



Lower Fraser Sturgeon Project

LFFA Report to HCTF – 1 June 2017

Executive Summary

Lower Fraser White Sturgeon (*Acipenser transmontanus*) is a culturally important species to the Lower Fraser First Nations. However, since the 1800s, the population has declined from historic levels and is currently listed as “Threatened” by COSEWIC and is on the BC government’s red list. This designation exists even though there is not any directed fishing of sturgeon. Habitat and non-lethal fishing activities are thought to continue to limit population growth. There are two main sources of non-lethal fishing activities: recreational fishing and First Nations net and drift fishing. While a lot of effort has been made to quantify recreational fishing encounters, until now, negligible effort has been made to understand encounters in First Nations’ fisheries.

This project sought to begin the dialogue to collect such information, and to subsequently collect traditional knowledge that may be useful for management and conservation of the White Sturgeon within the Lower Fraser Area.

The three main objectives of the project were to:

1. Compile Aboriginal Knowledge from Lower Fraser First Nations to help fill the knowledge gaps regarding White Sturgeon life history, habitat, cultural importance and impacts of human actions.
2. Develop a biological sampling protocol for LFFA monitoring of sturgeon encounters during FSC and EO fisheries
3. Share knowledge about the cultural importance of White Sturgeon cultural, biologically sensitive areas and suggest actions to avoid long-term damage to the Lower Fraser White Sturgeon population.

Summary of Sturgeon Aboriginal Knowledge from the Lower Fraser First Nations

Twenty interviews were conducted in 10 of the 23 First Nation Communities that are part of the Lower Fraser Fisheries Alliance in 2016-17 (Semá:th, Katzie, Chawathil, Seabird Island, Kwawkwawap'ilt, Skowkale, Tsawwassen, Shxwhá:y Village, Cheam and Shxw'ōwhámel).

Questions pertaining to; 1) mapping habitats, fishing and cultural sites; 2) sturgeon life cycles, habitat and changes/threats, were designed by LFFA biologists and aboriginal knowledge coordinator. Confidentiality of important ATK was maintained as all results were housed in a secure aboriginal knowledge portal that authorizes staff in each nation with the login information and ownership of the data rests with each individual Nation.

Results:

The results from interview were used to map 459 various habitat sites of which were 77 spawning sites, 137 rearing sites, 160 resting spots, 13 overwintering sites, 49 feeding grounds and 21 migration routes.

Habitat Sites- Spawning, Rearing, Resting, Overwintering sites, Feeding grounds and Migration:

The spawning sites included most of the sites where sturgeon spawning has been confirmed by egg mat studies. However, some spawning locations identified were in very different habitat from typical sturgeon spawning locations (e.g. lakes, sloughs and slack water areas). Most sites identified were upstream of Mission. Some spawning areas may have been destroyed because of blocked water channels.

Numerous rearing sites were identified. Interviewees often find juvenile sturgeon in back eddies and sloughs in the spring and early summer. Rearing habitats tend to be softer flowing areas.

Resting sites were also identified. Interviewees indicated that sturgeon rest at the bottom of the river, in back eddies or on sand bars. Interestingly many respondents indicated that sturgeon lie belly up facing the sun in certain locations to warm eggs.

Fewer overwintering sites were identified but these included most of the site identified by others. Interviewees indicated that sturgeons use their nose to burrow themselves into the sand or gravel and hibernate in these sites for the winter.

Habitat Features:

Interviewees identified that sturgeon follow food sources, feeding on eulachon in the spring, salmon in the summer and fall and some going to the ocean in winter when food is scarce in the river. The migration of sturgeon into the ocean and between major rivers was acknowledged.

Differences in the shape and colour of sturgeon were acknowledged. Green Sturgeon have been caught in the Fraser River but they are rare. Sturgeon above Hells Gate tend to have longer noses than those in the Lower Fraser River.

Spawning:

Many respondents highlighted that sturgeon respond to environmental conditions and some factors indicated that affect sturgeon spawning include water temperatures, flooding, timing of freshet, boat traffic, recreational fishing, urban development, shoreline diking and pollution.

Threats and Changes to Sturgeon Population and Habitat:

Threats to the Lower Fraser sturgeon population identified by interviewees included: trophy fishing, pollution, gravel extraction, warm temperatures, less snowfall, lower freshet, streams drying up, industrialization, log booms, residential development, farms, dikes, decline in eulachon population and overfishing. Most interviewees were concerned about the impact of recreational fishing, developments that affect sturgeon habitat and increasing water temperatures. A substantial amount of sturgeon habitat has been lost due to diking, blocking of side-channels (e.g. Hope Slough, Maria Slough and Nicomen Slough) and draining of off channel habitat (e.g. Sumas Lake).

Changes in the size of sturgeon caught was noted. The very large sturgeon caught historically by elders are seldom seen now and numbers of juvenile sturgeon seen are also lower. Reduce abundance of key food items (eulachon and salmon) was noted and sturgeon may have to rely more on other species now. This has probably affected their size and growth rate.

Fishing Sites and Methods:

Since the voluntary moratorium on fishing for sturgeon in the early 1990s, First Nation fishermen don't fish for sturgeon, but sturgeon are caught as by-catch in drift net and set net fisheries targeting salmon. No details on the number of sturgeons encountered in net fisheries were provided.

Cultural Practices:

Historically, sturgeon have been important food and cultural purposes. Sturgeon are available in the Fraser River throughout the year and have kept people alive in winter months when other species of fish are less abundant. They have been used previously for medicinal purposes and their meat and spinal cord are used in ceremonies where they are burned in offerings to ancestors in the spirit world. Sturgeon are depicted as beings that take care of the departed and provide various traditional teachings. Four communities have origin stories associated with sturgeon.