

Lahontan Cutthroat Trout Program

Lahontan National Fish Hatchery Complex

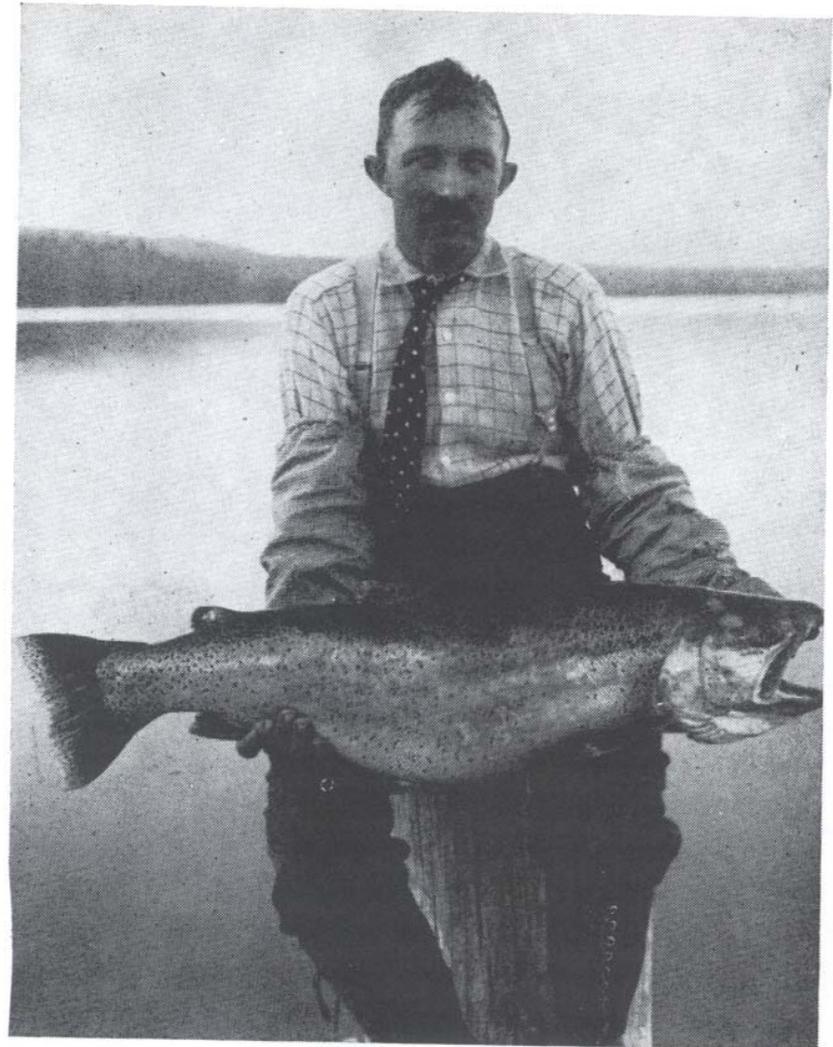
US Fish and Wildlife Service

Tahoe Working Group Meeting
February 16, 2010



Presentation Outline

- **Lahontan cutthroat trout – Background**
- **LCT reintroduction in Fallen Leaf Lake using adaptive management strategies**
- **Lake Tahoe Assessment**



Author's collection

Lahontan cutthroat trout – A Tahoe Legacy

- The only trout native to the basin
- Provided extensive recreational and commercial fisheries
- Extirpated from the basin in the 1930's



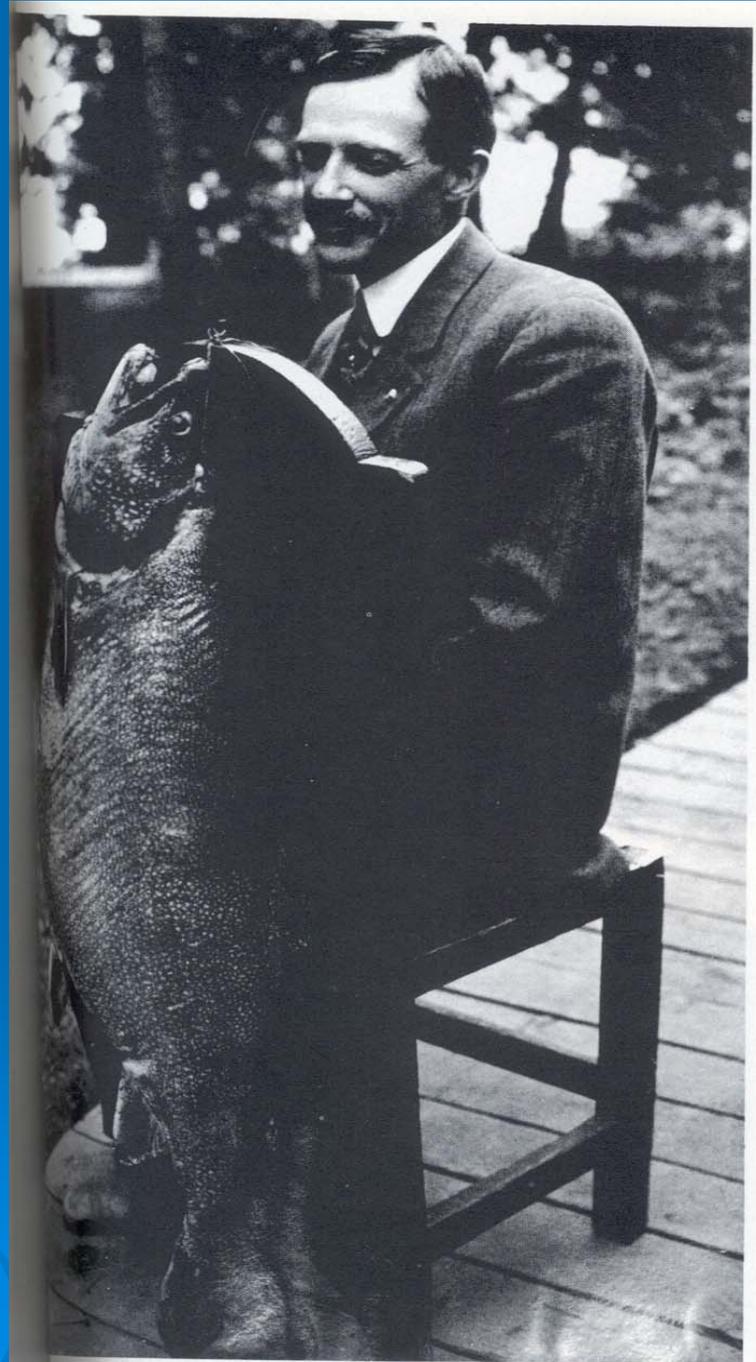
Pilot Peak LCT

- Represents the original Tahoe Basin strain based on genetic comparisons with museum specimens
- Exhibits ancestral life history characteristics



Conservation and Recovery Efforts

- Recovery Plan in 1995
- Short-term Action Plans for Walker and Truckee Basins 2003
- Formation of Tahoe Basin Recovery Implementation Team 2007
- Recovery Implementation Plan 2010



Author's collection

Fallen Leaf Lake Research 2002-2005 (FWS,UCD,UNR,UW)

- Stunted lake trout indicate resource limited system
- High shore angler catch rate of LCT
- Significant lake trout predation on stocked LCT
- Full compliment of native zooplankton species

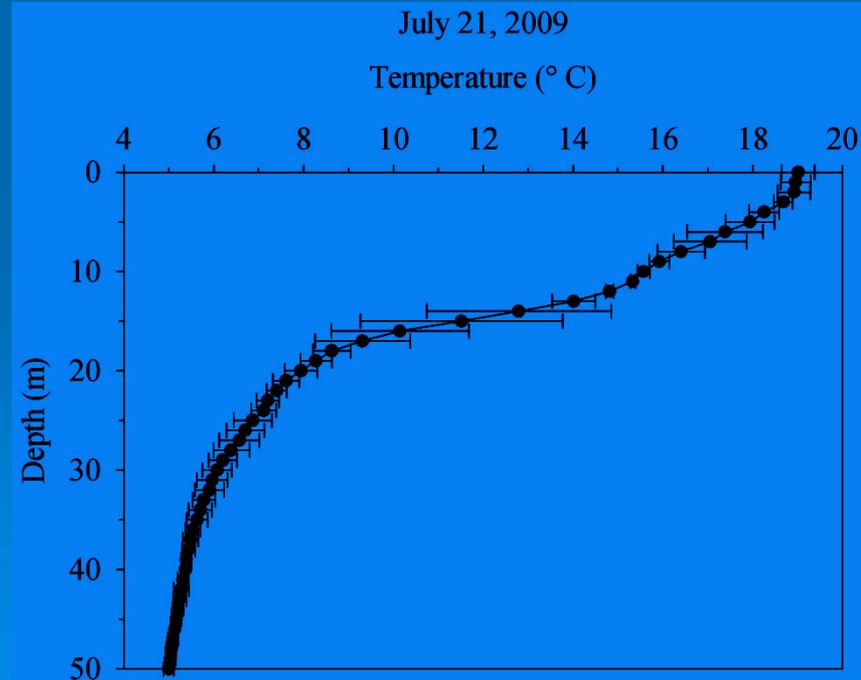


Fallen Leaf Lake Research

2007 (FWS, UNR)



- Refined lake trout abundance estimate:
 - 8,799 lake trout (Schnabel) 95% CI = 4,990 – 16,530
- Identification of refugia from predation for LCT
 - Thermocline segregation
 - LCT refuge in woody debris
- Diet of lake trout dependent on size and time of year



Adaptive management at Fallen Leaf Lake

Lake

➤ The challenges

- Lake trout
- Mysid shrimp
- Over fishing

➤ The strategy

- Improve stocking methods
- Research lake trout removal methods
- Monitor ecosystem effects of management actions



Adaptive Management Implementation 2008 and 2009

- Remote Site Incubation
- Adaptive Stocking Methods
- Hydroacoustic Detection of Lake Trout
- Lake trout abundance estimation:
15,675 lake trout (Peterson) 95% CI = 9,564 – 27,086

GLEN ALPINE CREEK

Remote Site Incubation



Remote Site Incubation Results 2008 and 2009

➤ 4 incubators for both years

- 3,500 per incubator 2008
- 7,500 per incubator 2009

➤ Fry released

- 2008 – 7,000
- 2009 – 20,000

Down stream monitoring



Juvenile Stocking Strategy

- **Implemented in 2008**
 - Stocked over 60,000 4-6 “ fish
- **Thermocline**
 - June-October
- **Dispersion**
 - Released at 11 Sites
- **Refugia**



Adult Stocking Strategy

- **Implemented in 2009**
 - Stocked over 30,000 10" fish
- **Thermocline**
 - June-October
- **Dispersion**
 - Released at 5 different sites over 5 days
- **Refugia**

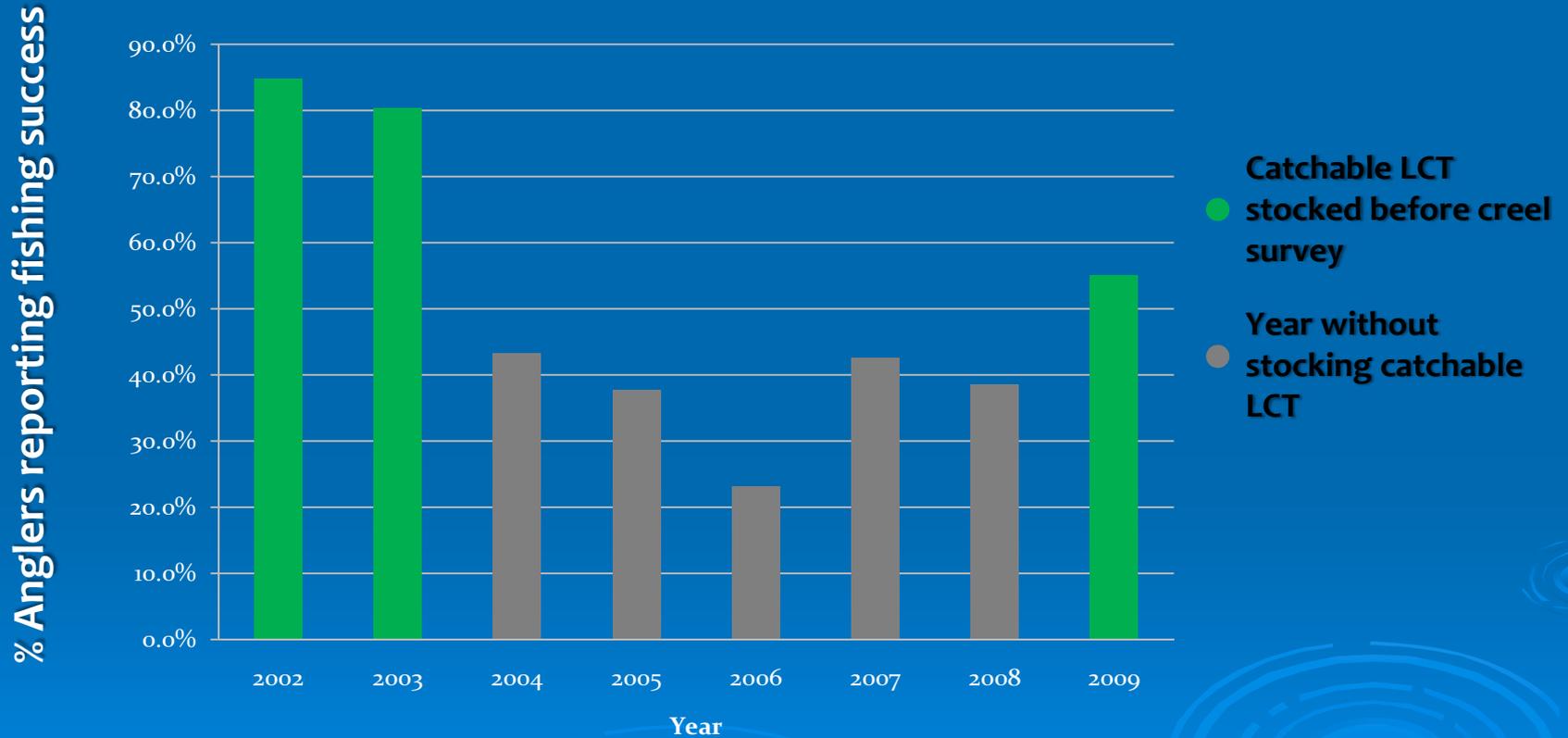


2009 Adaptive Management Objectives

- Enhance the recreational fishery at Fallen Leaf Lake by stocking LCT
- Refine Lake trout netting methods to reduce incidental catch of fishes native to the Tahoe basin
- Test the feasibility of systematic removal of lake trout

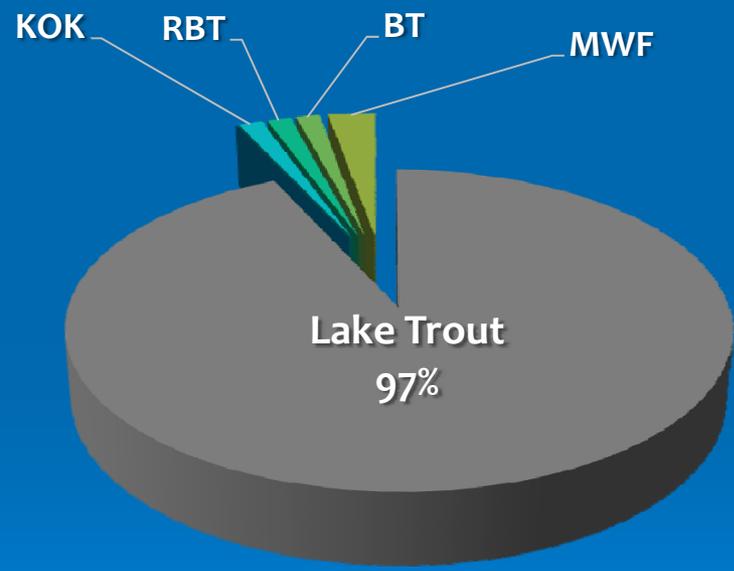


Percentage of Anglers Interviewed Reporting Fishing Success

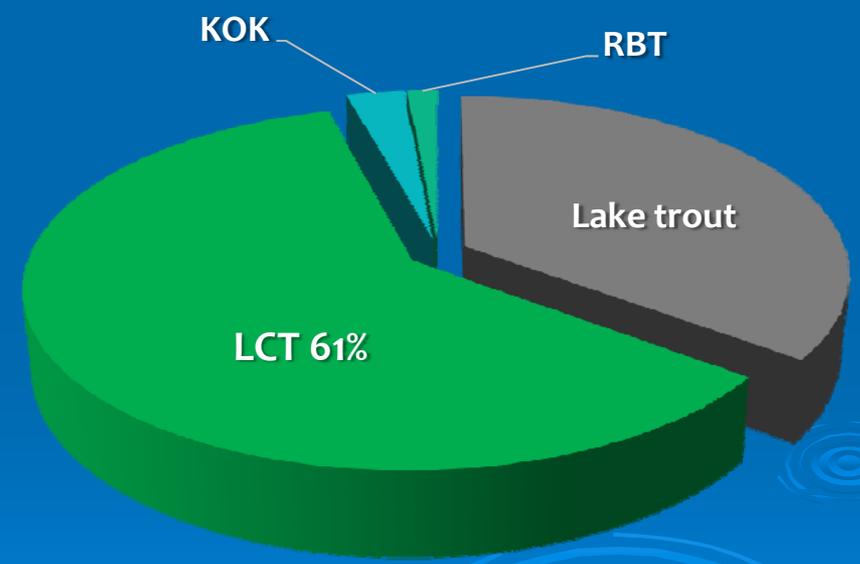


Primary Angler Catch Stocking vs. Non-stocking Years

2008 Creel

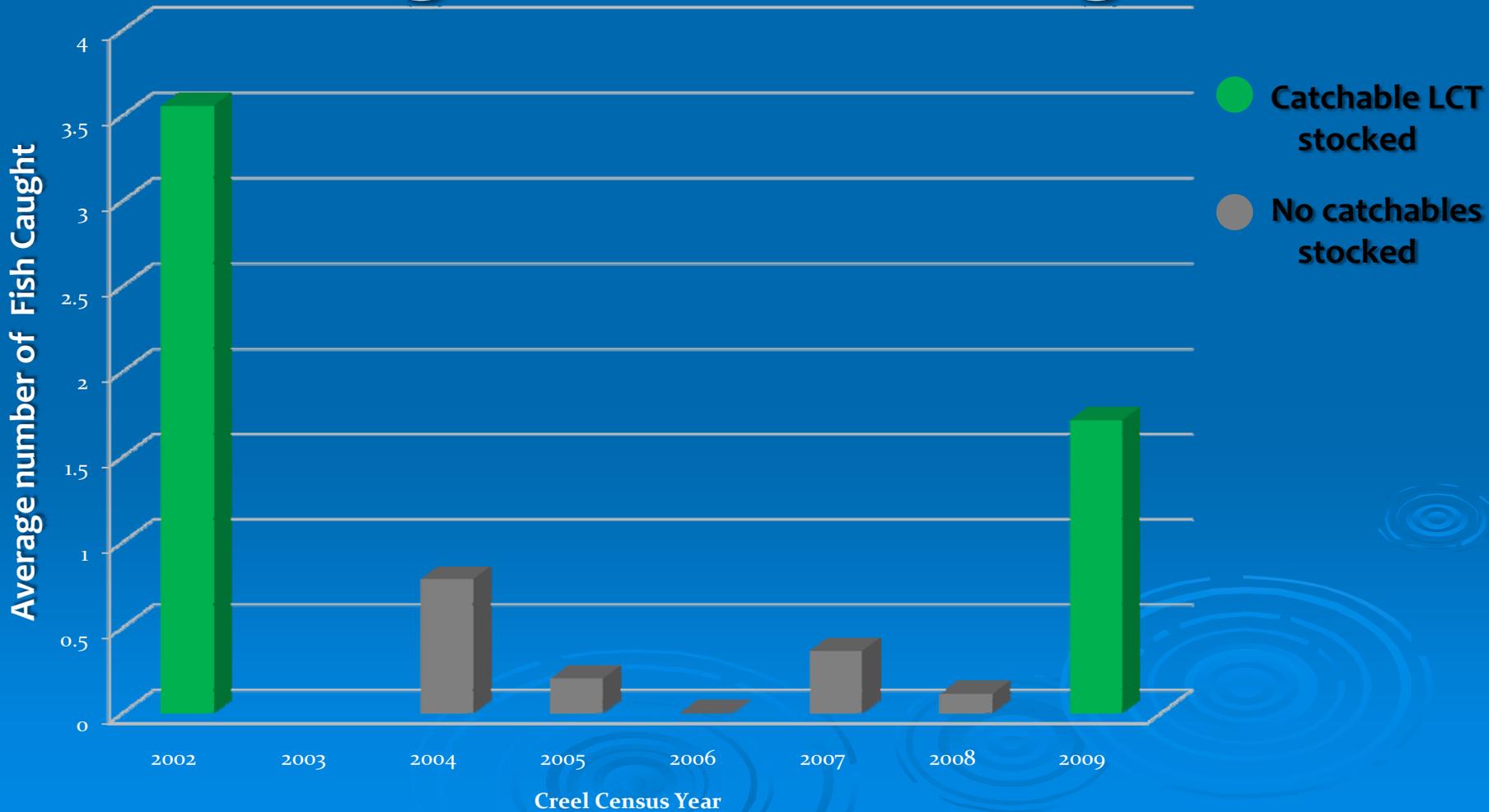


2009 Creel

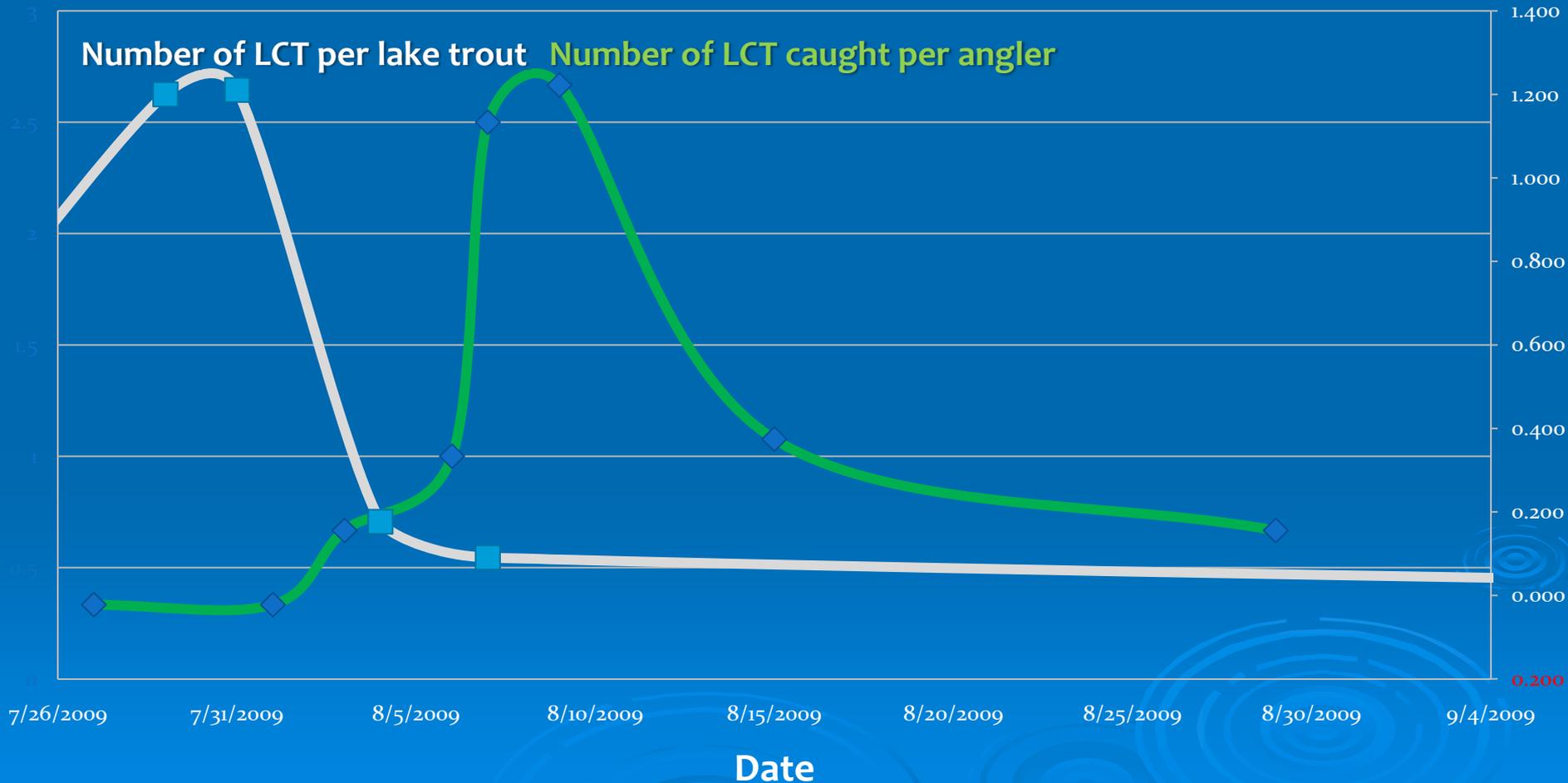


n = 73

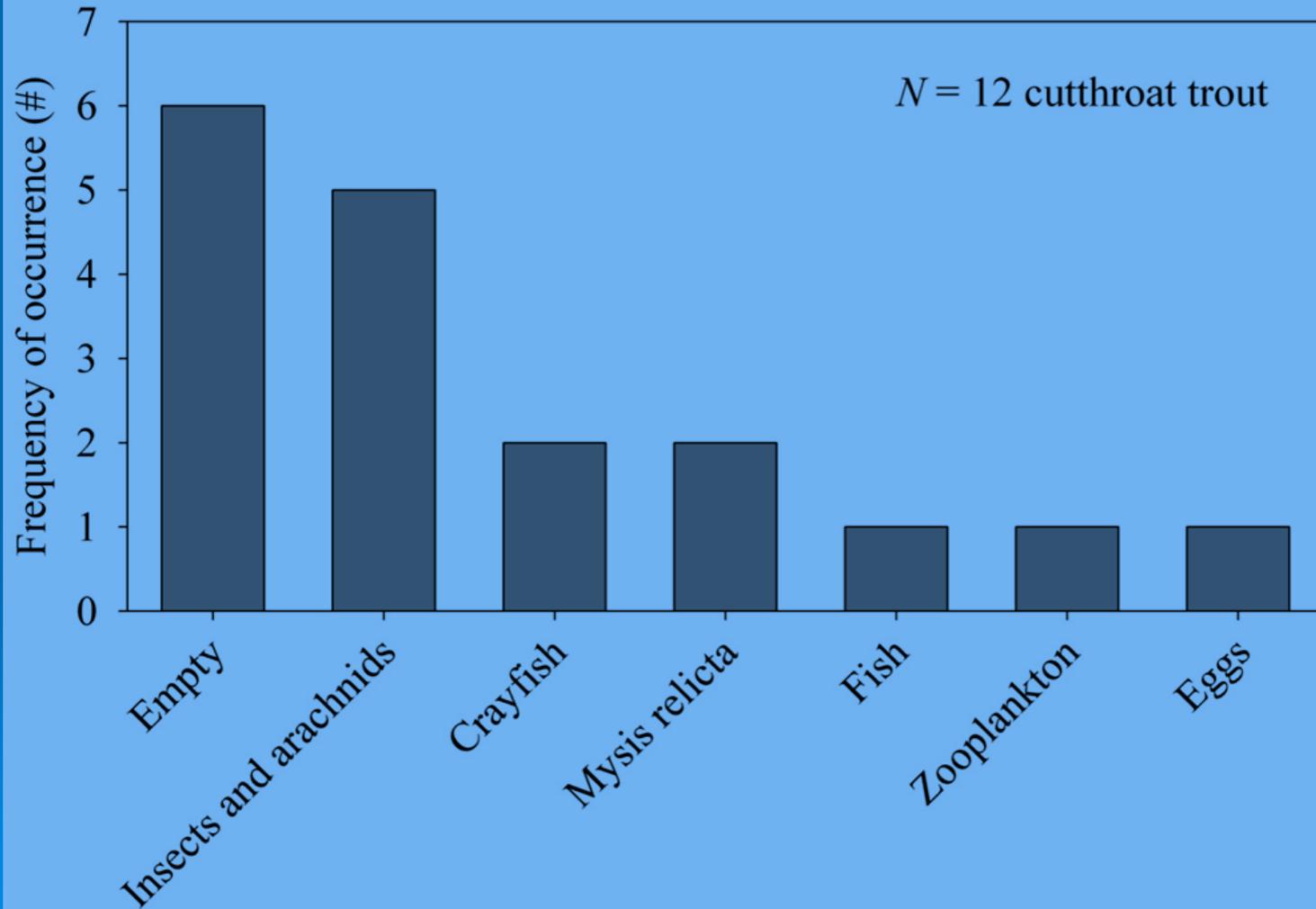
Number of fish caught per angler shore fishing



2009 LCT Initial Survival Predation vs. Angler Catch Rate



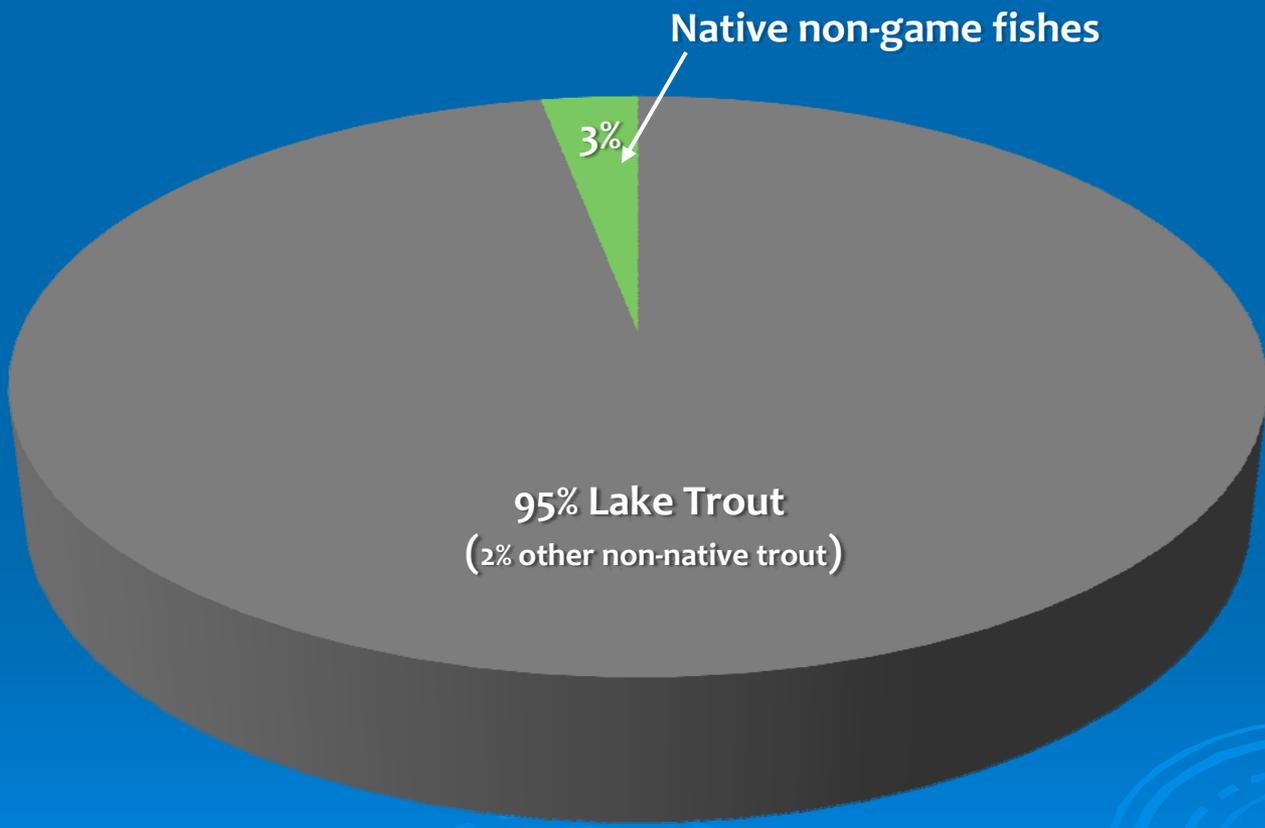
LCT Diet



Locating lake trout with hydroacoustics to increase netting efficiency



Lake Trout Specific Gill Nets



Lake trout donations to South Lake Tahoe food bank



Summary for Adaptive Management Actions

- Improved remote site incubation
- Successful stocking program
 - Larger fish
 - Stocked during thermocline
 - Not tagged
- Improved recreational fishery
- Lake trout specific netting methods
 - 4" mesh
 - During fall spawning
- Donation of lake trout filets to local food bank

Lake Tahoe Strategies

- Use the methods and tools refined at Fallen Leaf Lake to guide initial strategies in Lake Tahoe for assessment and reintroduction
- Select 2-5 Lake Tahoe streams/tributaries and areas within Tahoe for LCT recovery/reintroduction
- Provide LCT production at levels to support harvest and recreational fishing in Lake Tahoe



Questions/Comments

