

Movement Patterns of Adult Steelhead and Anglers in the Mainstem Clearwater River, Idaho

Stacey F. Feeken

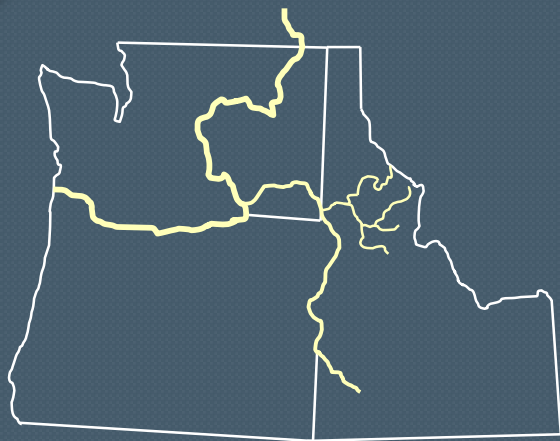
Idaho Cooperative Fish and Wildlife Research Unit,
Department of Fish and Wildlife Sciences, University of Idaho

Michael C. Quist

U.S. Geological Survey, Idaho Cooperative Fish and Wildlife Unit,
Department of Fish and Wildlife Sciences, University of Idaho

Brett J. Bowersox and Marika E. Dobos

Idaho Department of Fish and Game



Columbia River

Clearwater River

Snake River



Clearwater River Steelhead

◉ Five wild populations

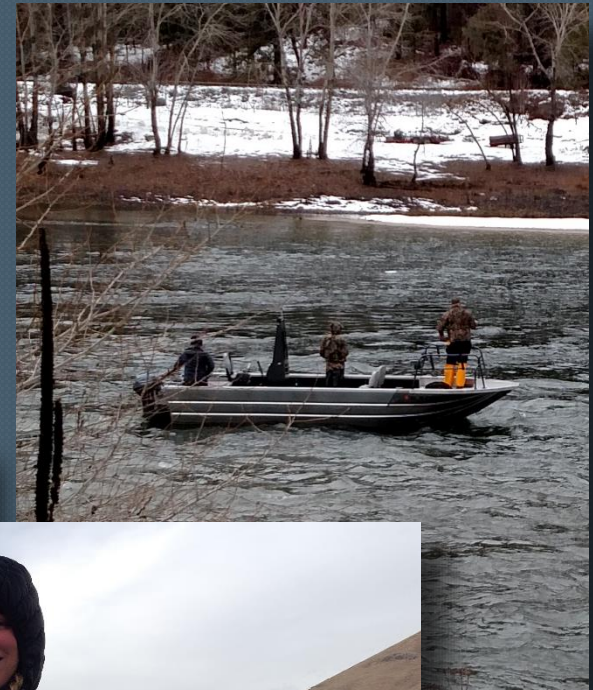
- Lower Clearwater River
- Lolo Creek
- SF Clearwater River
- Lochsa River
- Selway River

◉ One hatchery stock



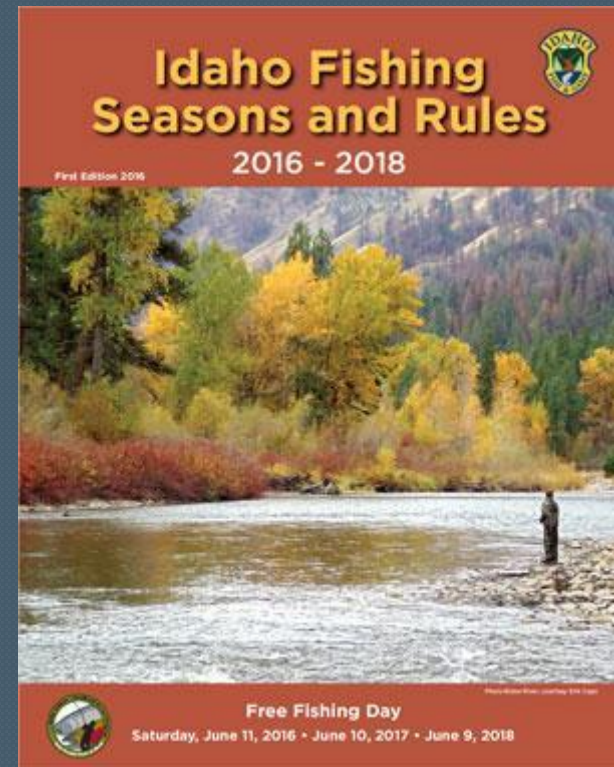
Recreational Fishery

◎ Trophy steelhead fishery



Fishing Regulations

- ◎ July 1st
 - Catch and release
 - Entire river (to Clear Creek)
- ◎ August 1st
 - Catch and keep
 - Mouth to Memorial Bridge
 - Catch and release
 - Entire river (to Clear Creek)
- ◎ October 15th
 - Catch and keep
 - Entire river (to Clear Creek)
- ◎ May 1st
 - Closed to fishing



Question

- ◉ How can we better understand the steelhead fishery to benefit both steelhead and anglers?

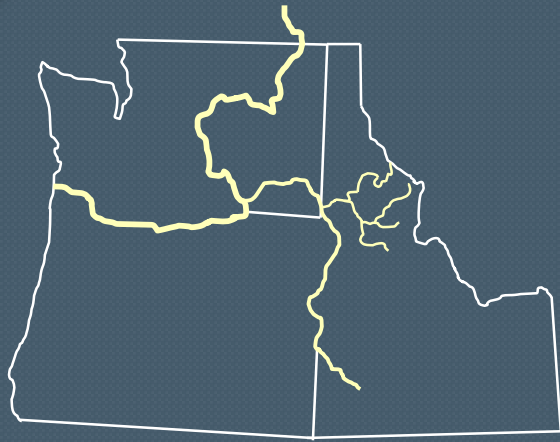
Objectives

- ◉ Describe steelhead distribution and movement
 - Wild and hatchery steelhead
 - Timing into the Clearwater River
 - Fate
- ◉ Describe angler distribution

A scenic landscape photograph of a river with rapids. The river is dark blue with white foam from the rapids. The banks are covered in dense evergreen forests. In the background, there are rolling hills and mountains under a clear blue sky. The word "Methods" is overlaid in large white text in the center of the image.

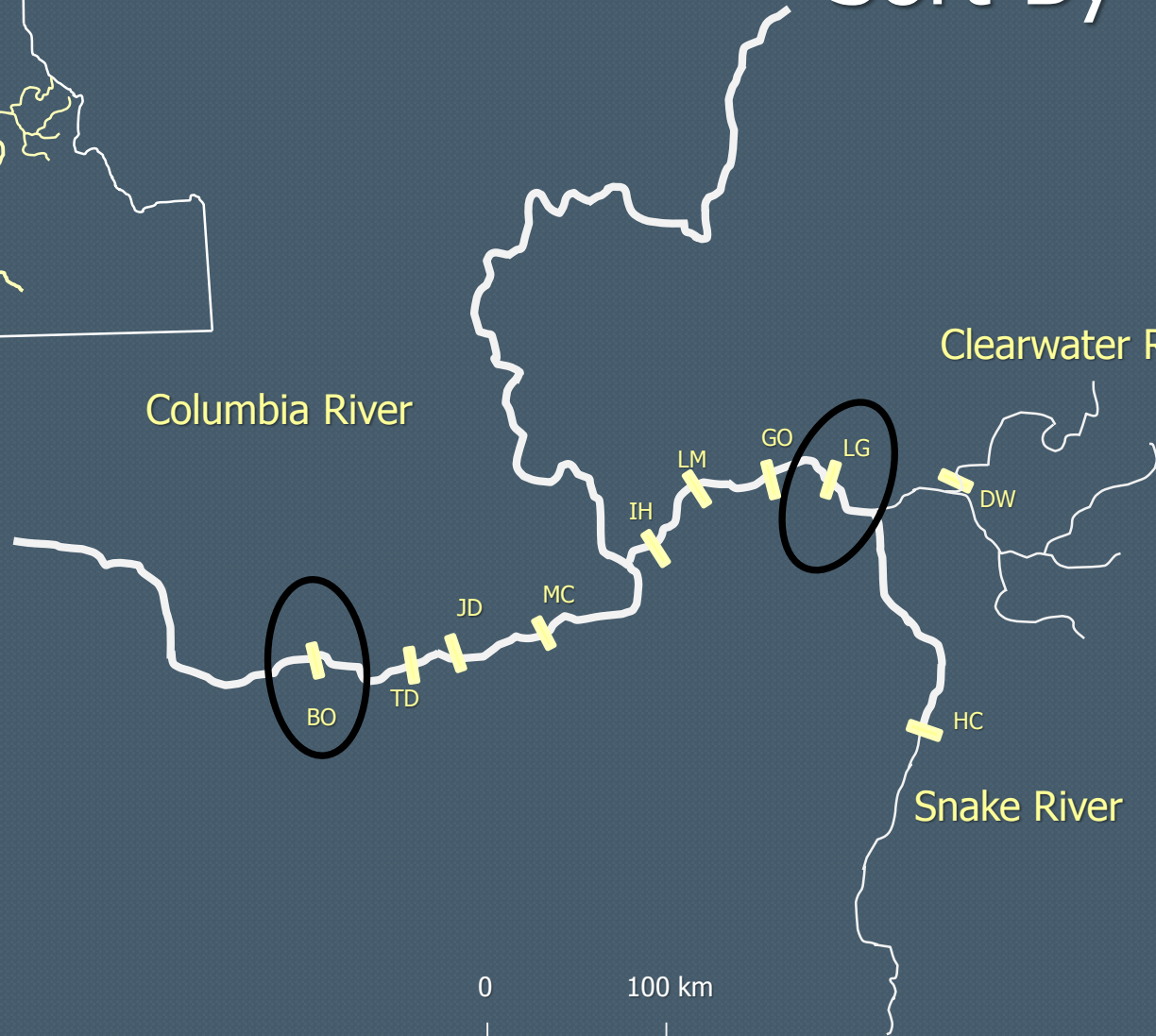
Methods

Sort-By-Code



Columbia River

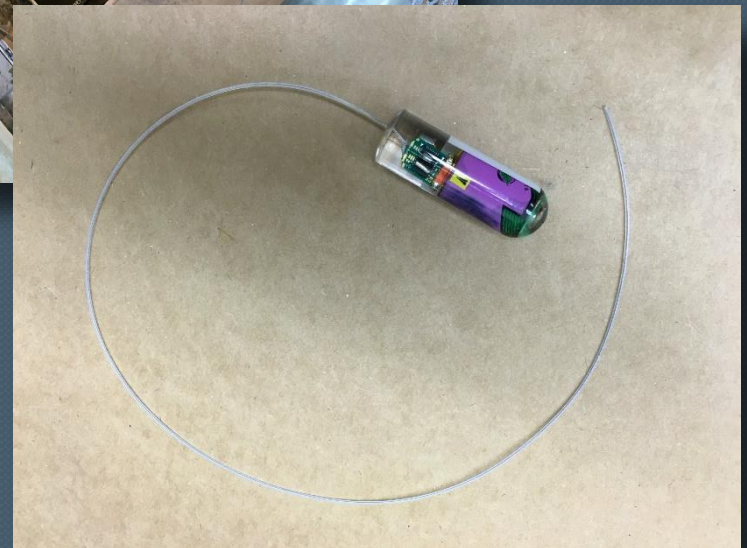
Clearwater River



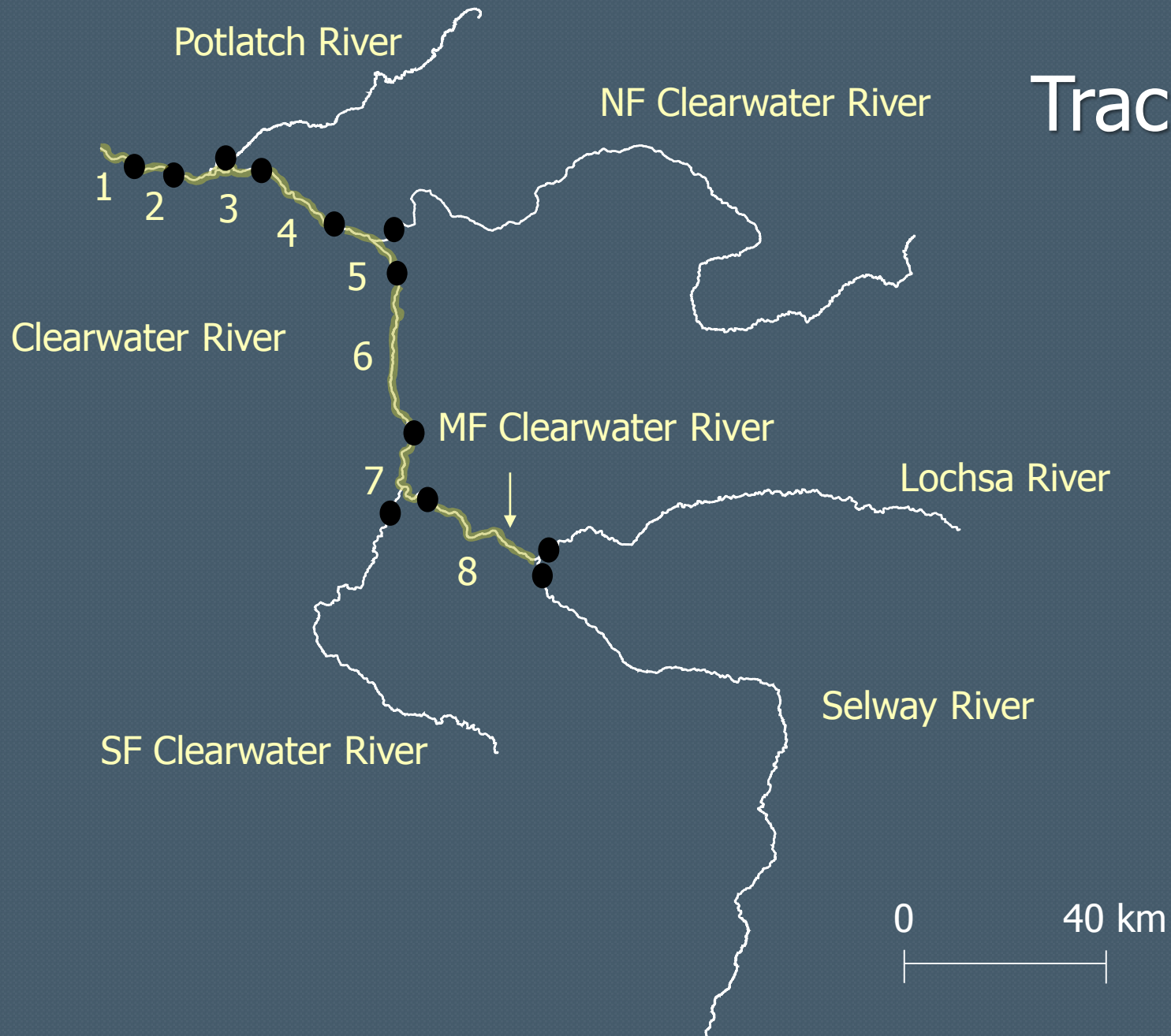
0 100 km

A scale bar with a horizontal line and vertical ticks at each end, labeled '0' and '100 km'.

Lower Granite Dam



Tracking



Results

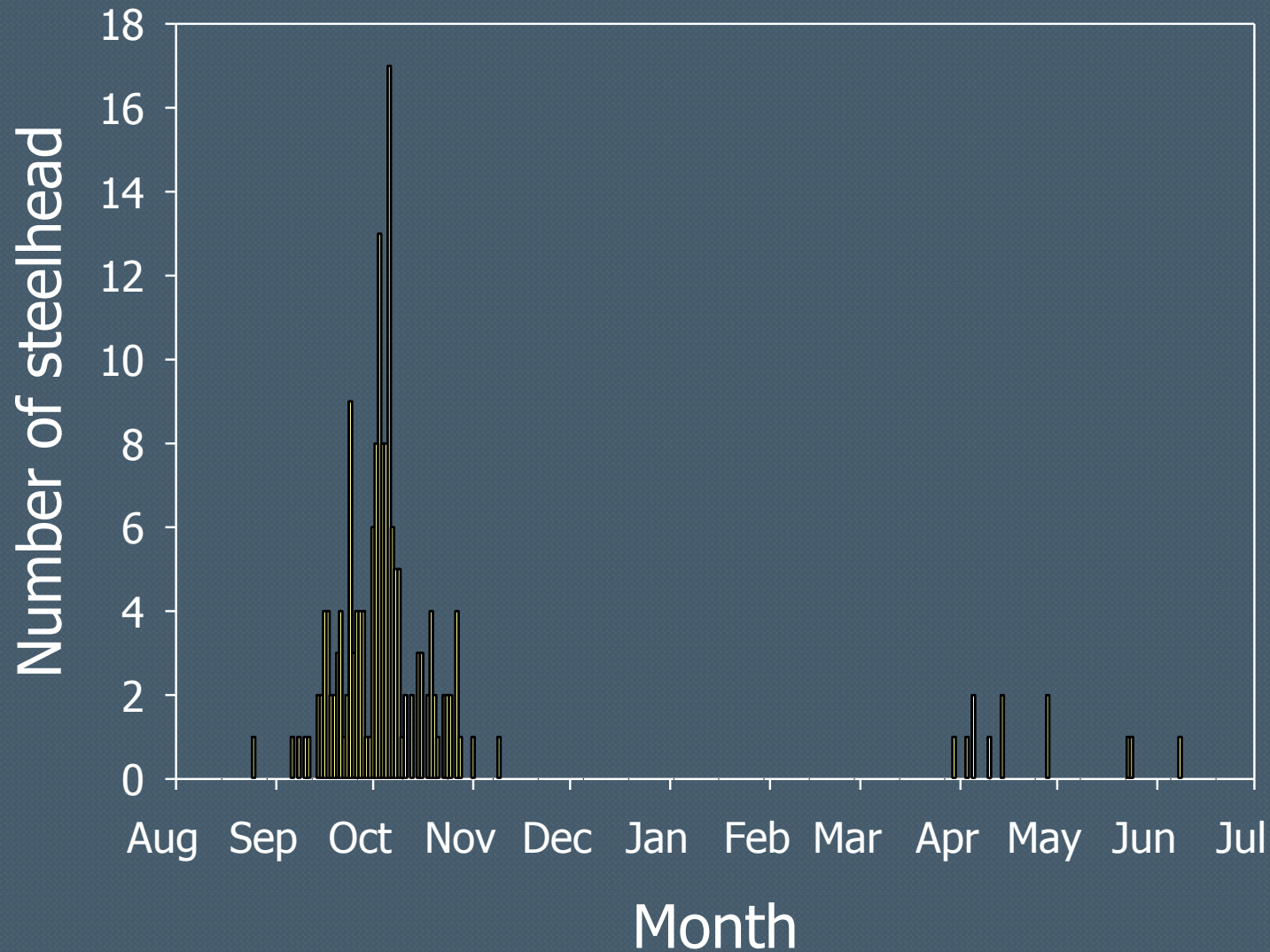


Radio-tagged Steelhead

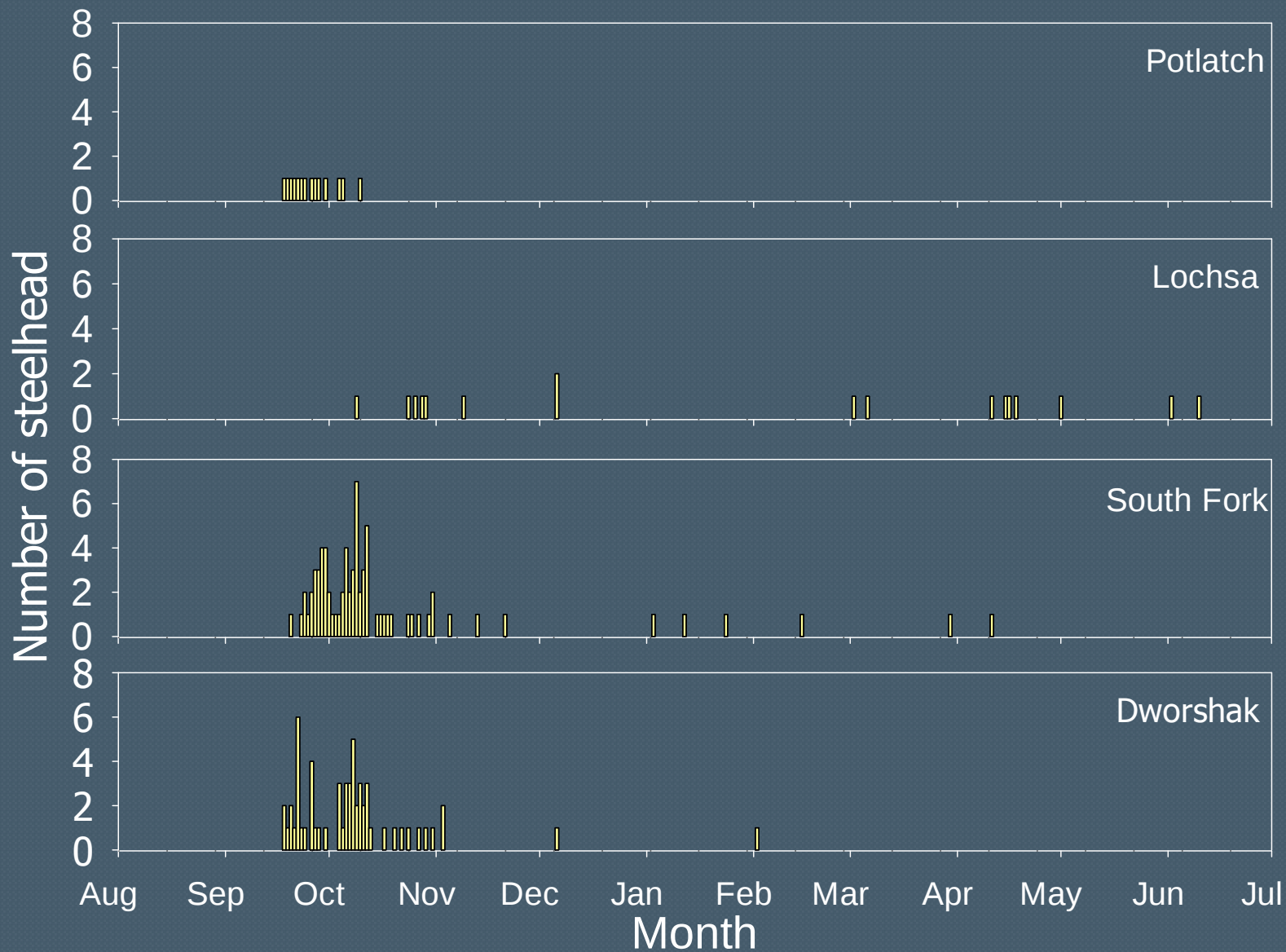
Radio-tag group	Lower Granite Dam	Clearwater River
Potlatch	15	14
Lochsa	23	19
Dworshak NFH	60	58
SF Clearwater	80	74
Total	178	165

Spawn Year 2017

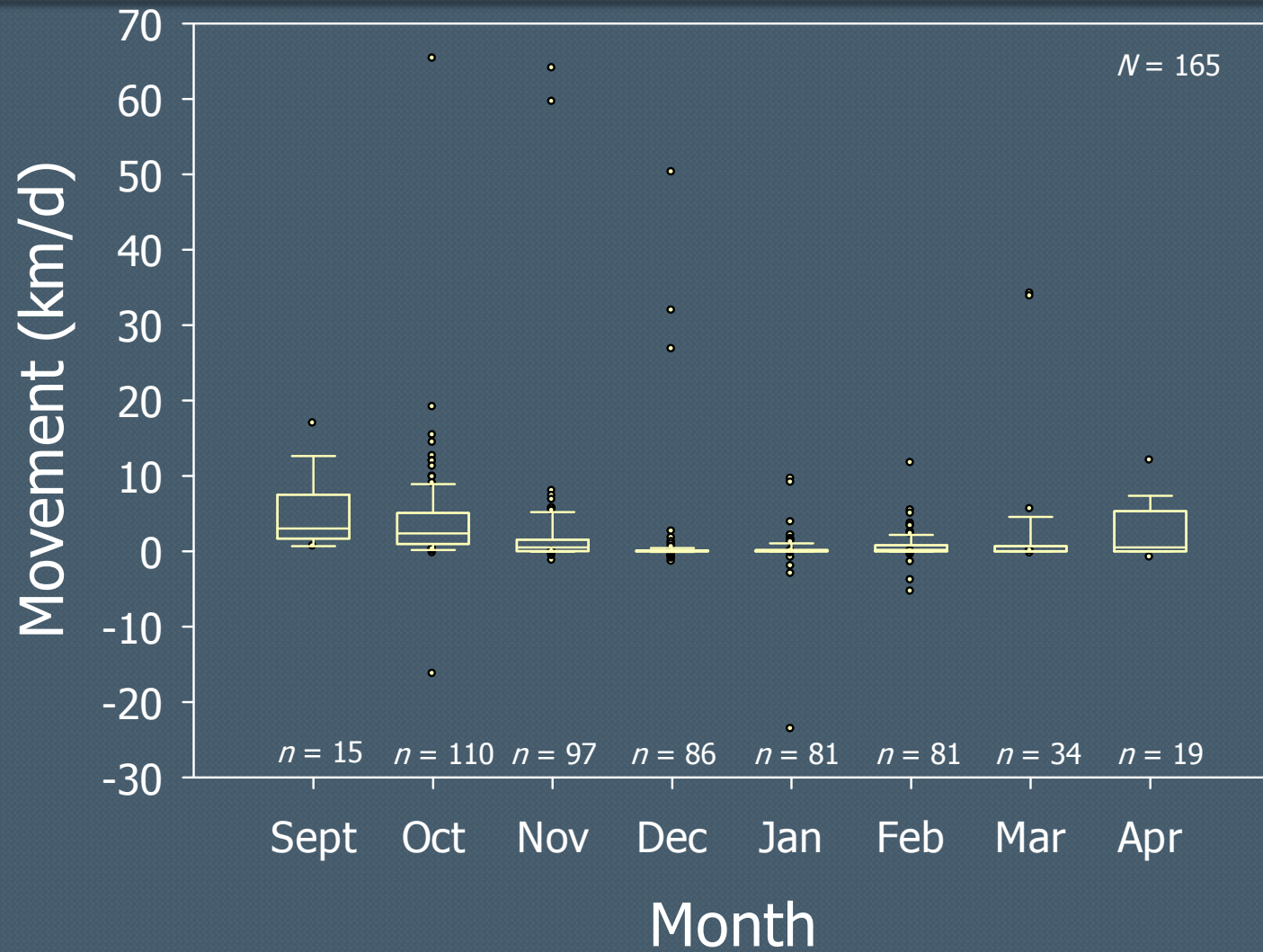
Timing-Lower Granite Dam



Month	Number of steelhead
Aug	0
Sep	0
Oct	10
Nov	3
Dec	0
Jan	0
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	0



Movement



Density estimator

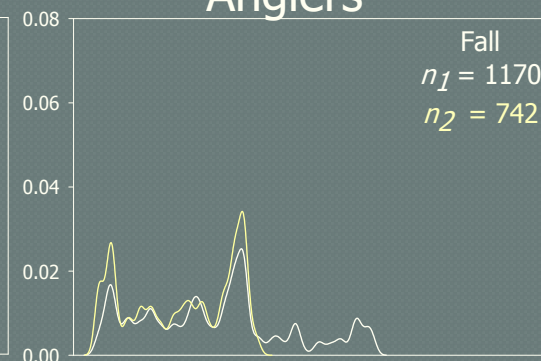
Potlatch



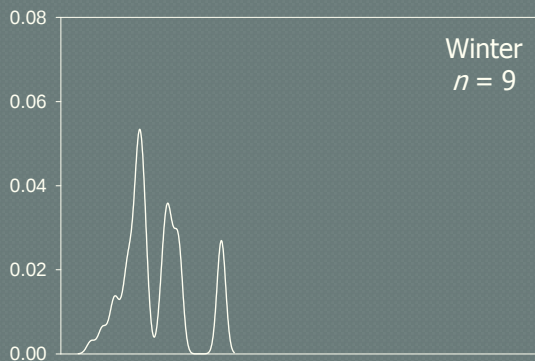
Lochsa



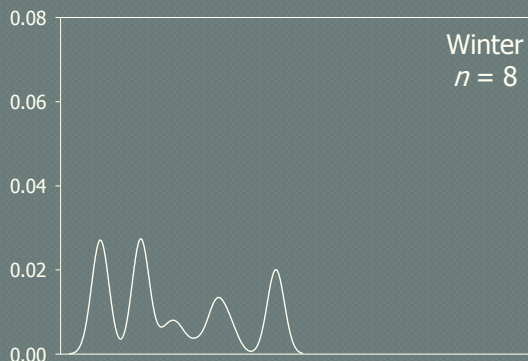
Anglers



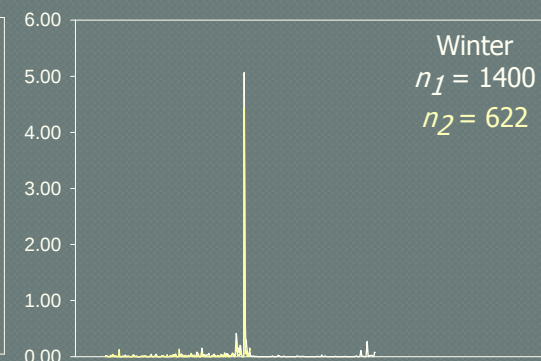
Winter
 $n = 9$



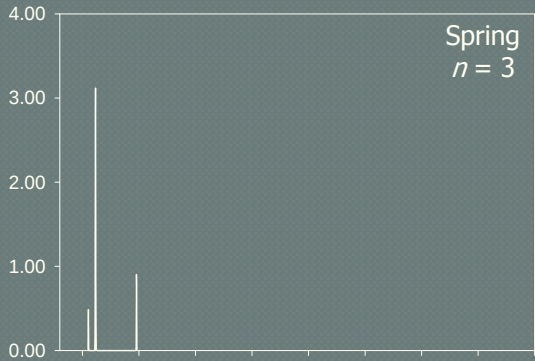
Winter
 $n = 8$



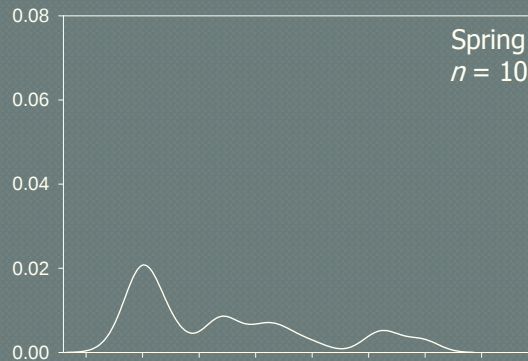
Winter
 $n_1 = 1400$
 $n_2 = 622$



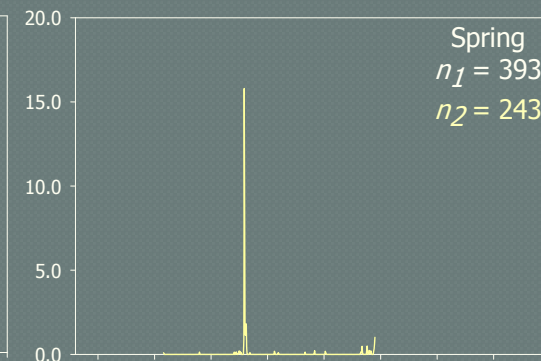
Spring
 $n = 3$



Spring
 $n = 10$



Spring
 $n_1 = 393$
 $n_2 = 243$



POT NF SF LOC

POT NF SF LOC

POT NF SF LOC

River kilometer

Density estimator

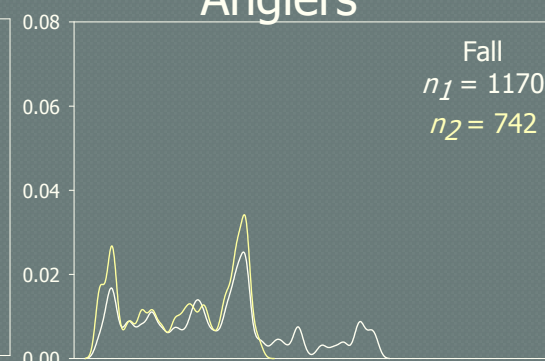
Dworshak



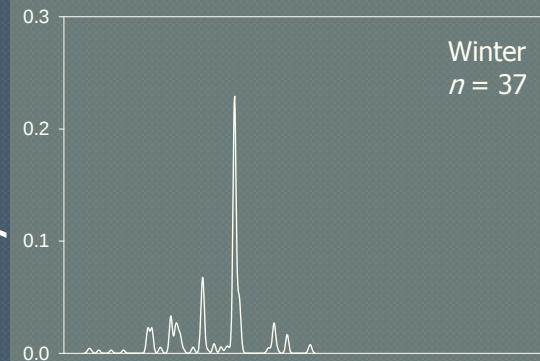
South Fork



Anglers



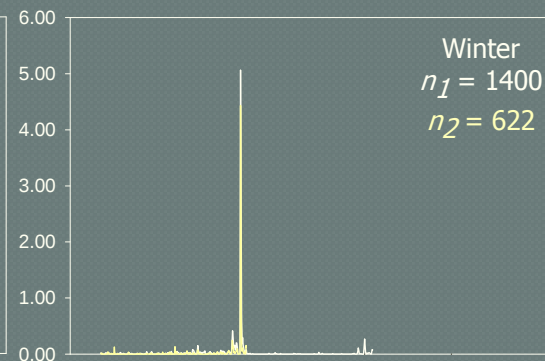
Winter
 $n = 37$



Winter
 $n = 8$



Winter
 $n_1 = 1400$
 $n_2 = 622$



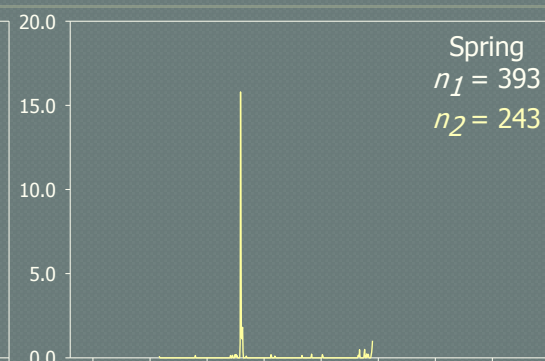
Spring
 $n = 14$



Spring
 $n = 14$



Spring
 $n_1 = 393$
 $n_2 = 243$



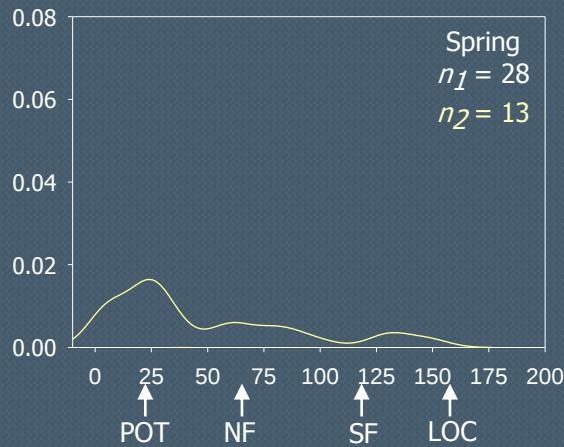
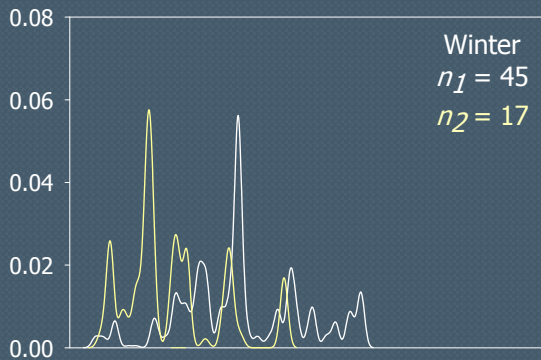
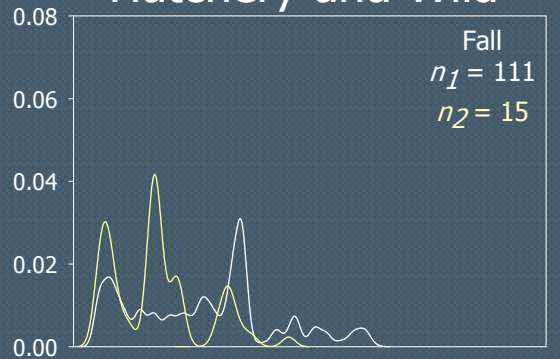
POT NF SF LOC

River kilometer

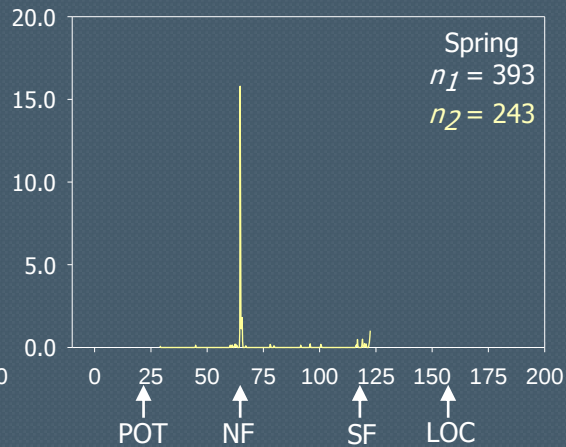
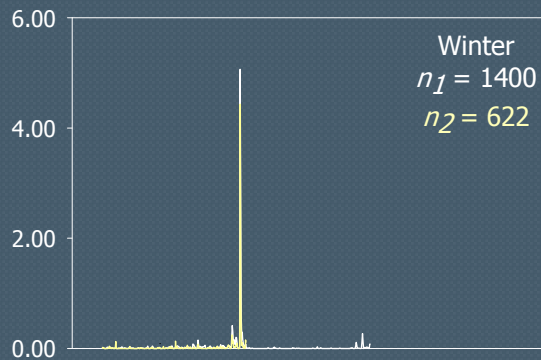
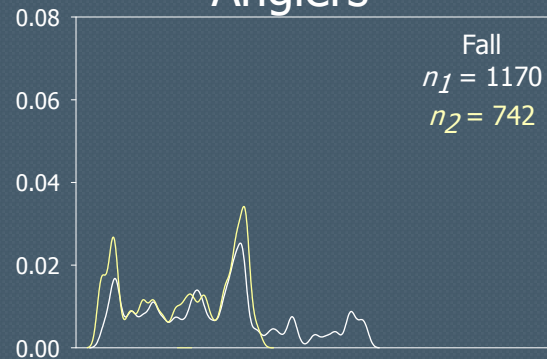
POT NF SF LOC

Density estimator

Hatchery and Wild



Anglers



River kilometer

POT

NF

SF

LOC

POT

NF

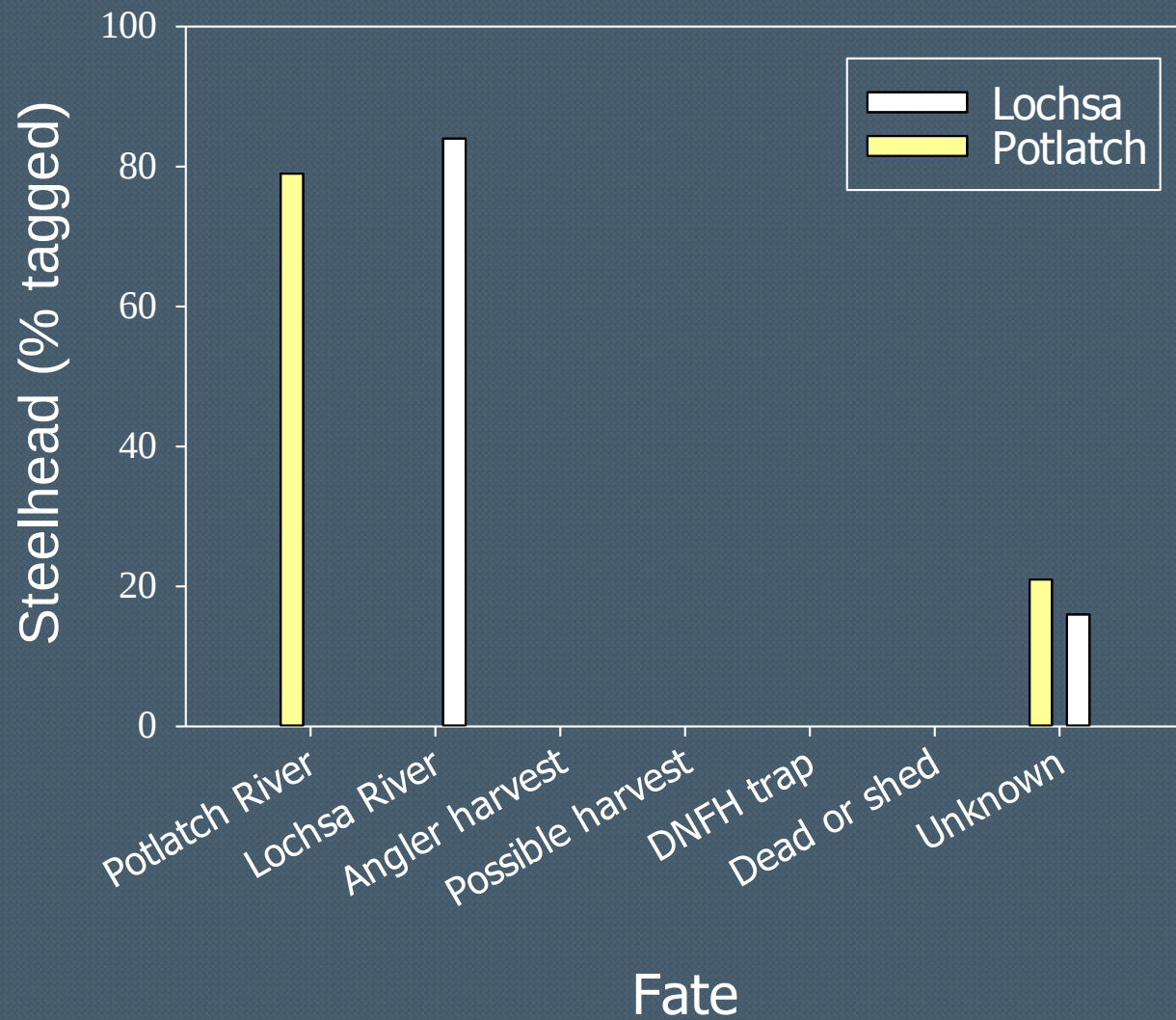
SF

LOC

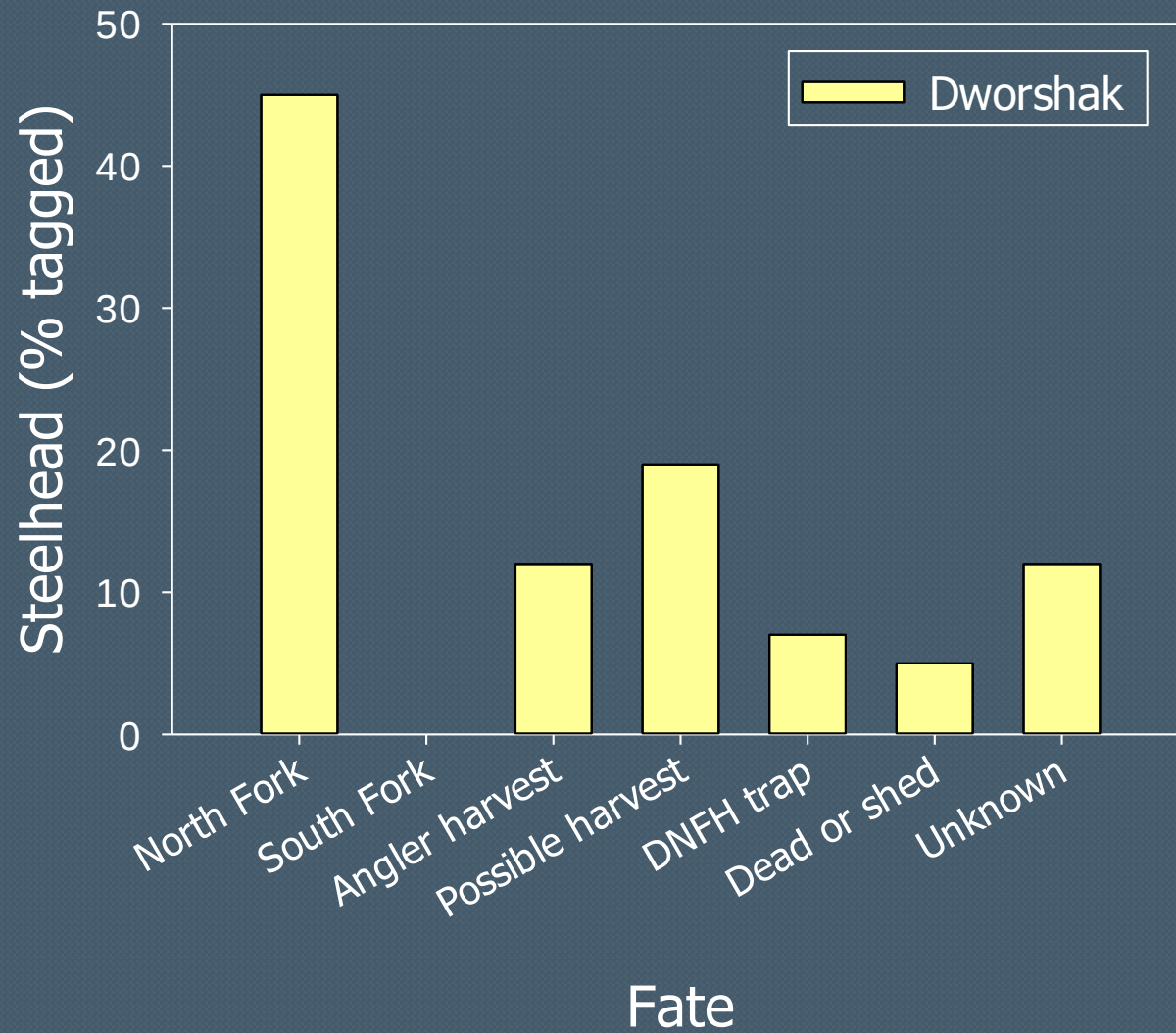
Return to Tributaries

Tributary	Origin			
	Potlatch	Dworshak	South Fork	Lochsa
Potlatch	79%	0	0	0
North Fork	0	72%	9%	0
South Fork	0	0	66%	0
Lochsa	0	0	0	84%

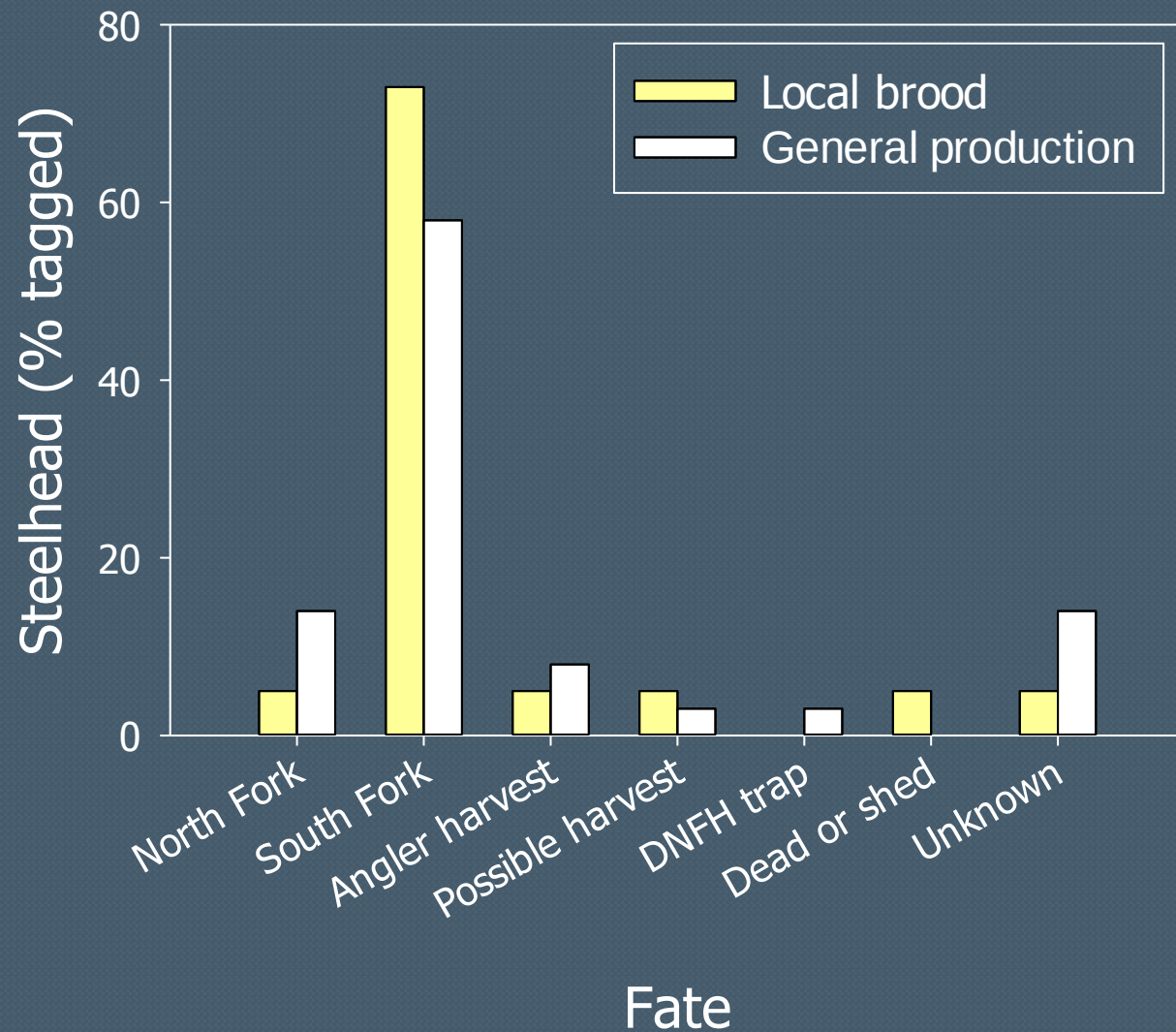
Fate



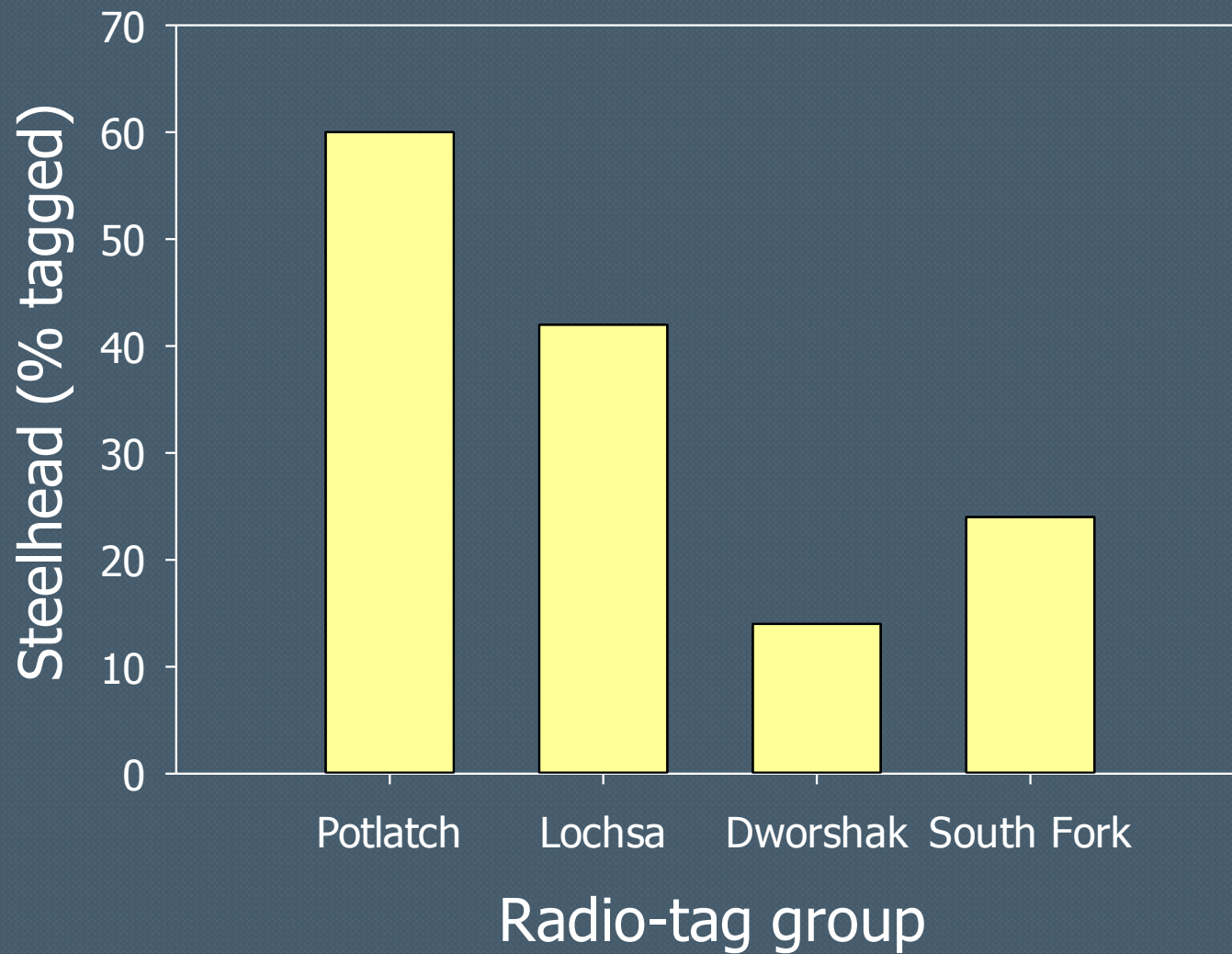
Fate



Fate



Kelts



Management Implications

◉ Wild and hatchery

- Limited overlap of wild and hatchery steelhead
- Angling effort focused on hatchery fish
- No evidence of straying by hatchery fish

◉ Regulation structure

- Highly compartmentalized fishery
- Out-of-basin stocks

Hatchery Effectiveness

◉ Dworshak steelhead

- Run reconstruction
- Fish are returning to the North Fork
- Few fish collected for brood

◉ South Fork steelhead

- Higher returns of local brood to South Fork than general production
- General production had high returns

Future Data Analysis

- ◉ Macrohabitat selection
- ◉ Summarize 2017-2018 steelhead and angler data



Acknowledgements

Idaho Department of Fish and Game

- Paul Bunn
- Michael Briggs
- Tim Copeland
- Matt Corsi
- Brian Knoth
- Dalton Lebeda
- Devin Norland
- Scott Putnam
- Grant Truskowski
- Clayton Waller
- Don Whitney

University of Idaho

- Shannon Blackburn
- Christopher Caudill
- Sophie Gilbert

Nez Perce Tribe

- Brent Boncheau
- Peter Cleary

NOAA

- Darren Ogden

Funded by: Pacific Coastal Salmon
Recovery Fund





Photo: Matt Corsi

