NECHAKO WHITE STURGEON RECOVERY INITIATIVE

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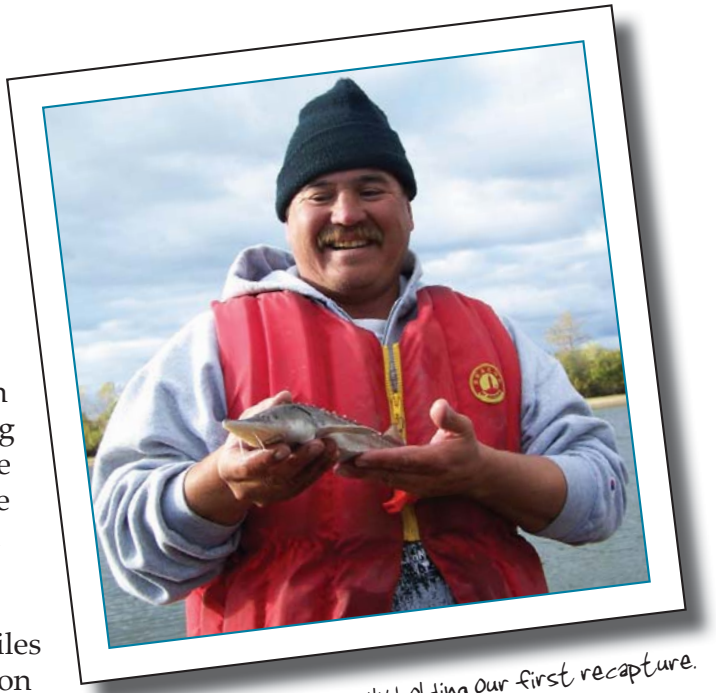
www.nechakowhitesturgeon.org

Two-year-old recapture, hope for the future

On September 22nd, 2008 Jako Prince and Jeano Nooski from the Carrier Sekani Tribal Council made history - they recaptured the first conservation aquaculturally reared juvenile white sturgeon in the Nechako River. Originally released in the fall of 2006 at 16 grams and 15 cm, it had grown significantly - now weighing almost 400 grams and measuring 49 cm in length. The NWSRI team hopes to begin recapturing other reared juveniles in upcoming field seasons as the young fish are now beginning to be large enough to be caught in nets. The NWSRI is particularly encouraged by the excellent growth of the fish, which hints at the possible success of the aquaculture program. In 2006, 2007 and 2008 several thousand four month old juveniles were released into the Nechako River. This conservation fish culture program together with research and recovery activities associated with habitat, recruitment, and restoration, are the two critical recovery efforts being made to save the Nechako white sturgeon from extinction.



Jako Prince, CSTC, proudly holding our first recapture.

Lhecho lhuyul

Ndi nido Acipenser Transmontanus *huy 'ulhni. Dakelh k'unakh lhecho lheyul ts'utni. Lhecho lhuyul Nichakoh 'it hune. 'I tat whuduts'olhdzukh (3 meters), 'it ulchokh lhekh.*

Acipenser transmontanus, the scientific name for the white sturgeon, translates literally as sturgeon across the mountains. White sturgeon in the Nechako River grow up to three meters in length and can weigh several hundred pounds.

In this Issue

Looking forward to 2009/10

In the coming year, the Carrier Sekani Tribal council will again lead projects to study survival success and the habitat needs of the juveniles we have released over the past three years.
We hope to implant acoustic telemetry-tags in up to 30 juvenile sturgeon that were over-wintered, with the generous support of the District of Vanderhoof, in the local ice arena. Tracking of these fish will help us find and capture cultured juveniles to ensure that we understand their habitat needs and that we are releasing the right number of fish to ensure subsequent generations of white sturgeon. Project biologists from the Ministry of Environment have proposed a study for 2009 that will help us understand habitat use by spawning adult white sturgeon. If funded, this project will determine which factors are responsible for cueing the spawning event and identify the habitat they need to be successful.

Sturgeon have barbels which are sensory organs, allowing them to feel and taste.

Update from the Community Working Group (CWG) Chair - Christina Cielsielski

In mid-2008, I was honoured to accept the position of CWG chair, replacing Justus Benckhuysen who had served in that capacity for the past two years. Aside from organizing the annual Save Our Sturgeon release event and assisting the TWG where needed, the CWG has been working towards implementing the idea of a permanent white sturgeon conservation aquaculture facility or multi-use facility and is assisting in the feasibility study that is currently underway. Stakeholder and community consensus is that a multipurpose arts, recreation, education, and fish rearing facility would be the most user-friendly and sustainable structure in the long run.

In the coming year the CWG will need to meet some fund-raising challenges to cover the costs of events and capital projects. We are also looking to engage more First Nations representation on the CWG. We are also looking at improving our existing communications plan to further spread the word about the Nechako white sturgeon and get the community involved in its recovery.

Thank you to all the staff and volunteers who work so hard each year to further the research, education and recovery of this amazing and ancient fish - one which lives in our own back yard. I look forward to working with you all in 2009/10.

Mussi (Thank you)

Christina Ciesielski

White Sturgeon Harm Reduction

First Nations communities within the Nechako watershed have voluntarily refrained from the direct harvest of white sturgeon since 1994. The focus of the outreach and harm reduction program is to share information with CSTC's eight member First Nation communities about the NWSRI, the CSTC's role in the Initiative and the status of the Nechako white sturgeon population. In 2008, catch monitors were hired for the communities of Saik'uz, Nadleh Whut'en, Nak'azdli and Takla Lake. A catch monitor coordinator was also hired and was successful in receiving reports and gathering data about sturgeon bi-catch. She spoke with several fishers in different communities and educated them about threats to sturgeon survival, how they can help and what laws apply to food fishing and sturgeon bi-catch (i.e., untargeted species caught when fishing/netting).

Juvenile Indexing Program

Releasing one of the 2008 broodstock fish.

The Juvenile Indexing Program recently completed its fifth year. It focuses on the capture and assessment of white sturgeon under 1 meter in length. The intent is to develop a methodology for a long term indexing program for the purposes of monitoring natural juvenile recruitment levels, as well as the growth, survival and distribution of conservation aquaculture facility reared juveniles. The project is key to detecting the Nechako sturgeon population's responses to recovery efforts. This year, technicians used gillnetting, trapping, beach seining, and angling to attempt to capture and sample sturgeon. In addition, a sonar device was used to detect acoustically tagged juvenile sturgeon released from the facility in the fall of 2007, and an underwater video camera was utilized to capture footage of white sturgeon congregating in overwintering sites.

A total of five white sturgeon were captured, ranging in length from 34 cm to 103 cm (TL). One of these fish was a conservation-reared juvenile that had been released in the fall of 2006. This was the first recapture of a facility-reared juvenile and the fish appeared very healthy at 49c m in length and just under 400 g (see cover story!) In addition, a total of 5 of the 29 acoustic tags implanted in conservation aquaculture facility-reared juveniles released in the fall of 2007 were detected in the summer of 2008.

2008 SPAWN MONITORING

White sturgeon spawning in 2008 occurred in two separate events. The initial event was estimated to have occurred between May 26th and June 2nd, based on the telemetry data and egg sampling results. Egg mats were deployed on May 26th and eggs were collected on June 2nd. Telemetry data showed increased activity in the vicinity of the spawning area beginning on May 29th.

On June 9th, additional eggs were collected at 2 of the 10 egg mat sets. The development stage of the eggs suggests that they were part of a second spawning event that occurred between June 4th and 9th. This is the first time that a second spawning event has been confirmed since monitoring began in 2004. There is the potential that the event may have been the result of a brood female being released from the conservation aquaculture facility into the river on June 3rd. This fish was released in the vicinity of where the eggs were collected, and records show that it remained in the vicinity of the spawning area from the 3rd to the 9th. Spawning in 2008 occurred in the same general area as in previous years (2004-2007).

Water temperature during spawning in 2008 was similar to that observed previous years. In 2008 mean daily temperatures of 13°C and daily maximums of 14.6°C were reached two days prior to eggs being collected for the first time.

White sturgeon eggs are small and very sticky.

2008 Enhanced Pilot Conservation Fish Culture Program

2008 marked the third and what was expected to be the last year of a three year pilot white sturgeon conservation based fish culture program on the Nechako River. This year's program was again led by the Freshwater Fisheries Society of BC and supported by numerous partners.

As in the previous years, brood capture of maturing fish was led by Ministry of Environment staff and was successful in providing five maturing females and five mature males for spawning purposes.

For each spawn individual females were crossed with three males to produce three half-sibling-families (i.e., 3 crosses per female). Ultimately eggs from two half sib-families were retained from each female for the juvenile releases and approximately 200,000 larvae were released for the habitat experiment. Unique family crosses were used for each experimental test for later identification using genetic identification.

In mid-September 2008, 3,300 fish were released into favourable conditions (i.e., warmer than previous years) and above predicted size. On Sept 24th, 675 more fish were released, leaving 1,300 fish for the Release Event which took place on October 1st and 2nd. After the event several hundred more fish were released for a total of 5609 with an average weight of about 20g. As in previous years, all releases were PIT tagged and scute marked.

A sturgeon's mouth acts like a vacuum for sucking up food.

A NWSRI volunteer holds a juvenile white sturgeon.

The biggest challenge this year was once again water-related. This year due to a very heavy, fine, sediment load during early spring and also during Summer Temperature Management Project (STMP) flows, there were difficulties providing consistent temperatures and flows. On a few occasions the water system was temporarily transferred to a partial city water–groundwater supply to augment or fully supply water to maintain flows. However this occurred after the critical incubation milestones— first feeding. Fluctuating water temperatures were offset by the heating of river water before and during STMP flows.

If success is solely measured by bottom line results, this year was the best of the past three. The fish were released earlier and they were also greater in number and size than previous years. The additional request for larvae was also covered off successfully.

Thanks to all involved this year but particularly to FFSBC staff, and team, Mickey McDonald and Neil Jantz, who did an exceptional job!

Lhecho lhuyul

Bugoos welewh but'ak 'andzoh ts'un linli, 'i nido "scutes" huyulhni. 'it andzokh buin kwulet 'i but'ak nunizt'uk.

Instead of scales, it has bony plates, called scutes, arranged in five rows down its body.

Where's My Fish??

You may be wondering what happened to the juvenile sturgeon that you released in October of 2006, 2007 or 2008. Scientists on the Technical Working Group continually work on fish sampling surveys to see if they can locate any of the fish that have been released at Save our Sturgeon events since 2006. Sometimes tagged fish are located within a couple of months of their release, or they may be encountered during juvenile sampling programs conducted every year on the Nechako River. When a fish is located, the date and location of the capture is recorded along with measurements of weight and length. It is also scanned for the passive integrated transponder (PIT tag) embedded just beneath its skin. It is this tag number that you were given at the release event you attended.

A four month old juvenile gets measured.

Remember, these fish are very small and not always so easy to find - your sturgeon is at the very beginning of a long life and the Nechako watershed is a big place! But if you are patient, you may one day find information on the fish that you helped release back into the river.

To see if your fish has been found, please visit: www.nechakowhitesturgeon.org/sturgeon/whereismyfish/index.php

The Nechako White Sturgeon Recovery Initiative (NWSRI) has been working hard to save the Nechako white sturgeon. Our team includes members that represent First Nations, governments and the community, all of which have provided critical support for recovery efforts.

SOS Release October 1-2, 2008

The third annual Save Our Sturgeon (SOS) juvenile release event was a huge success. The weather cooperated by providing us with sunshine and a last blast of heat. More than 900 students from seventeen schools within School District 91 attended the two day event – with each kid releasing a four month old juvenile white sturgeon into the Nechako River as part of the NWSRI's continuing effort to help restore endangered white sturgeon stocks. The schoolchildren named their sturgeon and received a certificate identifying the unique passive integrated transponder (PIT) tag number of their fish. This number will allow students to track their fish in the future (see article on *Where's My Fish?*). In addition to this event, everyone took a tour of the mobile aquaculture facility and heard a brief talk about the biology and risk factors to sturgeon survival. This event continues to be one the highlights of the year, not only for the school children, but for everyone involved with the Initiative.

CWG member Henry Klassen helps Liam Giroux release his white sturgeon into the Nechako River.

Update from the Technical Working Group (TWG) Chair - Cory Williamson

Since the beginning of the NWSRI in 2000, substantial progress has been made working toward understanding and recovering the critically endangered Nechako population of white sturgeon. Although we have made a great deal of progress, there is still substantial work needed to prevent the permanent loss of these large and amazing fish.

With funding from the Ministry of Environment and Rio Tinto-Alcan, the year 2008 saw the release of several hundred thousand larval sturgeon as part of a project to determine critical habitat needs for these young fish and enhance their survival. In September, Carrier Sekani Tribal Council field crews captured the first conservation cultured juvenile sturgeon that was released in 2006. With funding from the Ministry of Environment and Rio Tinto-Alcan for the third year of a pilot program, several thousand juveniles were grown by the Freshwater Fisheries Society of BC and were released into the Nechako in September and October with the help of children from School District 57. Work towards the development of an interpretive centre focussed on Nechako white sturgeon began with federal funding support. With significant support from the Nechako Watershed Council, the NWRSI is hopeful that funding could be in place in 2009 to construct a recovery centre that would focus on rebuilding the population while researching and then fixing the cause of the decline.

Cory Williamson, TWG chair, examines a potential broodstock fish.

On the National front, the NWSRI is assisting the National Recovery team to finalize recommendations in the draft National Recovery Strategy for all white sturgeon populations in BC. This document, once completed and approved, will contain information on recovery planning and critical habitat for all four endangered populations in BC as well as the middle and lower Fraser River populations. With your help, the coming years could mark a new beginning for the Nechako white sturgeon.

See you on the river this spring,

Cory Williamson

Lhecho lhuyul

Lhecho bugoo welewh. Buzek buyust'e 'it han'a. Hosdits hunakh yu'alhni tekh whutl'akh whulht'ook, lhecho ihuyul budghe weh whuni, k'us nido "barbels" huyulhni, 'i bih yu'alh ni nelih. Lhecho nizyei 'i lokh yu'alh, talokh weh 'u'alh.

Sturgeon have a toothless mouth which extends out of its body in order to suck up food. White sturgeon also have whiskers, or barbels which help it find edible objects. Adult sturgeon feed on fish, including salmon.

Larval Sturgeon Habitat Experiments

This past summer, a series of larval sturgeon habitat experiments were conducted in the Nechako River at Vanderhoof. Since relatively little is known about larval sturgeon habitat use or their behavior, biologists Steve McAdam and Marcus Boucher with the Ministry of Environment designed an experiment to look at just that. The braided section of river at Vanderhoof lent itself well to the study design, providing separate side channels for each habitat type to be created.

Larval white sturgeon used in the 2008 habitat experiments.

The goal of these tests was to observe how white sturgeon larvae react in the river in response to a variety of substrates, and particularly their reaction to clean gravel versus sand or mixed substrates. Previously tests done in laboratory tanks at the University of British Columbia have shown that the larvae tend to hid within the spaces in gravel substrates, and the Nechako River tests aimed to reproduce this behaviour within the river.

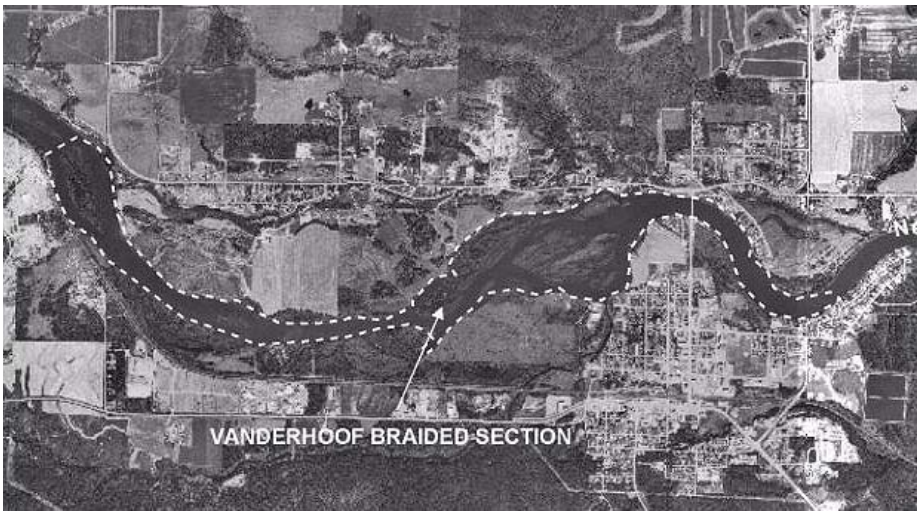
In order to provide clean and uniform gravel in test areas, gravel was flown in by helicopter to several sites and placed manually into four side channels. Placing this gravel was physically challenging and would not have been possible without the help of the fire control crews from the Ministry of Forests. Sand on the other hand was plentiful, as it been deposited in large quantities on several of the nearby islands during the flood of 2007. Each site was about 8m long and 4-6m wide and were located in various side channels throughout the braided islands of the Nechako Bird Sanctuary at Vanderhoof.

The District of Vanderhoof was also instrumental to the success of the project as they helped with coordination of the project as well as keeping the observing public safe while the gravel was being placed in the river.

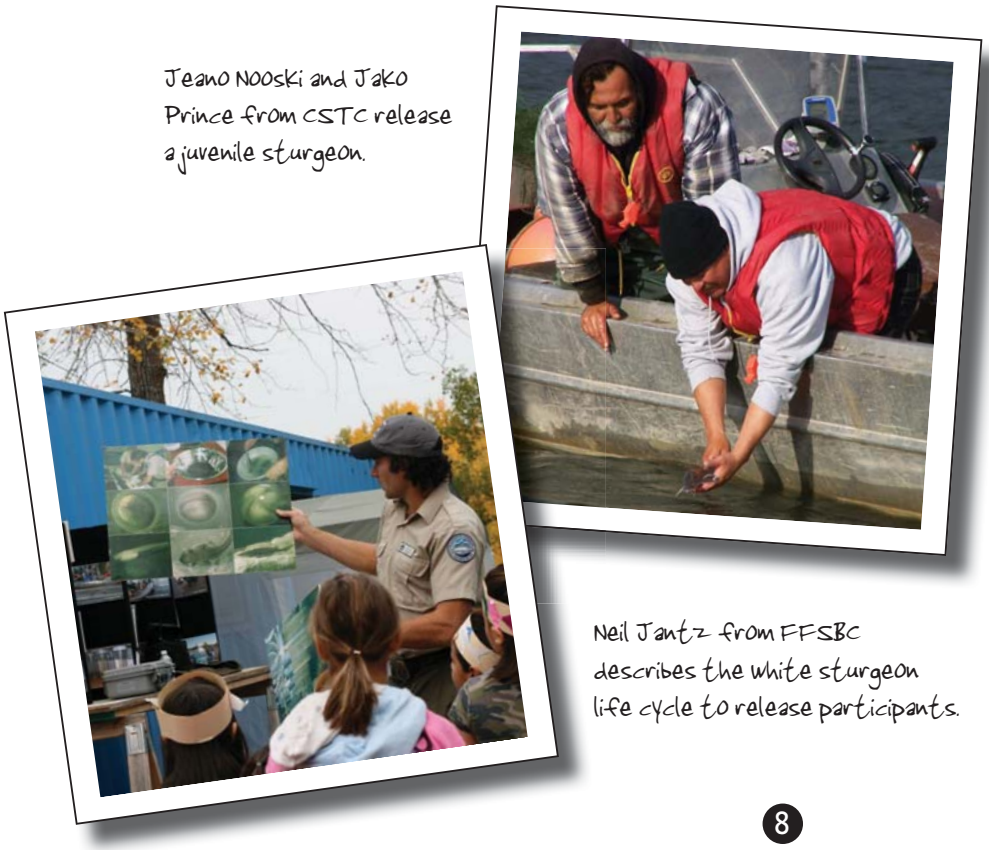
Results for the 2008 in river tests showed that larvae successfully hid and survived within newly created gravel substrates, when such substrates are available. In contrast, larval hiding success decreased markedly as the amount of sand in the substrates increased. In conjunction with ongoing analysis of the factors limiting white sturgeon spawning and juvenile recruitment, the results from 2008 larval studies provide important support for the implementation of larger habitat restoration tests planned for 2010. By starting with small laboratory tests and then continually increasing the size of this habitat restoration work, the Nechako white Sturgeon Recovery Initiative has been able to continually progress towards the ultimate goal of restoring riverine habitat that is capable of supporting continued wild recruitment.

From 1994 to 1999, the Province of British Columbia coordinated an intensive study of white sturgeon in the Nechako River. The study came to an unwelcome conclusion - the Nechako white sturgeon are in a critical state of decline. Unless something is done, and done soon, the great creatures will likely go extinct.

With so many stakeholders involved along the entire length of the Nechako River, it was imperative all interested parties gather together, to begin working as a team in recovery planning efforts. This was the beginning of the Nechako White Sturgeon Recovery Initiative. The NWSRI is ultimately responsible for identifying the reasons why white sturgeon are no longer successfully spawning and surviving in the Nechako watershed, and for the design and implementation of habitat protection, restoration and management options.



An important section of habitat for the Nechako white sturgeon.



Jeano Nooski and Jako Prince from CSTC release a juvenile sturgeon.

Neil Jantz from FFSBC describes the white sturgeon life cycle to release participants.

Want to Know More About the NWSRI?

Over the past 10 years, the Nechako white Sturgeon Recovery Initiative has gathered a wealth of information about the species and recovery planning. Part of the intent of the recovery planning process is to ensure technical soundness and meaningful participation of the public. On our website, www.nechakowhitesturgeon.org you will find numerous technical reports and publications describing the various activities that the Initiative has undertaken. This also includes our Habitat Plan and the Recovery Facility and Interpretive Centre Strategic Plan which outlines our plans for a permanent conservation aquaculture facility along with an interpretive centre for visitors to be located in Vanderhoof. Visit our website regularly to find out what upcoming events are planned, where your released fish may be or to just find out more information about this important species.

For more information about the NWSRI, please visit our web site:

www.nechakowhitesturgeon.org

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For past newsletters, copies of our brochure and signs, you can also visit the website.

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