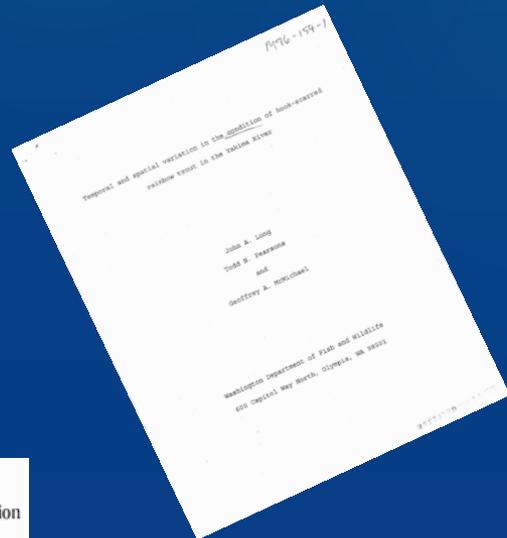


The influence of 25 years of catch and release fishing regulations on hook-scarring, size, and abundance of Yakima River rainbow trout

{ Presented By: Gabriel M. Temple¹
John A. Long¹, Todd N. Pearsons², and Geoffrey A. McMichael³



Yakima Basin Science and Management Conference
Central Washington University
June 18, 2015



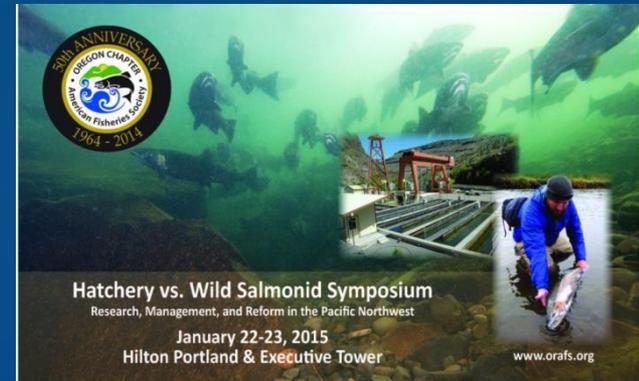
¹WDFW
²Grant County PUD
³Mainstem Fish Research



Project Updates-

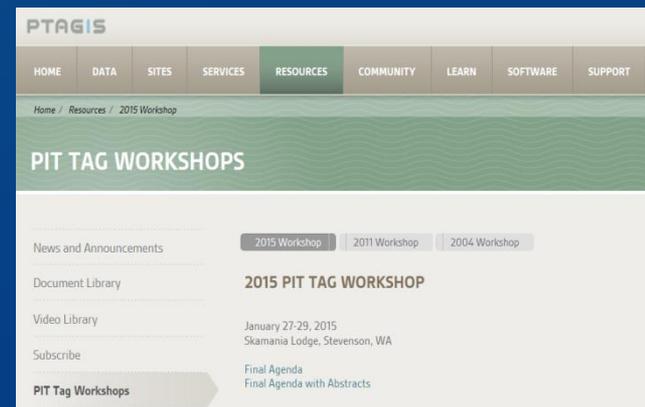
↳ NTTOC Monitoring

↻ <http://orafs.org/hatchery-vs-wild-salmonid-symposium-research-management-and-reform-in-the-pacific-northwest/>



↳ Resident/Anadromous *O. mykiss* interactions study

↻ <http://www.ptagis.org/resources/pit-tag-workshops/2015-workshop>

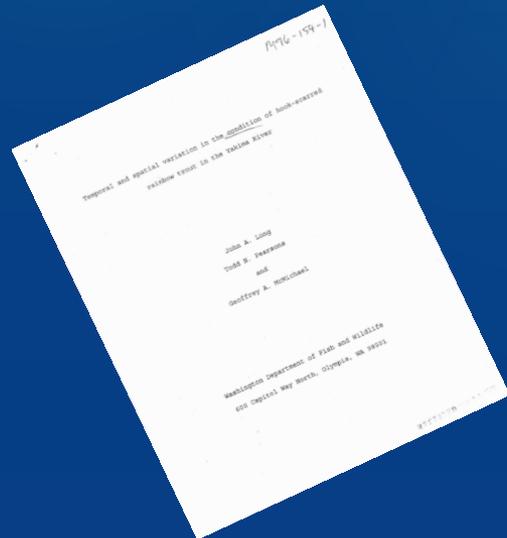




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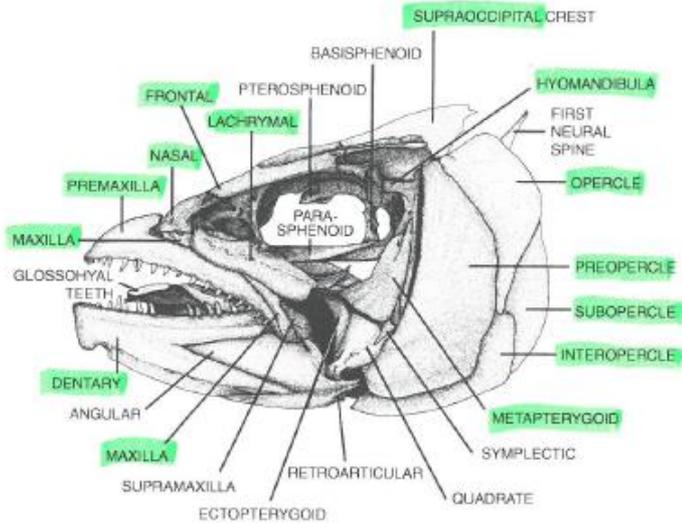
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Hook-scarring / hooking injury

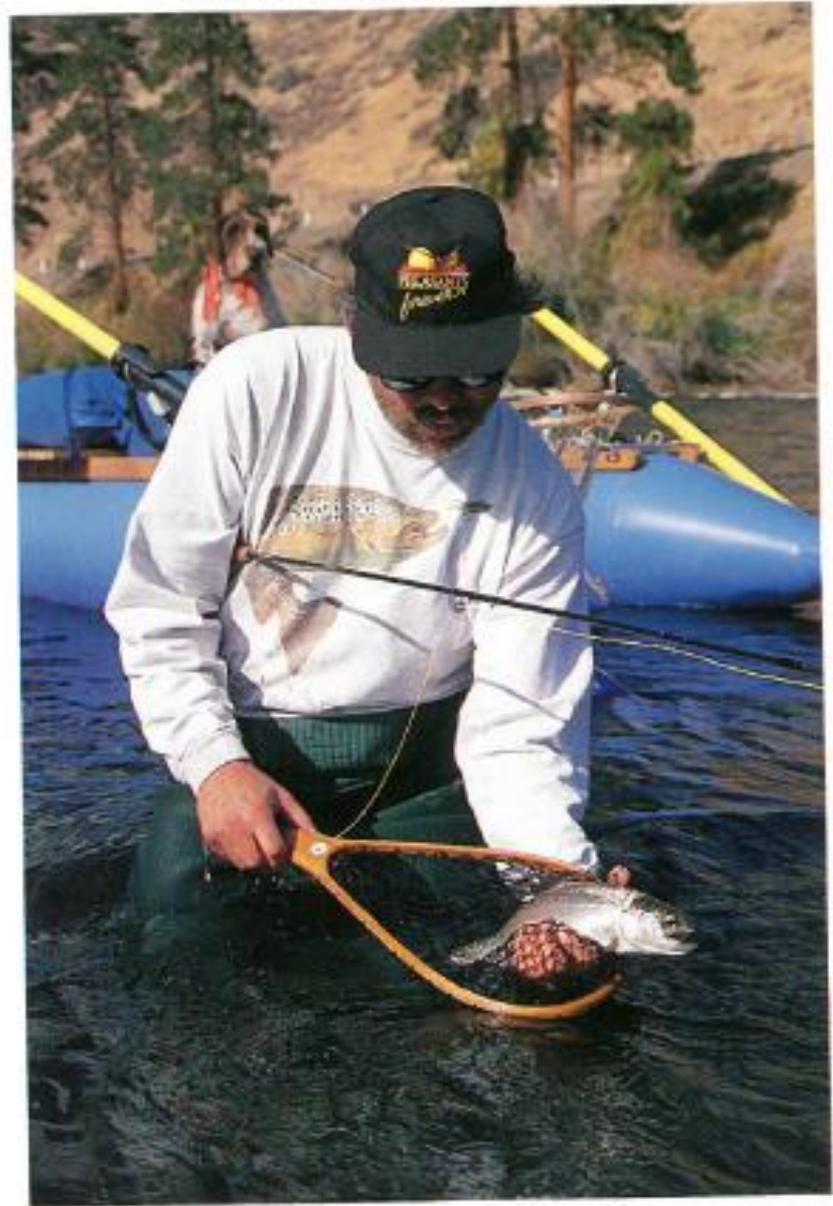


FIGURE 3.1. Lateral view of the skull of the dogtooth tuna (*Gymnosarda unicolor*).



From Collette and Chao 1975.

Ray Pelland releasing a Yakima Canyon rainbow.



Probasco, 1994: Yakima River Journal

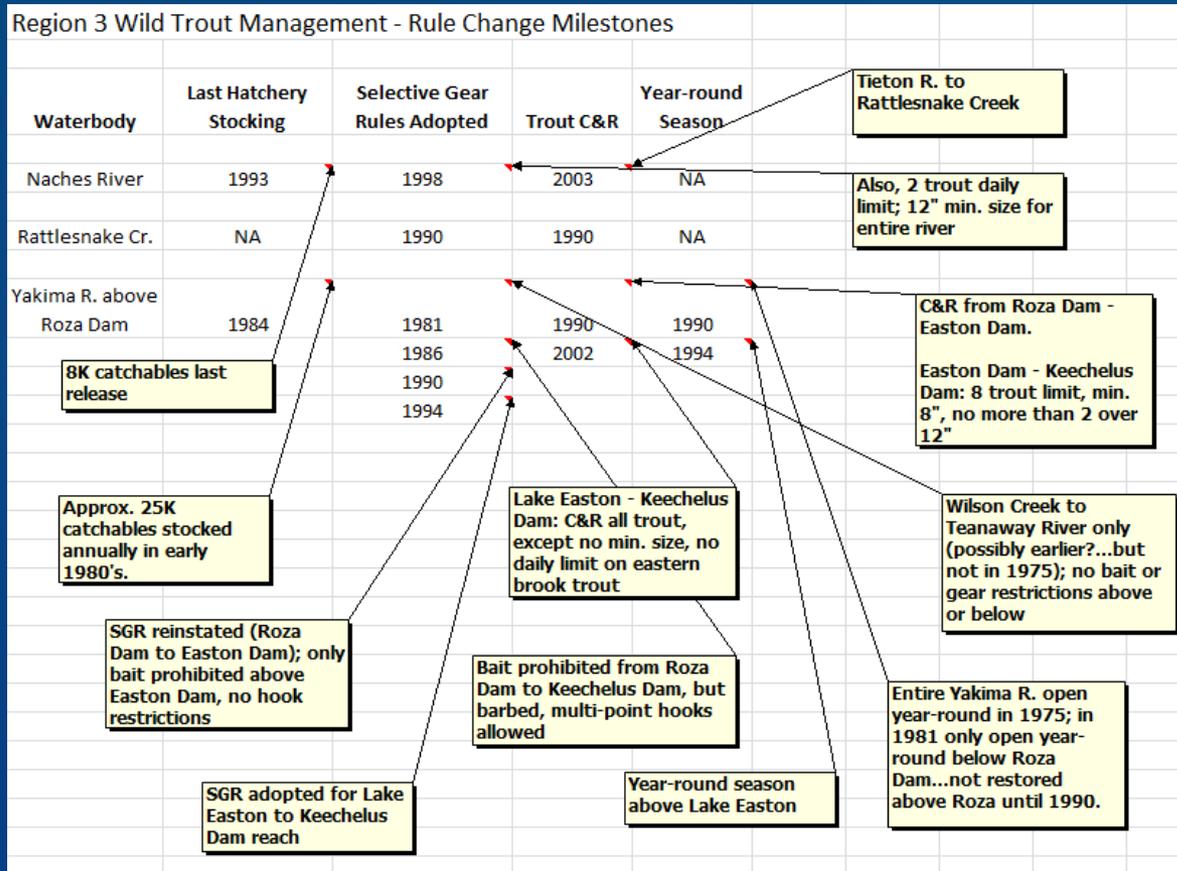


Catch-and-Release

- ⌘ First documented as a management tool in the mid-1950's – 'Fishing for Fun' in the Smoky Mountains
- ⌘ Recycling of fish to provide a 'quality experience' for many anglers
- ⌘ Schill et al. 1986: Yellowstone Cutthroat caught on average 9.7 times in a 3 month period in 1981
- ⌘ Vincent 1984: document increased fish abundance and size following implementation



Fishing Regulations - Recent





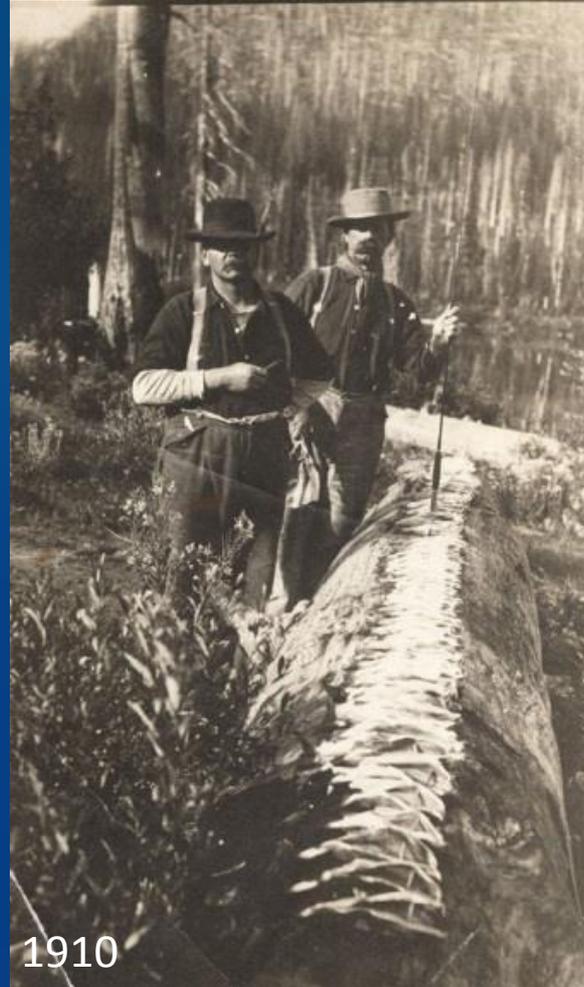
Fishing Regulations - Historical



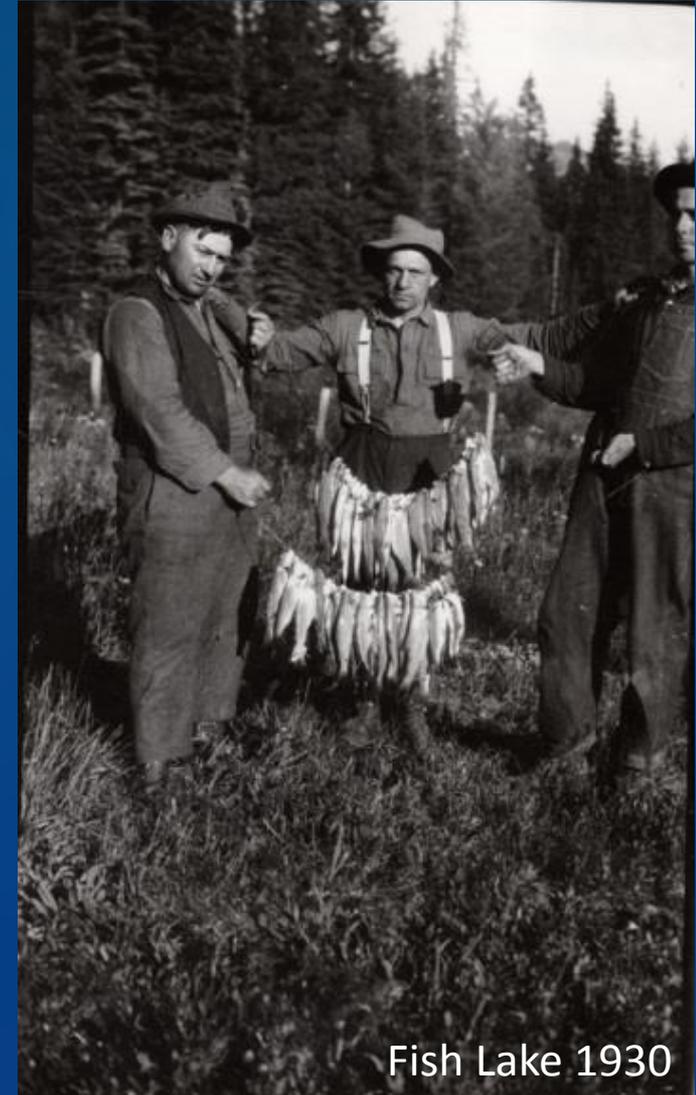
Frank Abbot - Cle Elum Circa 1930



Naneum Creek. 1914



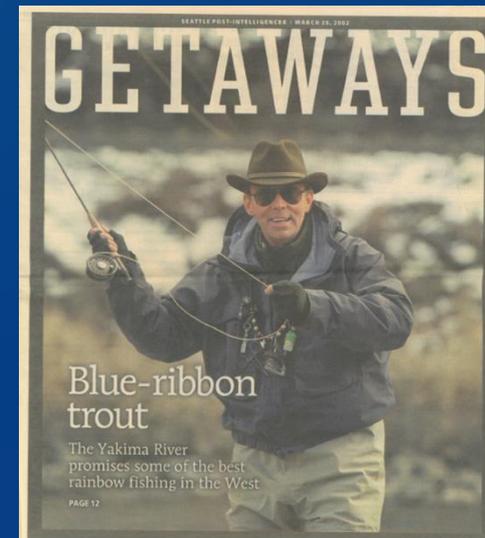
1910



Fish Lake 1930



Yakima River- Current





Yakima Rainbow Trout Abundance



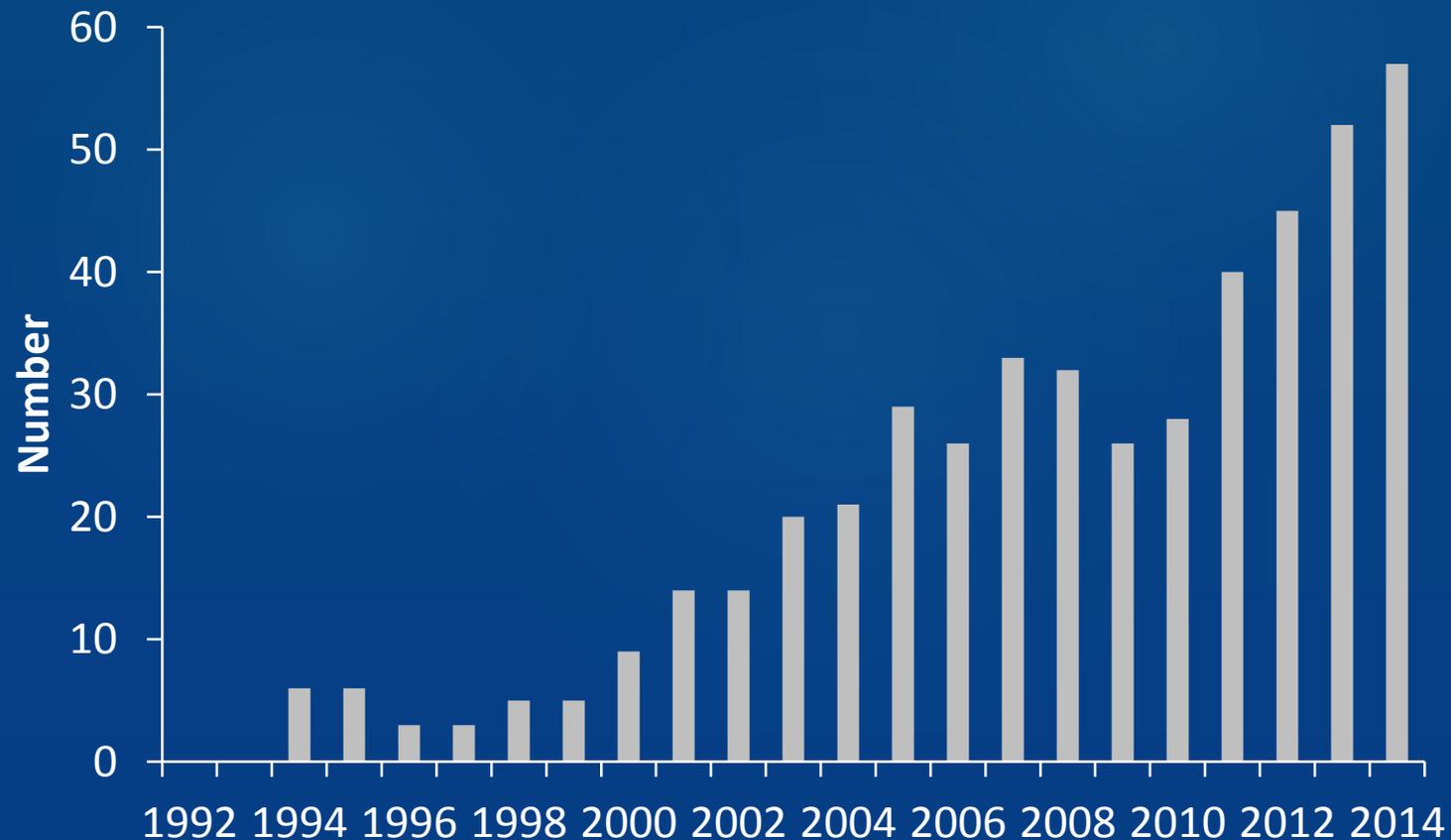


Yakima RBT Hook-scarring



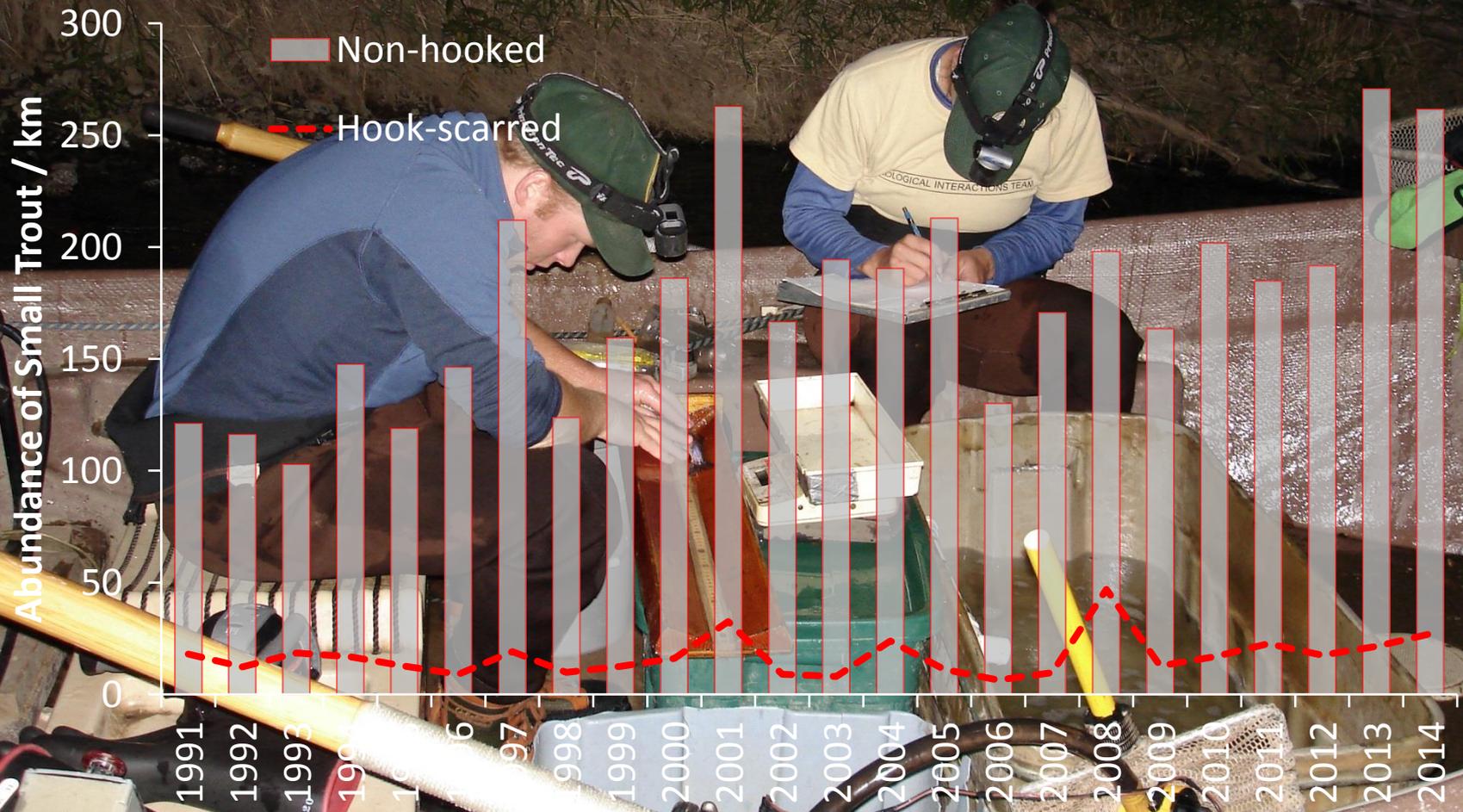


Kittitas County Guide License Sales – annual 1994 to 2014



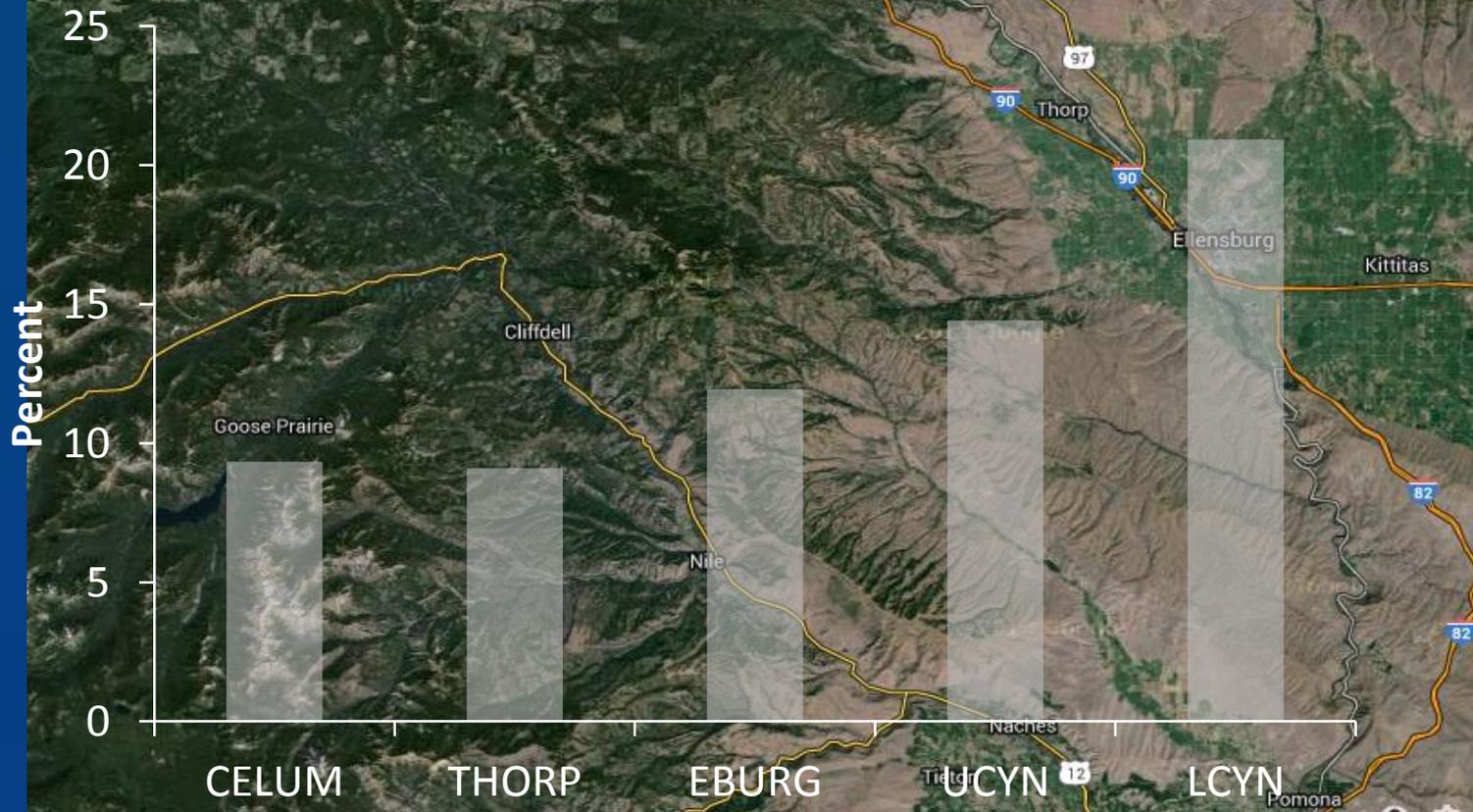


Yakima RBT Hook-scarring





Hook-scarring by Section



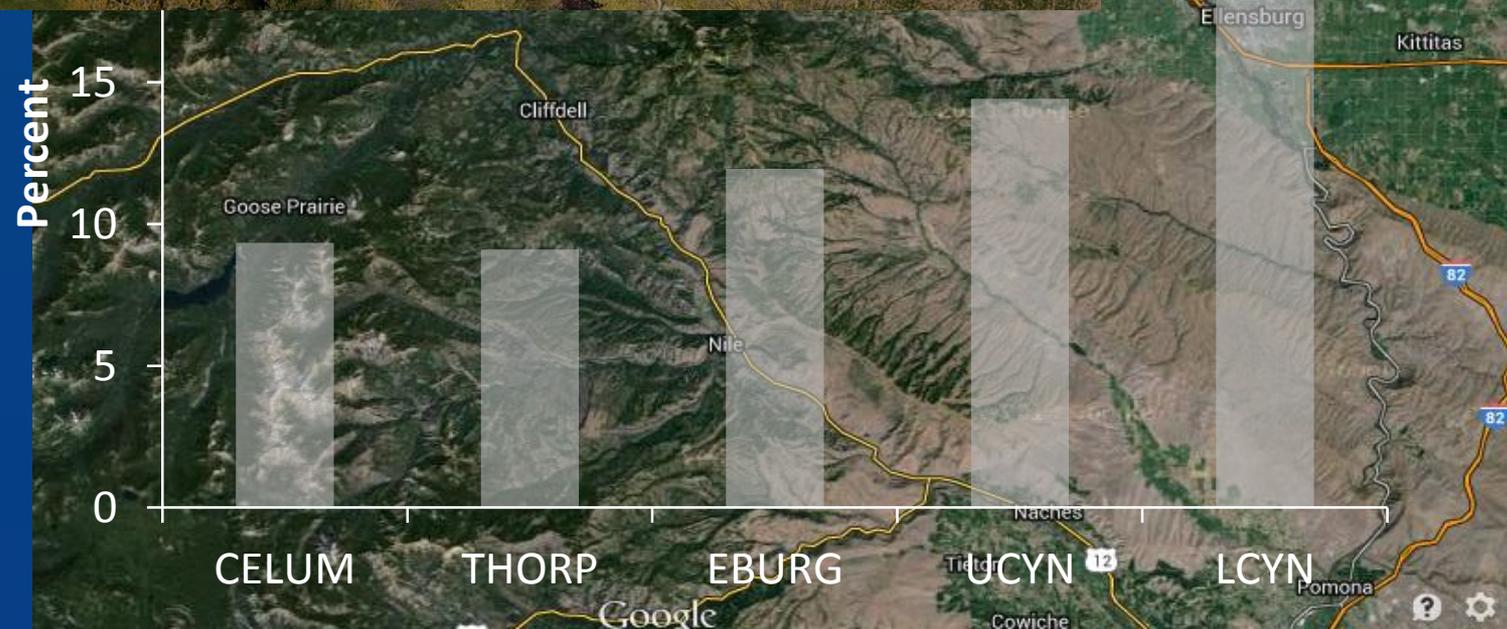


Hook-scarring by Section



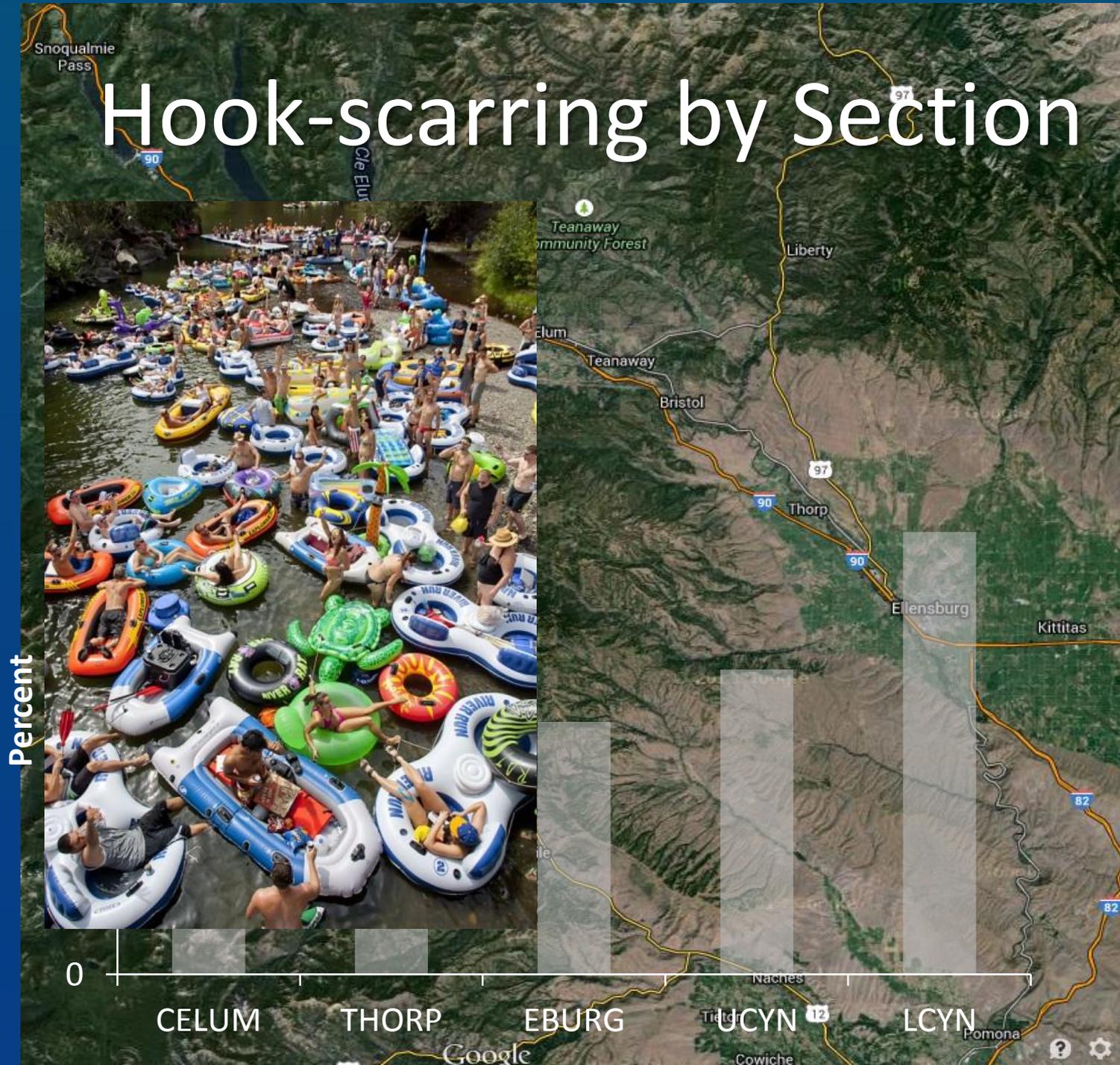
Welcome to Canyon River Ranch

Canyon River Ranch Video





Hook-scarring by Section



Percent

0

CELUM

THORP

EBURG

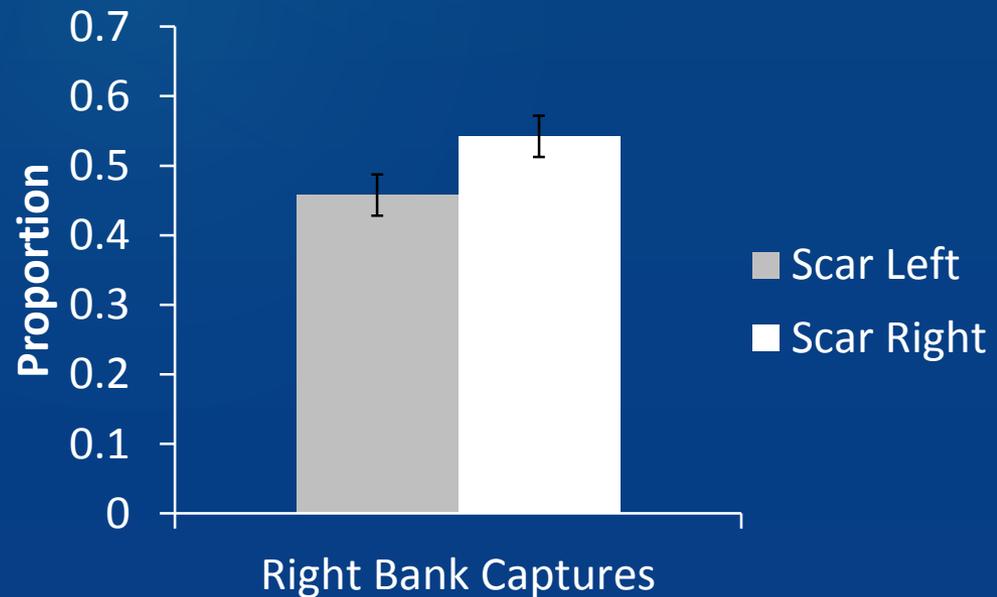
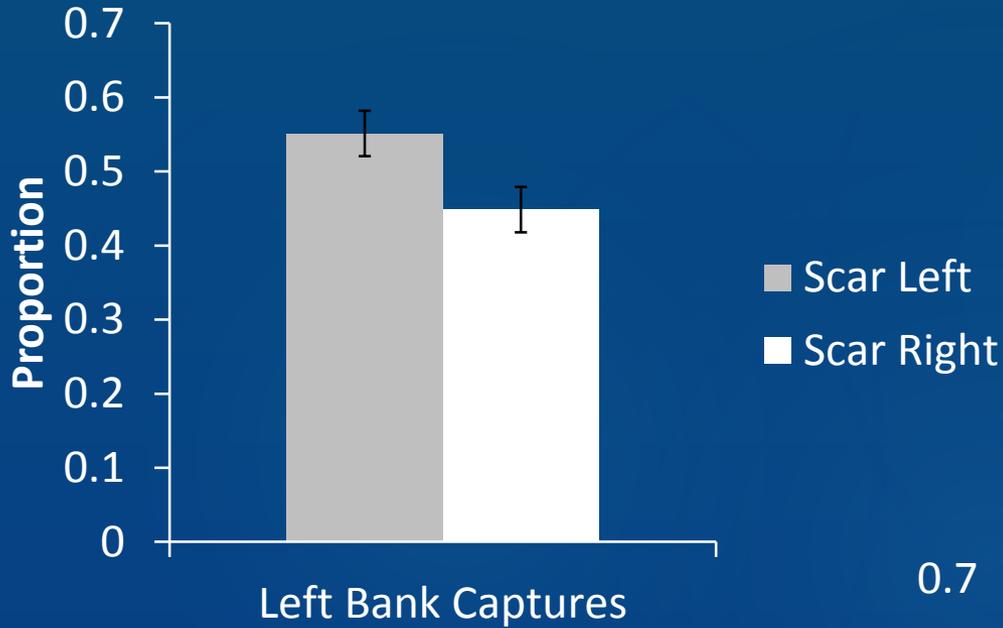
UCYN

LCYN

Google

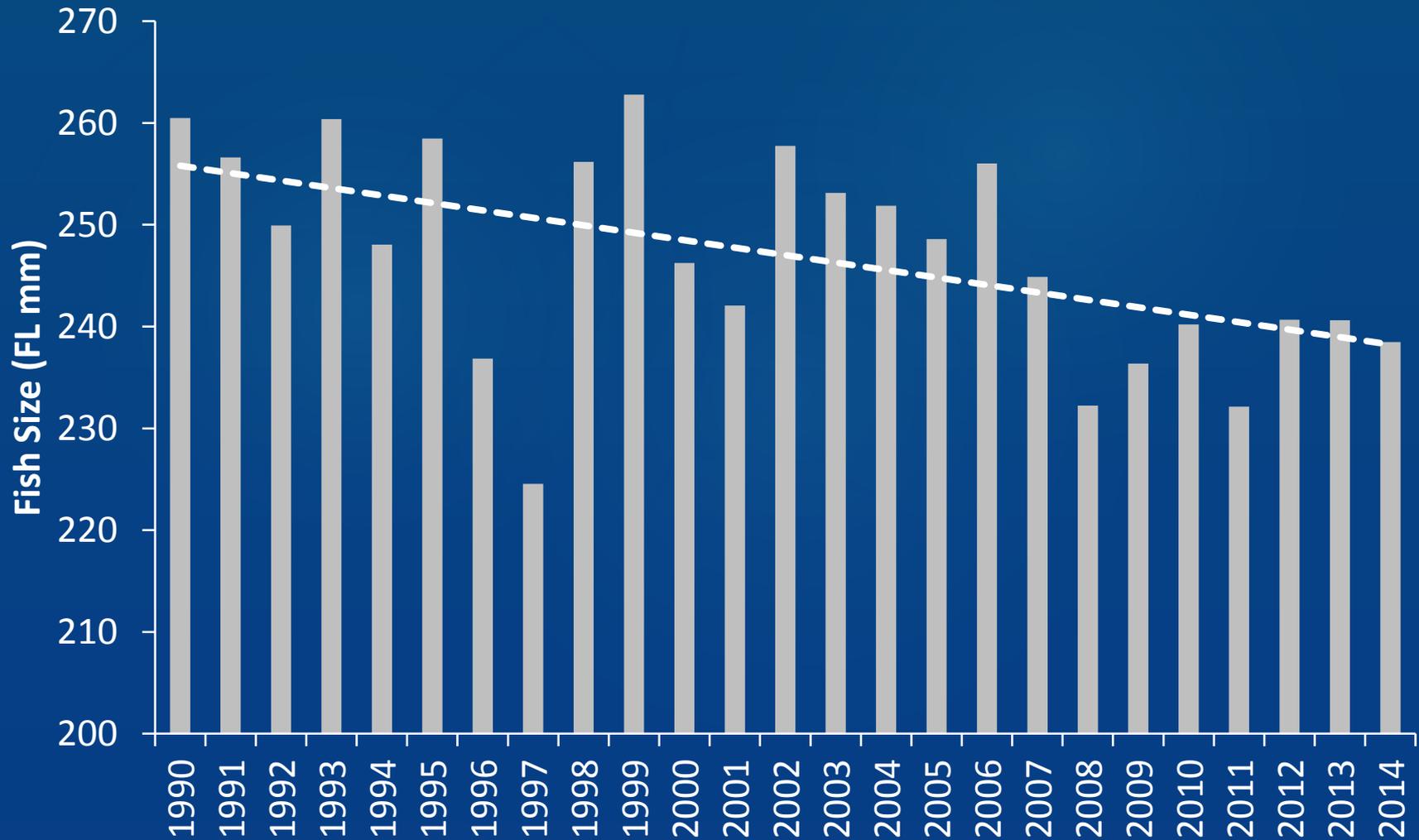


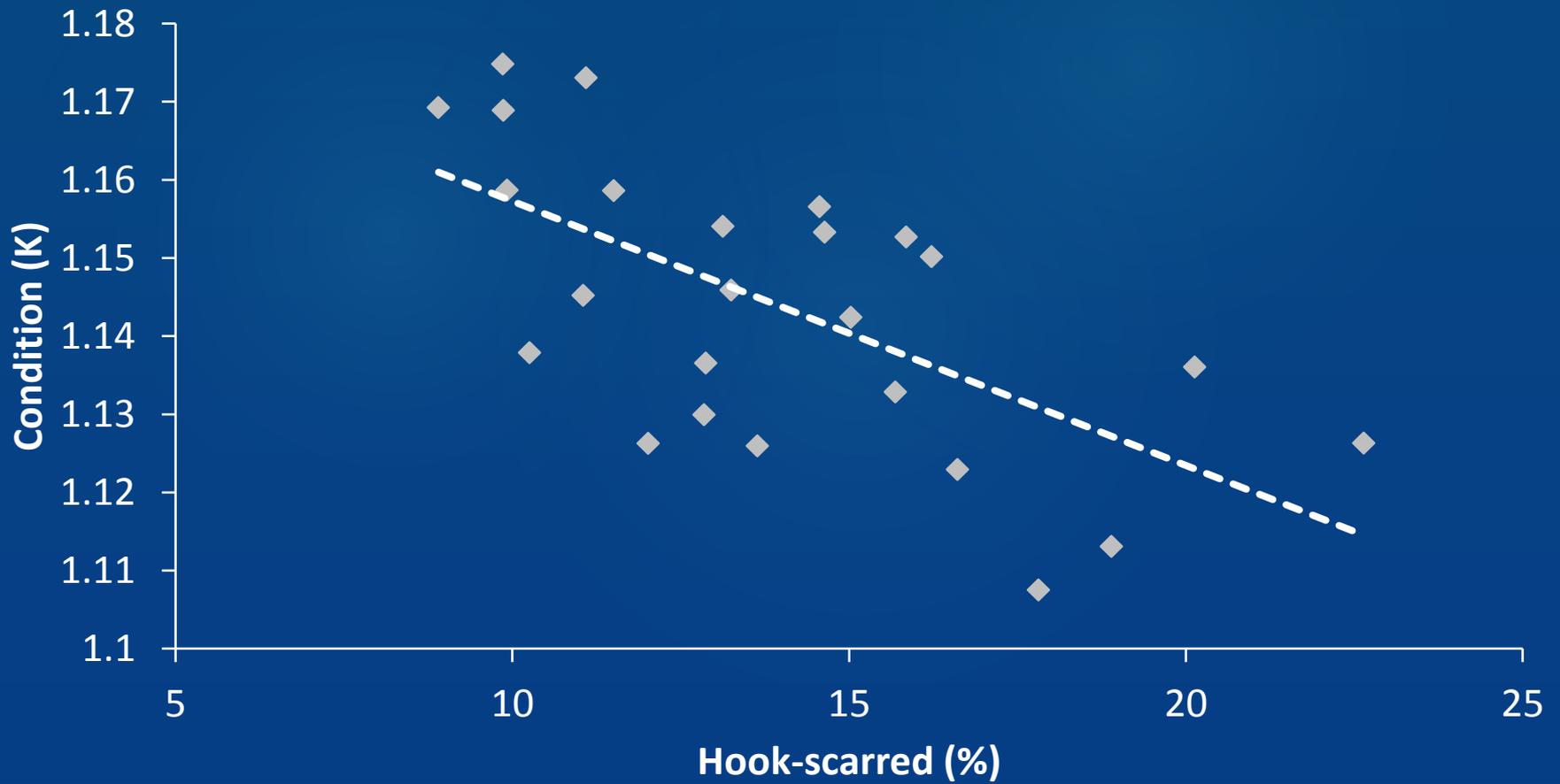
Bank Orientation





Size Trend



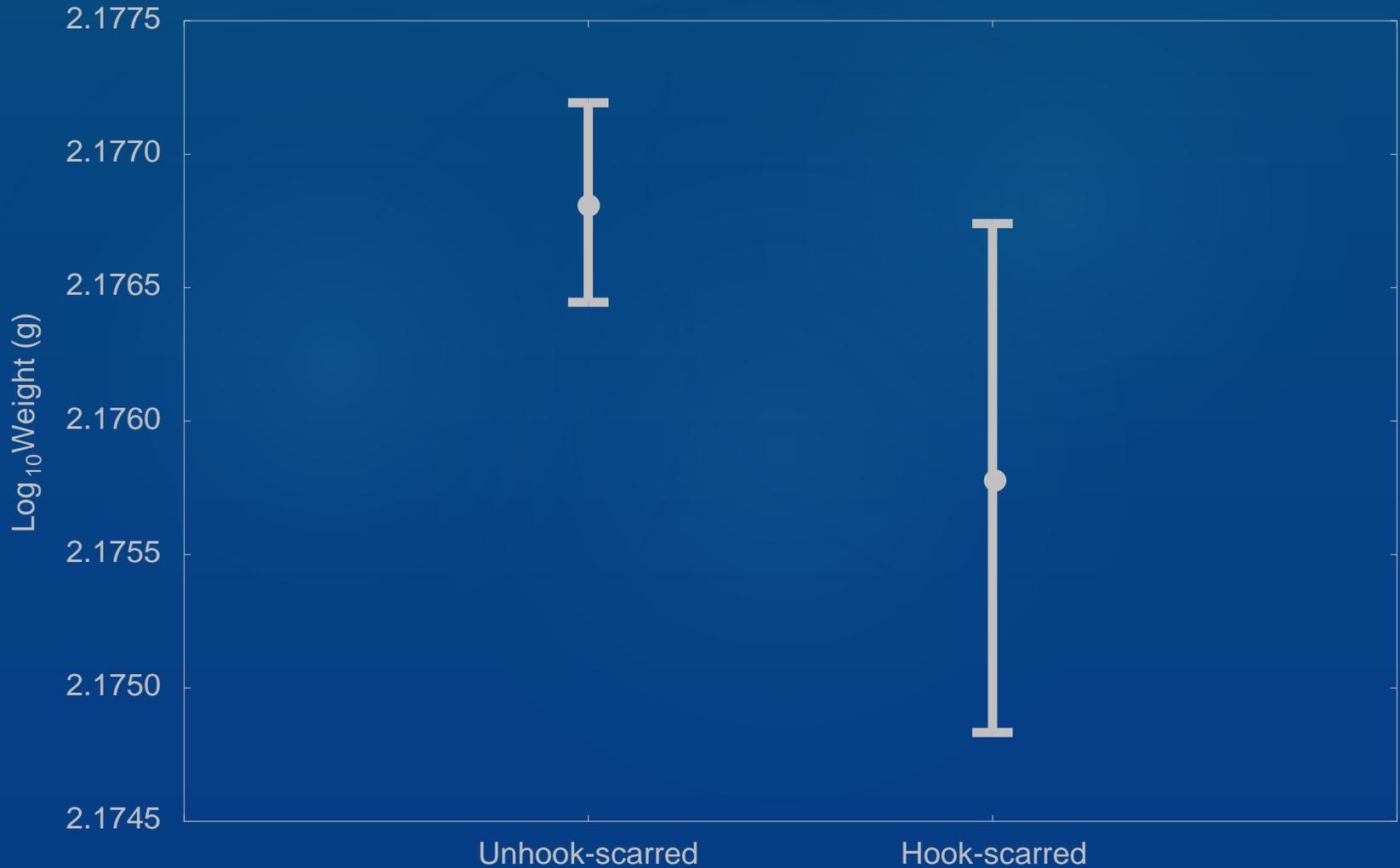




Covariate means:
loglen: 2.373172

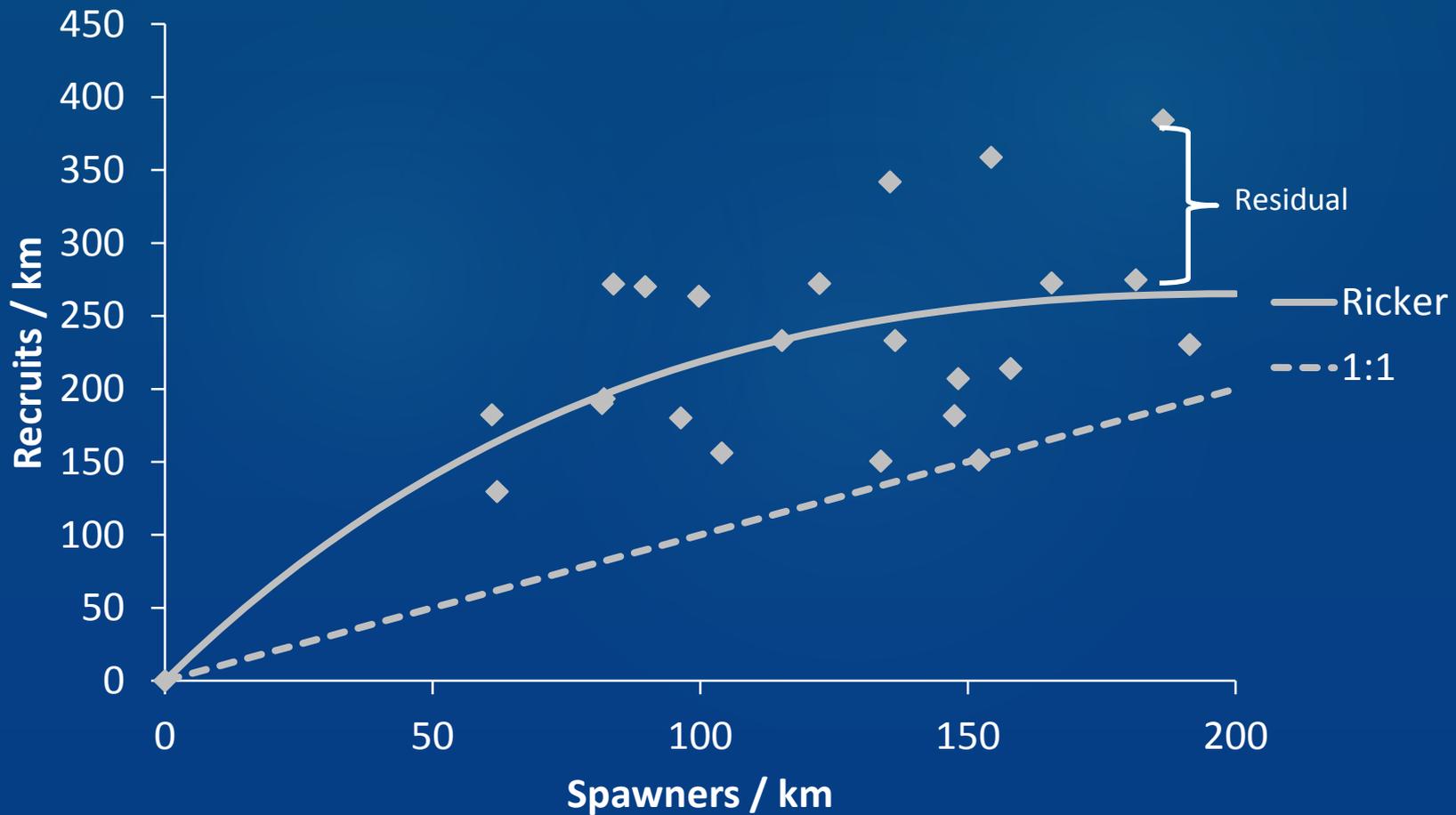
Current effect: $F(1, 53464)=3.8682, p=.04921$
(Computed for covariates at their means)
Vertical bars denote 0.95 confidence intervals

Note the scale- the
difference is like 1.5g



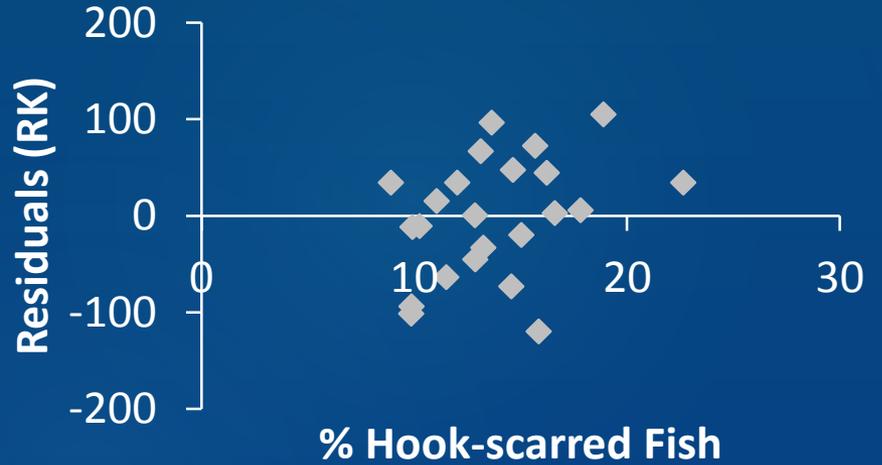


What Drives Recruitment?





Effort Correlations





Summary

- ⌘ Yakima Trout population appears to be gradually increasing
- ⌘ Fishing effort appears greater now than in the 1990's
- ⌘ Number of fish exhibiting hooking injuries is fairly constant
- ⌘ Higher injury rates with decreased elevation
- ⌘ Average size of individual trout decreasing slightly
- ⌘ Hooking injuries reduce trout "condition", although difference is small
- ⌘ Hooking injuries are somewhat related to bank orientation (probably resulting from water management)
- ⌘ Index of fishing effort appears to have less influence on variation in recruitment than other factors