

# Management Planning for Priest and Upper Priest Lakes





# Priest Lake

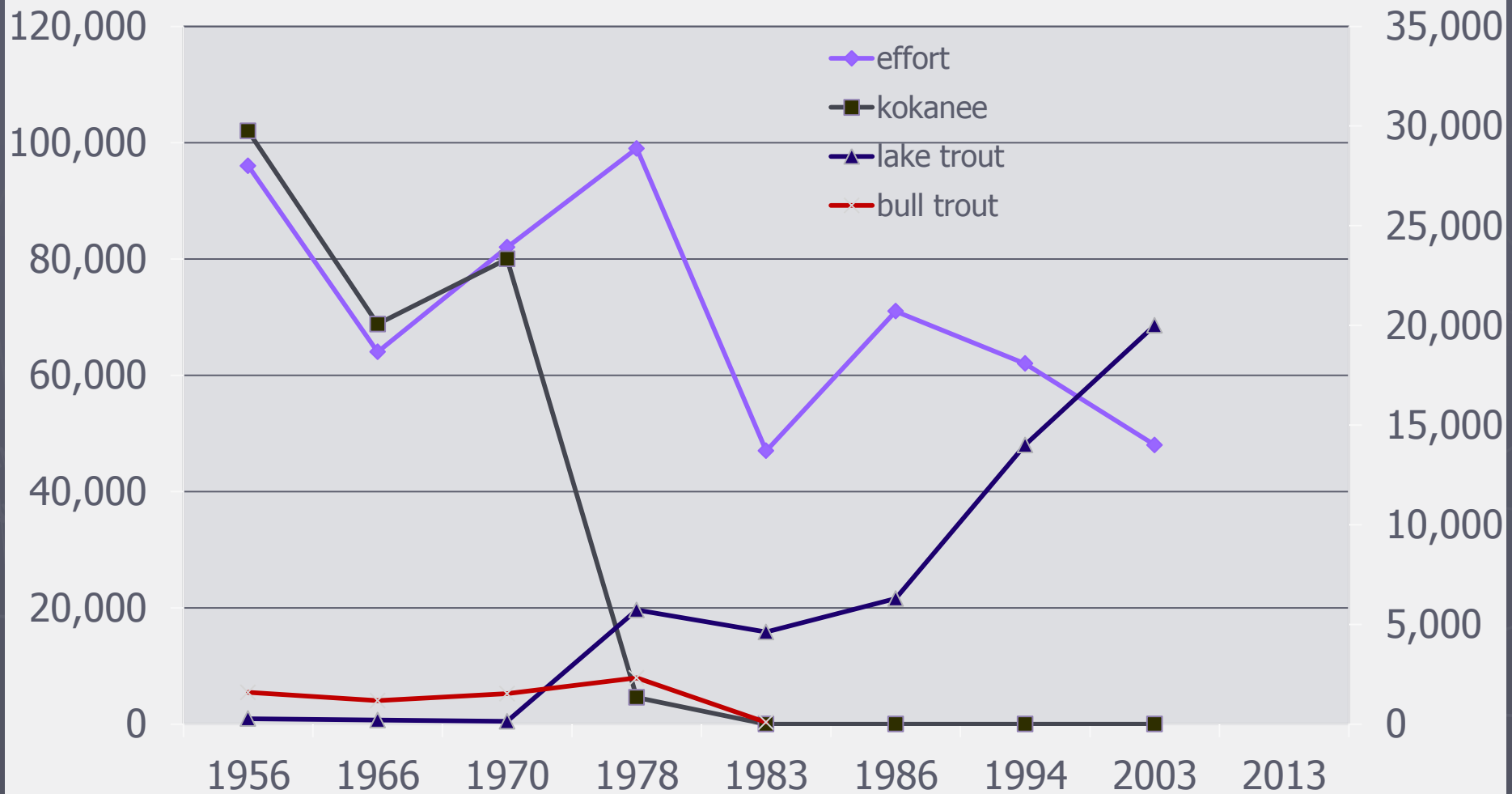
- ▶ Cutthroat: World-renowned fishery 'til 50's
- ▶ Bull Trout fishery 'til late 70's
- ▶ Kokanee: Introduced in 1930's and '40's
  - Annual harvest of 100,000 for 20 years
- ▶ Lake Trout: Introduced in 1925
  - Pre-Mysis, old growth
  - State record 57 ½ pounds
- ▶ Mysis: introduced in 1965

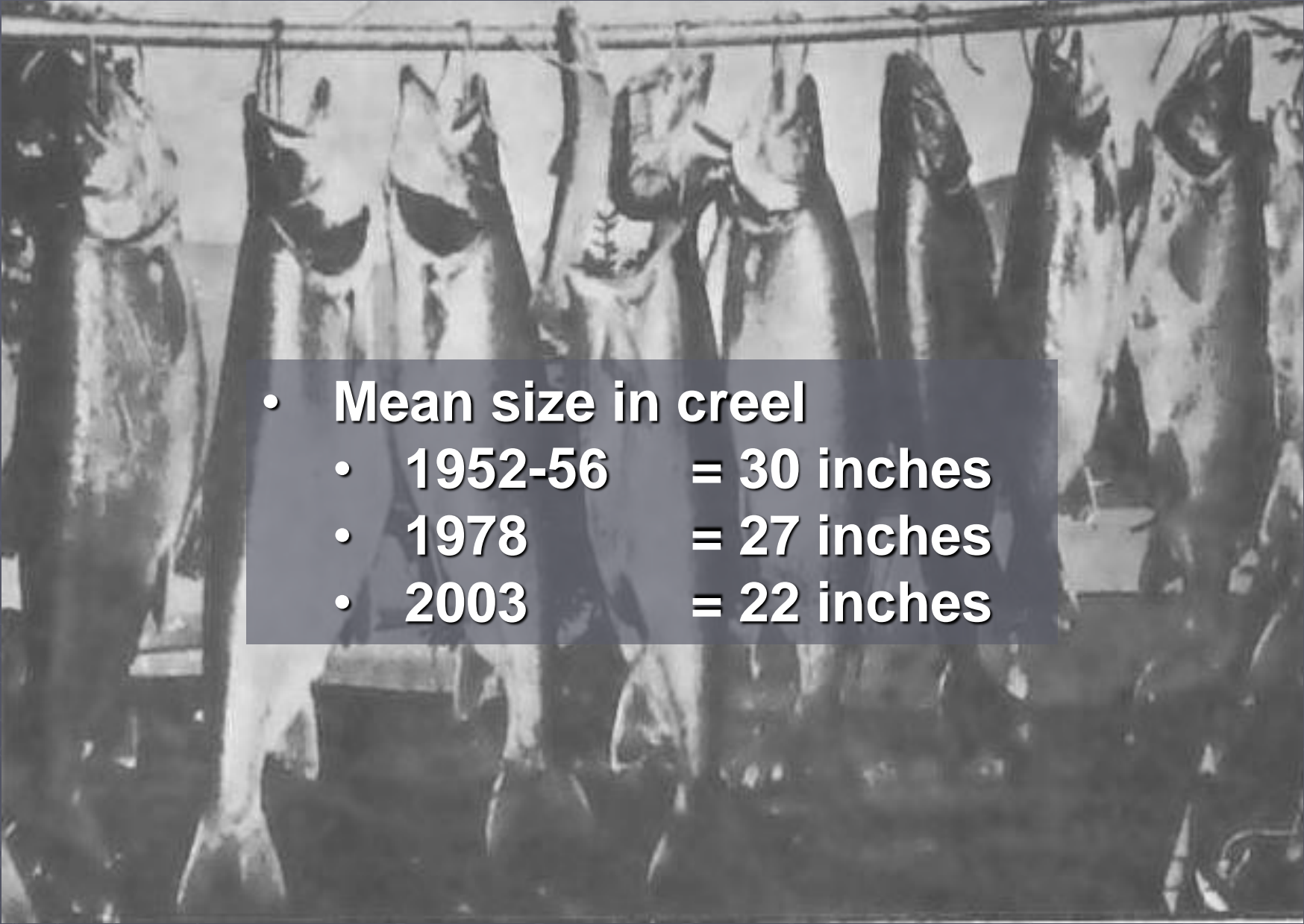


Idaho state record mackinaw caught by Russ Herman from Priest Lake in 1964. This fish weighed 54 pounds 5 ounces. Length 44 inches; girth 34 inches.



# Priest Lake Fishery - 1956 to 2003



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- **Mean size in creel**
    - **1952-56 = 30 inches**
    - **1978 = 27 inches**
    - **2003 = 22 inches**

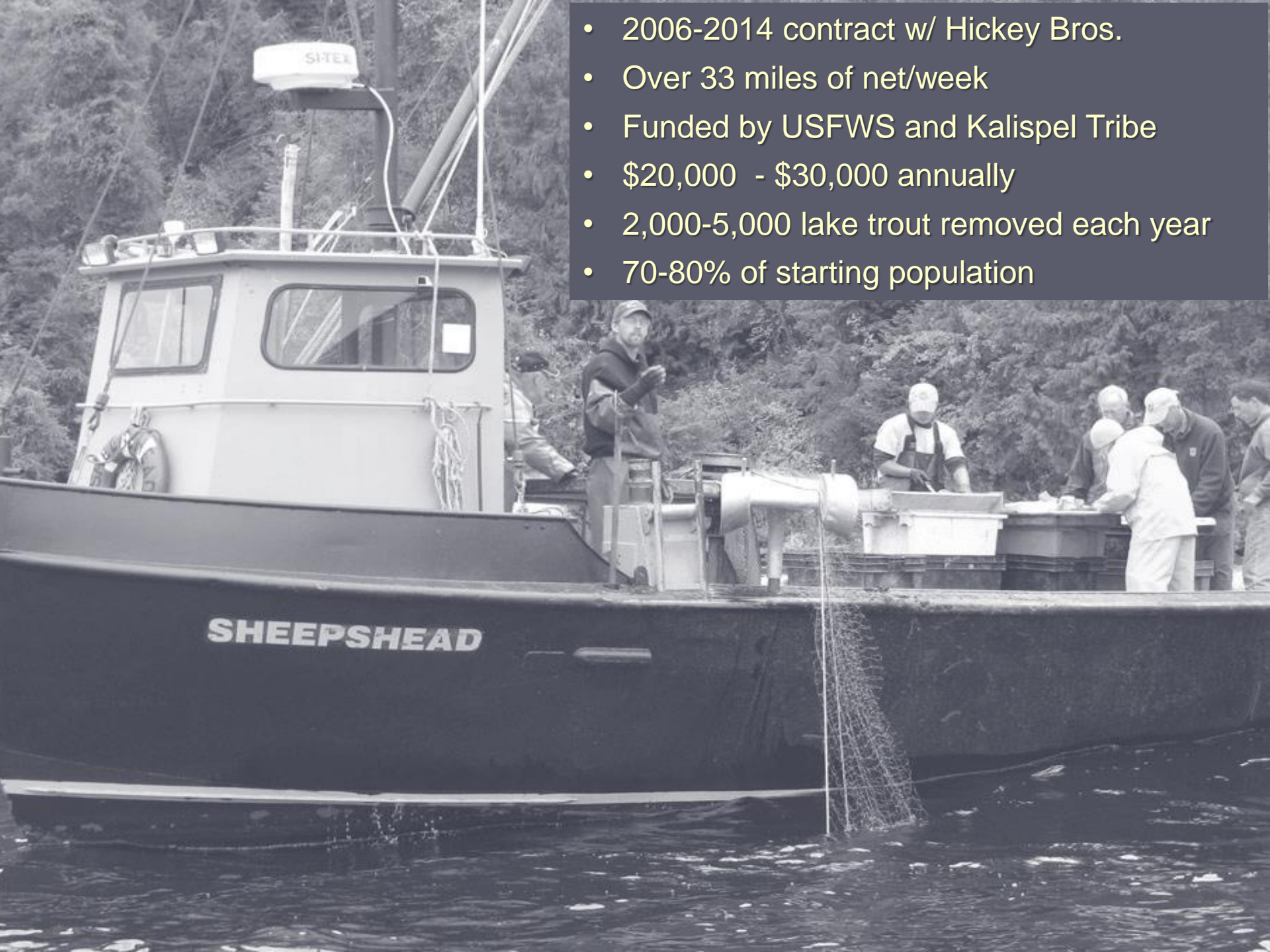


# UPL Lake Trout History

- Lake trout non-existent in upper lake in 1956
- Occasionally caught by 1985
- Common by 1993
- First removal in 1998
- Annual removal since

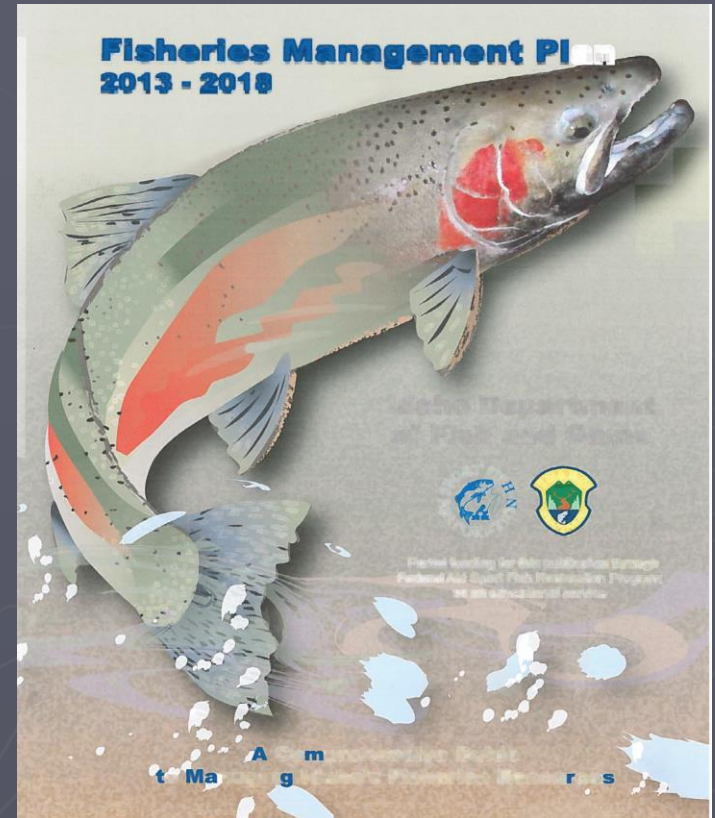


- 2006-2014 contract w/ Hickey Bros.
- Over 33 miles of net/week
- Funded by USFWS and Kalispel Tribe
- \$20,000 - \$30,000 annually
- 2,000-5,000 lake trout removed each year
- 70-80% of starting population



# 2013-2018 Management Plan

- ▶ Collect information necessary to make an informed decision on how to manage Priest and Upper Priest lakes into the long-term future.
- ▶ Work with stakeholders to develop an information based decision making process that will culminate with a decision on how to manage the two lakes





# Population Assessment





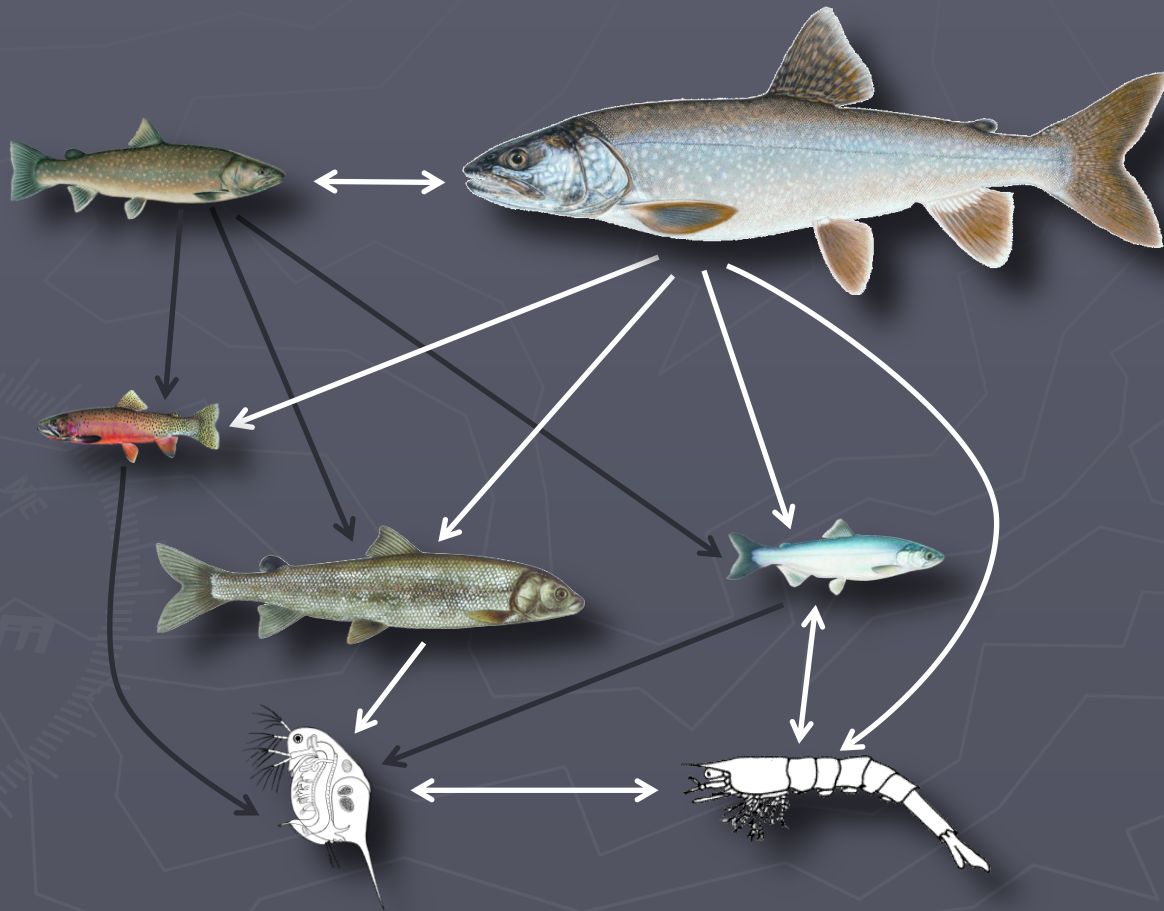








# Trophic interactions *(who eats whom)*



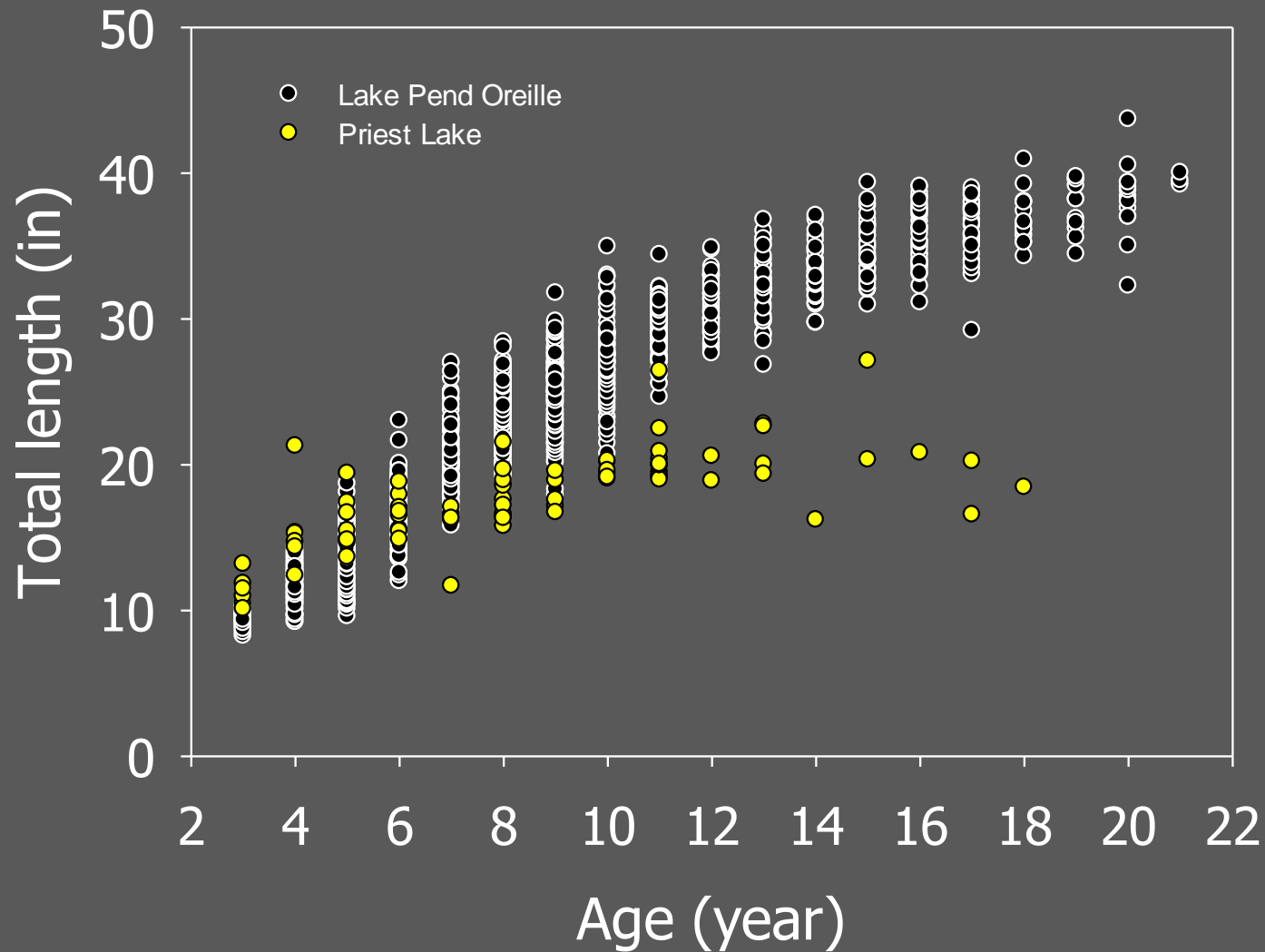
# Length and Weight

	1978	2013
Average length (in)	27.0	18.5
Average weight (lb)	12.7	2.3



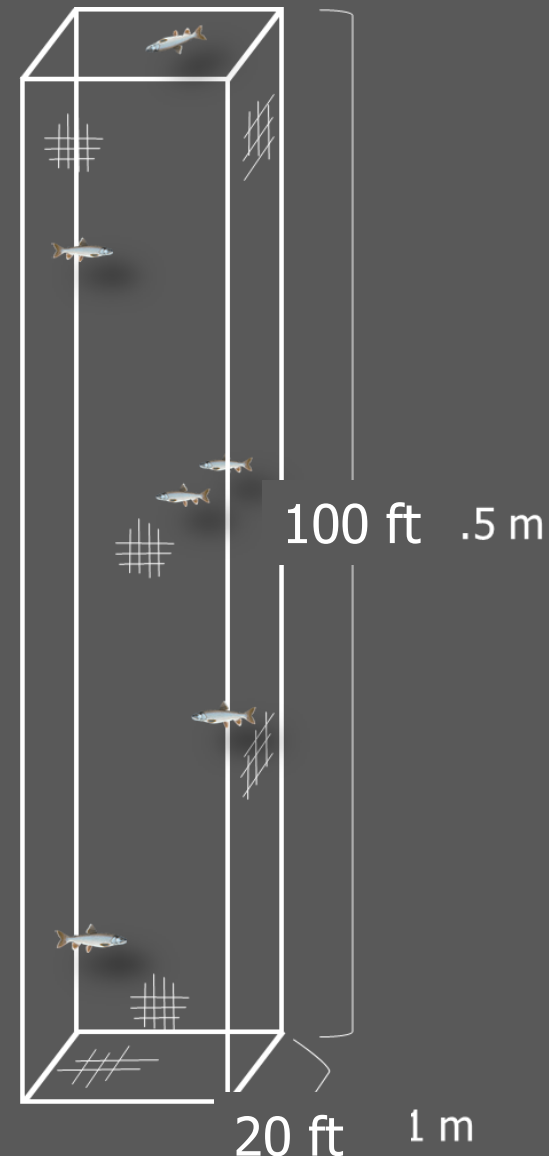


# Length at Age



# Survival Study

- Randomly assign treatment
  - 100-200 fish per trial
  - Deep release
  - Control
- Preliminary results:
  - Deep release not terribly effective
  - High mortality ( $>30\%$ ) of released fish
  - Fewer tagged fish at large than thought
    - Population estimate would actually be smaller
    - Exploitation would be much higher





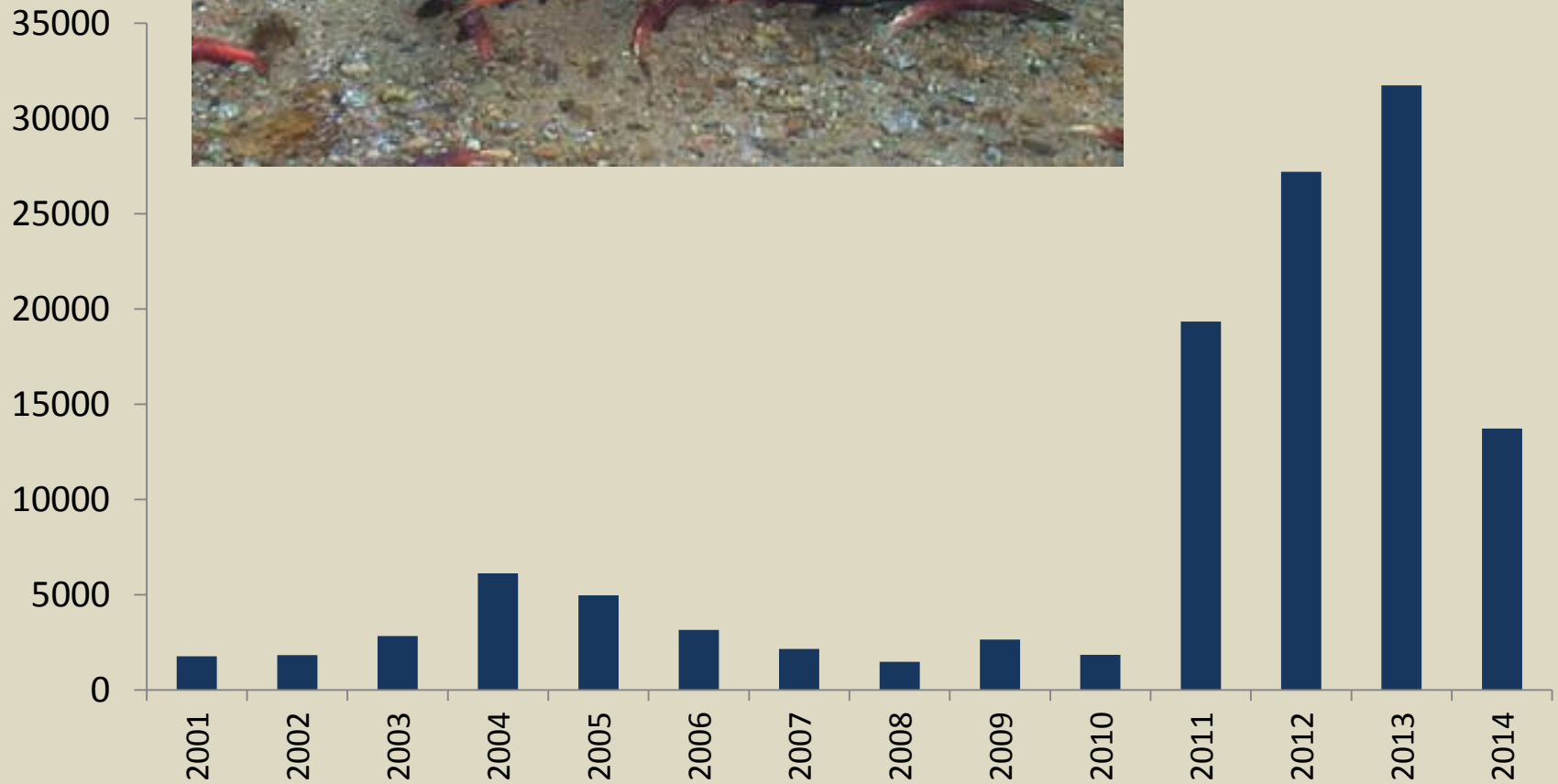
# Corrected Abundance

Estimate	Mortality	95% Confidence Interval
Schnabel	None	40,667 – 58,763
Huggins	None	51,332 – 97,588
	30%	36,676 – 69,306
	40%	31,569 – 59,451
	50%	26,831 – 50,311

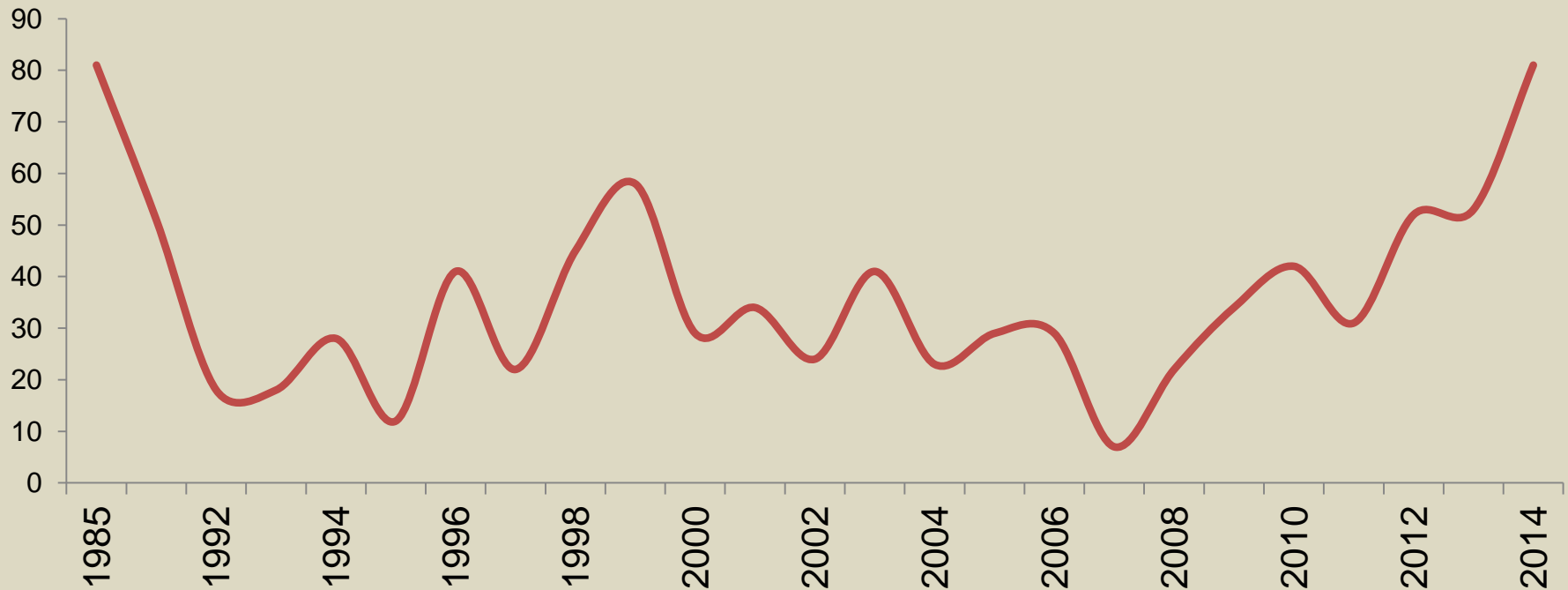




# Kokanee Spawners



# Upper Priest Bull Trout Counts





# Where are we Now?

- Fewer lake trout than expected
- Kokanee low density, but seemingly increasing
- Kokanee fishery is providing diversity
- Release mortality may be contributing significantly to “harvest”
- Bull trout redd counts in Upper Priest drainage are highest recorded
- Continuing to gather relevant information
- Stakeholder group is engaged
- Long-term plan to be developed by 2017