

Kootenai River Native Fish Conservation Aquaculture

Kootenai Tribe of Idaho Conservation Aquaculture July 2013 Update

Kootenai River white sturgeon and burbot were keystone species in the Kootenai River and are of immeasurable cultural value to the Kootenai Tribe.

These native fish once sustained a culturally important Tribal fishery as well as a valued recreational fishery. A precipitous decline in both populations eliminated the Tribe's ability to fish for these culturally important species.

The U.S. Fish and Wildlife Service listed Kootenai sturgeon as endangered under the ESA in 1994.

The Tribe began a sturgeon conservation aquaculture program in 1989 in order to preserve an adequate demographic and genetic base for a healthy future population.

Native Kootenai River burbot are almost extinct. A Kootenai Valley Resource Initiative (KVRI) Burbot Conservation Strategy was completed in 2005 and a multilateral conservation agreement was signed to ensure burbot population decline would be addressed.

CONSERVATION AQUACULTURE PROGRAM GOALS



The Kootenai Tribe of Idaho's conservation aquaculture program is designed to restore populations of Kootenai sturgeon and native burbot.

The goals of the Kootenai River white sturgeon aquaculture program are to:

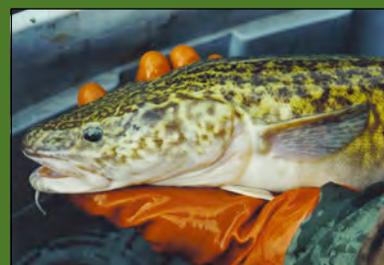
- Prevent extinction of Kootenai sturgeon by preserving the locally adapted genotypes, phenotypes, and associated life history traits of the population.
- Restore a healthy age class structure to enhance demographic and genetic viability and persistence of the population.
- Reestablish a sturgeon population capable of future Tribal Treaty subsistence and cultural harvest.

The goal of the Tribe's burbot aquaculture program is:

- To reestablish a native burbot population in the lower Kootenai River capable of future Tribal Treaty subsistence and cultural harvest and sport harvest once the population reaches sustainable levels.



KOOTENAI RIVER WHITE STURGEON (*Acipenser transmontanus*) are a naturally landlocked population of sturgeon unique to the Kootenai River. They are listed as Endangered.



LOWER KOOTENAI BURBOT (*Lota lota*) once had multiple populations in Idaho, Montana, and British Columbia. The lower Kootenai River component is now functionally extinct.

UPGRADES TO EXISTING KOOTENAI TRIBAL HATCHERY AND CONSTRUCTION OF NEW TWIN RIVERS HATCHERY

The existing Tribal Sturgeon Hatchery facilities were developed to meet near-term objectives of avoiding demographic extinction with the assumption that natural requirement would be restored by implementing flow measures. Since flow measures have not restored recruitment, numbers of broodstock, families and total releases provided by current production facilities are inadequate to address longer-term conservation risks.

The existing Tribal Sturgeon Hatchery is operating at its physical and functional capacity limiting any program operational flexibility in the future. Expansion of the current facilities is not a viable alternative because the available space and water sources are currently fully utilized.

The new sturgeon hatchery, in concert with the existing facility, will enable more families to be

reared in temperature and density conditions that optimize in-hatchery survival. Additional rearing space will also improve fish health by reducing density-related pathogen transmission and disease susceptibility.

Additional space will also support separation of sturgeon progeny groups (families) in the hatchery in order to maintain distinct family lineages until the fish are large enough to be marked with passive integrated transponder (PIT) tags. Additional space is also required to facilitate separate rearing of large and small components of individual families to reduce mortality due to size-based selection in the hatchery.

There is no physical capacity available at the existing Tribal Sturgeon Hatchery to accommodate the burbot conservation aquaculture program. The construction of a new facility is critical to advancing the burbot conservation efforts and to meeting the biological objectives identified in the KVRI Burbot Conservation Strategy.



Above: Location of existing Kootenai Tribal Hatchery and planned Twin River hatchery

ACCOMPLISHMENTS TO DATE

Kootenai River white sturgeon program successes to date include:

- Over 300 wild white sturgeon adults spawned.
- Over 200 sturgeon families produced.
- Over 220,000 juvenile sturgeon released.
- Good survival rates; juvenile hatchery sturgeon are dispersing throughout the river.
- Successful completion of the Northwest Power and Conservation Council's required Step 1 Master Plan (2009 and 2010), Step 2 document and preliminary facility design (2012), and completion of Step 3 (final design and implementation).

Burbot programs successes to date include:

- Development of successful burbot aquaculture techniques (there was no culture history for burbot).
- Completion of a pilot study to evaluate movement and habitat use.
- Completed successful experimental releases in 2009-2012.
- Burbot are dispersing extensively in the river.
- Ready to move to the next phase of production per the Conservation Strategy MOU.

Upgrades at the existing Kootenai Tribal Hatchery and construction of the new Twin River Hatchery are beginning in summer of 2013.



**Kootenai Tribe of Idaho
Fish & Wildlife Department
208-267-3620
P.O. Box 1269
Bonners Ferry, ID 83805**

