

## **Lake Pend Oreille Fishery Recovery Efforts Lakes Commission Briefing Paper**

*Issue:* Kokanee populations in Lake Pend Oreille have collapsed to the point where they are no longer capable of supporting a sport fishery, and are at risk of virtually disappearing. Lake Pend Oreille kokanee historically supported the largest fishery in Idaho, are the primary forage base for the trophy rainbow trout fishery, and the primary forage base for the lake's population of bull trout - a federally listed species.

### *Background:*

- 1925 – Lake trout introduced by US Fish Commission
- 1930s - Kokanee were established in Lake Pend Oreille, the result of downstream drift from Montana's Flathead Lake.
- 1940s - Gerrard (Kamloops) rainbow trout introduced.  
- Lake Pend Oreille produced world records for rainbow and bull trout. Bull trout, native to the lake, had become (and continue to be) dependent on kokanee as forage. Kamloops rainbow are also dependent on kokanee.
- 1950s -Kokanee providing anglers with an annual harvest of about one million fish per year.  
-In the early 1950s dams were constructed on either end of the Pend Oreille system in Idaho. Albeni Falls Dam, on the Pend Oreille River, regulates the top 11.5 feet of the lake's elevation; Cabinet Gorge Dam, on the Clark Fork River, fluctuates inflow daily and until recently blocked all fish passage into several hundred miles of spawning and rearing habitat in Montana.
- 1960s - *Mysis* shrimp were introduced into the lake with the belief that they would improve forage for kokanee.  
-Corps of Engineers begins annual deep drawdown (winter pool elevation of 2051) in the mid 1960s.  
-Start of kokanee decline
- 1970s - Kokanee decline becomes observable trend; initial research suggest *Mysis* are causing the problem, but subsequent research demonstrates loss of quality spawning habitat due to winter lake level management is resulting in low survival of kokanee eggs and fry.
- 1980s - Kokanee population continues to decline, despite Cabinet Gorge hatchery coming on line in 1986.
- 1990s -Lake trout make first "significant" appearance in angler creels; estimated harvest in 1991 is less than 500 lake trout.  
-Record high flow during spring of 1997 results in substantial loss of kokanee as juveniles are flushed out the north end of the lake.  
-Population assessment in late 1990s estimates approximately 15,000 rainbow trout, 1800 lake trout, and 12,000 bull trout (all estimates for fish over 17 inches long).  
-First lake level tests indicate significantly higher survival of kokanee eggs to the fry stage during years the lake is held at winter level of 2055, but juvenile survival takes a substantial downturn – predation is suspected.

2000s - Kokanee fishery closed, and bag limits on lake trout and rainbow trout liberalized, for start of 2000 fishing season.

-Creel survey in 2000 estimates harvest of 4700 lake trout, suggesting rapidly expanding lake trout population.

-In 2002, Citizen's Advisory Committee recommends increasing angler harvest of lake trout and rainbow trout, rod and reel commercial fishery for lake trout, experimental use of commercial netting gear to assess lake trout population and effectiveness of gear for removal of lake trout.

-During 2003-4, commercial trap nets are used to estimate the lake trout population at 6400 fish (fish over 20.5 inches long).

-Juvenile kokanee survival continues to be low due to predation, even as lake level management improves egg to fry survival.

#### *Current situation:*

-Kokanee population continues to decline due to low juvenile survival rates, resulting from predation.

Liberalized bag limits, commercial rod and reel fishery, and encouragement/incentives for anglers to harvest lake and rainbow trout is not curbing predation.

-Trap nets were redeployed in the lake in fall 2005, and are currently yielding a population estimate of about 10,000 lake trout - over a 50% increase over two years.

-Rainbow trout catch rates have declined only slightly from 2004.

-DDFG will be placing experimental gillnets in the lake to validate the lake trout population estimate between February and April. No decision has been made whether to use gillnets as a tool for lake trout control after the population estimate work is completed.

*Problem:* Failure to gain control of predator numbers is resulting in loss of the kokanee population. Conventional fishing methods and the commercial rod and reel fishery for lake trout are not removing enough predators. Anglers currently release nearly 70% of the rainbow trout they catch, and not enough anglers fish for lake trout to curb population growth. Additional efforts/methods are needed to control predator numbers if the kokanee population is to be restored.

*Actions:* DDFG is hosting a public meeting on January 21 in Sandpoint to provide stakeholders with an update on the status of the lake and its fisheries, and efforts to restore the kokanee population. We hope to establish a stakeholder group to discuss fishery issues on a regular basis, and seek input on development of a long term fishery management plan for the lake. We have been meeting with key stakeholders to discuss the situation, and to inform people that efforts to control predation will need to be stepped up, and go beyond the use of the sport fishery to control numbers. While no decision has been made yet on what other predator control measures will be used, a variety of "tools", including nets, will be considered.

*Relevant Information:* Kokanee population collapses have occurred in the other two large lakes in the basin - Flathead and Priest lakes. In both lakes, kokanee population collapses were concurrent with rapidly expanding lake trout populations, which is fueled by the presence of *Mysis*. Lake Pend Oreille historically supported well over 100,000 angler days, with an annual economic value of over \$15 million (2003 dollars). Recent studies show that, with the loss of the kokanee fishery, Lake Pend Oreille supports about 60,000 angler days. Loss of the kokanee fishery on Priest Lake resulted in a greater than 50% decline in fishing effort there, despite an abundant lake trout population, with an estimated economic impact of \$3-5 million.