



## Nechako White Sturgeon 2011



Jim Webb, Sr. Fisheries technician

Another year of sturgeon research completed. In partnership with the Nechako White Sturgeon Recovery Initiative (NWSRI), the CSTC conducted field work for telemetry, spawn monitoring and juvenile monitoring projects.

## Radio Telemetry

Mobile telemetry monitoring from May-August, 2011 resulted in more than 450 detections of radio tagged sturgeon. The survey area was between river kilometre rKm 91 and 157 (measured from the confluence of the Fraser and Nechako rivers). Once fish moved upstream towards Vanderhoof, telemetry runs were split between rkm 141-133.5 and a longer run from rkm 141 downstream to rkm 110. Tagged fish were noted to frequent the lower boundary (rkm134-135) of the spawning reach (~rkm 135-140) in late May. Tagged fish entered the spawning reach on June 1 and were present until June 11. Surveys were continued for July and August. Tagged fish were noticeably absent from the upper area of the spawning reach (upstream from the Burrard bridge and Riverside Park), leaving the most of spawning activity in the lower kilometer of the spawning reach. Usually the sturgeon leave the bird sanctuary after spawning is complete. This year one radio-tagged male stayed throughout the summer. The high water flow conditions and cool temperatures, may have contributed to this behavior.

An aerial telemetry survey was conducted on June 12th using a fixed wing aircraft from Vanderhoof airport down to Isle Pierre and then to Diamond Island. 16 fish were found. The fish were grouped at the confluence of the Stuart and Nechako River, at rkm 125, rkm 130-132 and above the bird sanctuary.

## Habitat alteration (gravel)

High flows and turbidity in the Nechako River at the time of gravel placement, made monitoring of the pads and any incoming sedimentation too difficult to be done. Freeze coring and visual observations done in September indicate that the lower gravel pad had mainly become covered with sand. The upper gravel pad was not filled in with sand. The different rates of infilling may be due to the difference in River Channel at the two locations. The lower pad was just downstream of the Murray creek outlet, while the upper pad was in a more open area in the braided section of the river

## Spawn Monitoring

Brood stock were collected by Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) staff (formerly MOE). Eggs were fertilized and released on to the two gravel pads set up in the Nechako river. One gravel pad was established upstream of the Vanderhoof bird sanctuary . The second pad was set up downstream from Murray creek and just upstream of the Burrard Bridge. On May 26 approximately 300,000 eggs

from two females and sperm/milt from 3 males were transferred to Vanderhoof, and eggs were fertilized and transferred onto the gravel pads. Large egg sampling mats were widely distributed throughout



Small egg mat/ sampling structure

the spawning reach and additional smaller egg-sampling mats/structures were deployed for the purposes of capturing eggs and identifying wild spawning locations and timing.

## Drift Netting

The crew set out fine mesh nets called "fyke" or drift nets below the areas where eggs were found. This was done to catch larvae as they emerge from the eggs (approx. 9 days after they are laid at 15C water temp). The larvae instantly hide in the gravel. After 12-15 days (at 15C) the larvae have consumed their yolk sac and drift further downstream looking for food. No larvae were found.



## Juvenile Sturgeon Monitoring

The juvenile indexing program is conducted to monitor (both wild and hatchery) juveniles. It is to determine if fish released from the pilot hatchery have survived and to see how many young wild sturgeon are present. Set lines with small hooks are used to catch the young fish (less than 1m long). The idea is that larger fish will simply bend the hook and not get tangled in the gear. Between Aug 31 and Sept 30, 29 juveniles were caught: 15 were recaptured, 14 were new (ie. never caught by us before). The number caught this year is about 1/3 of total in 2010. Sampling occurred earlier, water levels were lower and there was likely a lot more time for sturgeon to get to wintering areas.



David Clark and Theo Barfoot with a sturgeon caught on a setline.  
Photo: CSTC

## Endako River Chinook



Taking otolith (ear bones) from a spawned out Chinook carcass.  
Photo: Jim Webb

CSTC technicians (Jim Webb and Kirby Johnnie) completed the enumeration survey for Endako Chinook. This project took place from August 29-September 7, 2011. The total run size was 83 Chinook, with 21 in Shovell Creek and 62 in main stem Endako River.

## Nadina River

In September Nadina flights were completed. One ground survey was completed. DFO manages the data for this project. Kirby Johnnie, Tlazt'en Nation technician participated in this project and gained experience in conducting aerial surveys for sockeye, data collection for ground carcass recovery surveys, and methodology for conducting carcass recovery.



Photo: Aerial overview of Nadina spawning channel.

## Jim Webb leaves the Fisheries Program

By Christina Ciesielski



Jim Webb accepted a job offer from Kitsumkalum Band (near Terrace) to work as part of their Fisheries Program. He left in late October. Jim was a highly valued member of the Fisheries program, although he had only been employed with us for two years. As Program Manager for the Tlazt'en Nation, he often helped on projects, provided field support and shared his knowledge of Fish, Wildlife and Fisheries management with us. We worked together as part of the Upper Fraser Fisheries Conservation Alli-

ance (UFFCA) and as part of a larger group the Fraser River Aboriginal Fisheries Secretariat (FRAFS) which hosts meetings for all the First Nations located in the Marine, Approach area and the Fraser River. He was a great teacher and will be sorely missed. The Skeena watershed has gained an incredible asset. The Sr. technician position was temporarily filled by our mechanic/fish technician Colin Barnard. The position will be posted in March/April, with a possible start date in June, 2012.



## CSTC Fisheries Program– AFS projects

This past year has seen a lot of change in the Fisheries Program. A new project was developed called the “Fisheries Committee” to provide a place for all CSTC Bands that don’t have their own AFS agreement to participate. Each fisheries representative could bring forth specific issues for their area. Several projects for the coming year were developed. The committee met once a month. One member would travel to

regional meetings, along with the Program Manager. This allowed for a better understanding of the larger forums and how Salmon Management plans are developed. The AFS agreement itself took all summer to negotiate. There was a change in the projects that the Fisheries program agreed to participate in and new ones were proposed, such as the sturgeon bi-catch monitoring during salmon fishing.



Christina Ciesielski, assisted DFO staff with Chinook salmon aerial counts in August.

## Catch monitoring and Run sizes 2011

In 2011 there was no catch monitoring program set up in Nadleh, Nakazdli or Takla. The numbers in Table 1. below are the reported harvest numbers from Saikuz and Tlaz'ten. The forecast runsize and actual spawning escapements for Early Stuart, Nadina, Stellako and Late Stuart sockeye salmon that return to CSTC territory are listed in Table 2. The in-season run size is what is predicted to approach the marine

area en route to the Fraser River at the 50P level (50 % chance of this amount or less). The final escapement count is only those fish counted on spawning grounds. Forecasts were very modest in 2011. High flows in the Fraser heavily impacted the Early Stuart returns. Late Stuart returns were extremely low.

Table 1. FSC catch by year and area.

Year	Saik'uz	Takla	Nadleh	Nakazdli	Stuart River	Total
2009	153	23	2675	1650	n/a	4501
2010	294	11	4080	782	n/a	5167
2011	212	n/a	n/a	n/a	531	743

Table 2. Spawning escapement in 2011

Salmon Run	In-season run size forecast at 50P level	Actual fish on spawning grounds
E Stuart	17,000	758
Nadina	12,000	10,060
L Stuart	41,000	4,053
Stellako	79,000	85,938

## Sturgeon Outreach and Harm reduction

Cora McIntosh (Saik'uz band) was hired as Food, Social and Ceremonial (FSC) catch monitor. Cora was also on site to provide sturgeon bi-catch support and education. A “boat kit” has been developed through the NWSRI Community Working group. It contains tools and supplies to assist fishers in safely removing sturgeon from their gill nets. A data sheet and camera is included so that the measurements can be recorded and photos taken of the sturgeon. A sign-up list for boat kits has been provided to each community. After the fishing

season, the boat kits must be returned, so that supplies can be replenished, cameras developed and all encounter's recorded. Sturgeon harm reduction presentations have been held in five CSTC member communities, where a 45 minute video on how to safely release a sturgeon and how to use all the boat kit items including net mending techniques is shown. If you missed the community presentation and would like to see the boat kit video or sign up for a boat kit, then contact Christina at CSTC 250-562-6279 ext 238).



Many of the items found in a boat kit.



## Reducing harm to Sturgeon encountered during Saik'uz First Nation's FSC salmon fishery

### Nechako White Sturgeon Encountered as bi-catch 2012

Date	Action	Description/ Comments	Length (inches)
Aug. 30	Released	Was taken out of the net before I got there	48 (4ft)
Sept. 1	Released	Not there either	5ft
Sept. 4	Released	6 ft nothing to measure with	72 (6ft)
Sept. 6	Released	#1. Radio Tag still good. 1st scute on Right side removed	83 (6.92ft)
Sept. 6	Released	#2 no tags and no marks	59 (4.92ft)
Sept. 8	Released	#1 no marks no tags	70 (5.83ft)
Sept. 8	Released	#2 no marks no tags	40.5 (3.38ft)
Sept. 8	Released	#3 Got out of net when was pulling in	n/a
Sept. 11	Released	#1 No tag found. No scars, Damage to tail from net.	78 (6.5ft)
Sept. 11	Released	#2. PIT TAG #424D3B7366. Radio Tag in good shape, Scar off Left fin for age structure Net marks on head, some fins, tail.	45 (3.75ft)



Cora McIntosh taking measurements.

Saik'uz salmon fishery harvested 212 sockeye and 4 Chinook in 2011. During the fishery Cora McIntosh worked with the fishers to minimize the harm to white sturgeon encountered during the FSC salmon fishing. The project was extremely successful and 10 white sturgeon that encountered gillnets were released unharmed. However sockeye returns to the Nechako were some of the lowest on record. The spawner escapements were: Stellako River (85,938), Early Stuart (758), Late Stuart (4053), Nadina ( 10,060).



The sturgeons tail is wrapped in a towel to protect both the persons hands and the fish protective scutes and 'slime' layer. It is important to keep the fish in the water during handling to reduce stress.



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