

Upper Snake Region fisheries update 2022



Brett High
Regional Fisheries Manager

Steve Elle

Elle-isms:

- Nobody is hard core any more.
- It ain't a field day unless you get wet.
- The fishing isn't what it used to be, and it never was.
- Fish management in the West:
Just add water!





- Immediate effects
- Delayed effects
- Unquantified effects



Immediate Effects



Corral Creek Lake

Mountain Lake in upper Big Lost drainage (4.9 acre 10,070')

- 2002 survey: 2.9 fish/h angling, 5 fish/net night
 - Average size= 273 mm (10.7")
- 2014 angling survey: 12.5 fish/h
 - Average size = 274 mm (10.8")



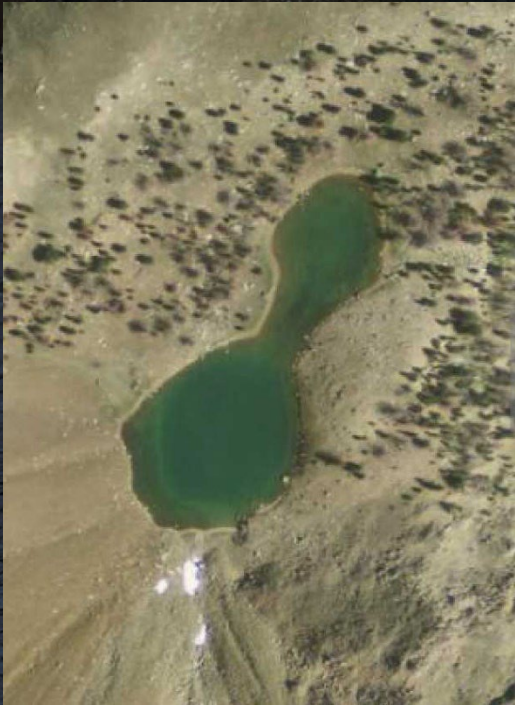
Corral Creek Lake

• 2011

• 2015

• 2017

• 2021

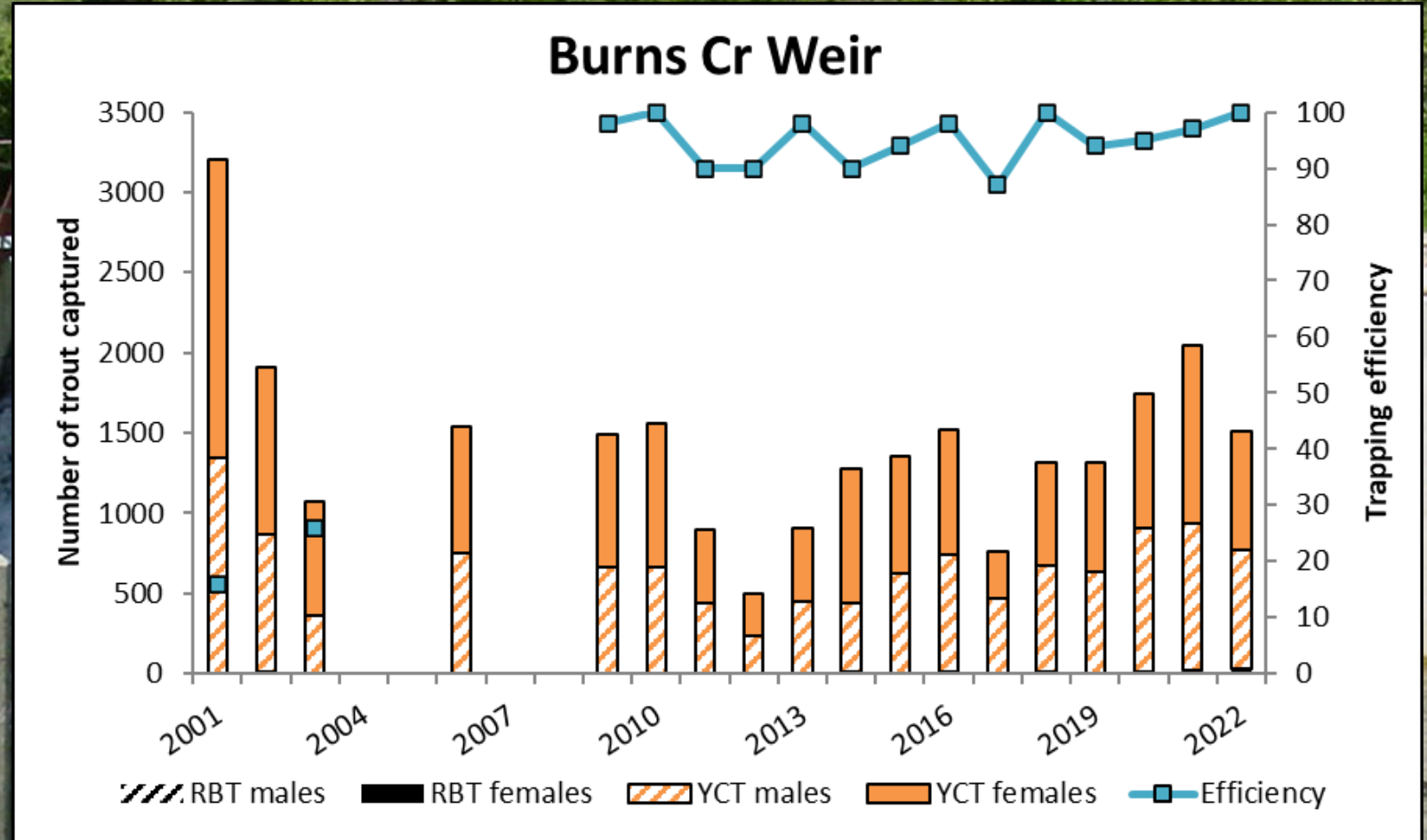


• stocked

South Fork Snake River Tributaries

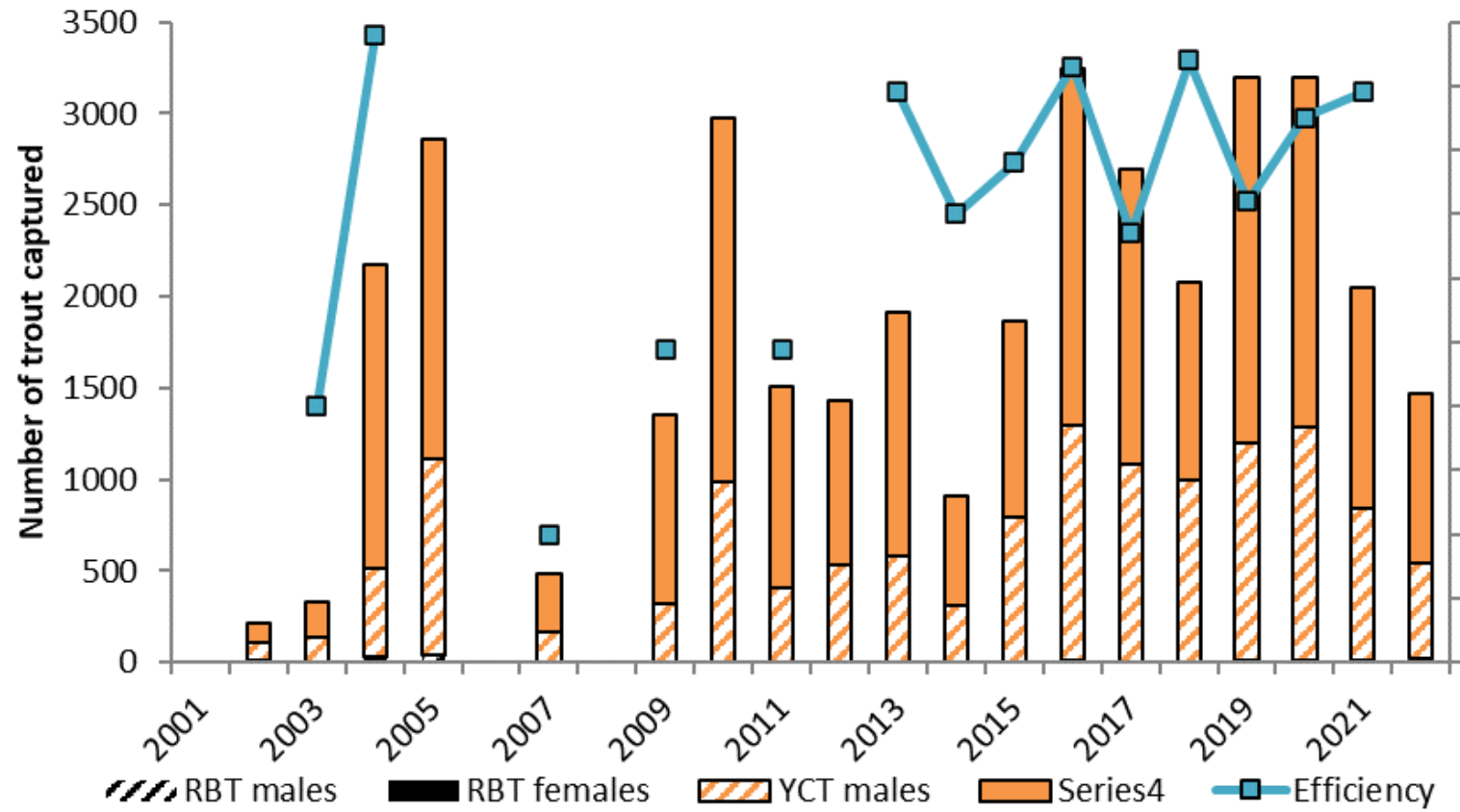


Burns Creek



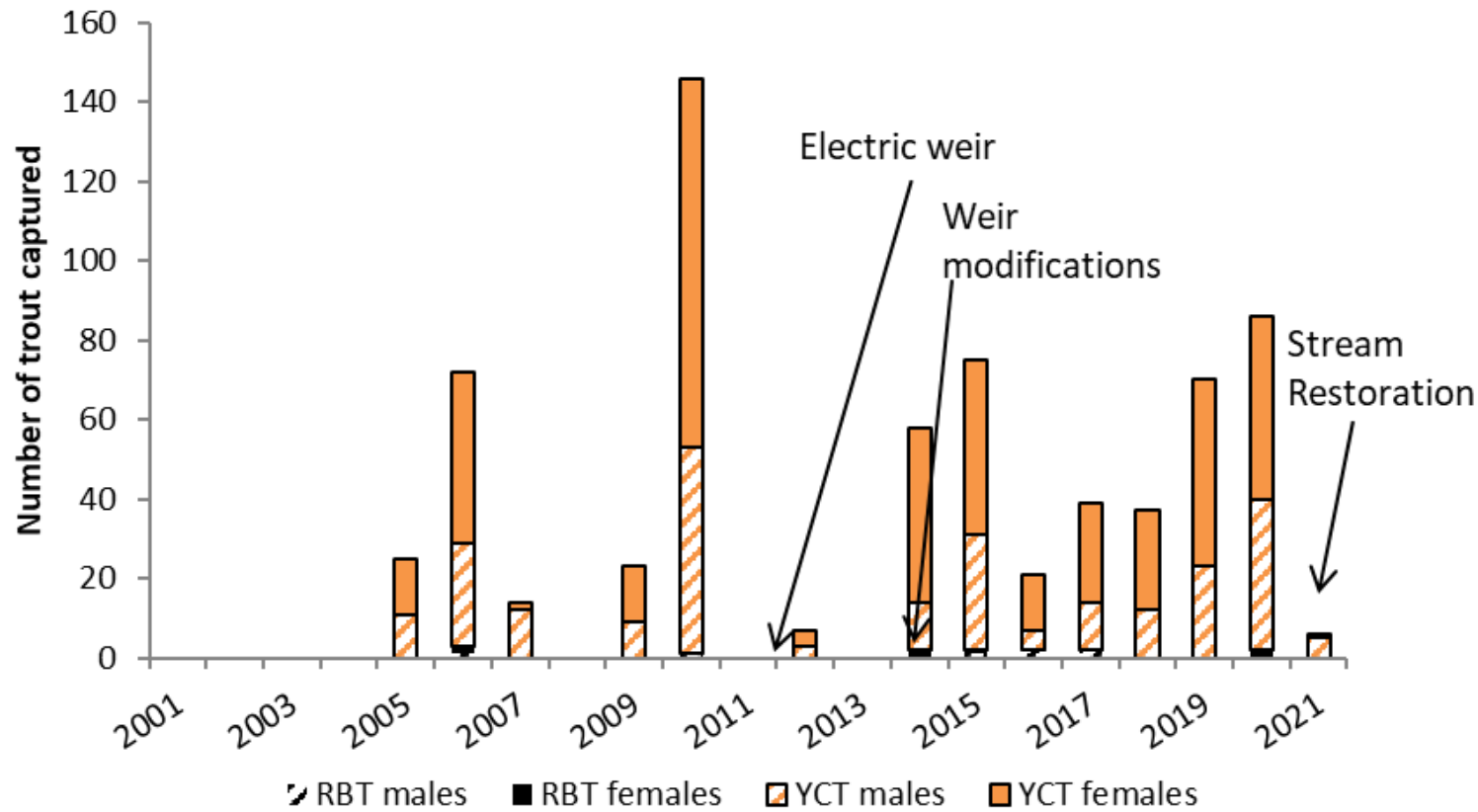
Pine Creek

Pine Cr Weir



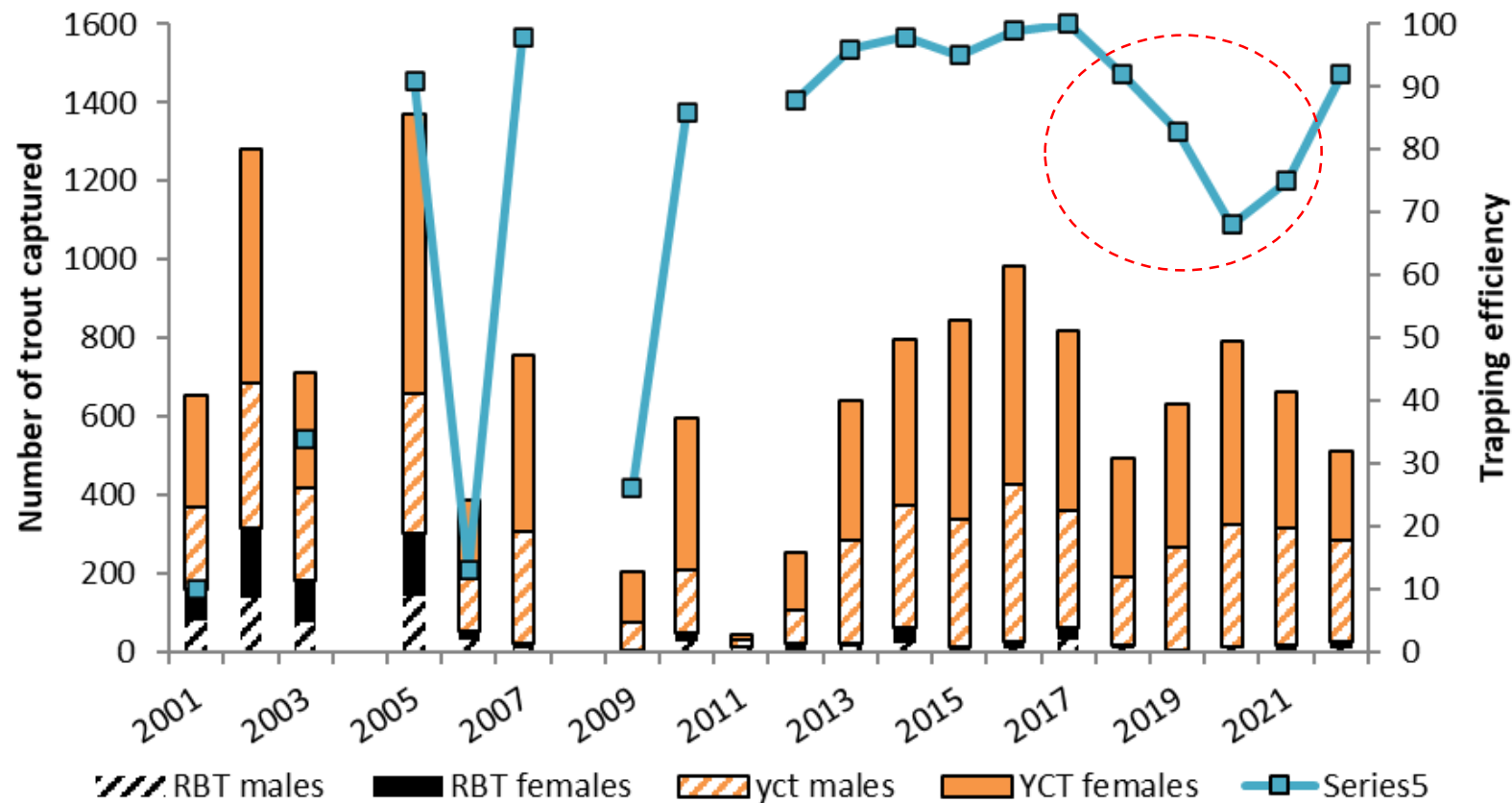
Rainey Creek

Rainey Cr Weir



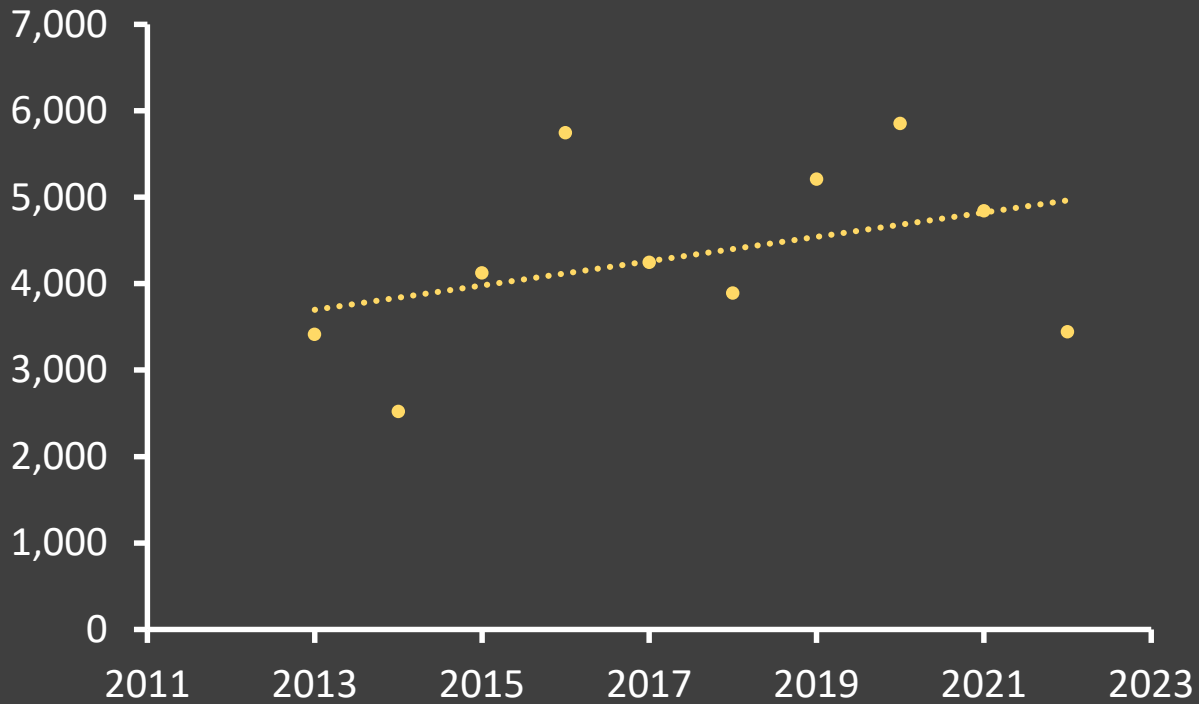
Palisades Creek

Palisades Cr Weir

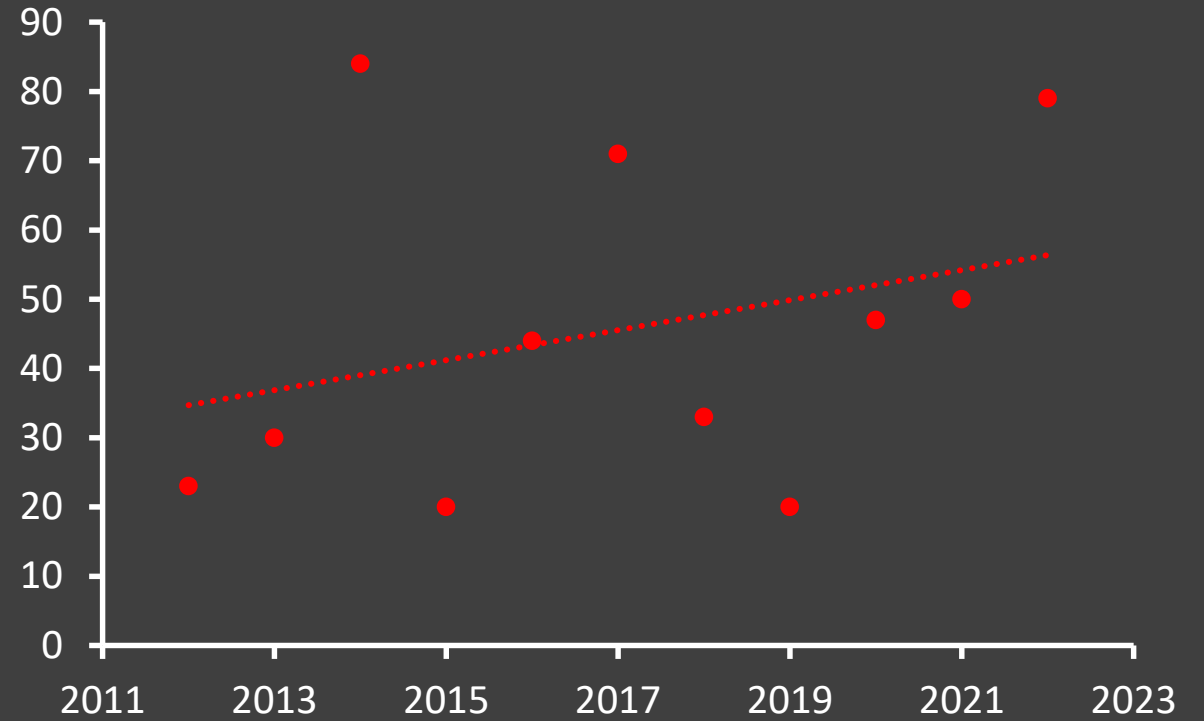


Total Spawner Abundance at Tributary Weirs

10-yr Adult YCT Abundance



10-yr RBT Removed

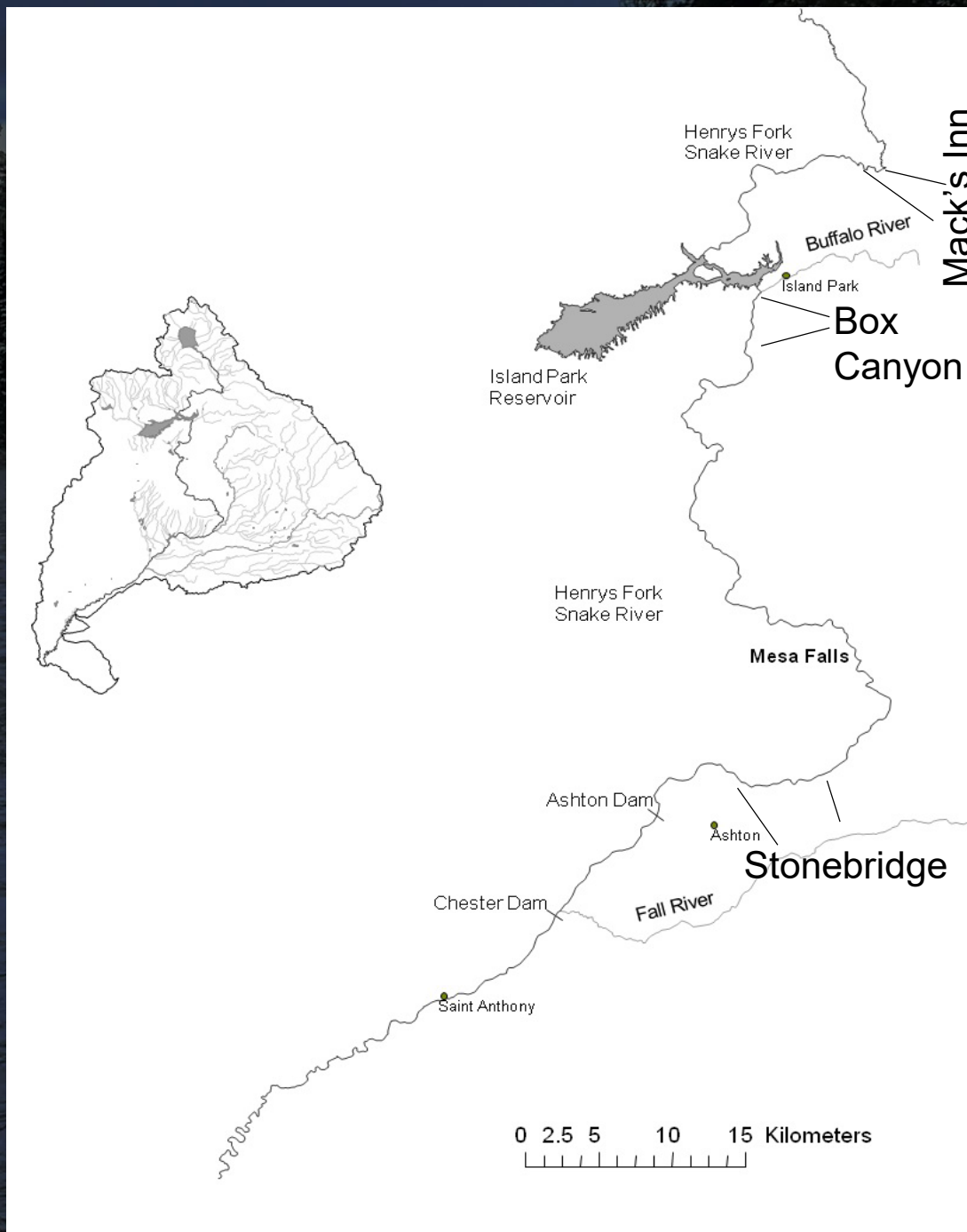


Delayed Effects



Henrys Fork Snake River





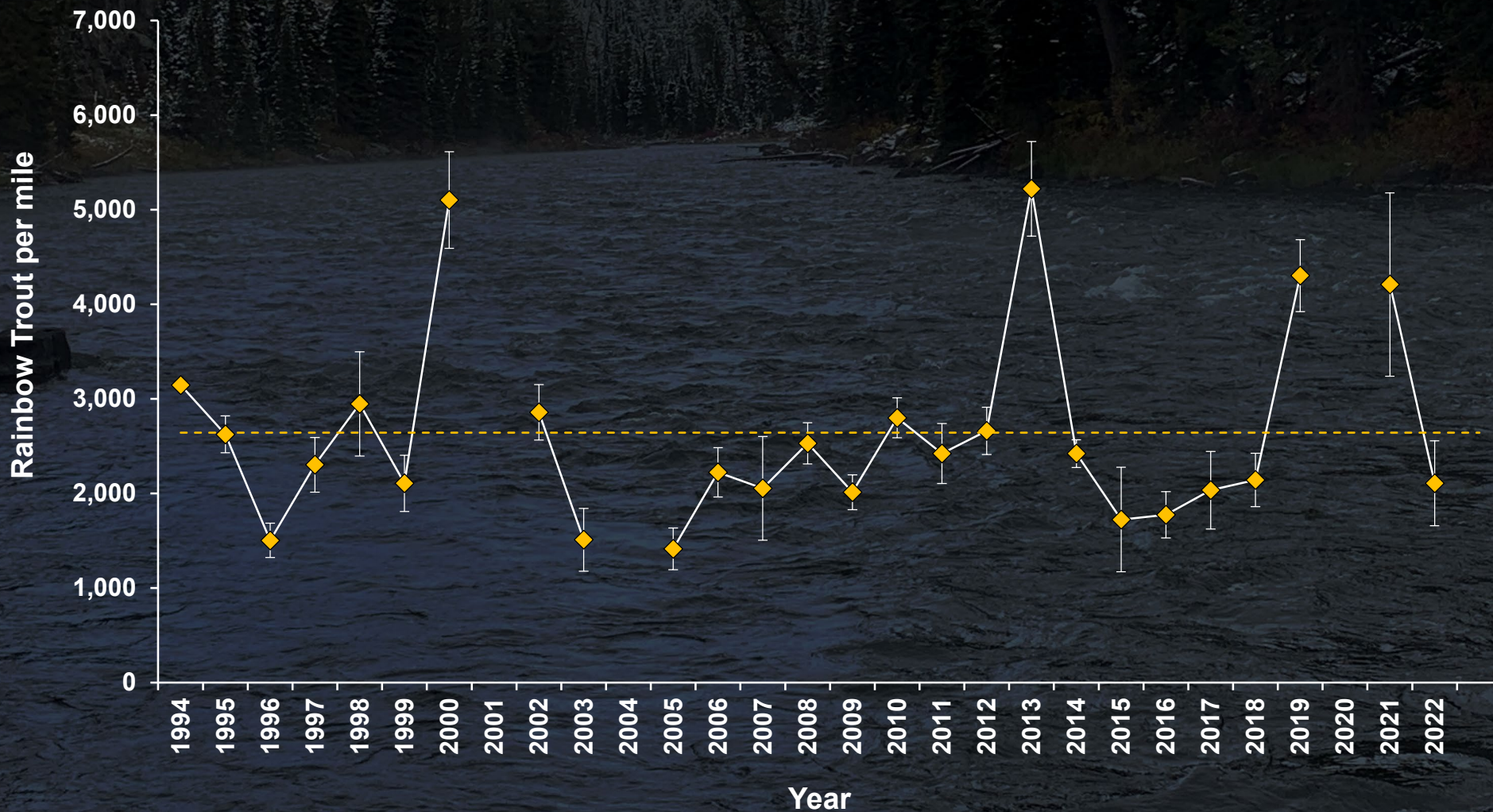
Methods

- Reaches
 - Box Canyon
 - Annual survey
 - Age and growth
 - Stone Bridge



Box Canyon Results

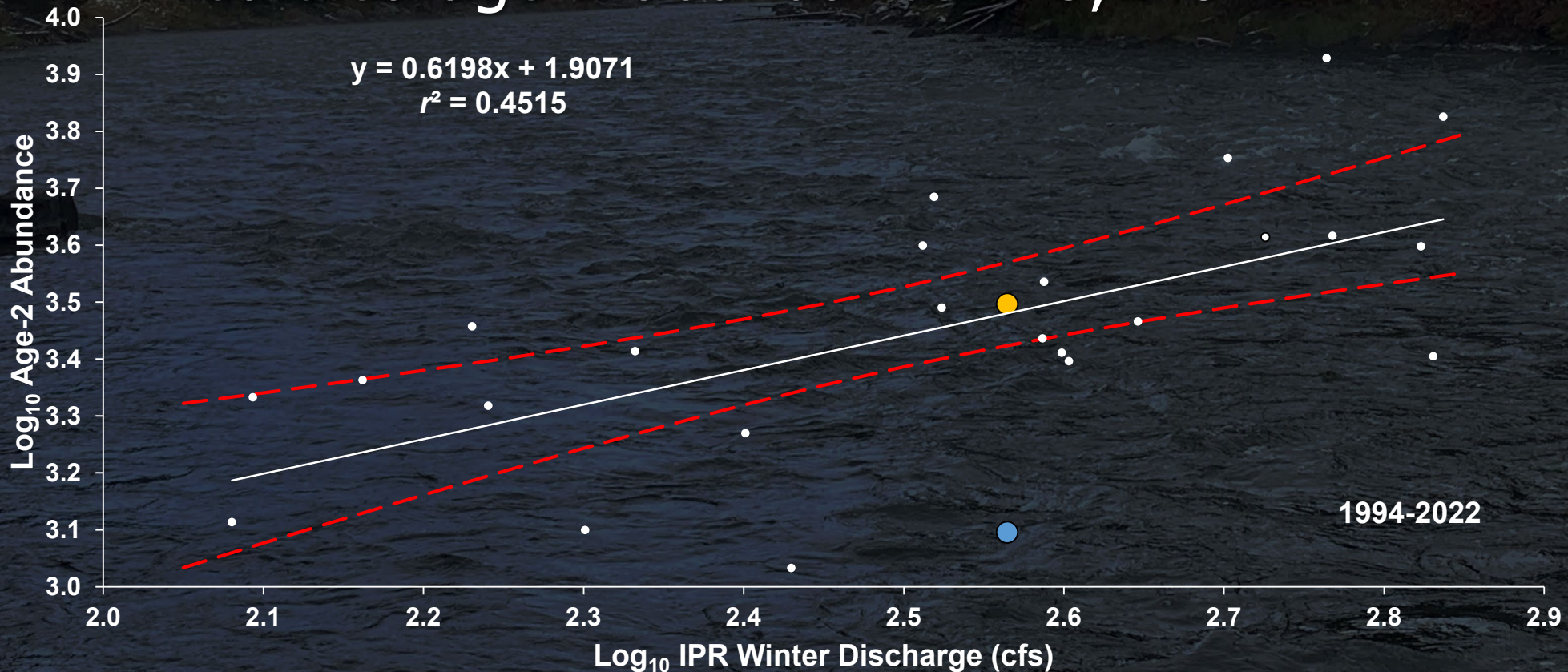
- 2,108 trout/mile $\pm$ 450 (95% CI)



Over Winter Flow

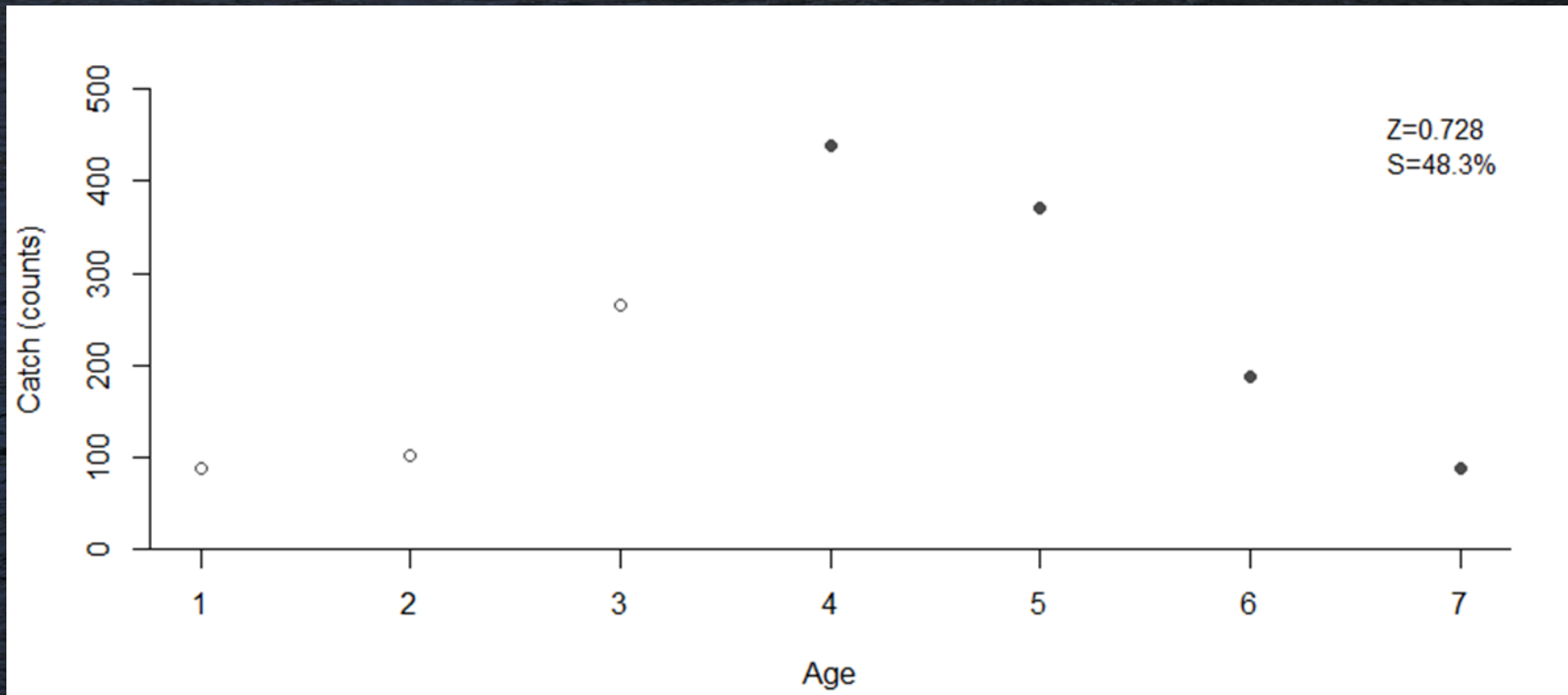
- 2022 data

- Observed age-2 abundance = 1,245 RBT
- Predicted age-2 abundance = 3,148 RBT



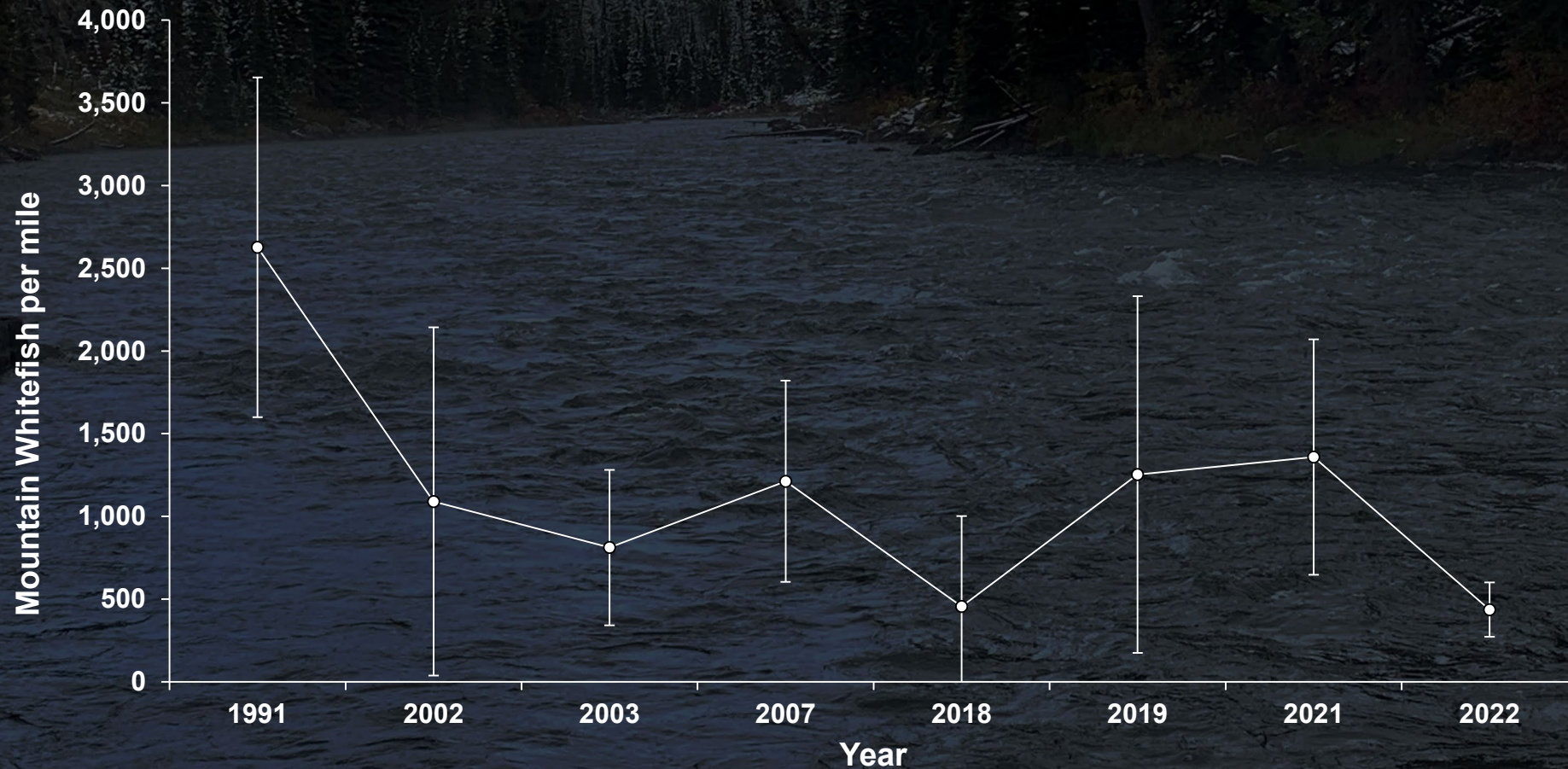
Box Canyon Results

- Mortality
 - Natural mortality and survival
 - Box Canyon: 52% annual natural mortality
 - Varies between 45-60%



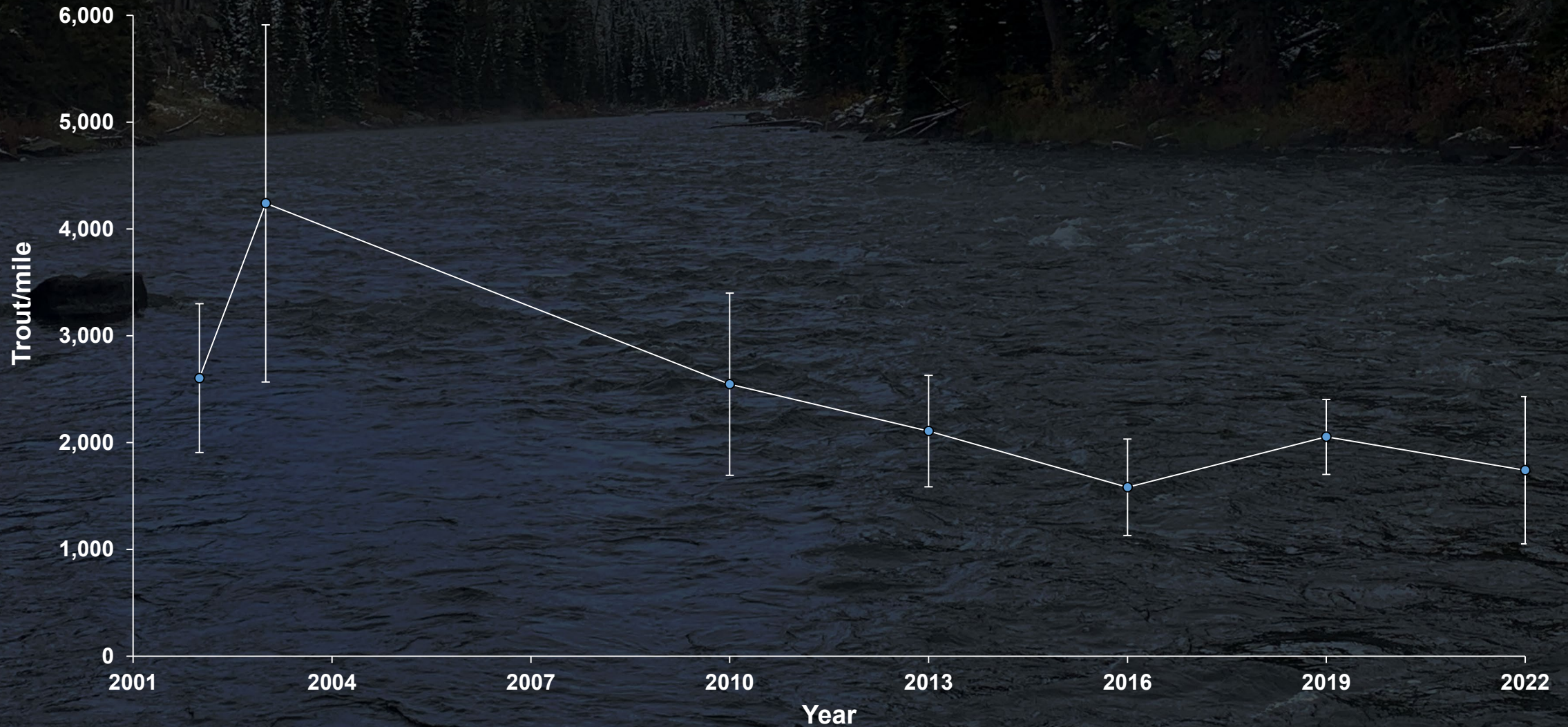
Box Canyon Results

- 436 MWF/mile $\pm$ 164



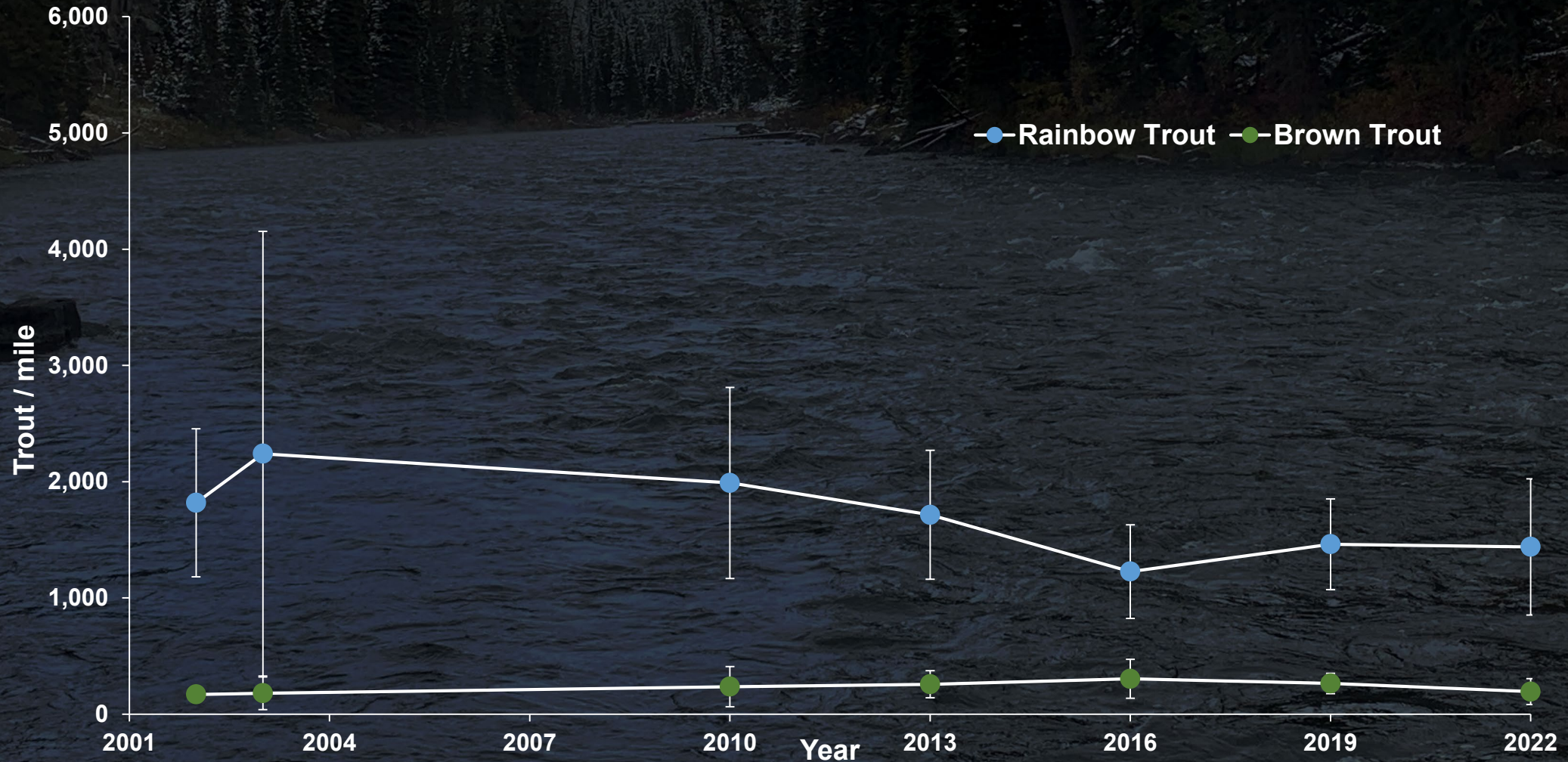
Stone Bridge Results

- 1,741 trout/mile $\pm$ 271



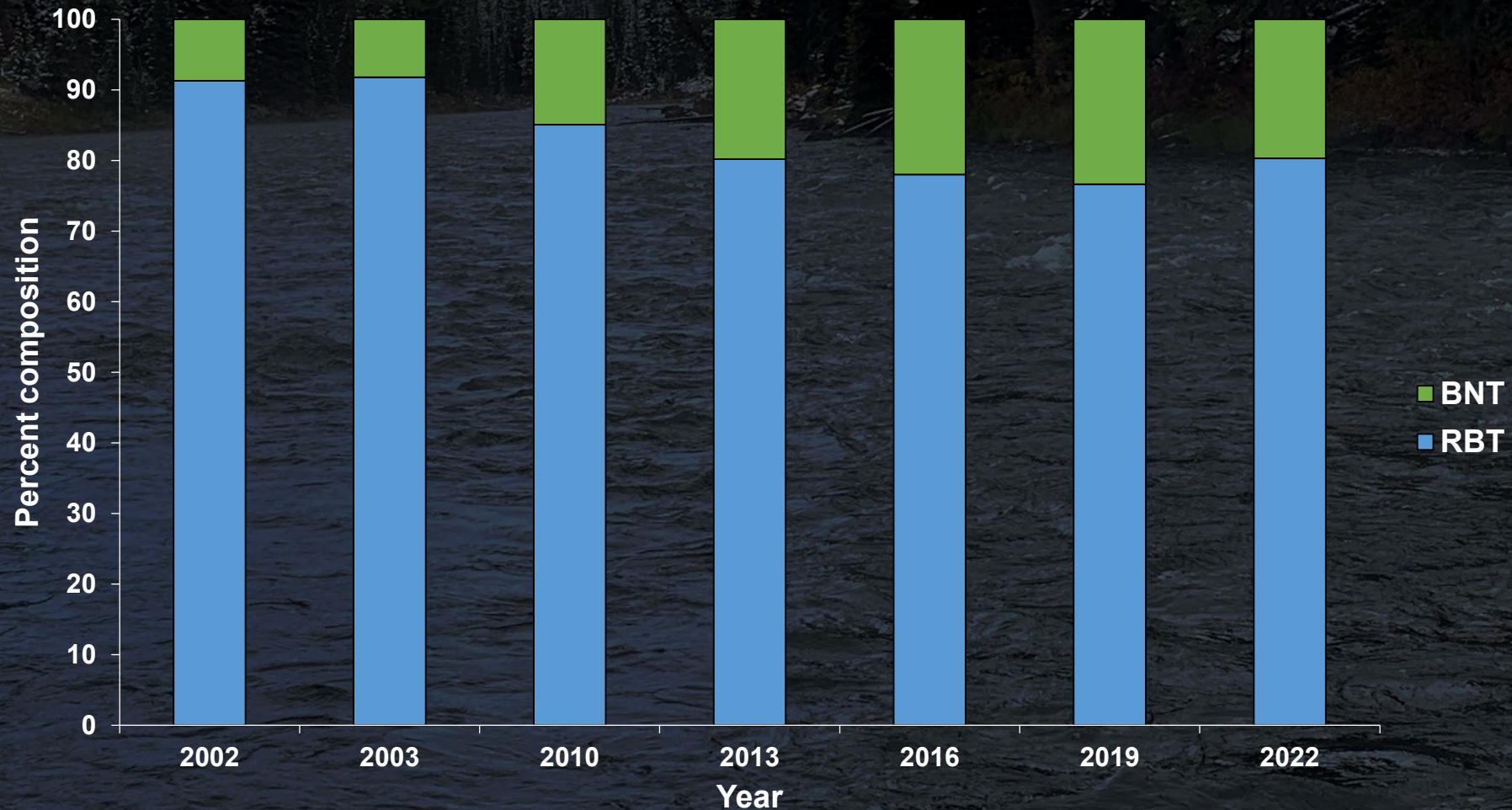
Stone Bridge Results

- 1,439 RBT/mile, 194 BNT/mile



Stone Bridge Results

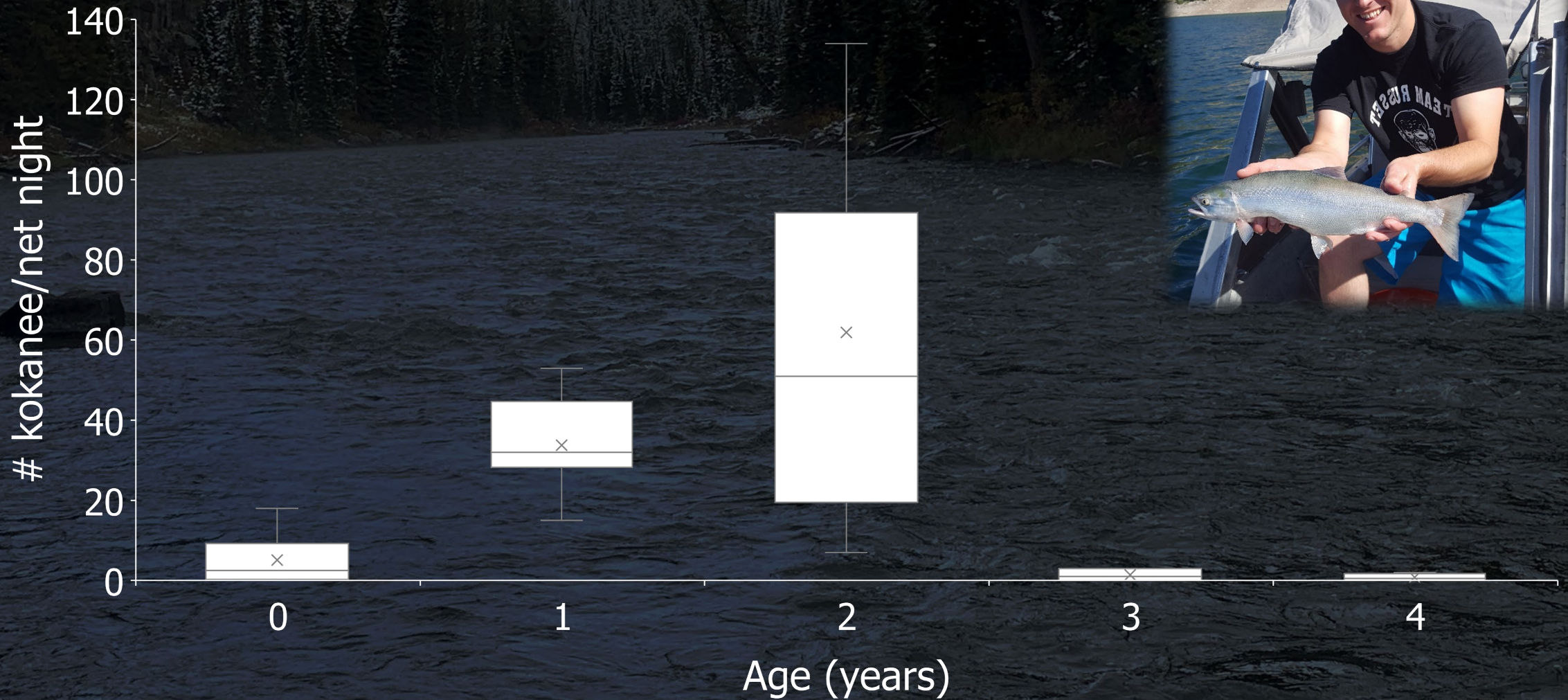
- 80% RBT, 20% BNT



Ririe Reservoir



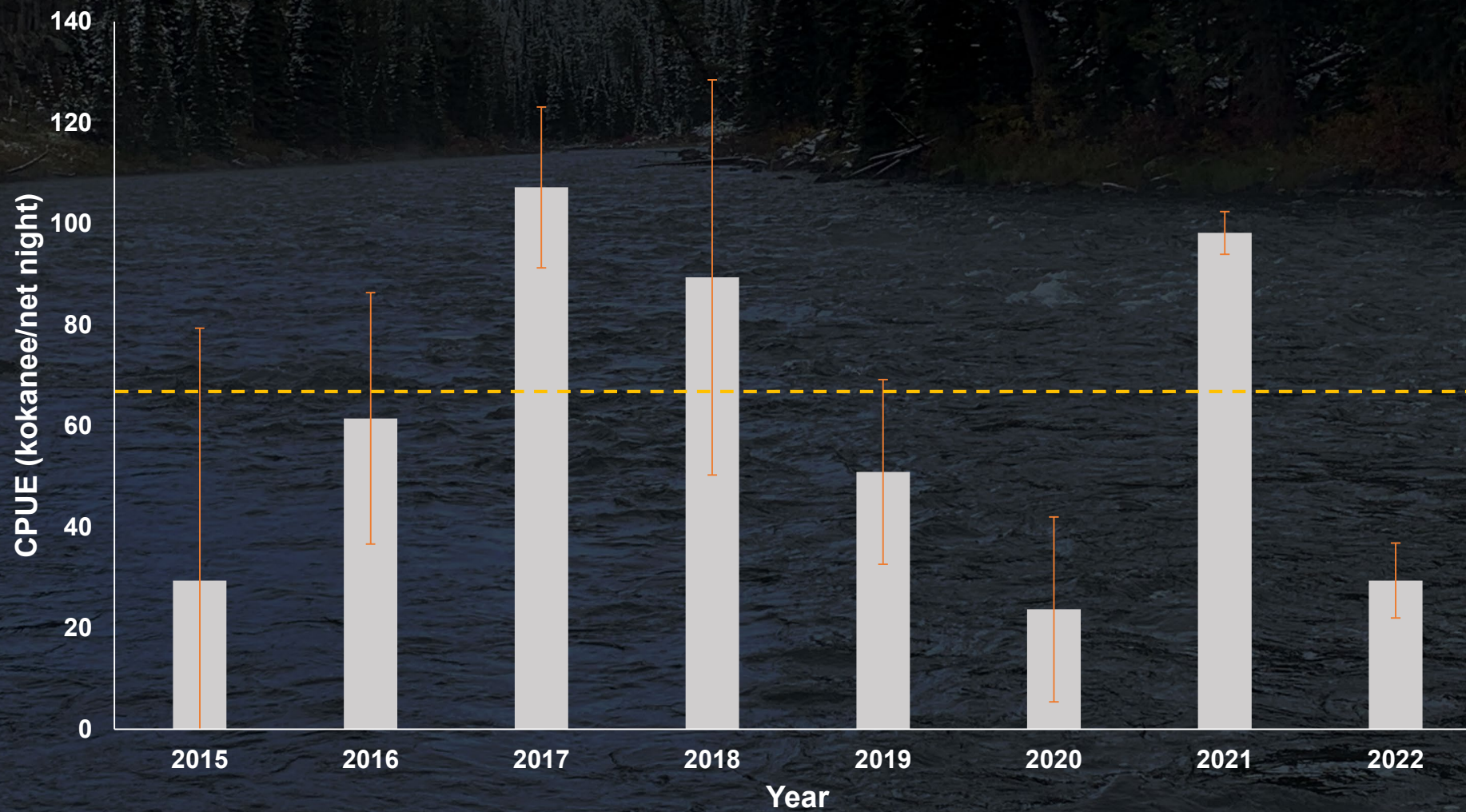
Ririe Reservoir



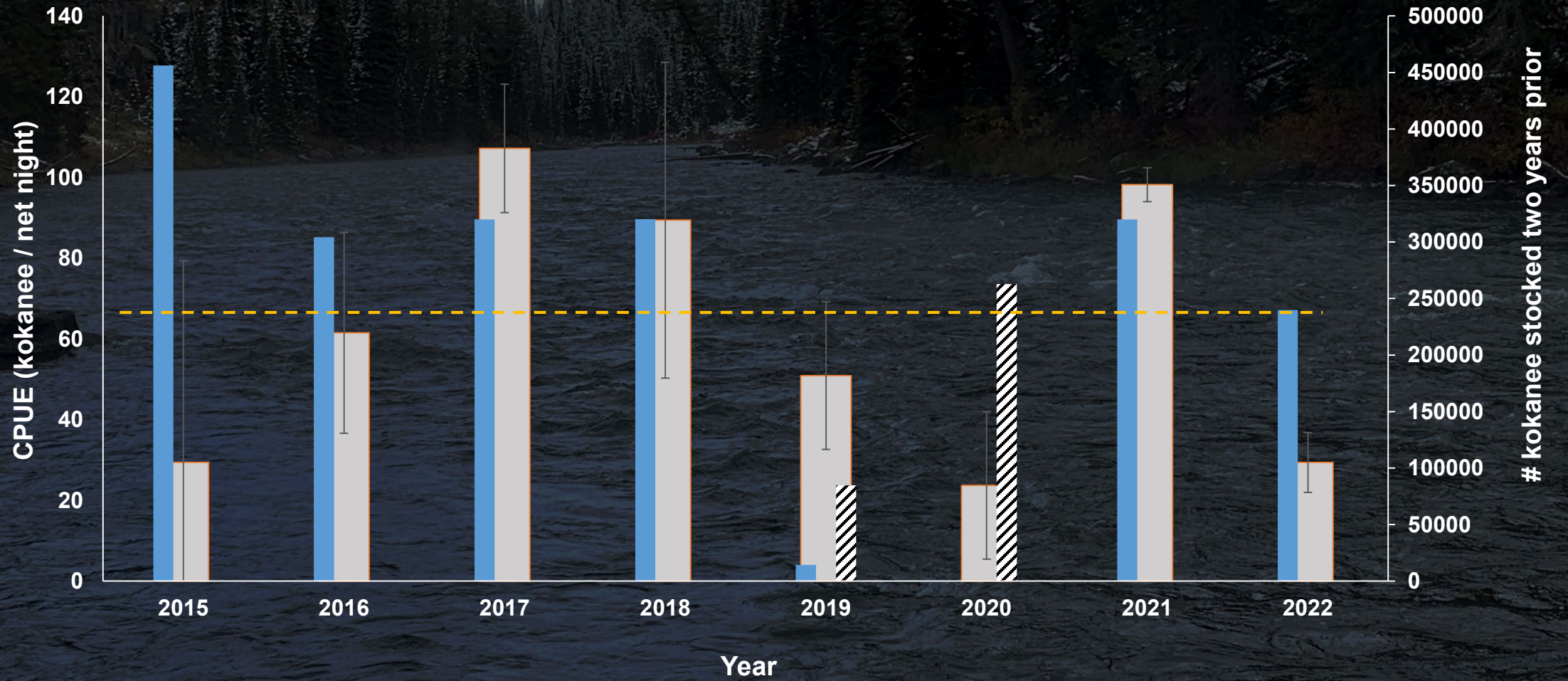
Ririe Reservoir

Age	<i>n</i>	Mean TL (mm)	95% CI
0	51	100	2.8
1	330	240	2.1
2	581	337	1.8
3	13	356	18.5
4	7	324	2.0

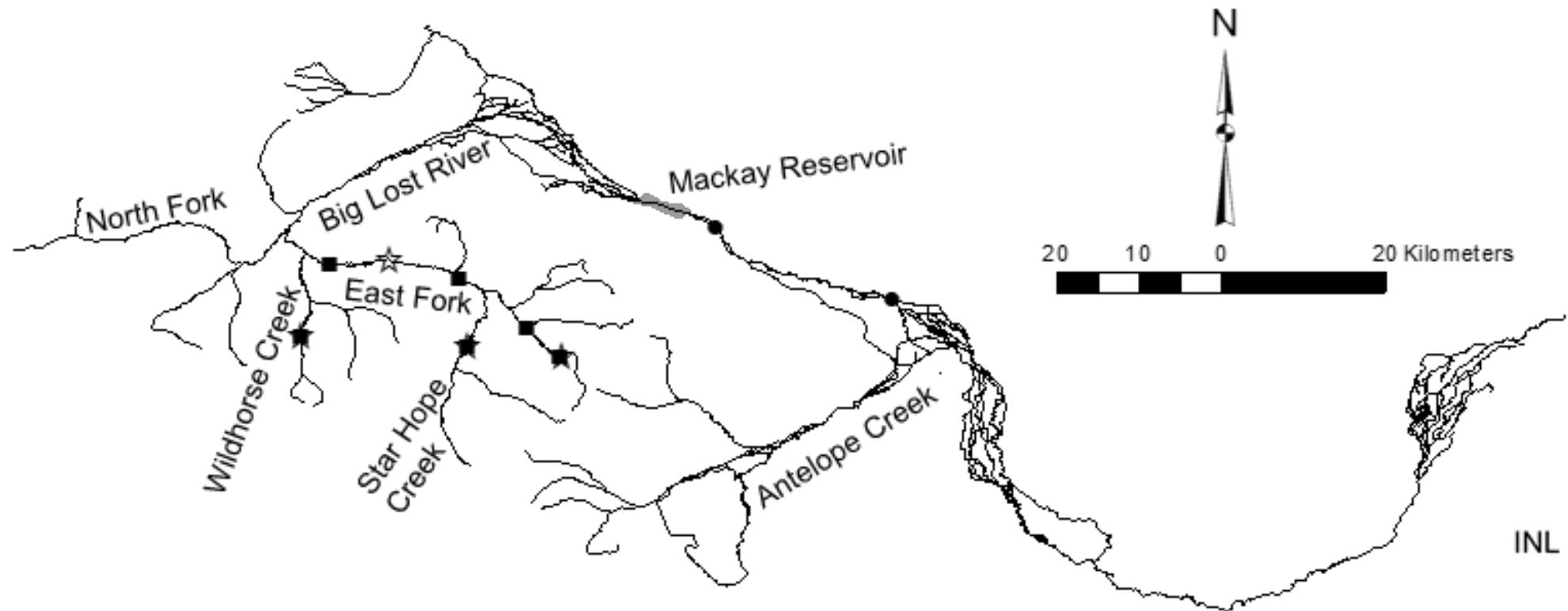
Ririe Reservoir



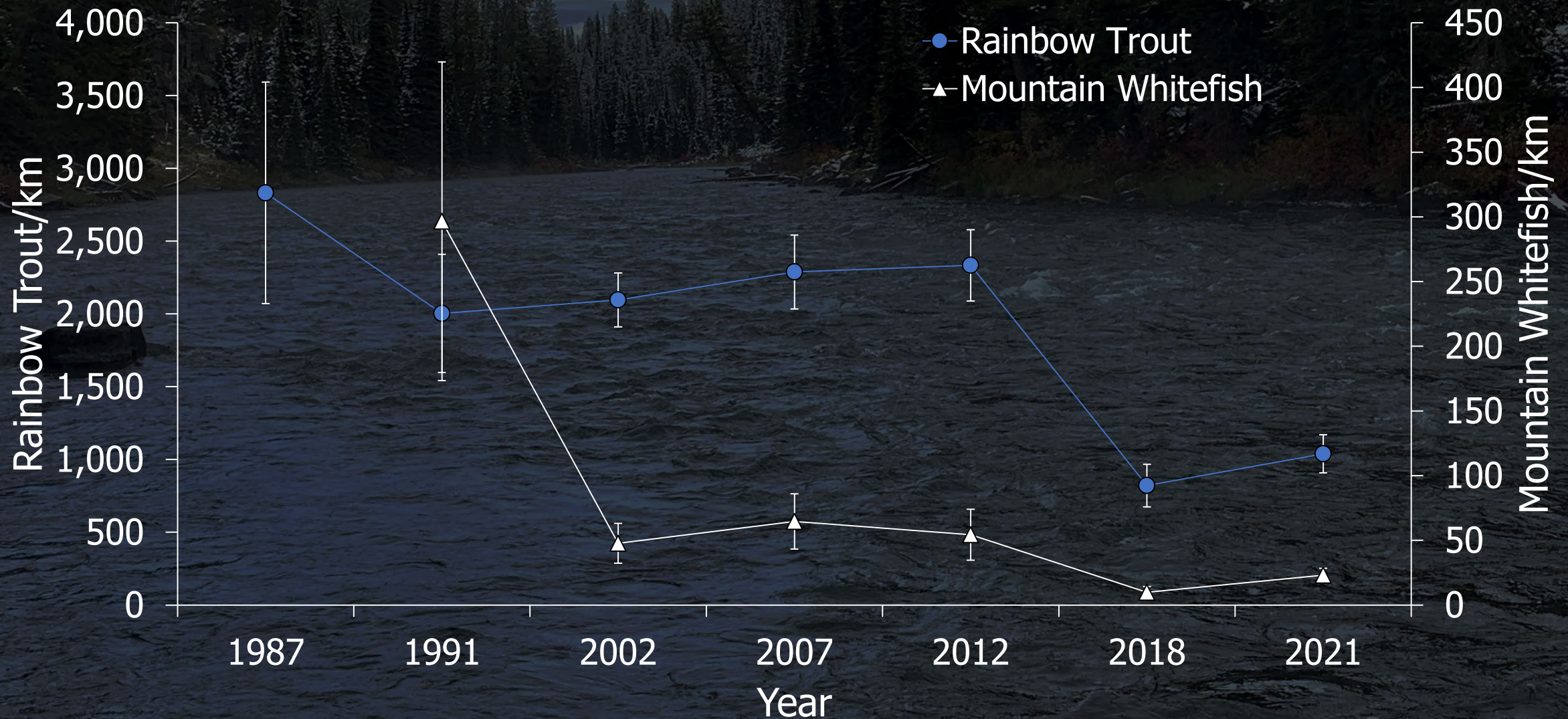
Ririe Reservoir



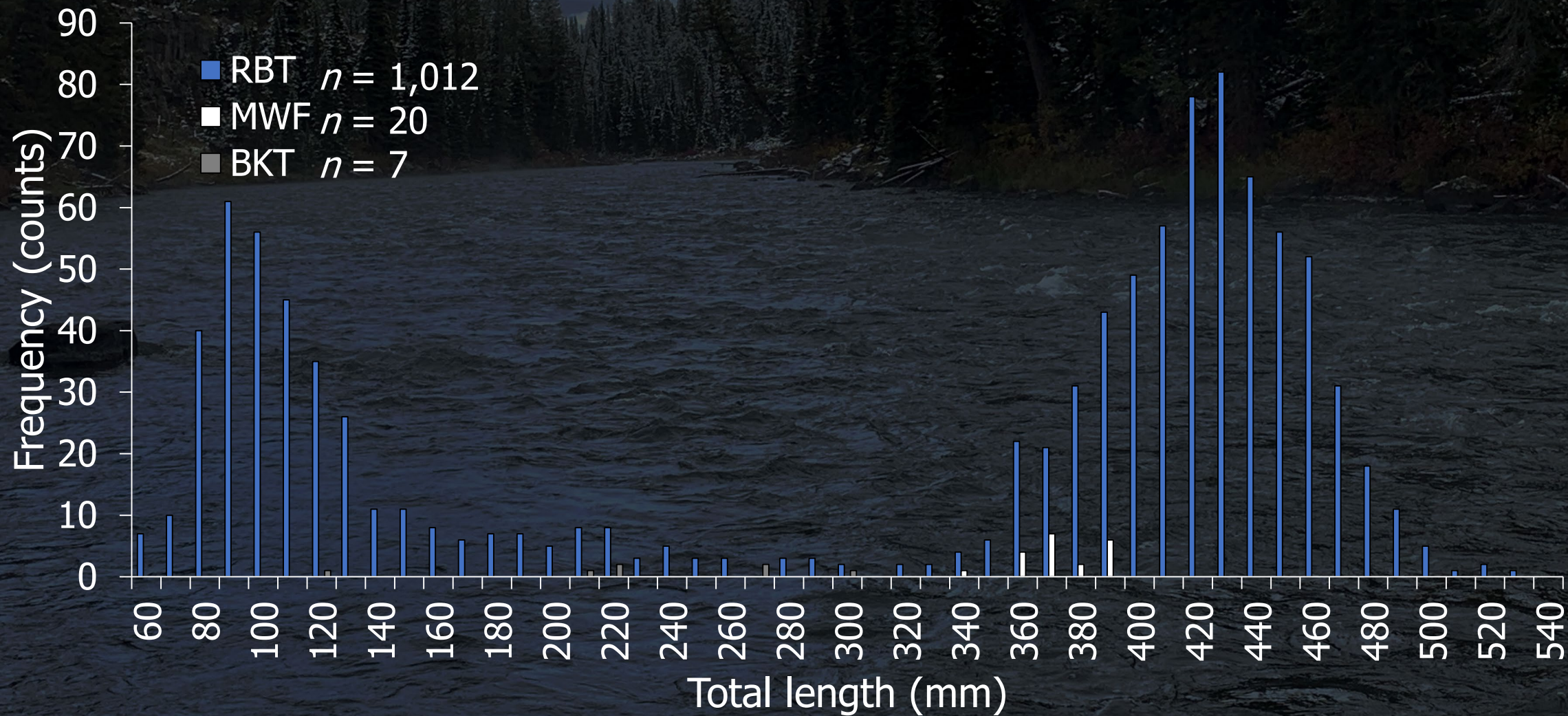
Big Lost River



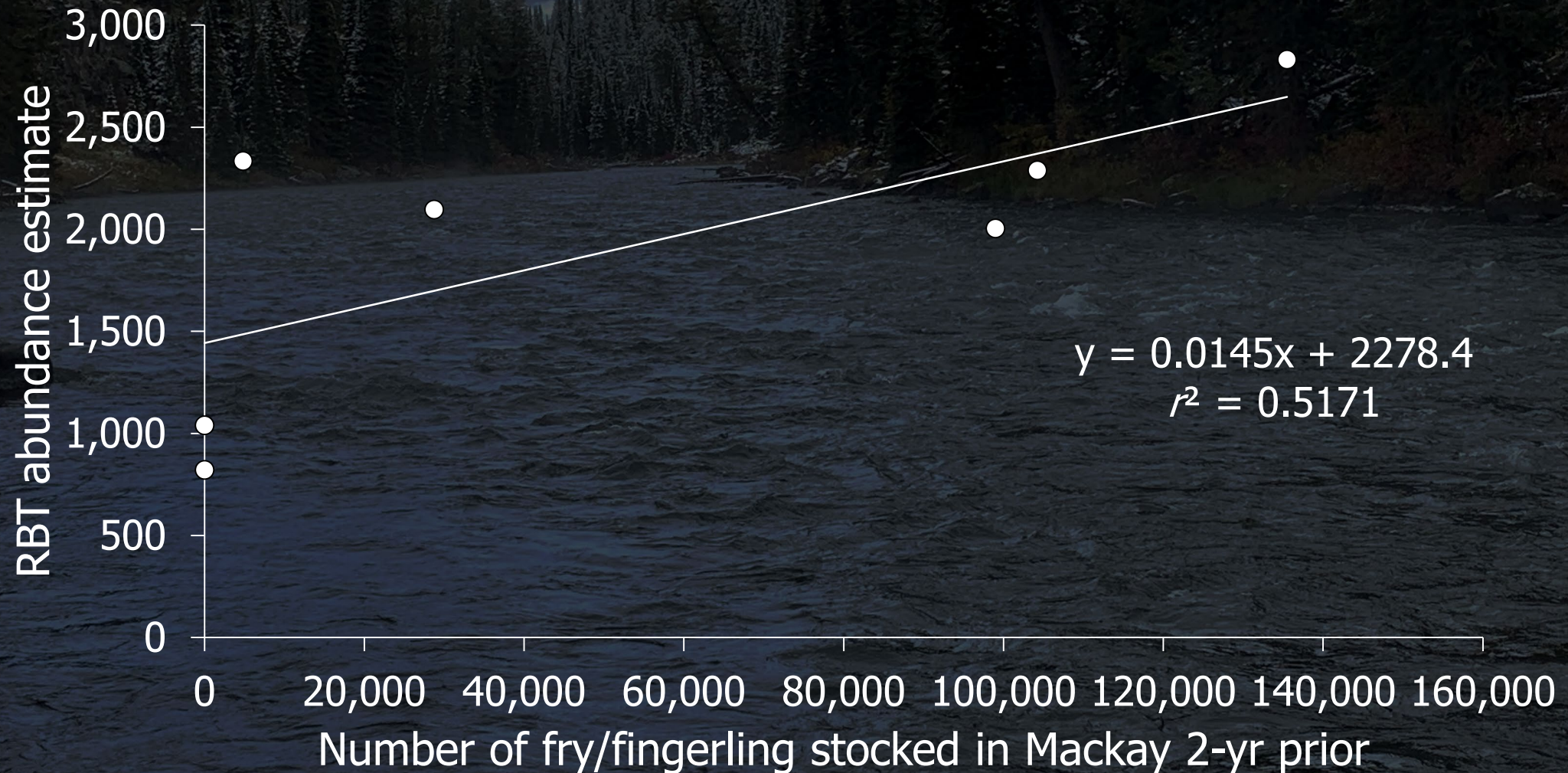
Tailrace-Campground Reach



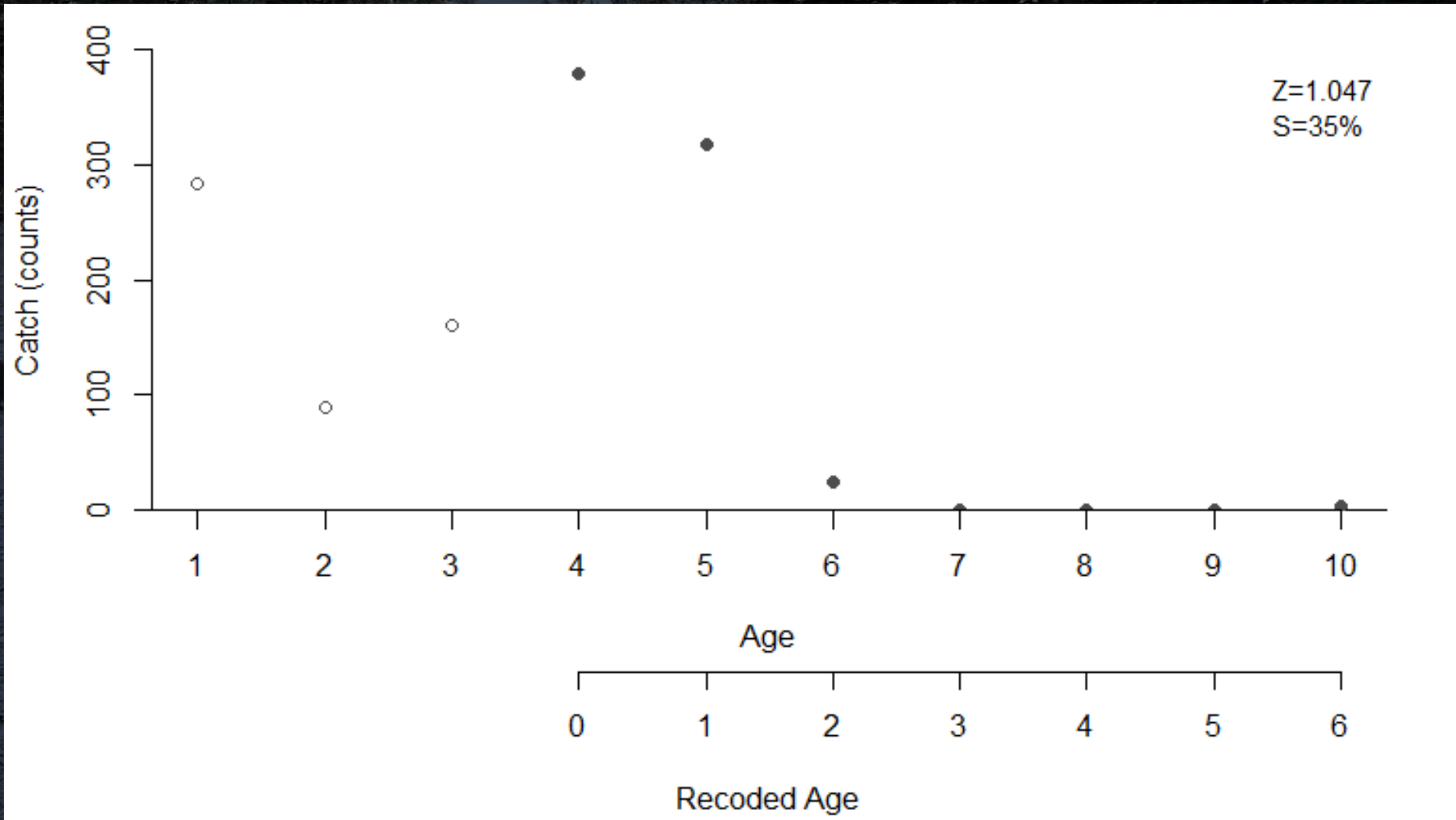
Tailrace-Campground Reach



Tailrace-Campground Reach



Tailrace-Campground Reach



Unquantified Effects



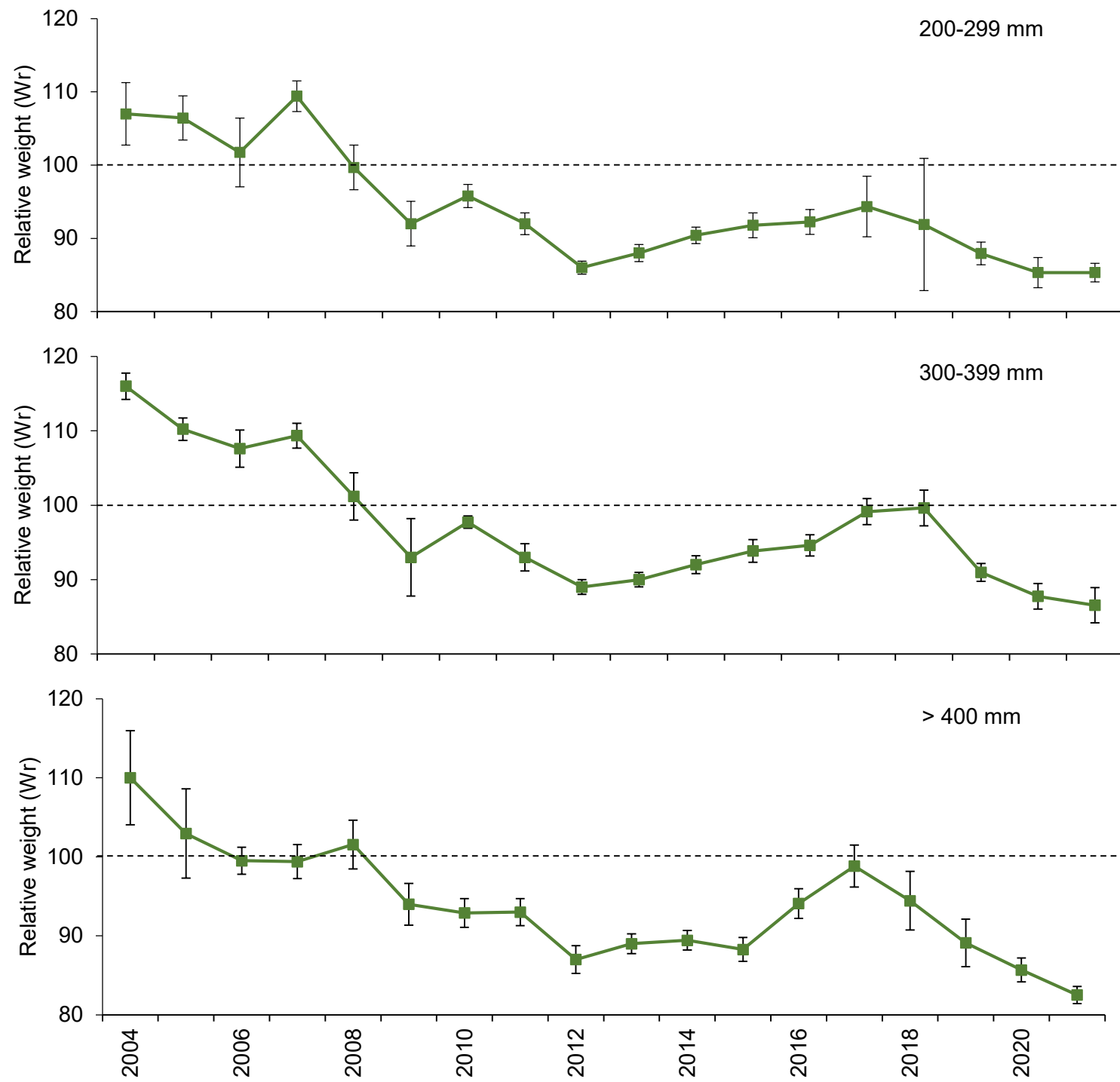
A wide-angle landscape photograph of Henrys Lake. The foreground shows the calm, blue water of the lake with gentle ripples. In the middle ground, a person is swimming, leaving a small wake behind them. The background is dominated by a range of rugged mountains with significant snow cover, particularly on the peaks and upper slopes. The sky is a clear, pale blue. The overall lighting suggests a soft, golden hour glow.

Henrys Lake

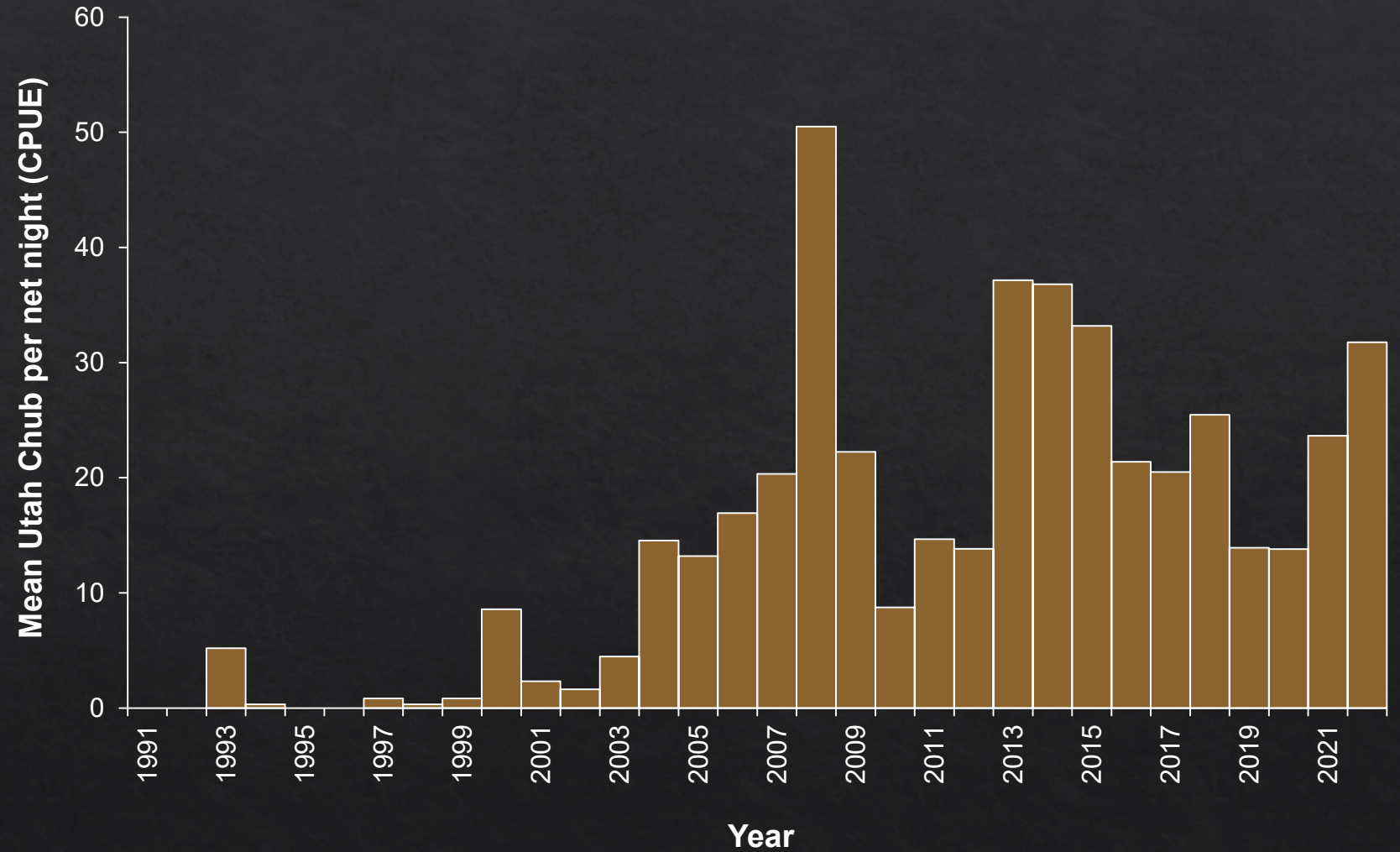


Henrys Lake

- YCT relative weight from traditional gill-net sets
- Declining trend for YCT relative weight



Henrys Lake – Utah Chub catch in gill nets



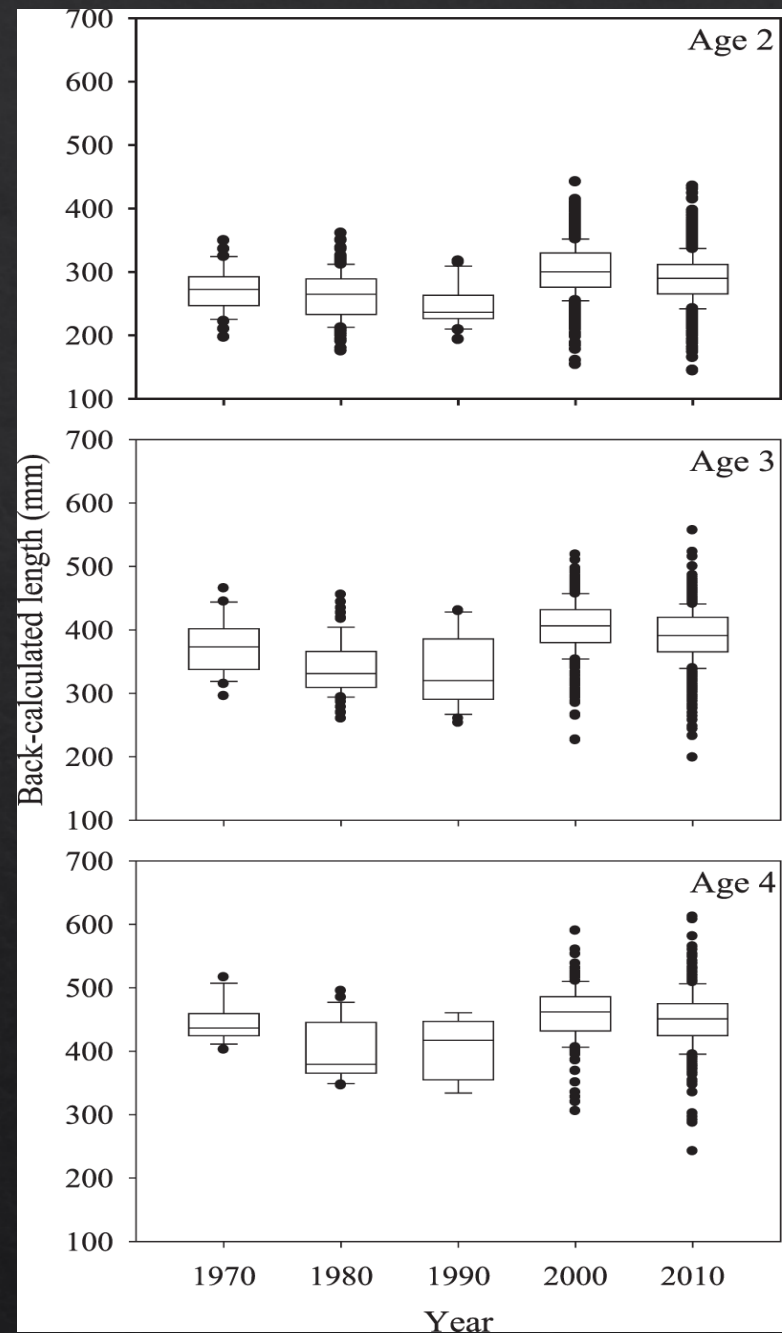
Darcy McCarrick - Henrys Lake graduate student 2018-2020

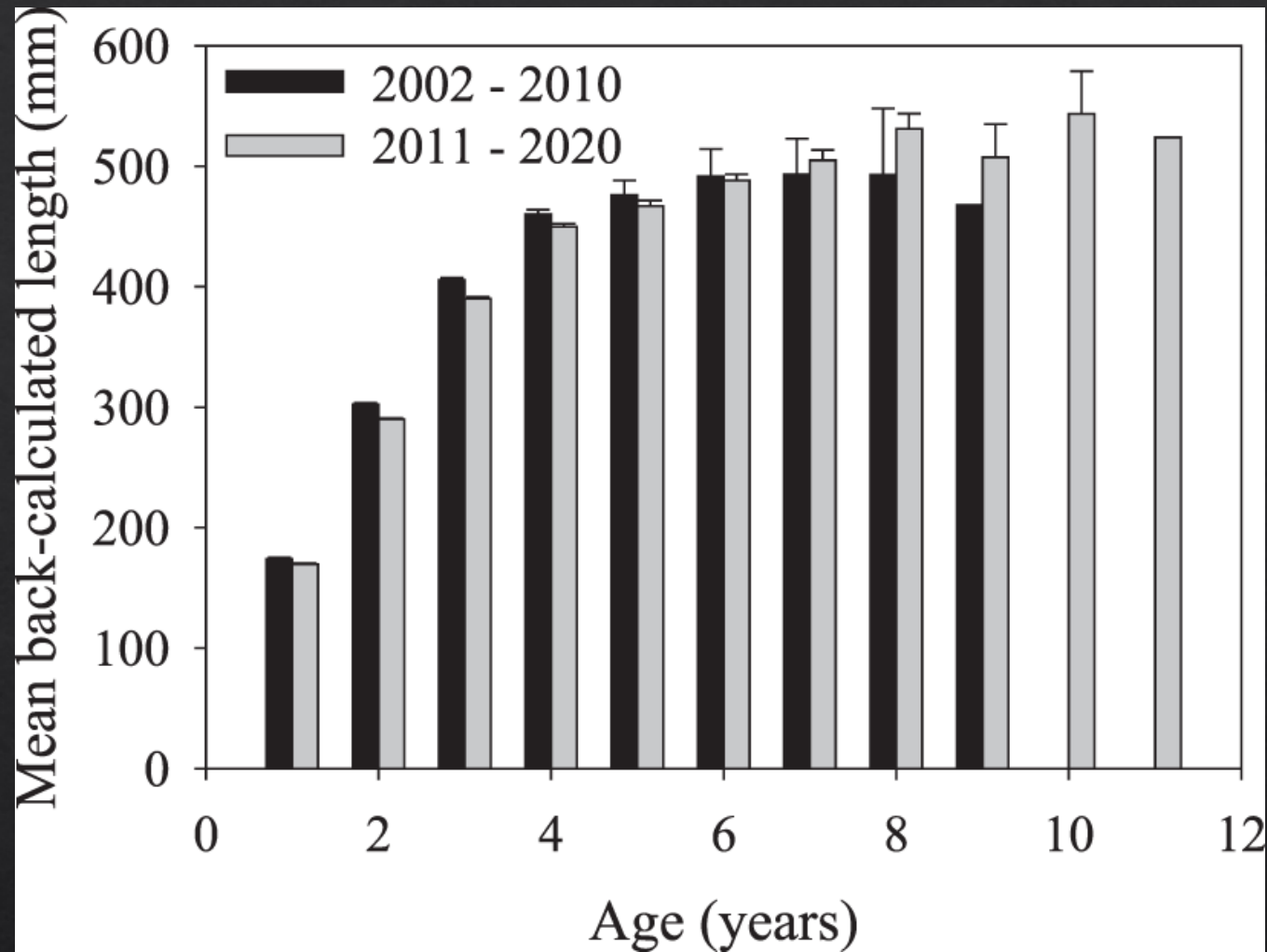


Large Rainbow Trout × Yellowstone Cutthroat Trout hybrid caught during the annual gillnet surveys at Henrys Lake, Idaho.

Back-calculated lengths for Yellowstone Cutthroat Trout *Oncorhynchus clarkii bouvieri* in Henrys Lake, Idaho, across five decades. We calculated back-calculated lengths from scales (1970–1990) and otoliths (2000–2020).

From McCarrick et al. (2022)





Mean back-calculated lengths and standard error for Yellowstone Cutthroat Trout *Oncorhynchus clarkii bouvieri* in Henrys Lake, Idaho (2002–2020). We calculated mean back-calculated lengths from otoliths.

From McCarrick et al. (2022)

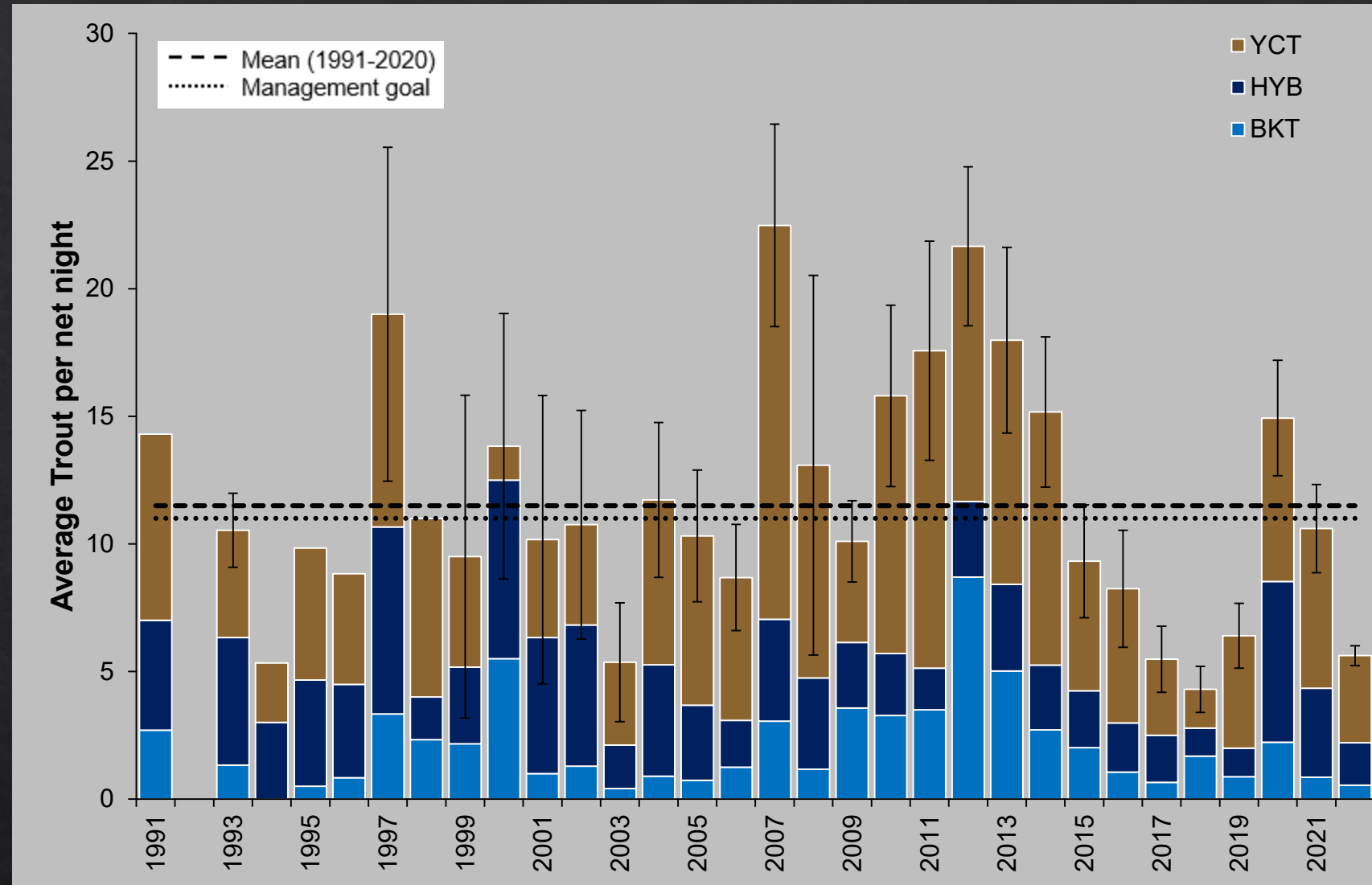
Key Findings

We observed negative relationships between growth of YCT and abundance of Utah Chub and Brook Trout. Although we identified negative relationships, YCT growth in recent decades is as fast as or faster than earlier time periods.

Movement and habitat data further support the assertion that Utah chub are not having a direct effect on the Yellowstone cutthroat trout population. Spatial distribution patterns and resource selection indicate minimal overlap between Yellowstone cutthroat trout and Utah chub.

Henrys Lake

- Gillnet CPUE



2015- 1.19 million

2016- 1.29

2017- 1.42

2018- 1.48

2019- 1.51

2020- 1.35

2021- 1.03

2022- 1.06

Summary

- ◆ Fish need water
- ◆ Effects of drought on fish populations vary
 - ◆ Drastic and immediate
 - ◆ Delayed
 - ◆ Complex and difficult to quantify
- ◆ While populations may be negatively impacted in the short term, they can quickly rebound

Questions?



