

Collecting biological data from live sturgeon.



further restriction that prohibited angling for sturgeon in the Nechako River was instituted.

The Nechako River white sturgeon are defined as those fish inhabiting the Nechako River and its tributaries, including the Stuart River watershed. Among the significant findings of the 5-year study was a clear indication that at least five distinct populations of white sturgeon exist in the Fraser and Nechako river system (Fig. 1). Genetic analyses indicate that Nechako sturgeon are distinct from other Fraser populations, and tagging studies to assess movement suggest that Nechako fish do not migrate to the Fraser River but do move freely between the Nechako and Stuart rivers.

The first indication that the Nechako River white sturgeon population is at greater risk of extinction than

other Fraser River stocks came from analyses of size and age structure. Compared to other populations, the Nechako River population is dominated by larger and older fish (Fig. 2). This suggests either poor spawning success or high mortality rates for juveniles. Although considerable effort has been directed toward capturing juveniles from the Nechako River, few have been found to date. In fact, most Nechako white sturgeon are more than 30 years old. Comparison of the data collected over the past 5 years with the data collected in the 1980's provides further evidence that this is an ageing population with little or no recruitment of young fish.

The situation is now at the point



Map of the Fraser and Nechako watersheds indicating the distribution of the five proposed white sturgeon populations.

where the continued existence of the Nechako River white sturgeon stock is at risk. Without successful recovery, a genetically distinct component of this species in BC will be lost.

There have been a variety of land use activities in the Nechako watershed that could potentially affect ecosystem productivity and sturgeon recruitment. Some of the most apparent changes resulted from the construction of

### RECOVERY INITIATIVE

The work completed over the last five years has identified the problem -- The Nechako white sturgeon population is in serious decline and appears to be unable to rebuild itself under current conditions. Now it is time to find solutions and that is why the Province has initiated a process to develop a Recovery Plan. Recovery planning will provide direction and ensure that the highest priority actions are undertaken in a coordinated way.

the Kenney Dam and the related infrastructure in the early 1950's. Alterations to flow regime, temperature and turbidity, as a consequence of hydroelectric operations, have been implicated as major factors in the decline of sturgeon in the Columbia and Kootenay river systems. One of the key roles for the Nechako white sturgeon recovery planning process will be to review possible causes for sturgeon decline and to determine what options are available to remedy the situation.

### DEVELOPMENT OF A RECOVERY PLAN

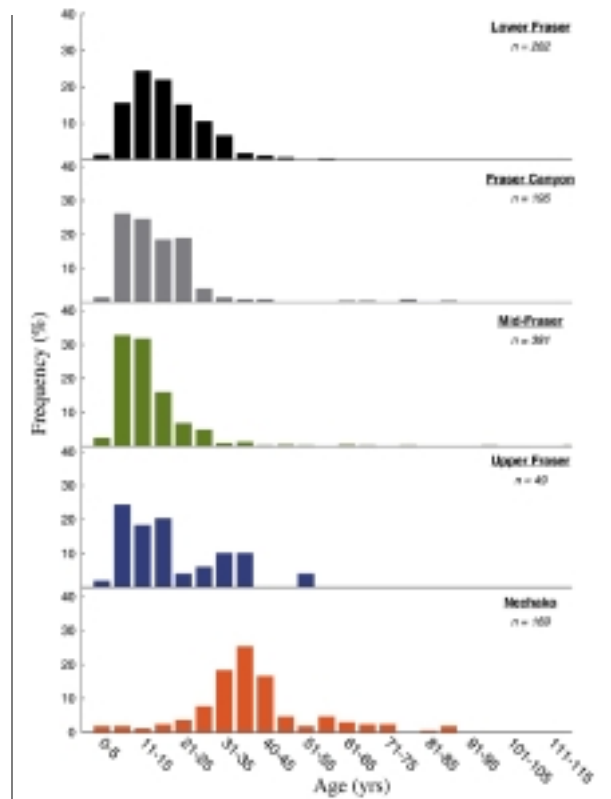
The Recovery Plan will be developed through discussion and consensus among qualified individuals with knowledge in several areas including white sturgeon biology, conservation biology, hydrology and river regulation for the Nechako watershed. The content will depend primarily

on the advice of two groups to be formed as part of this initiative – the Action Planning Group and the Recovery Team.

The Plan will be consistent with relevant legislation, policies, and strategic direction of both the provincial and federal agencies, and will be based on the best available science designed to achieve recovery goals and objectives. Sign-off of the Plan is the responsibility of the regulatory agencies (BC Environment, BC Fisheries, and Fisheries and Oceans Canada).

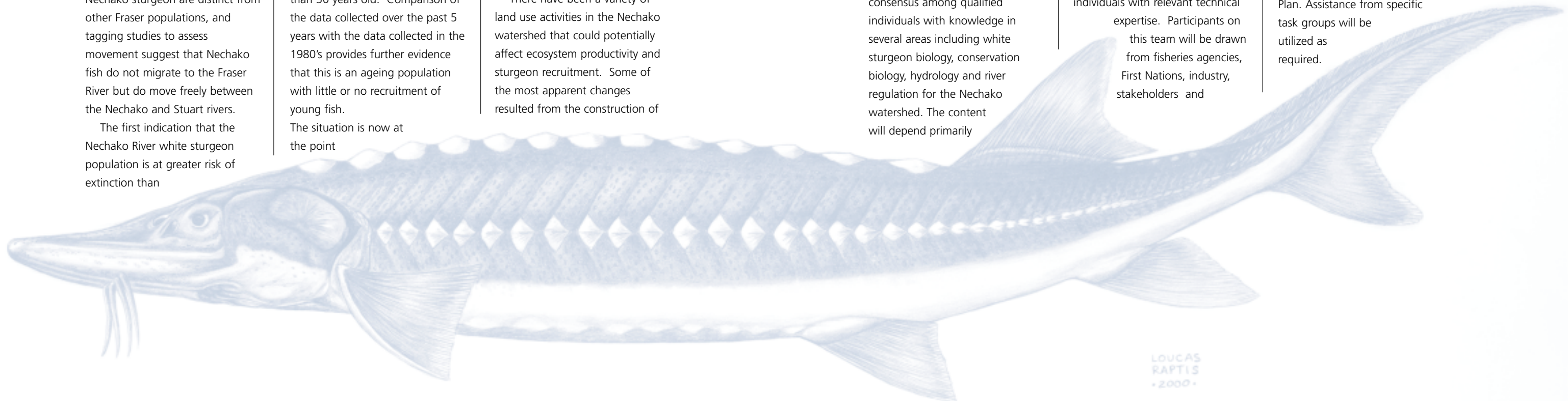
### RECOVERY TEAM

This group will be chaired by the Province and will consist of individuals with relevant technical expertise. Participants on this team will be drawn from fisheries agencies, First Nations, industry, stakeholders and



Comparison of age groups observed in the Nechako and other Fraser River populations.

academic institutes. The team will have 10 to 12 members, and the main criteria for participation will be technical qualifications. The role of the Recovery Team will be to develop and oversee implementation of the Recovery Plan. Assistance from specific task groups will be utilized as required.



Fishing for White Sturgeon in the upper Nechako River.



Participation on this team will be discussed at an initial public workshop. Proposed activities will include:

- assembling accurate baseline data and reviewing reasons for population declines;
- defining the long-term recovery goals and short-term objectives for white sturgeon recovery;
- designing technical strategies (options) and supporting research programs to achieve the recovery goals and objectives;
- establishing criteria to evaluate the Recovery Plan activities and to define success; and,
- establishing priorities for recovery implementation based on technical criteria and the input from the Action Planning Group.

#### ACTION PLANNING GROUP

The Action Planning Group will provide an opportunity for interested parties to participate in recovery planning and implementation for Nechako white sturgeon. Expected membership will include the regulatory agencies, regional governments, First Nations, the public and industrial stakeholders. Key individuals of the Recovery Team will also sit on the Action Planning Group to provide a bridge

between the two committees.

Proposed activities include:

- achieving consensus on the goals and objectives for white sturgeon recovery;
- providing input with regard to local and traditional knowledge on Nechako sturgeon to the Recovery Team;
- providing advice to the Recovery Team on the potential social and economic impacts of proposed recovery strategies;
- communicating issues and findings back to respective constituencies;
- supporting and promoting Recovery Plan implementation; and,
- encouraging any potential partners to support implementation of the Recovery Plan.

#### IMPLEMENTATION OF RECOVERY PLAN

Implementation of the Recovery Plan will be guided by action plans developed by the Recovery Team in conjunction with the Action Planning Group. The Recovery Team will continue to coordinate delivery of the Plan. The Action

Planning Group will play a key role in communications and may participate in implementation either directly or indirectly.

#### ROLES AND RESPONSIBILITIES OF THE REGULATORY AGENCIES

##### **Province of BC**

The Province of BC has responsibility for the management of all freshwater fish in the Nechako River watershed and will lead the recovery process as represented by BC Environment and BC Fisheries. [Contact: Don Cadden, BC Environment 250-565-6423]

##### **Fisheries and Oceans Canada**

Fisheries and Oceans Canada has the responsibility for the management of salmon in the Nechako River watershed and will ensure recovery planning is consistent with federal acts, policies and regulations, including federal policy for the management of fish habitat. [Contact: Jason Hwang, Fisheries and Oceans Canada 250-561-5396]



The British Columbia Conservation Foundation (BCCF) is a not-for-profit organization dedicated to the conservation, enhancement and restoration of fish and wildlife populations and their habitats. BCCF is assisting the Nechako River White Sturgeon Recovery Planning project through the co-ordination and management of the funds awarded by the Environment Canada – Habitat Stewardship for Species at Risk Program.



A substantial portion of the funding for the sturgeon assessment program and recovery planning has been provided by the Habitat Conservation Trust Fund. Contributions through license surcharges and tax deductible donations fund projects for freshwater fish and fish habitat. For more information, contact the Habitat Conservation Trust Fund, P.O. Box 9354, STN PROV GOVT, Victoria, B.C. V8W 9M1. 1-800-387-9853.

# Nechako White Sturgeon

## R E C O V E R Y I N I T I A T I V E



#### BACKGROUND

In 1999, BC Environment and BC Fisheries completed a 5-year study of the status of white sturgeon in the Nechako River. The results of the study revealed that Nechako sturgeon are in a critical state of decline, and that they will likely become extinct within the next 20 to 30 years unless something is done to restore the health of the population.

As a first step in stabilizing and restoring Nechako sturgeon, it is essential that a process be developed to engage all interested parties in recovery planning efforts. The goal of this process will be to develop and implement a Recovery Plan that will rebuild a self-sustaining Nechako white sturgeon population. Through this process, we hope to develop a common understanding of the issues and the implications of various recovery options.

#### WHITE STURGEON IN THE NECHAKO RIVER

The white sturgeon is BC's largest freshwater fish, reaching lengths of up to 6 m and weights exceeding 600 kg. In BC, populations are known to exist in the Fraser/Nechako, upper Columbia and Kootenay river systems. These fish grow at a rate of about 4 cm per year, slowing once they have reached 25 years. The largest Nechako River sturgeon captured in recent years weighed 112 kilograms and measured 2.7 meters in length although anecdotal information suggests larger fish have been captured in the past. Being found near the northern extent of their range, Nechako white sturgeon do not grow as fast or as large as those of southern populations. They may live for more than 100 years. Two imposing features of the white sturgeon set this fish strikingly apart from other freshwater

species in the province – the huge size reached by the oldest adults and the rows of bony plates or scutes along its body. Its physical appearance, particularly the plates of armour, gives it a prehistoric look. Indeed, sturgeon first appeared in the fossil record 175 million years ago and have remained relatively unchanged in structure.

In 1990, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) designated white sturgeon as vulnerable which focused some attention on its plight. Provincially, it has been assigned to the Red List, based on a BC Conservation Data Centre status review that described Nechako sturgeon as "critically imperiled". In 1994, commercial and sport harvesting of white sturgeon became illegal in the province, and many First Nations people voluntarily stopped their sustenance harvests. In 2000, a