

# News Brief on endangered species

## News Brief on fish

For thousands of years, fish have been an important food source for First Nations. Fish species for both sporting and commercial purposes are caught by First Nations depending on the regions. These species include trout, pike, yellow pike, sturgeon, salmon and many other kinds of fish.

The reduction of the fish population is often thought to be associated with the degradation of the quality of fish habitat and over fishing. But there are many other factors that can be taken into account. We also have to consider obstacles which are created by human activity (culverts, dams, dikes, etc.), the introduction of new species (bait), rising water temperatures, increased particle levels in the waters, the obstruction of spawning grounds and pollution.

### **Resources overexploited**

For a long time, we thought that the resources in our rivers and lakes were inexhaustible due to the large number of rivers and lakes located across our territory. It was thought that the fish stocks would never be affected. Today, reality is very different. Quotas and licences are issued by the government to control both commercial and sport fishing, because some species have been overexploited for many years and their stocks have been considerably reduced. The use of nets for commercial fishing has also led to the accidental capture of endangered species (fish, turtles, aquatic mammals, etc.) which can be either injured or killed.

### **Degradation of fish habitats**

A quality habitat consists of the various environments that the fish needs at the different stages of its life for nourishment, shelter, and reproduction. It is important to have quality habitats, but it is also important that the habitat be accessible without being fragmented. The more obstacles there are within the same body of water, the greater will the fragmentation of the habitat be (hydroelectric dams, dikes, culverts, etc.). This leads to the isolation of the fish in the different segments of the lake or stream where they can no longer find all the resources they need to survive. The increase of physical obstacles can also delay the arrival of the male fish that are needed for reproduction on the spawning grounds. Fish reproduction may also be compromised if the fish exhaust their energy reserves and are unable to make it past artificial obstacles.

The use of concrete on river and lake bank is another factor that leads to greater habitat degradation. Such development will eliminate the shelter that is available for fish that need protection against predators. Such shelters may be rocks beneath the water, fallen tree trunks or aquatic vegetation. Furthermore, shade that is projected on to the water by riverbank tension zones allows the water to remain at a cooler temperature.

### **Increased temperature, increased particle suspension, runoff and erosion**

The increase of the water temperature in lakes and rivers can lead to increased fish mortality. In fact, cutting down forests, agricultural land clearing, urban development and the use of concrete on the water banks increase the exposure to sun rays and increase the runoff of sediments into the water. The increased density of suspended matter will make water temperatures go up. Fine particles in suspension in the water can also irritate fish gills and make it more difficult for fish to move around because of the reduced transparency in the water. Fine particles might also settle on spawning grounds and kill the fish eggs or spoil the ability of the spawning grounds for reproduction. Spawning grounds are essential for fish reproduction.



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Roads that are built too close to rivers and lakes can also lead to sediment runoff and increase sediments in the spawning grounds. At one time it was very common for vehicles to drive through shallow rivers or lakes; today however, these practices are prohibited in Quebec.

The discharge of effluents into rivers and lakes is another factor that increases water temperature. Effluent discharge is regulated by the government and any industry that is in infraction may be fined if its effluents are beyond standards. Even a slight increase in water temperature can be harmful to the fish population.

### **Introduction of new species**

Several new species were introduced into rivers and lakes and replaced indigenous species. In some rivers and lakes, fishing with live minnows led to the introduction of several species. In other bodies of water, sport enthusiast introduced their preferred species into waterways to the detriment of indigenous species.

### **Pollution**

Another fact that needs to be taken into consideration is pollution. In several waterways, there has been an accumulation of rubbish (tin cans, old tires and all kinds of different materials). In the past, it was acceptable to dump all rubbish into bodies of water, but this practice is becoming rarer. Pollution can also be caused by the discharge of effluents into waterways. Other causes of pollution are acid rain, oil, petroleum, plastic and other similar materials.

### **Sound pollution**

Sound pollution can be caused by noisy motors which not only prevent communication between individual but it also blocks out the usage of ultrasound which fish use to detect their prey. Such noise can disturb the natural behaviour of such species.

### **Aboriginal fund project – Endangered species (AFES)**

Since the beginning of the AFES, First Nations have not proposed many projects related to fish. Community of Anisnabeg in Kitigan Zibi conducted one project on yellow sturgeon. In 2007-2008 other projects have been proposed on the sturgeon and the American eel, unfortunately these projects were not able to proceed due to lack of founding.



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The following is the list of endangered species that is provided by the Act respecting endangered species and the Act respecting threatened and vulnerable species:

<b>The Act respecting endangered species</b>	<b>Act respecting threatened and vulnerable species</b>
<p><b>Near disappearance</b>                      Copper red horse                      Stripe bass (population of the southern golf of St-Laurent)                      Sand darter                      Yellow sturgeon (Great Lakes and upper Saint-Laurence population)                      Grey log perch</p>	<p><b>Vulnerable:</b>                      Grey log perch                      American smelt (population of the southern St-Laurence estuary)                      American shad</p>
<p><b>Threatened</b>                      To date no species has this status</p>	<p><b>Threatened</b>                      Copper red horse</p>
<p><b>Or concern</b>                      American eel                      Grass pickerel                      Deep water smelts (Western Great Lakes and of St-Laurence population)                      River red horse                      Spring Whitefish                      Yellow sturgeon (Southern Hudson Bay and James Bay population)                      Northern Lamprey (Great Lakes and upper St-Laurence population)                      Grass Minnows</p>	<p><b>Likely to be designated as threatened or vulnerable</b>                      Sand darter                      Yellow sturgeon (Great Lakes and upper Saint-Laurence population)                      American eel                      Grass pickerel                      Deep water smelts (Western Great Lakes and St-Laurence population)                      River Redhorse                      Spring Whitefish                      Yellow sturgeon (Southern Hudson Bay and James Bay population)                      Northern lamprey (Great Lakes and upper St-Laurence population)                      Grass Minnows                      Yellow bullhead                      Stonecat                      Fourhorn sculpin                      Margined madtom                      Longear sunfish                      American Shad                      Black sturgeon                      Brassy minnow                      Arctic Char oquassa</p>
<p><b>Disappeared from the country</b>                      Striped bass (population in the estuary of the St-Laurence)</p>	

