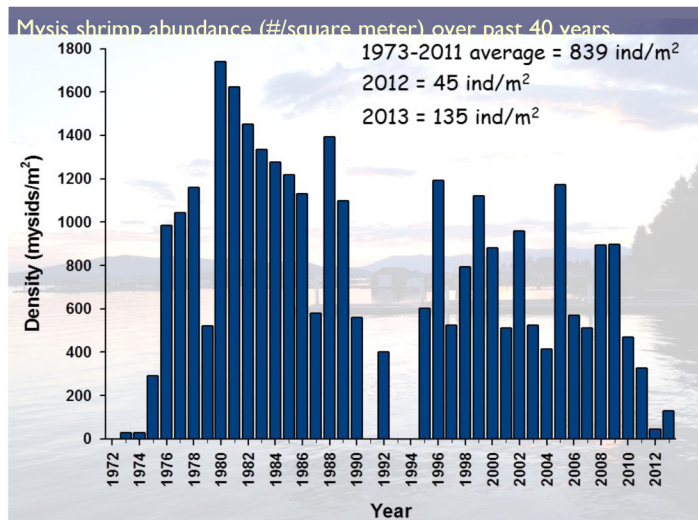


# Pend Oreille Fishery Recovery Effort Update

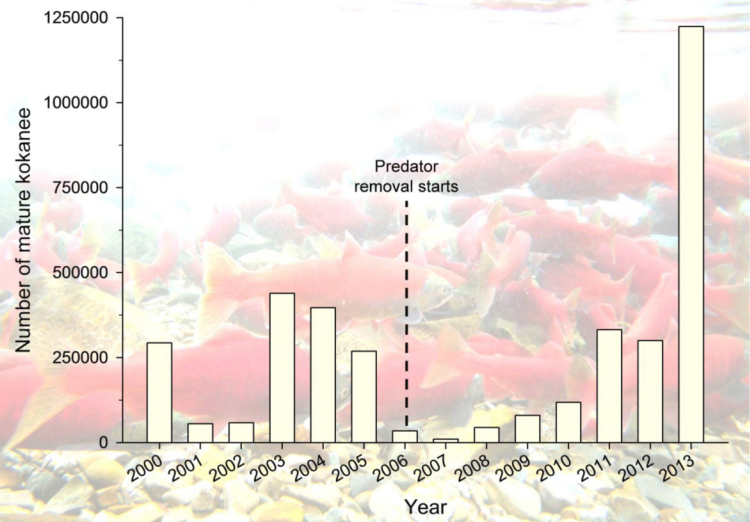
The Lake Pend Oreille fishery has steadily improved in recent years following intensive efforts to reduce predation on kokanee. Lake trout have been dramatically reduced thanks to angler harvest and targeted netting efforts. As a result, kokanee survival has increased and the population has grown. Two major management changes were made in 2013. First, a kokanee harvest fishery was reopened after a 13-year closure. The opportunity to harvest kokanee generated more angler effort on the lake than has occurred in years, and kokanee fishing was good. Second, the Angler Incentive Program for rainbow trout was discontinued and we've begun rebuilding the trophy rainbow fishery that once existed. The results are already evident, with bigger rainbow trout being caught. In fact, numerous fish over 20 pounds were caught in 2013, which is a notable improvement from recent years. Trophy fishing for rainbow trout should only improve if kokanee continue to do well.

**Kokanee**—The greatest highlight of 2013 was the tremendous increase in the kokanee population. Over 1.2 million mature kokanee survived to spawn. This is one of the highest spawner returns we've seen in the past 40 years and is about a four-fold increase from 2012. At the Sullivan Springs trap, where kokanee eggs are collected to fill the Cabinet Gorge Fish Hatchery, nearly 200,000 kokanee were handled, and 11.4 million eggs were collected. Compare that to 2007 and 2008, when the population bottomed out. In each of those years, only around 5,000 kokanee were handled and the total egg take was about a half million eggs. Younger kokanee also were abundant, especially age-2 fish, which means we should have another strong return next year and great kokanee fishing in 2014!

In addition to the decrease in lake trout, a decline in the mysid shrimp population may also be contributing to the kokanee resurgence. These small freshwater shrimp have been present since the late-1960s and compete with kokanee for food (both eat zooplankton). In 2012, the mysid shrimp population nearly collapsed and their density was almost 95% lower than the long-term average dating back to 1973. They remained at low density in 2013. We are unsure what caused such a sudden drop in the shrimp population, but the past two years of low mysid density have almost certainly benefitted kokanee.



Estimate of mature kokanee in Lake Pend Oreille from 2000 through 2013.



Another possible benefit to the decline in shrimp abundance could be a decrease in juvenile lake trout survival. Time will tell whether or not mysids will rebound and how much kokanee have benefitted from the reduced decline, but the timing couldn't be better.

**Lake Trout**—Lake trout predation on kokanee has been the primary limitation to kokanee recovery over the past decade. Aggressive efforts to remove lake trout continued in 2013, marking the eighth year of this program. We continued to use both the Angler Incentive Program (\$15 reward) and commercial netting equipment to remove lake trout. Together these actions have successfully reduced the size of the lake trout population to a level where it no longer is limiting expansion of the kokanee population. This is a major achievement and possibly the best evidence to date that large-scale suppression of lake trout is not only possible, but effective.

We now are entering the next phase of this program. With a much smaller lake trout population, our next challenge is keeping these fish at low abundance into the future. We will be evaluating options

for a maintenance program that will allow for a gradual reduction of annual netting effort. Our goal is to reduce the netting effort (and cost) of this program over time, while still keeping lake trout at low abundance. We expect to continue the Angler Incentive Program for the foreseeable future, so the changes will be focused on netting activities. This process will take time, but the fact that this transition is beginning after only eight years since starting the removal program is significant.

We have a variety of new activities planned for 2014, but most notable for anglers is a 12-month creel survey. We will be conducting angler counts and interviews throughout the year to estimate how much fishing effort and harvest is occurring for each of the fish species in the lake. This survey is very important for evaluating regulations and other management actions, so we ask that you partner with us to gather this information.—Andy D., Nick W., Bill H., and Bill A.