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Nechako White Sturgeon Recovery Initiative: Monitoring sediment transport and larval habitat quality

The Nechako White Sturgeon Recovery Initiative (NWSRI) has been closely monitoring sediment transport through the Vanderhoof reach of the Nechako since the ice cleared around March 20th, 2015.

The purpose of monitoring sediment transport is to understand how the reach is evolving through time and how this might affect the quality of sturgeon habitat.

Our earlier research has revealed that recruitment failure for Nechako Sturgeon likely occurs during the egg incubation and/or larval hiding or rearing phases. Accumulation of fine sediment (basi-

cally sand) in the spawning areas covers the sticky eggs and prevents them from adhering to gravel on the river bottom.

This sand also fills in spaces within the gravel that White Sturgeon larvae preferentially hide in immediately after hatching. This behavior provides them with several survival advantages such as increased growth and reduced predation.

Where, how and when sediment is being transported through the reach affects whether sand-free gravel habitat is available and can be used by the larvae. So far this year, the increasing water

level has made for very interesting patterns of flow and sediment transport in the area. We have observed that sediment tends to be transported along narrow lanes within the river, usually between 10-40% of the total channel width. We have also observed more sediment being transported at the upstream end of the reach than at the downstream end.

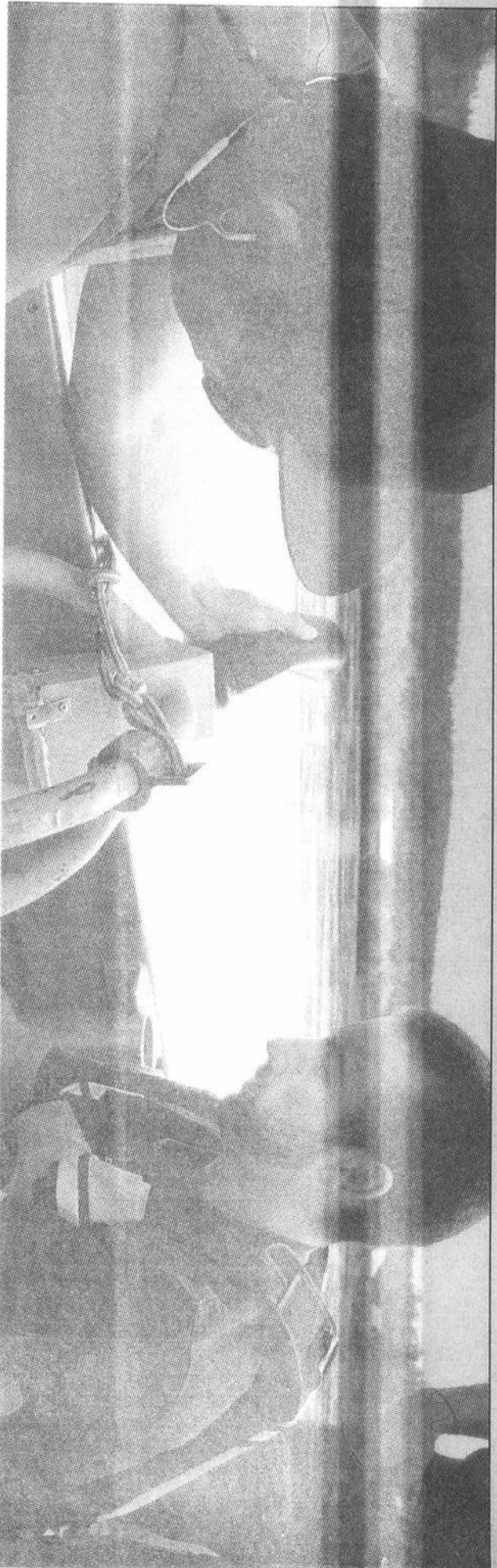
This trend is expected to flip later in the year as the balance tips and more sediment begins to get transported out of the reach. We look forward to continue our monitoring throughout the summer months.

The results from this study will advance our understanding of how sediment transport affects Sturgeon habitat and will contribute toward resolving the recruitment problems facing this endangered species.

The research is being conducted by Simon Gauthier-Fauteux as part of a Master of Science thesis in Geography at the University of BC.

I would like to thank the Carrier Sekani Tribal Council for their generous help with fieldwork.

Sent in by Simon Gauthier-Fauteux



UBC student measures sediments in the Nechako as part of masters degree

Rebecca Watson
Omineca Express

Sand and fine particles flowing through the Nechako have an impact on fish-spawning operations, specifically the white sturgeon, but how big of an impact is still unknown.

Which is why Simon Gauthier-Fauteux, 27, a geography student from the University of B.C., has been working on finding out how, where and when sediment is being transported.

"This is important to know because of previous research stating sediment is linked to sturgeon survival. [But] we're still at the research stage, finding out what's moving and where it's moving," he said.

As part of his Master of Science thesis in geography, Gauthier-Fauteux's started measuring sediments moving in the Nechako last year in four key locations as a continuation of a project that started a few years ago.

At each location he measures from the south to north bank sampling every ten meters across the channel looking at the rate and size of what's moving.

He samples on average two spots a day depending on changes in water level, which equals about 20 samples per day, he said.

"What we're seeing is how [sediments] play into the fish when sturgeon eggs are stuck at the bottom. When the larger ones hatch they have to hide in the rocks so when tons of sand is coming in and filling in hiding spaces they can't find a spot," he said.

Through his studies Gauthier-Fauteux has also mapped out the water table including depth and velocity prior to entering his research into a computer model.

His project will continue until the end of summer 2016 at which time he will present his findings to the White Sturgeon Recovery Initiative team. Read more on page 9.



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