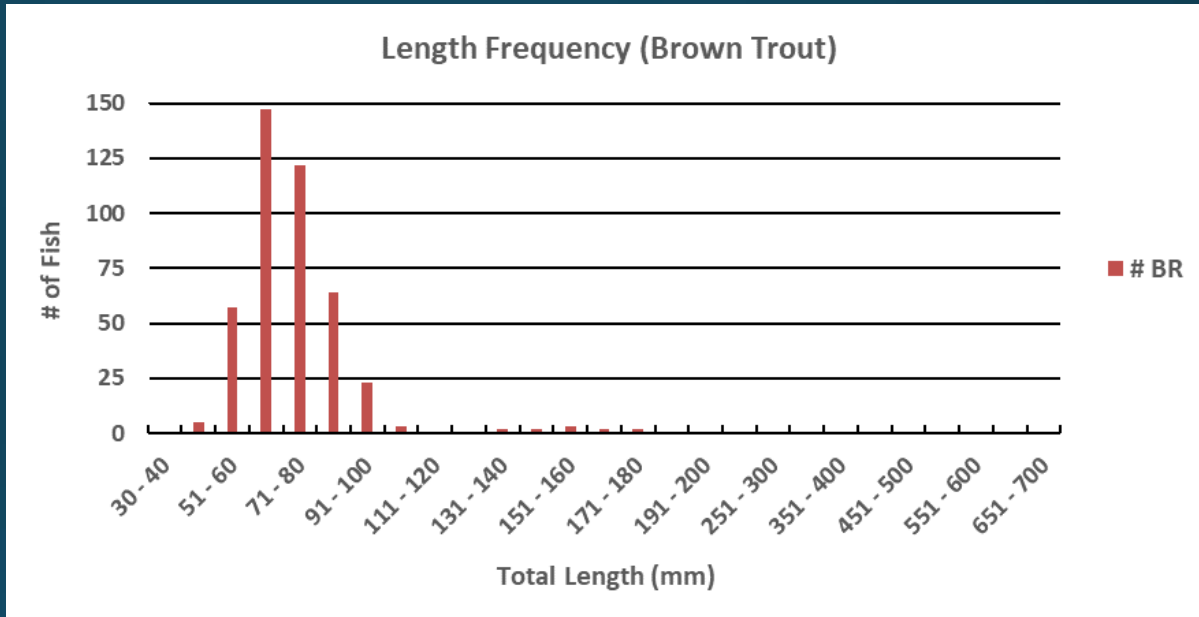
2018



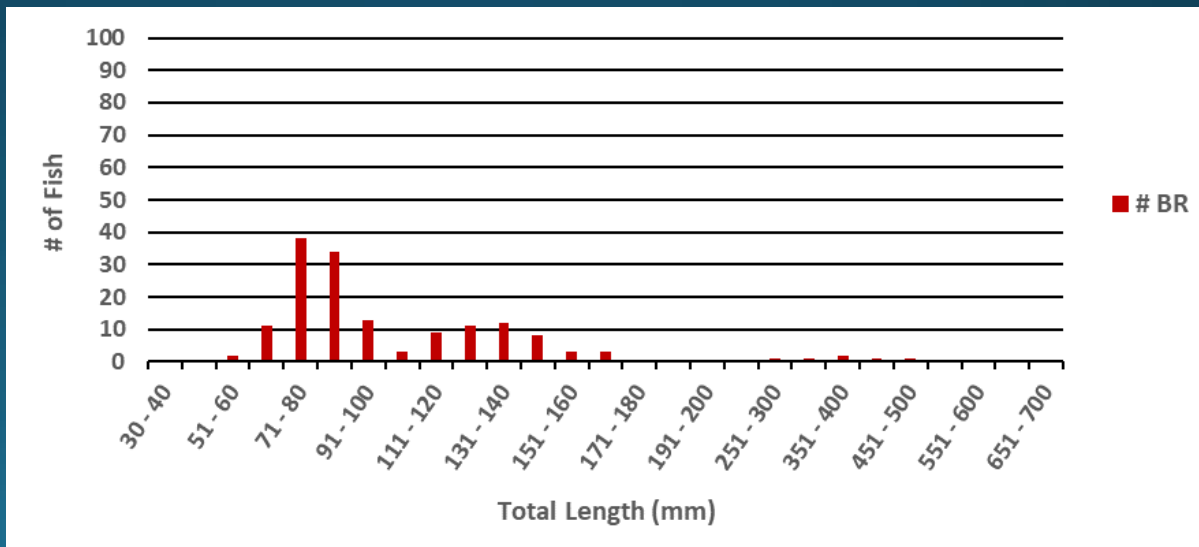
Length Frequency Brown Trout

Whychus Canyon
R4 Upper

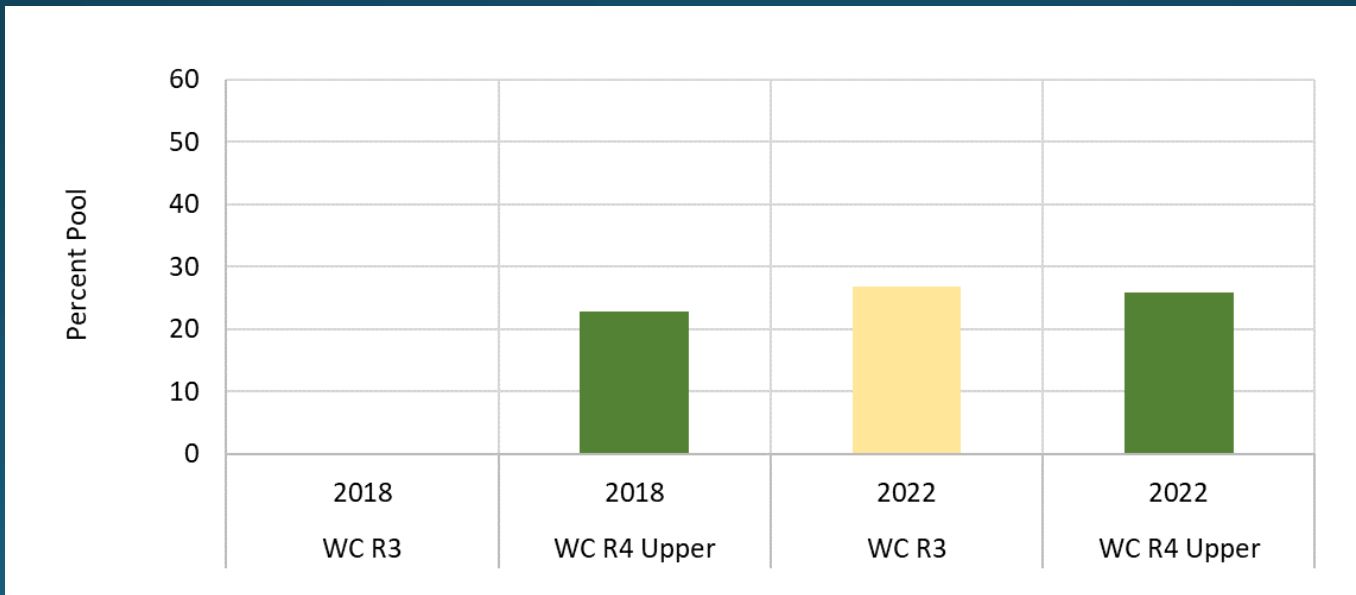
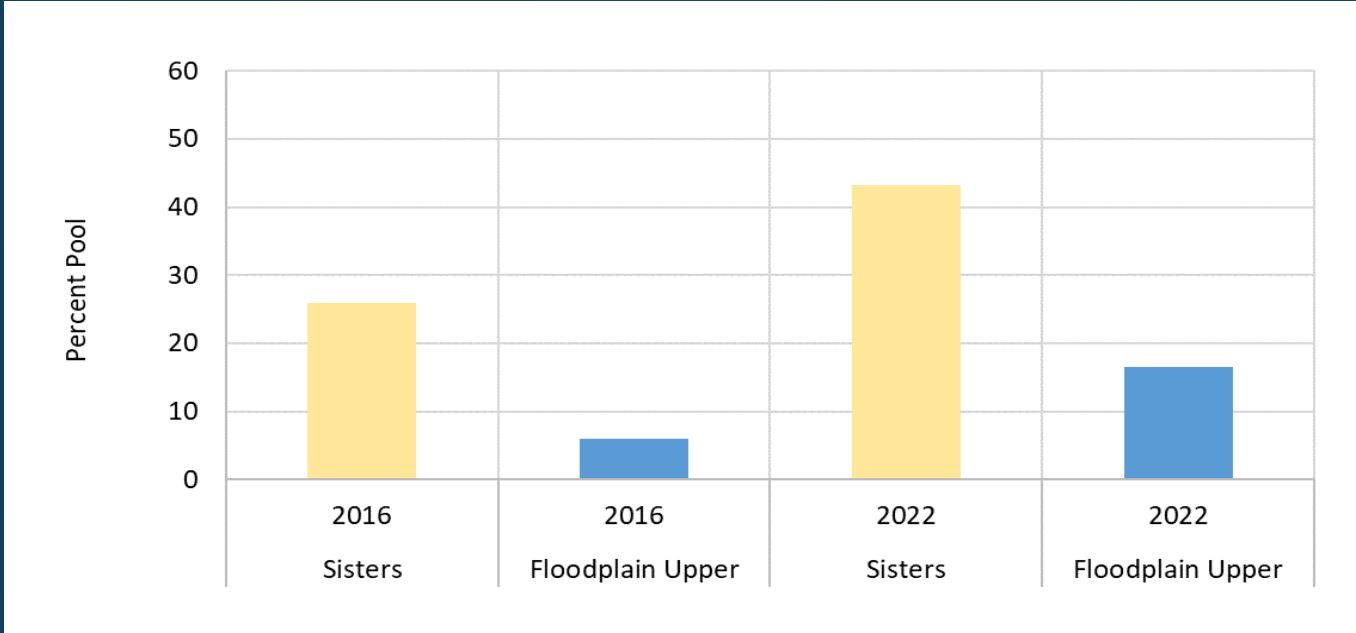
2022



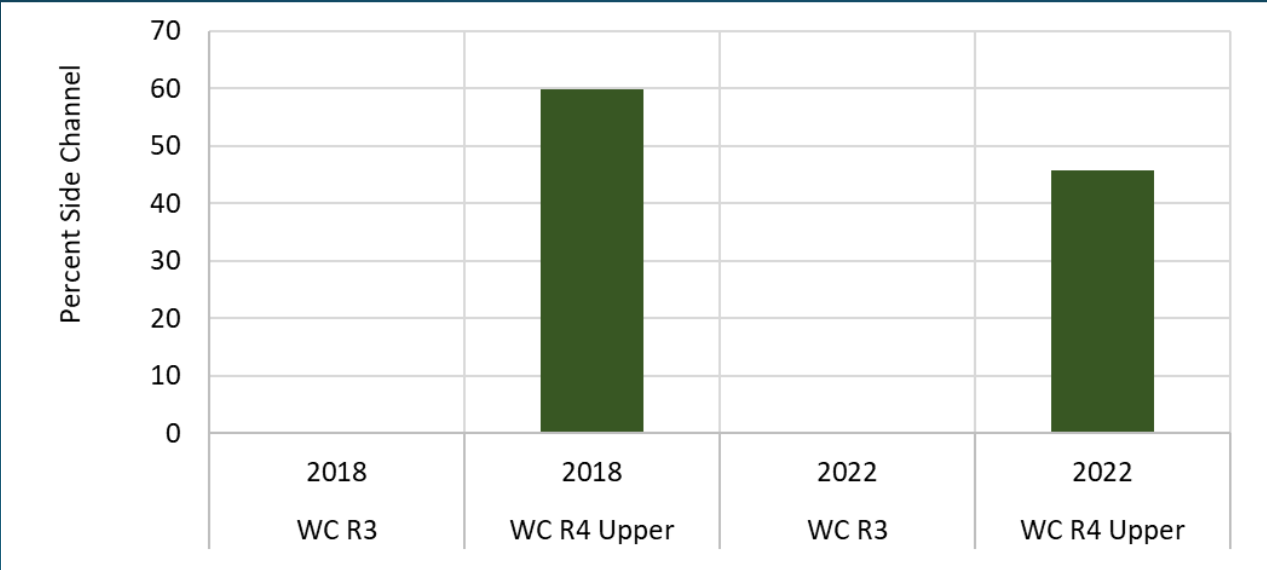
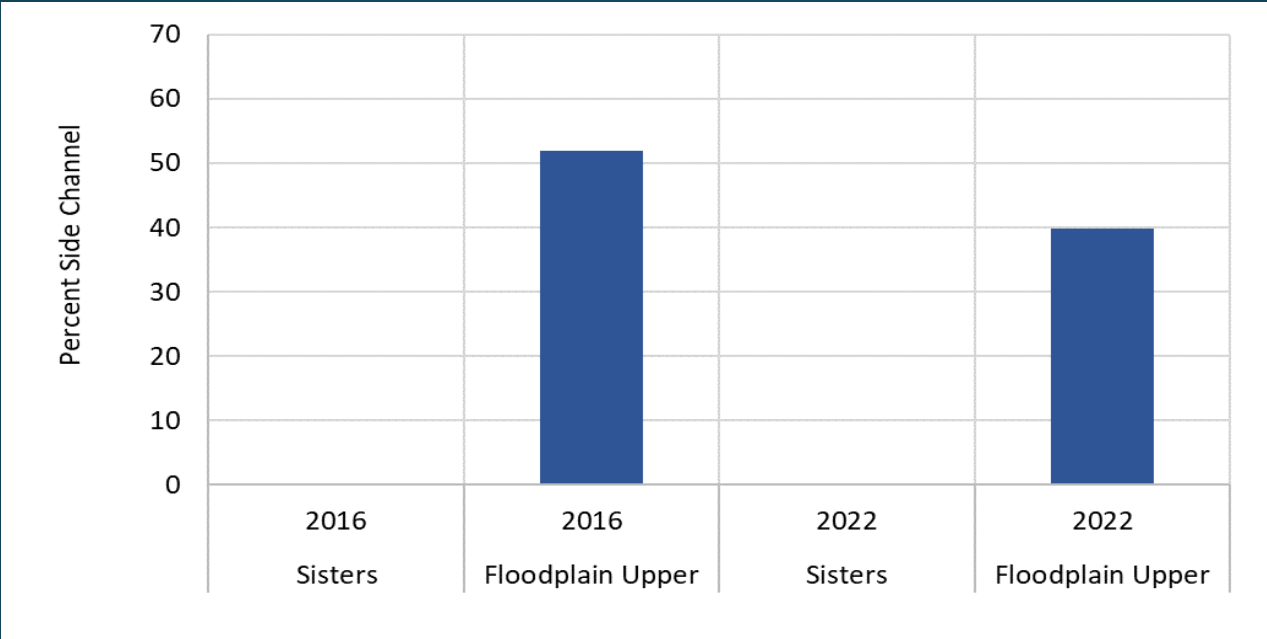
2018



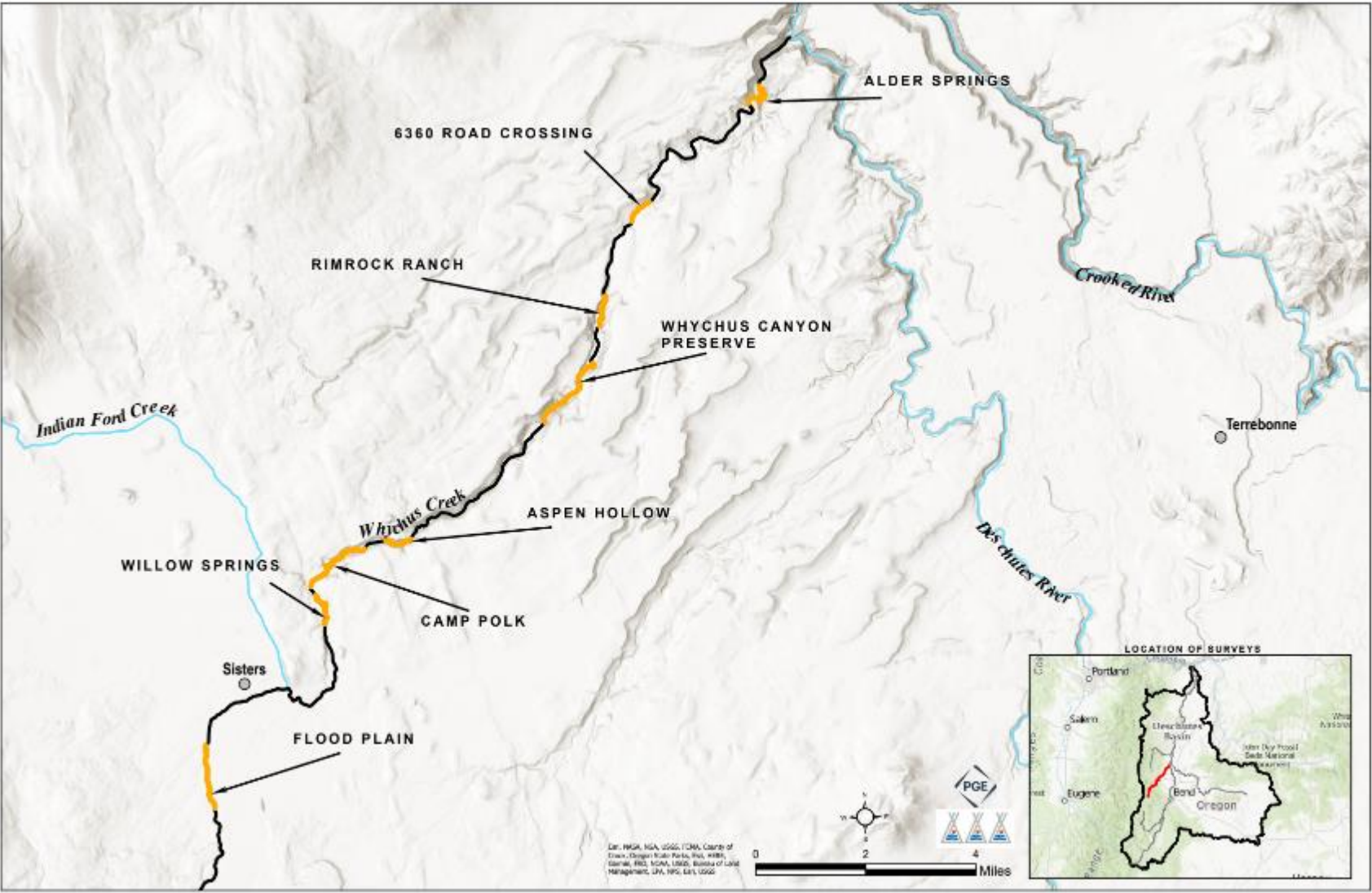
Percent Pool was similar or improved in 2022



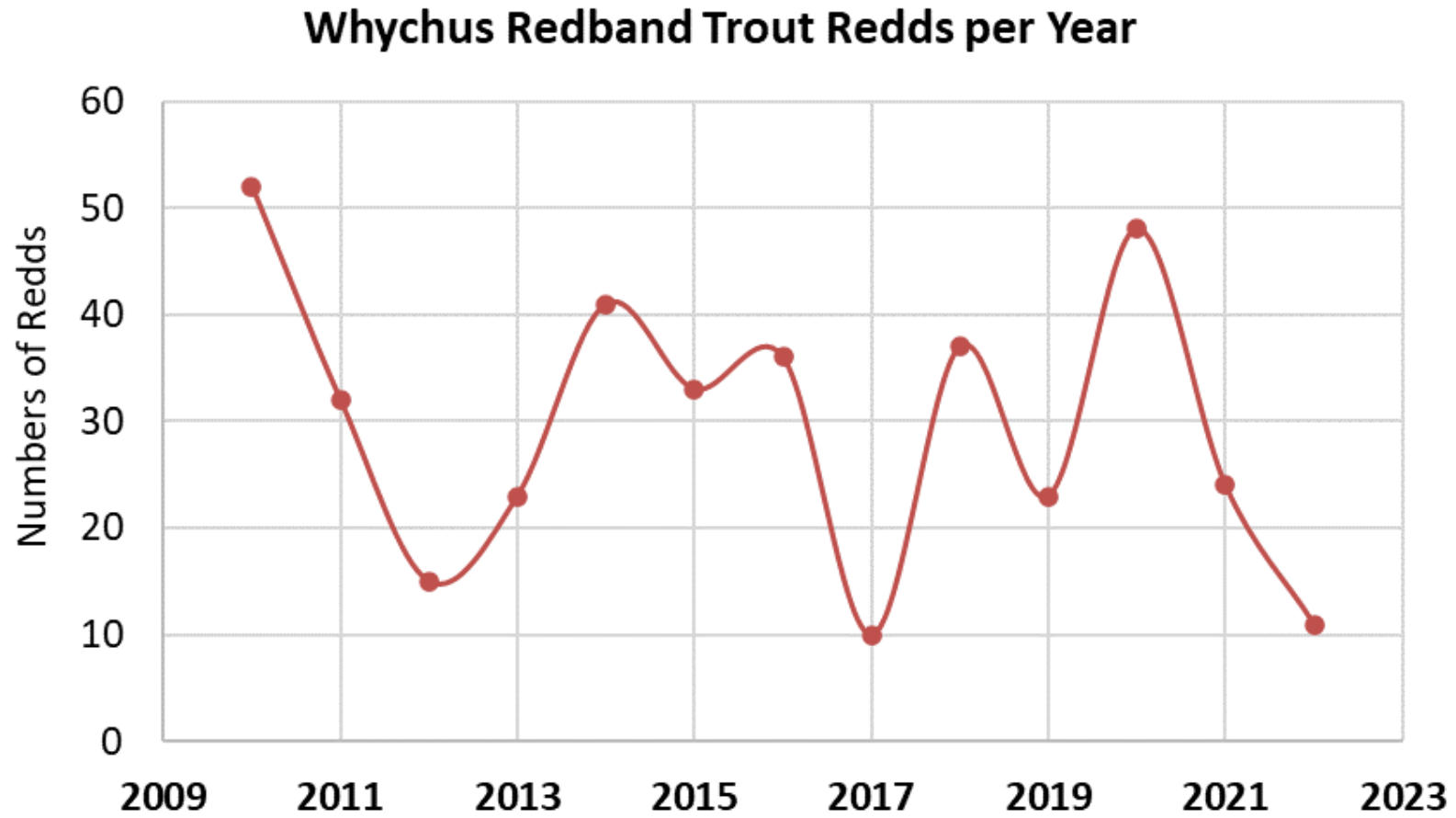
Percent Side Channels were similar or slightly declined in 2022



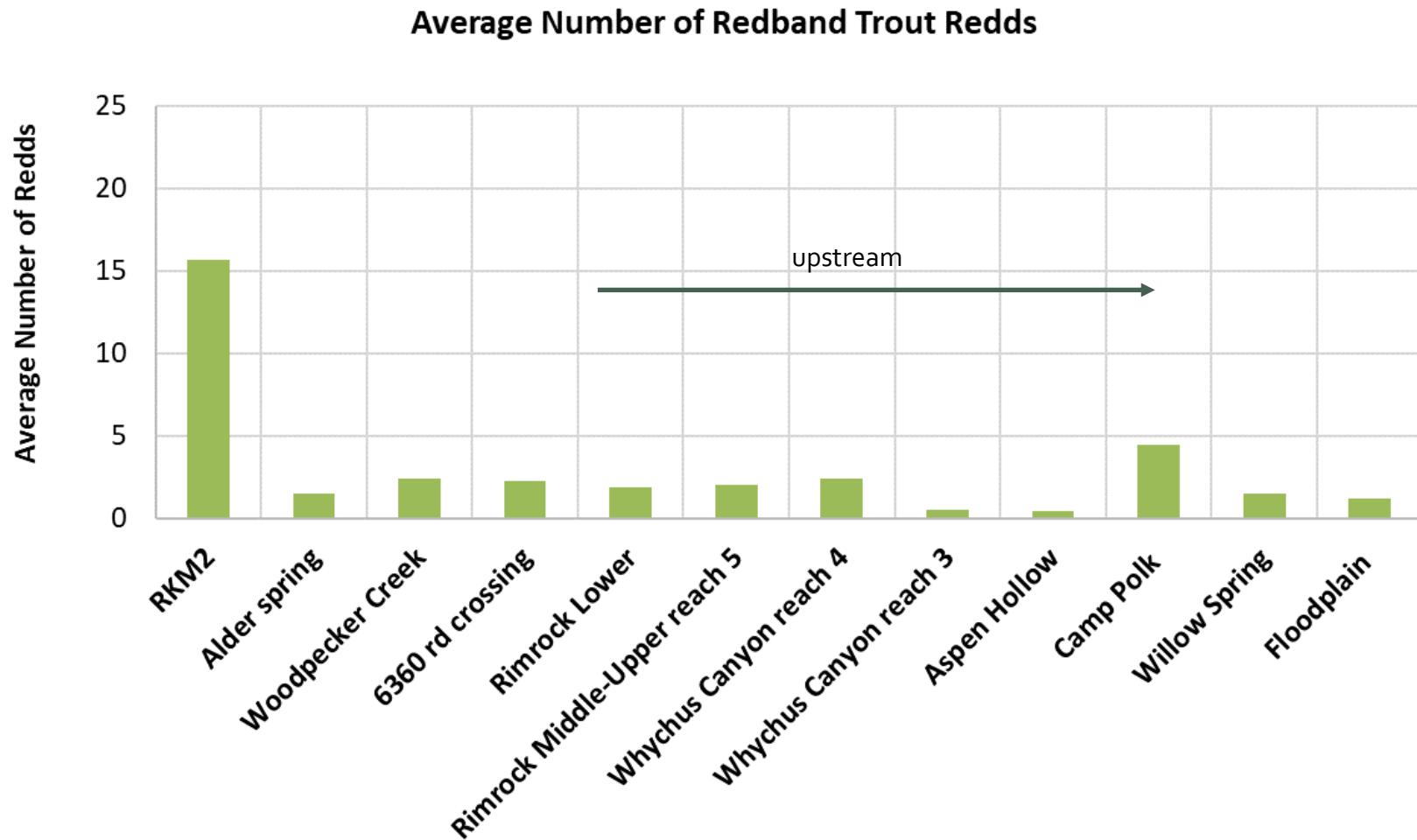
Reband Trout Spawning Survey Reaches- Whychus Creek



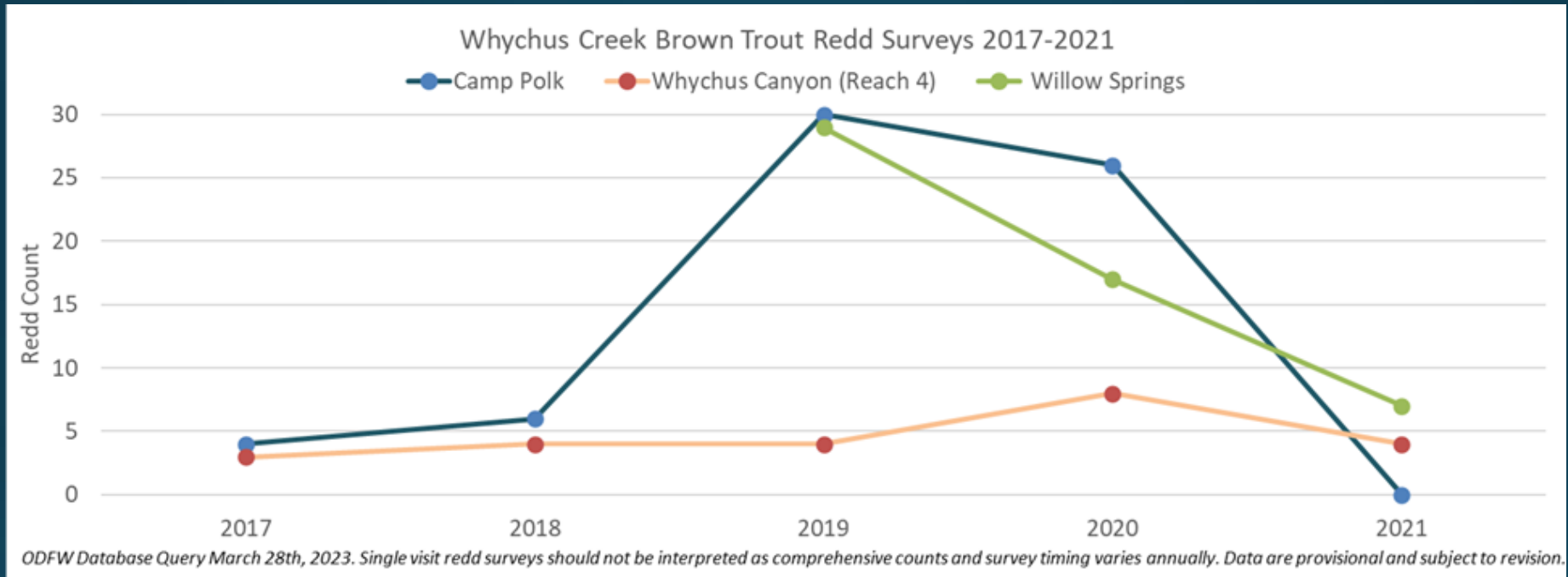
Redband Trout Redd Counts per year Whychus Creek



Redband Trout Average Redd Counts by Reach Whychus Creek 2010-2022



Brown Trout Redd Counts Whychus Creek



Fine sediment (sand) bedload in springtime may limit *O. mykiss* incubation survival.



Redband Trout redd in 2022, marked one month prior to when photo was taken

Summary of conclusions

- Redband trout were in low numbers in Whychus Creek in 2022.
- Habitat projects have not increased redband trout densities over control reaches without fry releases.
- Brown Trout population is increasing, with strong recruitment of younger age classes, and higher abundance in habitat reaches.
- Redband Trout recruitment is low, possibly due to fine sediment that is mobile in springtime during spawning and incubation period.

Follow-up sampling

**Next repeated project monitoring:
Camp Polk 2023 Sept 18-19**



**Monitoring New Projects:
Willow Springs 2025**



**Genetic Sampling:
Post Fry Release 2023**



Thanks

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