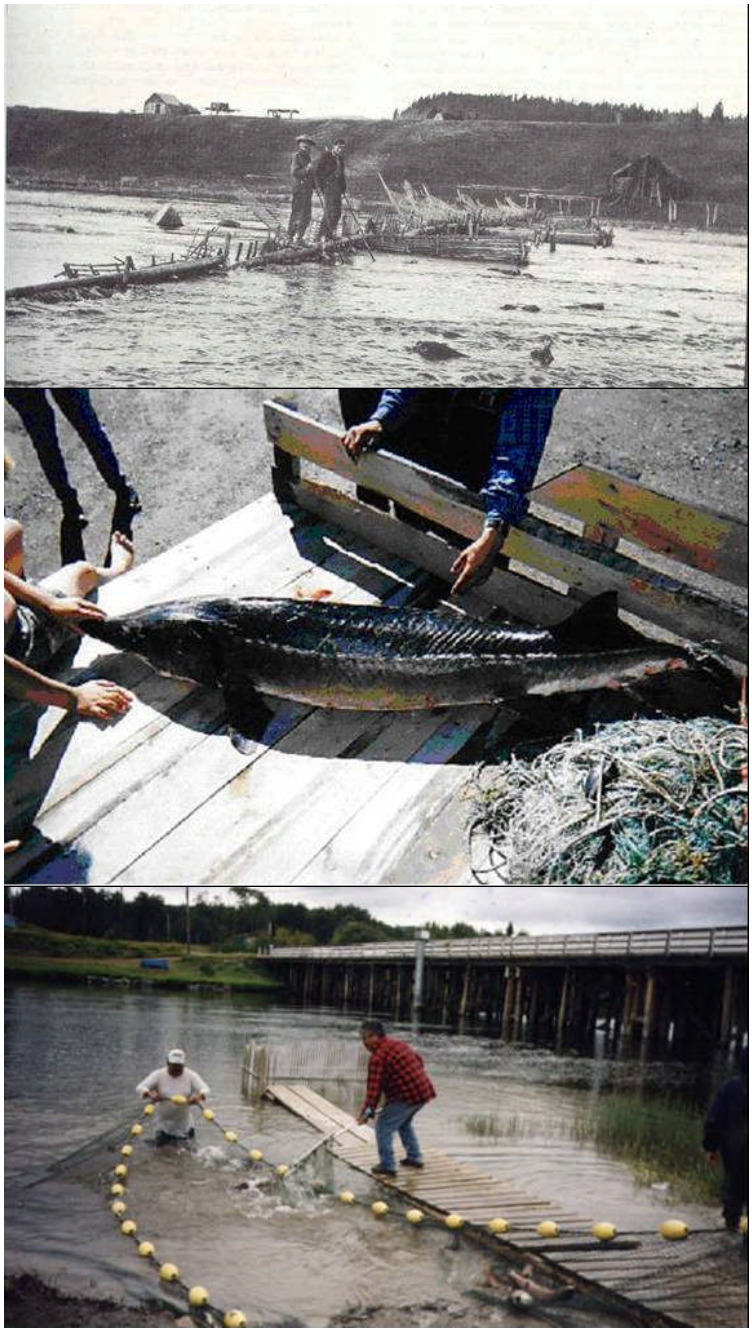
Working towards harm reducing and selective fishing methodologies for Carrier First Nations within the Nechako River watershed



Prepared Through Funding Assistance From The:

Environment Canada

2006/07 Habitat Stewardship Program

CWS

Canadian Wildlife Service

Prepared By The:

Carrier Sekani Tribal Council

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Prince George, B.C.
V2L 3N2

March 2007

NECHAKO RIVER WHITE STURGEON RECOVERY INITIATIVE

Prepared in Partnership with the Nechako White Sturgeon Recovery Initiative

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CARRIER SEKANI TRIBAL COUNCIL
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CSTC Overview

The Carrier Sekani Tribal Council (CSTC) is an administrative, political and technical organization representing and supporting its' 8 affiliated member First Nation Communities. These include the communities of the Saik'uz First Nation, Nakazdli First Nation, Tl'azt'en First Nation, Nadleh First Nation, Burns Lake Band, Stellat'en First Nation, Takla Lake First Nation, and Wet'suwet'en First Nation. The Carrier Sekani Tribal Council's office is based in Prince George. With the exception of the Wet'suwet'en First Nation, all CSTC communities are situated within the Nechako River watershed. The Carrier Sekani Tribal Council is mandated to work to:

- Preserve and promote the Carrier & Sekani heritage and identity
- Improve the social and economic independence of Carrier & Sekani people
- Achieve a just resolution of land claims and aboriginal rights issues for Carrier & Sekani people
- Promote better understanding between First Nations people and the general public
- Advance and improve the standard of living of the Carrier & Sekani people
- Promote self-government for Carrier & Sekani people

We are governed by a Board of Directors who are the Chief Councilors from each member First Nation. We are led by an elected Tribal Chief and Vice-Tribal Chief. Our operations are carried out by a professional staff of 26 full-time personnel. Our objective is to help our Member Nations achieve self-reliance through the delivery of support services in the following areas; economic development, financial management, first nation community management and planning, technical services, education, and natural resources. We also assist our Member Nations in their collective effort to secure their rights to their traditional lands and resources. To further the work we do, we maintain political affiliations with the Assembly of First Nations and the First Nations Summit.

The Carrier and Sekani First Nations that occupy the area of the Nechako basin have historically utilized a diverse range of both resident and anadromous fisheries resources, including the white sturgeon, for a sustenance and economic base. Today however, very few sturgeon are harvested from the Nechako system, and those that are harvested are the result of by-capture during sockeye salmon or char gillnet fisheries. However, white sturgeon continue to be important to the Carrier people, both as a cultural symbol and as an environmental indicator. The Carrier peoples' past and continued reliance on the natural environment surrounding them brings with it an inherent desire to contribute to the conservation and health of this environment and all species that contribute to its' diversity.

Acknowledgements

This work was funded through the Habitat Stewardship Program for Species at Risk (HSP) through Environment Canada's Canadian Wildlife Service. Without their support this work would not have been possible. Alan Charbonneau, Resource Mgr., Fisheries and Oceans Canada, B.C. Interior North, and Lisa Wilson, Regional Coordinator, Stewardship and Community Involvement, Habitat & Enhancement Branch, Fisheries and Oceans Canada (Vancouver B.C.) administered funding between HSP and the Carrier Sekani Tribal Council (CSTC). Bill Shepert (Fisheries Program Manager) and Brian Toth (CSTC Fisheries Program Biologist) contributed to the materials developed for outreach purposes and participated in project delivery. CSTC Community Fisheries Liaisons (CLs) and Catch Monitors (CMs) provided assistance in organizing community forums and were the central to promoting harm reduction. They included:

- Judy French (Takla CL & CM)
- Violet Kennedy (Stellat'en CL & CM)
- Ryan Tibbitts (Burns Lake Band CL & CM)
- Reg Ogen (Wetsuweten CL & CM)
- Robert (Bob) Antoine (Nakazdli CL) and Sandra Joseph (Nakazdli CM)]
- Albert George (Saikuz CL & CM)

Assistance from other individuals in CSTC communities [Jim Webb (Tl'azt'en Fisheries Program Manager) and Kenny & Gino Nooski and Brian Ketlo (Nadleh)], who assisted with the collection of information with respect to fisher/sturgeon interactions was appreciated. The assistance and participation of all of those who made this important endeavor a success is appreciated.

Executive Summary

From April 2006 to March 2007 technicians from the Carrier Sekani Tribal Council (CSTC) conducted numerous outreach meetings with First Nations communities situated within the Nechako basin. The focus of these sessions was the distribution of information to community members, and specifically First Nations fishers, regarding the status and plight of the Nechako sturgeon, the ongoing recovery initiative activities, and the role First Nations are playing within this process. Tools were developed and applied during these sessions to directly and indirectly facilitate fishing methods that would reduce the potential for harming sturgeon. Further, information sharing protocols that were previously developed with community catch monitors and fishers to report information regarding encounters with sturgeon were confirmed and continued. Additionally, efforts to transition existing non-selective gillnet fisheries for sockeye towards more selective means were undertaken, including the implementation of a selective seine fishery for sockeye on the Nautley River.

The white sturgeon in the Nechako watershed have been identified as a genetically unique stock. It has been documented that the stock has been suffering from a severe recruitment failure since the 1960s, resulting in a rapidly diminishing population of nearly exclusively older fish. The Nechako stock, and all other white sturgeon, have been designated as Endangered by the COSEWIC. The Nechako's population was added to Schedule 1 of the Species at Risk Act in August of 2006. One of the remaining direct sources of human-caused mortality on the Nechako stock are non-selective First Nations Food, Social and Ceremonial (FSC) gillnet fisheries for sockeye salmon. Reducing the remaining direct sources of mortality on this stock was identified as a Priority 1 activity within the recovery plan developed for this population.

Activities undertaken in 2006 and early 2007 have been largely successful in furthering communication between the CSTC and its member and non-member communities within the Nechako watershed regarding the plight of the Nechako sturgeon. Reporting related to sturgeon encounters has continued to improve. There is support for the development of selective means of sockeye harvesting, and a pilot-scale fishery on the Nautley River demonstrated substantial success. Recommendations for further outreach-related work and harm-reducing selective fishery development have been developed.

Introduction

Originating from the eastern aspect of the Coastal Mountains in Tweedsmuir Provincial Park, the Nechako River flows east to Prince George where it joins the Fraser. An earthen-fill dam (Kenny Dam) was erected on the system in the 1950s, significantly altering aspects of the Nechako's flow patterns. The Stuart watershed is the largest tributary to the Nechako River, with a watershed area of approximately 15,600km^2, and is unregulated. Biogeoclimatic zones within the basin area are dominated by Sub-Boreal Spruce (SBS) in southern portions and Engelmann Spruce Sub-Alpine Fir (ESSF) in northern areas (Hickey et al. 1997).

The streams and lakes of this system support a diverse array of resident and anadromous fish stocks including coho (*Oncorhynchus kisutch* - Endangered Interior Fraser stock), sockeye (*Oncorhynchus nerka*), chinook (*Oncorhynchus tshawytscha*), rainbow trout (*Oncorhynchus mykiss*), bull trout/char (*Salvelinus confluentus*), lake trout/char (*Salvelinus namayucush*), lake whitefish (*Coregonus clupeaformis*), mountain whitefish (*Prosopium williamsoni*), burbot (*Lota lota*), kokanee (*Oncorhynchus nerka), and* white sturgeon (*Acipenser transmontanus*), as well an array of non-sport fish species.

First Nation communities that occur within the Nechako basin or possess Territories that are comprised of a portion of the area include the Lheidli T'enneh, Yekooche, Saikuz, Nak'azdli, Tl'azt'en, Takla, Stellat'en, Wet'suwet'en and Burns Lake First Nations. Of these, the latter 7 are members of the Carrier Sekani Tribal Council based in Prince George. The Skin Tyee, Cheslatta and Nee-Tahi-Buhn First Nations also occur within this watershed.

Industrial development within the basin is dominated by agriculture and forestry, with development occurring throughout the vast majority of the watersheds that drain into the basin (Hickey et al. 1997). Additionally, the area is heavily utilized by B.C residents for the purposes of recreational angling and hunting. The First Nations within the basin rely heavily upon the fish, including resident and anadromous stocks, and wildlife of the area for sustenance purposes.

Until approximately 1910, First Nation's within the Nechako watershed utilized an intricate system of weirs to selectively harvest returning sockeye salmon

and other fish species. The success of this system of selective terminal harvest is evident in its historical support of human populations that were far in excess of what presently reside in the central interior, as well as its support of an extensive trade system that spanned the entire province. The sustainability of this system is evident in its establishment for thousands of years. Early in the to 20th century, this weir system, thought to be a detriment to the mixed stock commercial fishery being established on the coast, was outlawed and First Nations were subsequently ordered to utilize gillnets as a means of harvesting (Roos 1991). This decision continues to have consequences for fisheries resources throughout B.C.

Background

The white sturgeon within the Nechako River have been assessed over the last several decades (Dixon 1986; RL&L 1996, 1997, 1998, 1999 & 2000a). Works by Dixon (1986) and subsequent investigations into the Nechako white sturgeon populations by RL&L Environmental Services (*now* Golder Associates Ltd.) between 1995 and 1999 identified a number of issues with regards to this population, the most notable of which was the fact that the population had been receiving negligible levels of juvenile recruitment for several decades (RL&L 2000b). Similar white sturgeon assessment work conducted throughout the Fraser River watershed over the same general time period resulted in the identification of at least four genetically distinct stock groupings that reside within geographically bounded portions of the watershed, including the lower, middle, and upper Fraser, and Nechako (Nelson et al. 1999; Pollard 2000; Smith et al. 2002).

Subsequent to the conclusion of RL&L's work on the Nechako in 1999, the Ministry of Environment, Lands and Parks (*now* Ministry of Environment) initiated a recovery planning process for the Nechako sturgeon stock. This *Nechako White Sturgeon Recovery Initiative* (NWSRI) parallels similar recovery planning processes implemented on the Columbia and Kootenay rivers, where sturgeon populations within these regulated systems have also experienced recruitment failures (Golder 2003). The NWSRI Recovery Team produced a Recovery Plan for the Nechako White Sturgeon (Golder 2003).

The population of white sturgeon within the Nechako are presently "red listed" or considered "critically imperiled" by the BC CDC (2002), inferring that this unique stock is facing imminent extirpation without intervention. More recently, the Committee on the Status of Endangered Wildlife in Canada

(COSEWIC) has designated all white sturgeon populations within Canada as Endangered. The Nechako's population of white sturgeon were added to Schedule 1 of the *Species at Risk Act* (SARA) in August of 2006. SARA includes components that may result in forced alterations to the manner in which activities in and about a stream are managed. This will include First Nations activities, including constitutionally protected rights to conduct fishing activities.

In 2000 it was estimated that the Nechako sturgeon population would approach an overall mean age and size (i.e. numbers) whereby, due to diminishing reproductive potential and effective population size, the recovery of the stock would not be possible by 2020 (Korman and Walters). This analysis did not consider what is now known to be the additional substantial mortalities incurred in the First Nations food fishery. As well, First Nations' food fishing nets target sturgeon in the 1-2.5 meter range (large fish tear their way out of the nets) and are therefore harming the most reproductively viable portion of the population.

Recognizing the detrimental impact of the existing state of FSC sockeye fisheries, the CSTC initiated community outreach efforts through the Habitat Stewardship Program in 2004. These outreach efforts included an initial assessment of the challenges and opportunities related to the alteration of existing sockeye harvesting methods to more selective means (CSTC 2005 & 2006). Both components of the work were continued in 2006/07.

Purpose

By-catch and mortality of white sturgeon during First Nation's gillnet fisheries for sockeye salmon and resident species is the remaining direct anthropogenic source of mortality on the Nechako population. This project was intended to work towards reducing by-catch of non-target[1] species, primarily white sturgeon, and related sources of mortality on white sturgeon within the Nechako drainage. Reducing by-capture and potential sturgeon mortalities will assist in the maintenance of the most important portion of this Endangered population, and increase the potential of its eventual recovery.

[1] Nechako First Nations, as well as all Fraser First Nations, have voluntarily complied with a 1994 "agreement" to not direct harvest effort on white sturgeon, and to release incidentally captured white sturgeon when possible.

One of the "Priority 1" Recovery Activities identified within the recovery plan for the Nechako sturgeon is to "protect existing sturgeon stock using available regulatory mechanisms and planning processes." The education of First Nation fishers with respect to the safe release of sturgeon was identified as an action to be continued. As well, the CSTC recognizes that the existing gillnet-based food fishery inherently holds some threat to the stock, and there is a desire to reduce that threat.

Objectives

The broad objectives of this project entailed outreach-education with First Nation fishers regarding the plight of the Nechako sturgeon, the Nechako White Sturgeon Recovery Initiative, the impact of First Nation fisheries on this stock and available methods of harm reduction and selective fishing. More refined objectives of the work were as follows:

1. Reduce and eventually eliminate mortality of white sturgeon resulting from First Nations gillnet fisheries.

2. Ensure all desirable information possible is collected from white sturgeon (released and harvested) during First Nations fisheries in the Nechako watershed.

3. Monitor the impact of the food fishery on the sturgeon population.

4. Assess the plausibility and feasibility of developing and implementing completely selective food fishing mechanisms (i.e. community desire and/or acceptance, plausible methodologies, site locations, logistics).

Activities

Core activities that were implemented in relation to the objectives above included the following:

1. Delivery of a power point presentation and other materials to First Nation and non-First Nation forums explaining and describing the plight of the Nechako white sturgeon and the ongoing recovery process.

2. Delivery of presentations to each CSTC community with significant FSC sockeye fishing activity in the Nechako basin on several occasions (Nadleh, Nak'azdli, Saikuz, Tl'az'ten, Takla, Stellat'en).

3. Providing fishers with actions/mechanisms to reduce harm to by-captured sturgeon when gill netting.

4. Development of protocols with fishers and individual community catch monitors to record specific information regarding sturgeon encounters and mortalities for the purposes of having the information reported back to the CSTC fisheries program.

5. Providing community catch monitors with required materials and training to collect relevant information from any captured sturgeon.

6. Conducting periodic outreach visits to First Nation communities.

7. Assessing the feasibility and plausibility of implementing completely selective sockeye food fishing methodologies.

8. Implementing pilot-scale selective FSC fisheries.

9. Completion of this report summarizing activities and results and recommendations for further work.

Project Results

It was intended that this proposed initiative would work to reduce by-catch of non-target species, such as white sturgeon, within the Nechako drainage through four primary means:

1. Educating First Nation fishers regarding the plight of the Nechako sturgeon

2. Disseminating the objectives and activities of the Nechako White Sturgeon Recovery Initiative, and First Nations' role in the initiative

3. Highlighting the potential impact of First Nation fisheries on this stock

4. Describing available methods of harm reduction and selective fishing

To these ends, appropriate informational/educational materials were developed, and several outreach sessions were held.

Materials

Activities related to this initiative were initiated in April of 2006 and continued into March of 2007. The presentation (Power Point) developed for the purposes of the outreach component of this work is provided in Appendix 1. Further, general informational handouts and information kits for community catch monitors were assembled and posters describing the purposes of the outreach work were prepared (Appendices 2, 3 and 4 respectively). Ensuing discussions following outreach presentations included the description of procedures for freeing captured sturgeon from gillnets in the most harmless manner, and other aspects of fishing activities that can be altered to reduce the potential for sturgeon by-catch and harm.

Outreach Activities

Outreach activities were initiated in April of 2006 and continued until March of 2007. Outreach sessions involved the discussion of matters relevant to Nechako sturgeon and their conservation, in some cases the presentation of the Power Point Presentation developed specifically for this program, as well as the distribution and discussion of the other materials developed. Attempts were made to attend all functions where the target First Nations audience would be in attendance and focus on opportunities with groups of fishers and youth, and community leaders. Meetings attended/outreach sessions are outlined in the table below.

Table 1. Dates, locations and subject matter at outreach sessions attended (2006/07).

Date	Place	Attended By	Nature of Outreach
April 12, 2006	CSTC Office	B Toth; B Shepert; CSTC POC committee (Chiefs and Senior management)	Policy and Operations Committee meeting – issues related to white sturgeon by-capture and harm reduction discussed, and intended program to reduce harm described
April 18, 2006	CSTC Office	B Toth; B Shepert CSTC Chiefs and CSTC program managers	Chief's meeting attended to provide update on status of fisheries program for 2006; HSP project rationale and activities described.
May 15, 2006	Saik'uz	B Shepert; CSTC Chiefs and Senior CSTC staff; Saikuz First Nation community members	HSP project rationale and activities described.
June 5, 2006	Wetsuweten First Nation	B Toth; B Shepert; Wetsuweten Council	Community meeting with Reg Ogen and Councilors regarding CSTC's fisheries program and involvement in white sturgeon recovery

			initiative and harm reduction
June 21, 2006	MoE Prince George	B Toth	NWSRI TWG meeting regarding review of spring activities and additional activities planned for the coming year, and implications of proposed SARA listing – CSTC activities including outreach and harm reduction program
June 27, 2006	Nak'azdli	B Shepert; 150 participants	Nak'azdli AGA, presentation from fisheries program – Involvement in white sturgeon recovery initiative and harm reduction
July 4, 2006	CSTC	B Shepert, B Toth, V Roang	Planning related to HSP project – responsibilities assigned and work plan developed
July 20, 2006	Nakazdli Band Office (Fort St. James)	B Shepert, B Toth	Community Liaison/Catch Monitor meeting in Nakazdli [A George (Saikuz), B Antoine, S Joseph (Nakazdli) J French (Takla)] – initiation of planning regarding selective fishery
July 26, 2006	Binchi (Fort St. James)	B Toth; 300 participants	CSTC AGA meeting; pres. regarding fisheries program projects and issues, including white sturgeon issues; various discussions with individual community members
August 4, 2006	Nakazdli Band Office (Fort St. James)	B Shepert, B Toth, S Ratko	Community Liaison/Catch Monitor meeting in Nakazdli [A George (Saikuz), B Antoine, S Joseph (Nakazdli) J French (Takla)] – continued planning re selective fishery and catch monitors provided with materials for by-catch reporting
August 10, 2006	CSTC Office Prince George	B Shepert and B Toth	Meeting with Chiefs Louie (Nadleh) and Michelle (Stellaten) regarding HSP project purpose and rationale, and legal issues surrounding its implementation and other issues with the fisheries program
August 30, 2006	CSTC Office Prince George	B Toth	Meet with Chief Martin Louie, and Councilors R Nooski and K Nooski at CSTC office regarding sturgeon harm reduction and selective fishery
Sept 12, 2006	Nadleh Band Office	B Toth; Nadleh Chief and Council and Band Manager	Meeting regarding planning and staffing for selective fishery and fishery monitor position
Sept 13, 2006	Tlazten Office	B Toth	Meeting with J Webb and Tlazten catch monitoring staff regarding sturgeon by-catch and related monitoring-reporting
Sept 13, 2006	Nakazdli Band Office	B Toth	Meeting with S Joseph (catch monitor) in Nakazdli regarding sturgeon by-catch and related monitoring-reporting
Sept 13, 2006	Nadleh Band Office	B Shepert, B Toth	Identified staff for initiating HSP fishery and catch monitoring function
October 22, 2006	Stellat'en	B Shepert, B Toth; 40 participants	Stellat'en AGA regarding the band rejoining the CSTC – information on white sturgeon recovery

			initiative and harm reduction provided
November 22, 2006	Saikuz First Nation	B. Toth, B. Shepert; 20 First Nations trainees	Saikuz;, provided Environmental Monitoring Program training class with presentation regarding CSTC fisheries program activities, including white sturgeon outreach program
Jan 24, 2007	CSTC office	B. Toth, B. Shepert	Met with CSTC Executive Assistant regarding approval of correspondence prepared under Tribal Chief's signature endorsing CSTC's involvement in various recovery activities
Jan 25, 2007	CSTC office	B. Toth, B. Shepert	Met with Chief Martin L and Councilor K Nooski (Nadleh) regarding catch monitoring data from their community and by-catch issues, and future selective fisheries in their area
Feb 9, 2007	Nakazdli	B. Toth, B. Shepert; Jako Prince and family	Met regarding sturgeon specific issues within their community
Mar 1, 2007	CSTC office	B. Toth	Met with CSTC education coordinator regarding CSTC's activities related to white sturgeon and need to incorporate related issues into education curricula under development
Mar 9, 2007	CSTC office	B. Toth	Meeting with Chief Martin Louie and Councilor Ken Nooski (Nadleh) regarding options for reducing by-catch within Nadleh area fisheries

Materials presented are translated into Carrier for the members present during an outreach session in Tl'azt'en.

Reporting Protocol

Attempts were made to maintain reporting and communication protocols with Community Liaisons and Catch Monitors (sometimes the same individual within a community fulfills both roles) within each of the six relevant First Nation communities (including Stellat'en). This individual was provided with the "sampling package" and the biologist and/or technician attending provided a brief training session on the collection of the desired information using the directions provided. Feedback was received from the catch monitors in all 6 target communities, and CSTC staff were notified on several occasions throughout the summer/fall with respect to observations and concerns.

A total of 23 reports of white sturgeon being by-captured during sockeye gillnetting activity were provided in 2006 (Table 2). Two (2) of these sturgeon were reported as being killed as a result of by-capture, with the remainder being released unharmed. Information regarding the sizes of the sturgeon encountered indicated that they were all adults. Samples from the mortality reported in Nadleh were collected and provided to the Province. One of the fish by-captured in Stuart Lake was reported to be radio tagged (no floy tag number was reported), and the mortality provided from Fraser Lake was radio tagged.

Table 2. A summary of FSC fishery-related encounters with white sturgeon reported in 2006.

Community	Reporting Protocol	Sturgeon-Fisher Interactions
Nadleh	Nadleh is not a signatory to the CSTC AFS Agreement, making the ability to receive regular catch monitoring difficult. Improvements have been achieved as a result of this program.	Reports indicated that 7 sturgeon were encountered during FSC fishing in the Nechako River (1 fish) and in Fraser Lake (6 fish). Two sturgeon were killed. One sample (and the associated radio tag) were collected and provided to MoE.
Stellat'en	Stellat'en operated their own independent fisheries program in 2006. Most FSC harvesting occurs selectively in conjunction with the sockeye enumeration fence.	Some harvesting occurs in Fraser and Francois lakes No reports of sturgeon encounters were indicated.
Saik'uz	Catch monitoring information was collected and provided regularly.	No reports of sturgeon by-capture were received in 2006.
Nak'azdli	Catch monitoring information was collected and provided regularly.	Two reports of sturgeon encounters were provided from the vicinity of the Stuart River outlet. Both were released.
Tlazt'en	Tlazt'en's fisheries program	A total of 14 sturgeon encounters were

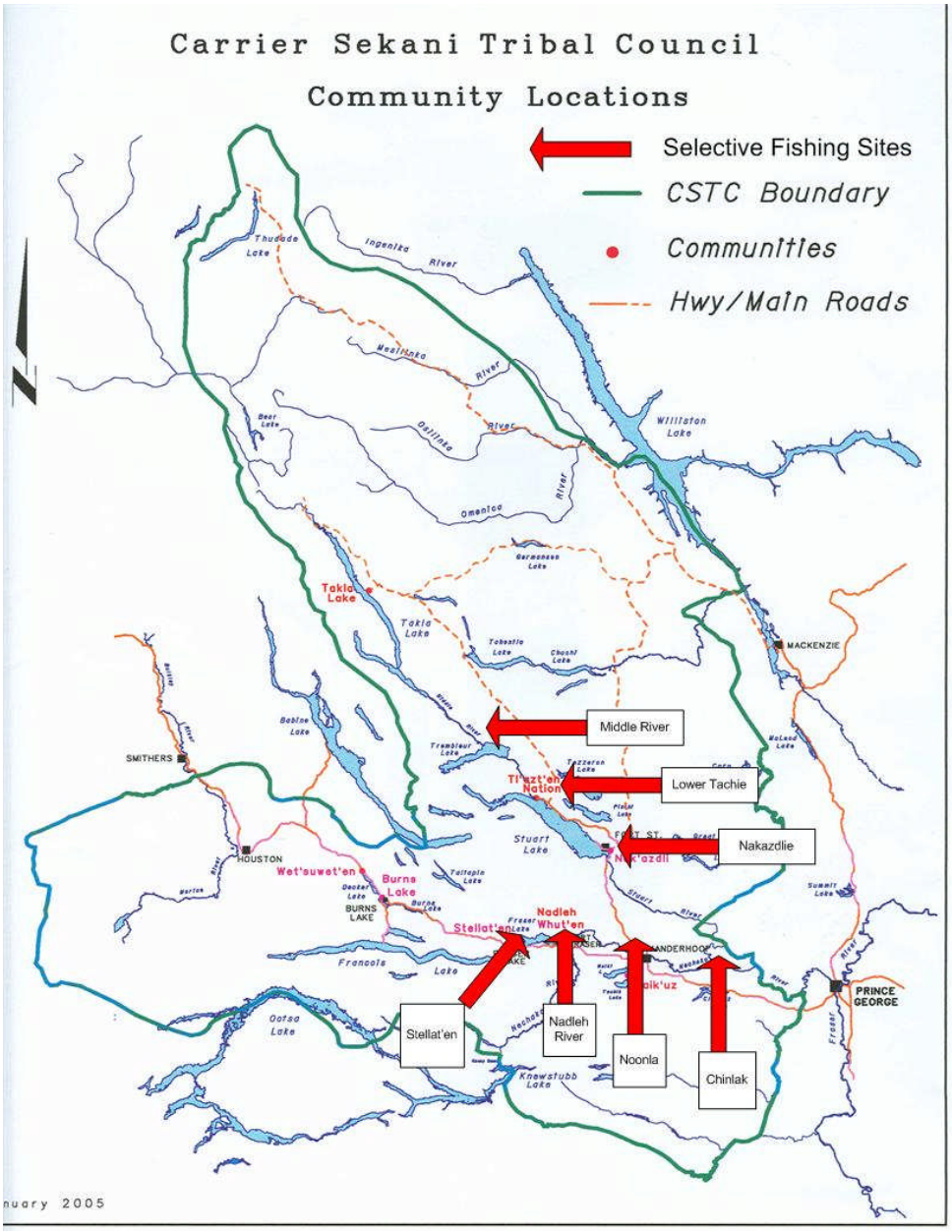
	operates autonomously from CSTC. Information regarding sturgeon encounters was provided as a function of this HSP project.	reported; 12 from the vicinity of the Tachie River confluence with Stuart Lake (1 radio tagged fish) and 2 from Trembleur Lake. These were all encountered during FSC activities for Late Stuart sockeye. All of the sturgeon were released.
Takla	Catch monitoring information was provided regularly.	No reports of sturgeon encounters during FSC harvesting activities were reported. It should be noted that this is largely a reflection of the conservation closure on early Stuart sockeye in 2006, which is the only Fraser stock that this community has opportunity to harvest.

Reporting from the community catch monitors / community liaisons continues to improve. This, in combination with fisher's increasing comfort levels for reporting information, is believed to account for the year-to-year increase in the reported number of sturgeon being encountered that has been observed since this project was initiated in 2004. There is no known reason to believe that either a substantial increase in the number of individuals participating in the fishery, or that their fishing effort increased, relative to previous years.

Limited information is being reported with respect to the specifics of individual fish being captured. This is largely a reflection of the fact that most by-captured fish are being reported to the community catch monitors after the fact. Catch monitors generally rely on reported information due to the nature of the fisheries. Sampling kits were not provided to individual fishers, due to concerns relating to unnecessary handling and stress to captured fish. The fact that measurements relating to by-captured fish are not being provided is not considered a major issue.

Selective Fishery Transition

One of the objectives of this work in 2006 was to conduct a selective sockeye fishery, in a continued effort to establish a selective harvesting option for First Nations food fisheries for sockeye. Information gathered in 2004 and 2005 indicated that there was support for this transition, and several suitable sites for selective harvesting methodologies were identified (CSTC 2005 & 2006) (see map below). The sub-objective of selective fishery efforts in 2006 was to complete a feasibility assessment of 1-2 other potential selective fishery sites, with the hopes of finding a workable site to harvest Late Stuart sockeye.



Selective Fishery

The intent in 2006 was to conduct a 20 day selective beach seine fishery for sockeye on the Nautley River in the community of Nadleh. This site allows for the selective harvesting of both Nadina and Stellako sockeye stocks. It meets several criteria that make it a suitable selective fishery site in that it provides vehicle access and is in direct proximity to the infrastructure of the community of Nadleh, it is a site that is still commonly used for harvesting, and occurs within an area where sturgeon by-catch is an ongoing issue (CSTC 2005).

Several meetings were held with the Nadleh Chief and Council and Band administrators in 2006 to convey the CSTC's intended objectives in relation to the planned selective fishery. Political support to conduct the fishery in the desired location was received (from Nadleh) in September, after the majority of Stellako sockeye had migrated through the Nautley River. This allowed for the counting fence on the Stellako River to confirm escapement. Much confusion ensued during discussions with Nadleh to initiate the fishery. The Stellako stock's strength was reduced from pre-season expectations due to high rates of marine exploitation. Substantial conservation concerns existed as in-season estimates of escapement declined to a low of 80,000 fish based on test fisheries and exploitation, which was considerably lower than DFO's target. Approximately 145,000 sockeye ended up escaping to spawn, somewhat alleviating concerns.

A beach seine fishery was initiated on September 13 and wrapped up on September 22. A total of 900 sockeye were harvested and distributed. Five Hundred female sockeye were released during the fishery. Harvested sockeye were distributed to elders within the community of Nadleh as a priority, and later to other Nadleh residents, and later to elders within the communities of Saikuz and Stellako. Numerous non-target sport and non-sport species were released unharmed during the fishery, but records were not maintained.

All personnel utilized to conduct the fishery and fish distribution were hired from Nadleh. No community opposition to the fishery was evident in 2006, and political support was maintained for its short duration.

A logistical plan and guideline document was developed to aid in the effective management of the fishery (Appendix 5).

The factors that appeared to annually contribute to difficulties in obtaining community (leadership) support for the fishery were identified and discussed at length in 2006. At the request of the fisheries program, the CSTC has moved to provide Nadleh with funding to research the legal issues necessary to satisfy their concerns to these ends.

Beach seined sockeye on the Nautlev River in 2006.

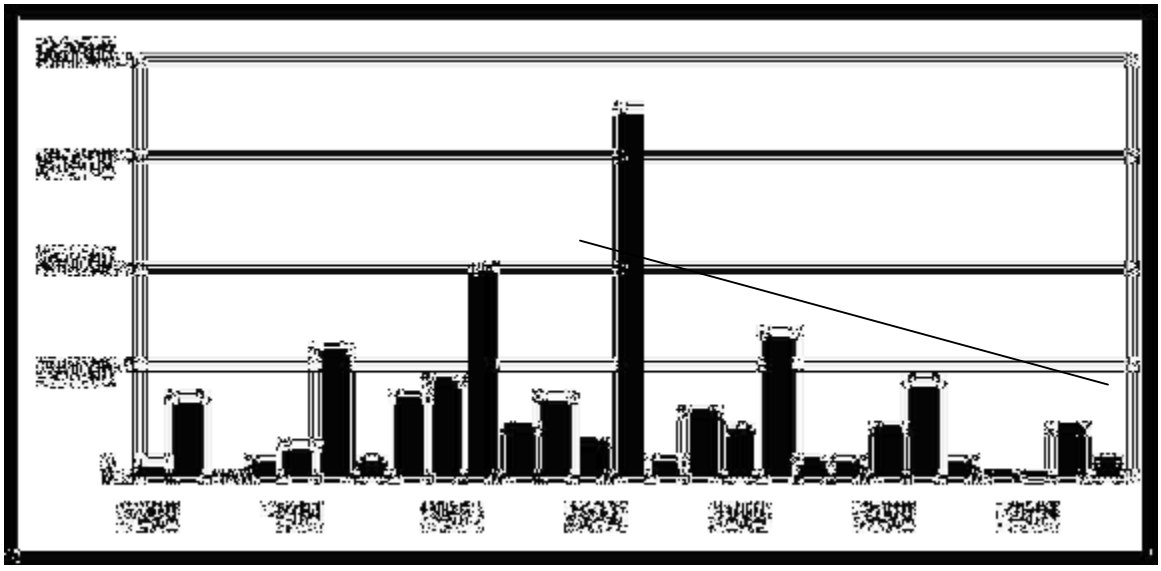
Selective Fish Site Assessment

As a function of 2006 HSP project activities, a secondary selective sockeye harvesting site was investigated. The intent was to focus on the Stuart system whereby Late Stuart sockeye could be the focus of harvesting activities when Stellako/Nadina sockeye abundance was insufficient to support communal harvests, or community support did not exist for such a fishery in this area. Such a site could also be utilized to direct harvest effort on Early Stuart sockeye as well, but conservation issues presently preclude the consideration of that stock.

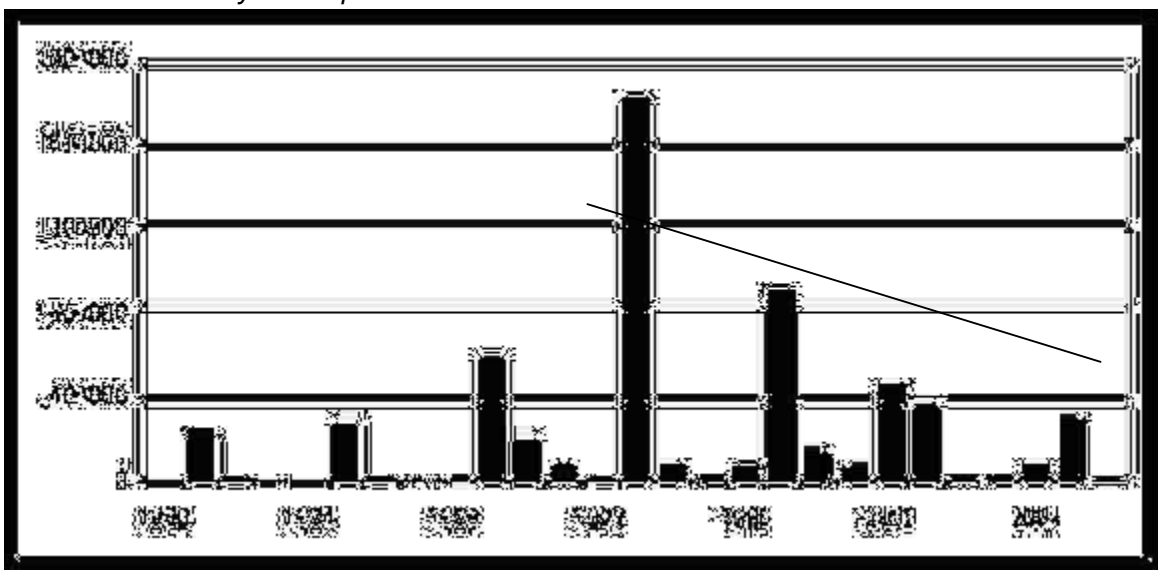
Based on CSTC (2005) one site (Chinlac) was investigated in the lower Stuart River that was documented as having potential as either a seine fishing site, or a seine site augmented by a weir. However, a primary practical constraint common to all sites in this area is that they are boat access only which, it was determined, make the cost effectiveness of fish harvest and transport unworkable. This was especially readily evident in 2006 when stream

discharges were at record lows. Further, the CSTC and its member communities have been pursuing a stock status review of both Early and Late Stuart sockeye stocks. Both stocks have been on a declining trend in terms of adult returns for more than three generations.

Early Stuart Sockeye Escapement



Late Stuart Sockeye Escapement



While the Late Stuart stock could possibly support near-terminal harvests on some years, their coincidental marine and lower-river migration timing with other summer stocks continues to make them susceptible to high rates of mixed-stock harvest. Mixed-stock fishery managers made it clear (after the initiation of this project) in 2006 that they have no intention of redressing their management of this stock to reverse their declining trend in escapement (i.e.

continued high rates of exploitation of the stock can be expected to continue). After discussion with CSTC member communities, it was determined that a directed selective harvest of Late Stuart sockeye is likely not going to be possible for some time, and that harvests of this stock should be restricted to the needs of locally-dependent communities (Nakazdli and Tlazt'en).

Efforts to identify a secondary selective harvesting site were redirected to the Nechako mainstem upstream of the Stuart River confluence. A site in Vanderhoof (Noonla) was identified that would provide opportunities to harvest Stellako sockeye. The site is within the Traditional Territory of the Saikuz First Nation. The site was a previous traditional weir location. It was deemed to be suitable for sockeye harvests via beach seine, but would require the installation of at least a partial weir system to delay and concentrate fish. It was also assessed (in 2006) during a period when the Nechako River was at record low flows for the season. While the site does hold potential, it holds far more physical challenges to success than the Nautley River site. Crews did not attempt to capture sockeye, which could be readily seen migrating through and holding at this site. The site provides vehicle access but boat(s) are required to conduct the fishing and fish transfer. The site would likely be a good fall-back if the Nautley River site was not available, but would require substantially more planning and costs.

Augmentation of By-Catch Monitoring

As indicated above, the selective fishery conducted in 2006 was considerably smaller than anticipated, and therefore did not utilize the full allotment of HSP funding that was identified for that component of the project. In an effort to enhance the level of participation of community catch monitors and individual fishers within the by-catch reporting component of this outreach and harm reduction work, the CSTC utilized unspent funds to purchase Passive Integrated Transponder (PIT) tags, PIT tag injectors and PIT tag readers. This equipment will be provided to catch monitors for use in the next fiscal year.

PIT tags are essentially tiny microprocessors (computer chips) that are individually coded and only readable via a scanning device, similar to a bar/sku reader utilized in the merchandising sector. Each PIT tag has a unique alpha-numeric code, making any fish that a PIT tag has been applied to, individually trackable throughout the fish's life.

PIT tags have been utilized extensively on the Nechako's sturgeon population. Providing community catch monitors with the ability to scan and/or tag by-captured fish for/with PIT tags will provide valuable information to the Technical Working Group.

Two concerns identified related to this opportunity were:

1. Fishers may be incited to hold sturgeon so that they can be scanned/tagged, potential harming fish
2. PIT tagging requires some expertise in order to be done correctly, to avoid harming fish

The CSTC has committed to ensuring that sufficient training is provided to the individual catch monitors within the communities to ensure they can complete tagging proficiently and without causing harm. As well, they will discuss concerns (with catch monitors and fishers) regarding the inclination fishers may get to hold by-captured fish so that they can be scanned and/or tagged. This will be done as part of the ongoing outreach program in the upcoming fiscal.

Involving community catch monitors with PIT tagging/monitoring is intended to deepen the level of engagement of the catch monitors and individual fishers within the recovery process. Continued involvement of community members in recovery activities is seen as essential to maintaining and building support for necessary recovery activities, and maintaining records regarding the impact FSC fisheries on white sturgeon.

Conclusions and Recommendations

Nechako First Nations have become generally well adapted to harvesting sockeye with gillnets since their imposition approximately 100 years ago. Gillnets are a nonselective means of capturing sockeye and are evidently impacting non-targeted species. Gillnet catch-success is abundance based, meaning that reduced sockeye presence leads to increased effort and inherent increases in by-catch. In recent years the trend has been for decreasing sockeye abundance, particularly in the Stuart system, which has likely seen a significant increase in the potential for by-catch of sturgeon and other species. If these trends continue, impacts to resident stocks will become more threatening without a move to more harm-reducing fisheries.

The Federal Minister of Environment, on the advice of the Minister of Fisheries and Oceans, added the Nechako white sturgeon population to Schedule 1 of SARA in August of 2006. The inclusion of Nechako white sturgeon as Endangered under Schedule 1 of the *Species at Risk Act* has necessitated a "Recovery Potential Assessment (RPA)," which shall dictate the activities that pose a potential threat to sturgeon recovery and can continue under the authority of an "Incidental Harm Permit." The information collected through this project (2004-06) informed this process.

A review of this three year endeavor is being completed by the CSTC to evaluate the effectiveness of the different components of this project in achieving the intended objectives and outcomes of the work. This report will inform the future directions outreach and selective fisheries activities should take. Preliminary recommendations from this review include:

1. Means of increasing the participation of community catch monitors in monitoring and promoting harm reduction should be investigated. This is somewhat already being addressed through the means discussed above.
2. Funding should be provided to Nadleh to allow them to investigate legal issues related to allowing the conduct of a selective fishery within their territory. This has also been acted upon.
3. Outreach activities should be continued and be further integrated into the CSTC's fisheries program as a core activity.
4. Activities encompassed by this project should be solely dedicated to a CSTC Fisheries Program position, which has also recently been accepted and acted upon.
5. Funding to continue the pursuit of these issues and activities should be sought in 2007. This was also acted upon.

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Appendix 1 – Power Point Presentation for Outreach Sessions

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CSTC_fish_publc\200

Appendix 2 - Handouts for meeting attendees and general community distribution

Fisheries Program, Carrier Sekani Tribal Council
2nd Floor, 1460 Sixth Ave.
Prince George, B.C.
V2L 3N2

White Sturgeon within the Nechako Basin are known to be "Endangered." The Carrier Sekani Tribal Council is participating in ongoing recovery efforts, including research and population assessment activities, and promoting white sturgeon "harm reduction" within Carrier First Nations' food fishing activities. First Nations fishers are requested to take steps to minimize harm to white sturgeon when they are captured during fishing activities.

- ✓ **Avoid gillnetting in areas where sturgeon are frequently captured.**
- ✓ **Check gillnets with increased frequency to minimize harm to entangled sturgeon.**

<u>If you capture a white sturgeon during your food fishing activities, you are requested to do the following:</u>

- **If it is alive;**

Attempt to release the fish without harming it. Do not remove the fish from the water or into your boat, and do not touch the fish's gills. Please take note of the approximate length of the fish and any tags. Report the time, date, and location of the encounter, and specifics of the fish, to your community's catch monitor (listed below).

- **If the fish is dead or cannot be released successfully when you encounter it;**

Please contact one of the people identified below <u>as soon as possible</u>. We wish to collect specific measurements and samples from the fish. If it is possible, please do not process (gut, dress, or cutup) or dispose of any portion of the fish until one of the individuals below has sampled the fish. If this is not possible, please retain the fish's head and front fins for pickup by one of the persons below.

- **If you observe a sturgeon (not captured) during your activities, please report the date, time and location to one of the individuals below.**

If you would like further information with respect to this issue, contact Margo French 250-613-5000.

Brian Toth, CSTC, 250-613-5680
Jim Webb, Tl'azt'en, 250-648-3224
Betty-Lynn French, Takla, 564-3704
Sandra Joseph, Nak'azdli, 996-0321
Ricky Nooskie, Nadleh, 690-7156
Violet Kennedy, Stellat'en, 699-7771
Margo French, CSTC, 250-613-5000
Scott McIntosh, Saik'uz, 250-567-9293

Appendix 3 – Sampling and reporting directions for community catch monitor and/or fisheries liaisons

Carrier Sekani Tribal Council
2nd Floor, 1460 Sixth Ave.
Prince George, B.C.
V2L 3N2

NECHAKO RIVER WHITE STURGEON RECOVERY INITIATIVE

Nechako White Sturgeon Outreach and Harm Reduction
Handout for Carrier First Nations FSC Fishery Monitors, Liaisons and/or Representatives

The Carrier Sekani Tribal Council is promoting the conservation of white sturgeon in the Nechako and Stuart watersheds. We are requesting that First Nations fishers release white sturgeon captured whenever possible. We are also initiating a monitoring program to document observations of, and encounters with white sturgeon in the Nechako and Stuart watersheds. Your assistance to these ends is greatly appreciated. Reporting and information collected will be shared with all Carrier First Nations.

Your name and contact information has be distributed to fishers in the area. If you are contacted by a someone that has encountered or observed a white sturgeon, please collect the following information.

1. **If the sturgeon was only observed or the fisher(s) were able to release it successfully (alive):**

   a. The date and time the sturgeon was encountered.
   b. The location where the sturgeon was observed and the nature of the observation (what the sturgeon was doing, what the observers or fishers were doing.)
   c. The general length of the sturgeon.

2. **If the sturgeon reported is dead:**

   a. Please try to get to the fish as soon as possible and request that the individuals in possession of the fish do not process (gut or cut up) or dispose of any part of it.
   b. Please collect the measurements identified on the attached Reporting Form.
   c. Please collect the samples and info identified on the attached Reporting Form

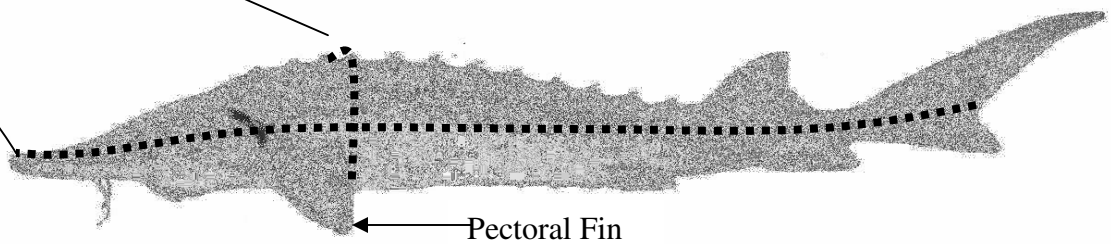
3. **If a sturgeon is reported alive and still entangled in a net:**

   a. Please attend the site if possible and assist with the safe removal and release of the fish.
   b. If it is not possible to attend the site yourself, please inform the individuals how to safely release the fish and request that they inform you if attempts are unsuccessful.

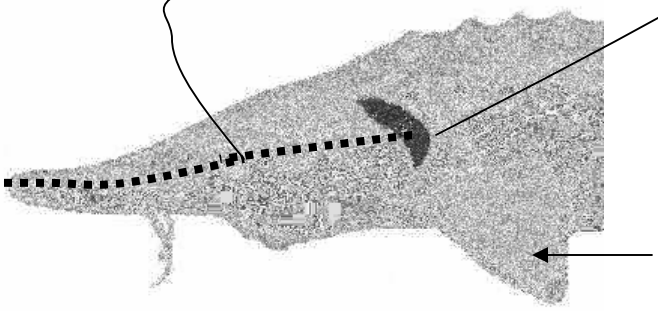
NOTE: Please ensure that if multiple persons are reporting the same sturgeon capture, encounter, and/or observation, that the reporting records indicate this.

Margo French, CSTC Community Liaison Tech. 250-613-5000	Sandra Joseph, Nak'azdli Contact, 250-996-0321
Brian Toth, CSTC Biologist 250-613-5680	Ricky Nooskie, Nadleh Contact, 250-690-7156
Jim Webb, Tl'azt'en Fisheries Manager, 250-648-3224	Violet Kennedy, Stellat'en Contact 250-699-7771
Betty-Lynn French, Takla Contact, 250-564-3704	Scott McIntosh, Saik'uz Contact 250-567-9293

Measurement	Specific Technique For Measurement
Fork Length	From the center of the curvature of the snout, along the lateral line, to the fork of the tail.
Post Opercular Length	Place tape at the center of the curvature of the snout and measure around to the posterior edge of the opercular plate. In the case of a gap between the operculum and the bony structure located posterior of the opercular plate, the gap should be included in this measurement.
Post Orbital Length	Place tape at the center of the curvature of the snout and wrap around to the back of the eye socket.
Girth	Taken as the circumference of the fish's body on the posterior side of the pectoral fins. Wrap tape around body directly behind pectorals.



Note: in the case of all measurements, pull the fabric tape taut, but not tight (e.g. in the case of a girth measurement, the form of the fish's body should not be altered by the tape when measuring.)



Place head and pectoral fins in one plastic bag labelled with you name and the date. Place all entrails from the body cavity into another plastic bag labelled in the same manner. Freeze both bags as soon as possible.

Additional Comments:_____
_____
_____

Nechako White Sturgeon Outreach and Harm Reduction
Sturgeon Observation, Encounter and/or Capture *Reporting Form*

Refer to the rear of this form for specific directions and additional space for comments

1. **A sturgeon was observed or released successfully (alive):**

Date and time of report:_____

Date of observation or encounter:_____

Location of Encounter:_____

Nature of Encounter:_____

Approximate Fish Size:_____

2. **If the sturgeon reported is dead, please contact the CSTC, in addition to recording:**

Date and nature of report (who and when reported, how captured):_____
_____
_____

Where and when the fish was captured and died/killed or when and where it was found dead:_____
_____
_____
_____

Nature of your report (where, when, how you attended):_____
_____
_____
_____

Check for tags and evidence of previous tagging (Floy and radio):_____

Fork Length (cm or inches):_____ Post Opercular Length (cm or inches):_____

Girth (cm or inches):_____ Post Orbital Length (cm or inches):_____

Samples: Collect, label and freeze the following in the plastic bags provided:

a. Both pectoral fins (remove with a knife or saw as close to the body as possible)
b. The head
c. All innards (all guts including all gonad material)

3. **If a sturgeon is reported alive and still entangled in a net:**

Depending on outcome, complete either 1 or 2 above.

Report (date, time, etc.):_____
_____

Appendix 4 - 11x17” Posters created and posted within First Nations Communities

NECHAKO RIVER

WHITE STURGEON

RECOVERY INITIATIVE

White Sturgeon within the Nechako Basin are known to be "Endangered." First Nations fishers are requested to take steps to minimize harm to these fish when they are captured during fishing activities.

If you encounter a white sturgeon during your food fishing activities:

- ***If it is alive, attempt to release the fish without harming it. Take note of the general length of the fish and any tags. Report the time, date, and location of the encounter, and specifics of the fish to your community's catch monitor.***
- ***If the fish cannot be released successfully and/or is dead when you encounter it, please contact one of the people identified below <u>as soon as possible</u>. We wish to collect specific measurements and samples from the fish.***

If you would like further information with respect to this issue, contact Margo French 250-613-5000

Carrier Sekani Tribal Council
2nd Floor, 1460 Sixth Ave
Prince George, B.C.
V2L 3N2

<u>CONTACTS</u>
Margo French, CSTC, 250-613-5000
Jim Webb, Tl'azt'en, 250-648-3224
Betty-Lynn French, Takla, 564-3704
Sandra Joseph, Nak'azdli, 996-0321
Ricky Nooskie, Nadleh, 690-7156
Violet Kennedy, Stellat'en, 699-7771
Scott McIntosh, Saik'uz, 567-9293

NECHAKO RIVER **WHITE STURGEON**

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Attempt to release the fish without harming it. Do not remove the fish from the water and do not touch the fish's gills. Please take note of the approximate length of the fish and any tags. Report the time, date, and location of the encounter, and specifics of the fish, to your community's catch monitor (listed below).

. ***If the fish is dead or cannot be released successfully when you encounter it;***

Please contact one of the people identified below <u>as soon as possible</u>. We wish to collect specific measurements and samples from the fish. If possible, please do not dress, cut up or dispose of any portion of the fish.

If you would like further information with respect to this issue, contact Margo French 250-613-5000

<u>*CONTACTS*</u>

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Appendix 5 – Selective Fishery Logistics and Management Plan; 2006

Selective Fishery Logistics and Management Plan
Nadleh 2006

Stock Management Plan

The forecast escapement of the Stellako stock is very poor (66,000). This is a direct result of DFO's implementation of commercial fisheries based on run size estimates made in July prior to having reliable information. The decision has been made to carry on with the planned selective fishery in an attempt to meet some of the CSTC member First Nation's food needs.

1. This decision will be revisited as new information becomes available.

Selectivity and Monitoring

1. The crew on site can decide the criteria that will determine which sockeye are to be harvested and which are to be released (if any). Fish condition appears to be quite good.
2. All species other than sockeye should be released unharmed.
3. There should be one staff member that always serves to record the fish that are captured, released and harvested.

Environmental Management Plan

1. The site requires some cleanup of garbage and other materials that are present and will hamper or make seining dangerous for the crew. The site should be cleaned of any glass/bottles and other debris.

The other primary concern is the erosion of the river bank in the area where the seine fishery takes place. As fish are pulled into the shore area the mud substrate gets stirred-up creating further erosion and a soupy mess for the fish. There are two options to resolve this issue

2. Seining from the west side could be attempted. The bank in this area is gravel/cobble and there is better/deeper flow.
3. Alternatively, the shore and bank in the area where seining normally takes place could be tarped along the shore and out to a depth of about 3'. This should avoid some of the problems that are normally encountered. The seine net could then be left in the water and sockeye dipnetted out to a holding bin and other species released more easily.

Safety

1. The crew leader should organize a safety plan that encompasses what the course of action is in the event of injury or emergency. All the crew should be made aware of this plan.
2. All crew should have suitable gear (life vests, waders and/or wading boots, gloves)

Daily Harvesting Considerations

A number of issues should be dealt with prior to harvesting taking place on any given day:

1. All necessary gear and personnel should be in place
2. Ice
3. Totes and a water supply
4. A distribution plan (where the fish are going)
5. A harvesting plan – fish should be delivered to the target location at a reasonable hour and as per the plan setup with the contact in that community. This will necessitate a planned termination time for harvesting and when the delivery truck will have to leave
6. A schedule of when harvesting will have to begin and end will have to be developed for the crew each day. This will have to be based on the capacity of the delivery vehicles, how many fish it is assumed can be captured, delivery time and the time the delivery is intended to arrive.
7. All equipment should be stored in a manner that ensures it will be available in working order the following day and that unauthorized individuals can't utilize the equipment when the crew is not operating.

Equipment & Material Needs

Crew safety gear (waders, wading boots, gloves, life jackets) Boat & oars Seines Dip nets Totes, Bins	Pump, hoses, generator Data forms and ducksback book

Distribution

The following is suggested as a plan for fish distribution. This is based on the proximity of each community to the site and assumes an ample supply of fish for several days will be available (the following list is in order of suggested priority):

1. **Nadleh elders**
2. **Other Nadleh members**
3. **Stellat'en elders**
4. **Other Stellat'en members**
5. **Saikuz elders**
6. **Nakazdli elders**
7. **Tl'azt'en elders**
8. **Takla elders**
9. **Burns Lake elders**
10. **Wetsuweten elders**
11. **Other Saikuz members**
12. **Other Nakazdli members**
13. **Other Tl'azt'en members**
14. **Other Takla members**
15. **Other Burns Lake members**
16. **Other Wetsuweten members**

It is suggested that the following individuals will be tasked with organizing the distribution of fish within each community. The harvesting crew will be responsible for harvesting, preparing the fish for delivery, and delivering to single site within each community (i.e. the contact within each community will be responsible for organizing the distribution of fish within their community once they are delivered on site).

1. **Nadleh – Kenny Nooskie/Gino**
2. **Stellaten – Sharolise Baker**
3. **Saikuz – Albert George**
4. **Nakazdli – Sandra Joseph/Bob Antoinne**
5. **Tlazten – Jim Webb/Thomas Alexis**
6. **Takla – Judy French**
7. **Burns Lake – Ryan Tibbets**
8. **Wetsuweten – Reg Ogen**

Records must be kept of the number of fish harvested/released, number distributed to each Nadleh member, and the number delivered to each distribution point in other communities.