



# First Nations Fish Habitat Program **FACT SHEET**

## Fish Habitat – An introduction to keeping habitats healthy

### Why is fish habitat important?

Fish need healthy places to live, feed and reproduce, and suitable corridors to migrate between these places. The places that supply fish with their life cycle requirements for food, shelter, reproduction and movement are called 'fish habitat'<sup>1</sup>.

Taking care of fish habitat is about keeping fish populations healthy for future generations. Fish habitat management includes taking actions to:

- **Prevent** fish habitat damage by managing negative impacts to water environments; and
- **Enhance and recover** fish habitat by improving water environments<sup>2</sup>.

### Habitat Essentials:

Fish require certain characteristics of their environment for survival. Habitat requirements are different for each particular species. In general, essential habitat features include:

- A dependable food supply – availability of plankton, insects, or other fish;
- A place to spawn – the right place to reproduce;
- Adequate cover – hiding places to evade predators or ambush prey; and
- Reliable migration routes – passage to different habitat types depending on life cycle phases and seasonal changes.<sup>1</sup>

### Habitat Spotlight - Spawning Areas:

Spawning sites are particularly important in the life cycle of a fish. If spawning sites are in limited supply or if they are altered, the overall health of fish populations and species diversity may change. Spawning site preferences can vary among fish species. Some species prefer wind-swept rock shoals (e.g. lake trout), while others prefer the marshy edge of a lake (e.g. pike). Many fish will travel long distances to find just the right spawning habitat. For example pickerel (walleye) will migrate considerable distances up rivers and streams in search of ideal shoals or shorelines with gravel and cobble bottoms.<sup>1</sup>

### FISH FACTS:

- Manitoba's lakes, streams, and rivers provide habitat for approximately 95 species of fish.<sup>3</sup>
- Of the 13 species commercially harvested in Manitoba, pickerel (walleye), sauger, lake whitefish, northern pike, yellow perch, and lake trout are the most highly valued species.<sup>4</sup>
- The largest fish ever caught in Manitoba was a 184.6kg lake sturgeon caught in the Roseau River in 1903.<sup>3</sup>

1 Fisheries and Oceans Canada. (2008). *The fish habitat primer: A guide to understanding freshwater fish habitat in the prairies*. Calgary, AB: Fisheries and Oceans Canada.  
 2 Fisheries and Oceans Canada. (1986). *Policy for the management of fish habitat*. Ottawa, ON: Fisheries and Oceans Canada.  
 3 Stewart, K.W. & Watkinson, D.A. (2004). *The freshwater fishes of Manitoba*. Winnipeg, MB: University of Manitoba Press.  
 4 Manitoba Conservation. (1991). *State of the environment report 1991*. Manitoba: Manitoba Conservation.



## What is impacting fish habitats?

### Canada's Fisheries Act defines fish habitat as:

"spawning grounds and nursery, rearing, food supply, migration and any other areas on which fish depend directly or indirectly in order to carry out their life processes".

(section 34)

Fish habitat can be easily altered or destroyed, in both obvious and subtle ways, as a result of human activities. The many different uses of land and water can lead to a complex interaction of impacts that affect fish habitat at the same time.

### *Harmful impacts to fish habitat may be the result of:*

#### *Nutrient loading:*

Nutrient pollution from cities, industry, and agriculture results in an increase in nutrient levels, particularly nitrogen and phosphorus. Nutrient loading increases the growth of algae (a process called eutrophication). As the algae decays, oxygen levels decrease, which can lead to the decline of fish stocks.

#### *Pollution:*

The release of heavy metals, pesticides, or other forms of pollution into waterways, can damage fish habitat and the health of fish species. Negative impacts from chemical pollution include changes in fish behavior, damage to reproductive organs, or destruction of vegetation.

#### *Hydro development:*

Hydroelectric development alters fish habitat in a variety of ways:

- The creation of reservoirs can change the availability of river habitat;
- The flooding of land releases mercury from soil;
- Dams and control structures can interfere with migration routes and spawning runs; and
- Changes to water flow levels can lead to soil erosion and sedimentation.

#### *Mining:*

Mining operations can physically alter or destroy aquatic habitat. Mine effluent can be released into water systems and the leaching of metals and other contaminants from mine tailings can have a negative impact on fish populations.

#### *Forest harvesting:*

Through changing the structure of vegetation, forest harvesting can alter groundwater flow and surface runoff, leading to increased release of sediment to waterways and the release of mercury, nutrients, and dissolved organic carbon from soils. The construction of roads, bridges, and culverts required for harvesting operations can block fish passageways and result in habitat fragmentation and shoreline disturbance.

#### *Agriculture:*

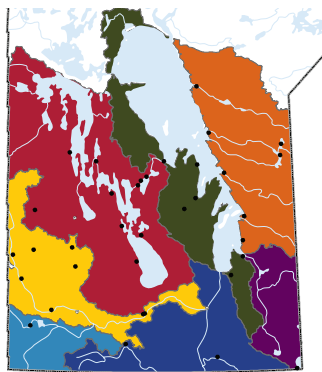
Agricultural land use practices can lead to fish habitat losses as a result of stream channelization and drainage activities for irrigation. Livestock access to stream shorelines can escalate bank erosion and sediment loading. Agricultural runoff can contribute to nutrient loading and pollution to waterways.

#### *Invasive species:*

Invasive species can lead to the decline of native fish species by altering food regimes, spawning habitat, and water clarity. In Manitoba for example, the common carp negatively impacts marsh habitat as it feeds heavily on vegetation and increases turbidity. Marsh areas are important spawning and nursery habitat for many fish species.

#### *Climate change:*

Climate change is a long-term threat to fish habitat and fish populations. For example, warming climate may result in higher temperatures and lower water levels, impacting cold-water fish species and accelerating algal growth. A reduction in spring runoff, from less winter snow accumulations, may reduce available spawning habitat.



### Major Watersheds in Southern Manitoba

- The SCO Affiliated First Nations

#### Major Watersheds

- Assiniboine
- Eastern Lake Winnipeg
- Lake Winnipegosis and Lake Manitoba
- Red River
- Souris
- Western Lake Winnipeg
- Winnipeg

In Southern Manitoba, there are seven major watersheds, each with distinct characteristics and composition of fish species.