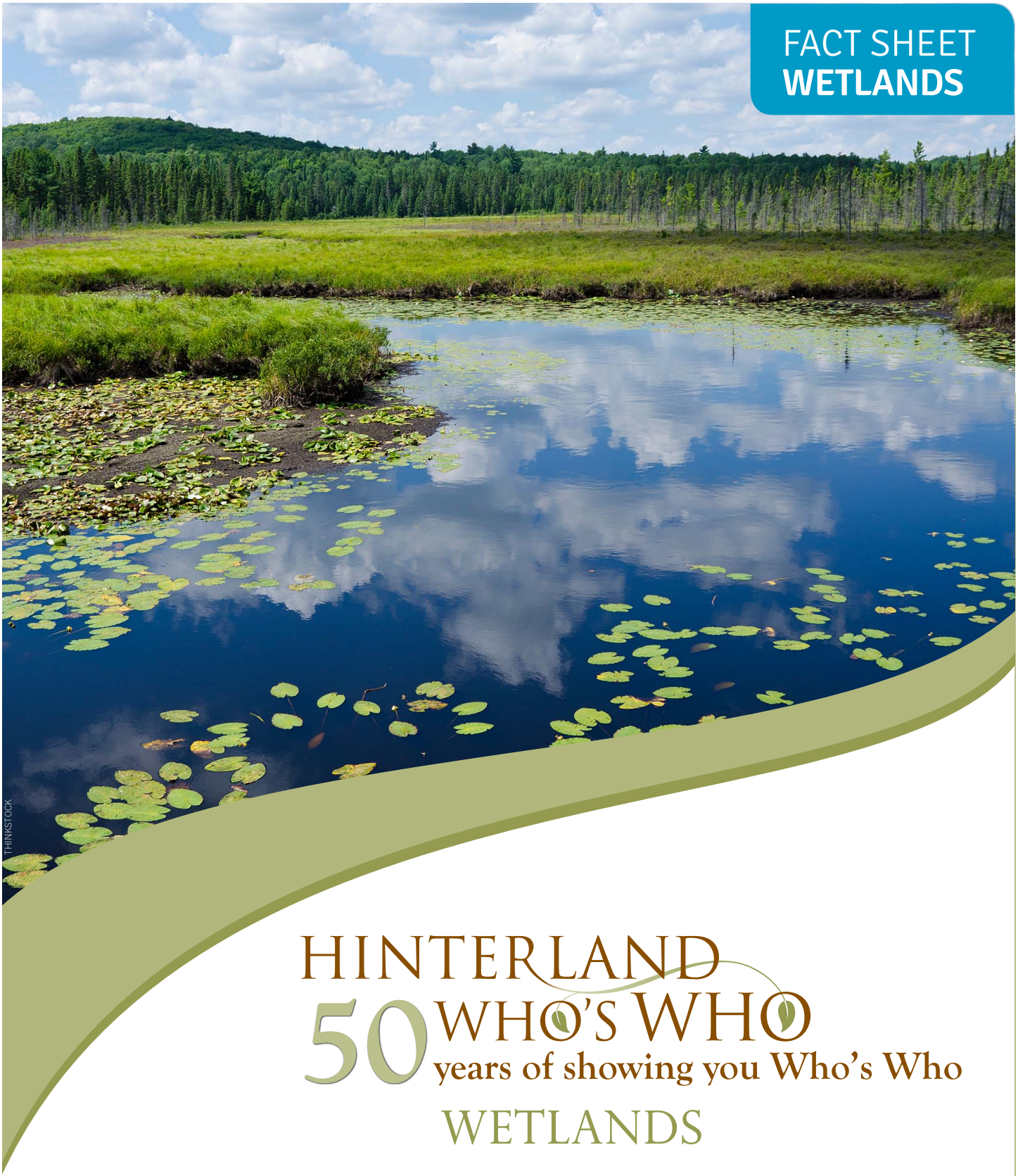
FACT SHEET
**WETLANDS**



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# HINTERLAND 50 WHO'S WHO

years of showing you Who's Who

## WETLANDS

CANADIAN WILDLIFE FEDERATION
FÉDÉRATION CANADIENNE DE LA FAUNE

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# FACT SHEET
# WETLANDS

## QUICK FACTS

### Wetlands

- are rich in nutrients and teem with more life than most people suspect
- may be shallow open water wetlands, marshes, swamps, bogs or fens, each of which has its own characteristics
- act like giant sponges, soaking up rain and snowmelt and slowly releasing water in drier seasons, reducing flooding and easing the worst effects of drought
- are considered "nature's kidneys" since they purify water by trapping sediments, excess nutrients and pollutants such as heavy metals
- are home for at least part of the year to many fish, birds and other animals. Without wetlands, some wildlife species would disappear.
- are being destroyed across the country by industry, commerce, agriculture and climate change

## WETLANDS

### WHAT ARE WETLANDS?

Canada is famous for its innumerable lakes and rivers, but travel brochures seldom mention its marshes, swamps and bogs or the many small ponds and sloughs that dot large areas of the country. These are called wetlands—a precious but threatened part of our natural heritage.

### WETLANDS

A wetland is any area of land that is covered with water for a part each day or year. There are two classes of wetlands: freshwater and saltwater. The limits of freshwater wetlands are usually established in the spring, when water levels are highest because of melting snow and flooding. Summer droughts, evaporation and infiltration of water into the ground gradually cause the areas to dry up, sometimes completely. But even areas that are wet for only a short time each year can be considered wetlands.

Saltwater wetlands, on the other hand, are usually caused by ocean tides. Some are flooded and then dry up twice each day. Others are flooded only by particularly high tides that occur at less regular intervals.

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## WHERE ARE WETLANDS?

In Canada, wetlands are everywhere. They are found along the shores of oceans, lakes and rivers, dotted across the prairies, and in countless poorly drained depressions in the Canadian Shield. Look for them throughout river deltas and estuaries and near the shallow bays and inlets along our coasts.

Better-known wetlands are the marshes in the Great Lakes basin, bordering Lake St. Clair and Lake Erie and along the shores of the St. Lawrence River. Large areas of wetlands are found in the Peace-Athabasca River delta in northern Alberta and the Saskatchewan and Red River deltas in Manitoba. Noteworthy too are the peatlands of Newfoundland and Labrador, Vancouver Island and the large areas of muskeg in northern Canada.

MEGAN LORENZ

**Shallow open water wetland**

The broad coastal areas of Hudson Bay and James Bay and the marshes at Kamouraska in Quebec, at Tintamarre in New Brunswick and of the Fraser River estuary in British Columbia are among the better-known saltwater wetlands.

But no wetlands are more remarkable than those of the prairie pothole region. This is an area of some 750,000 km$^2$ stretching across southern Alberta, Saskatchewan and Manitoba. This vast region is pitted with millions of depressions that vary considerably in size and depth. In the spring these depressions fill with water from melting snow and rain. Some of the larger ones form lakes or other permanent bodies of water, but the smaller depressions form innumerable temporary sloughs or potholes, many of them drying up in only a few weeks.


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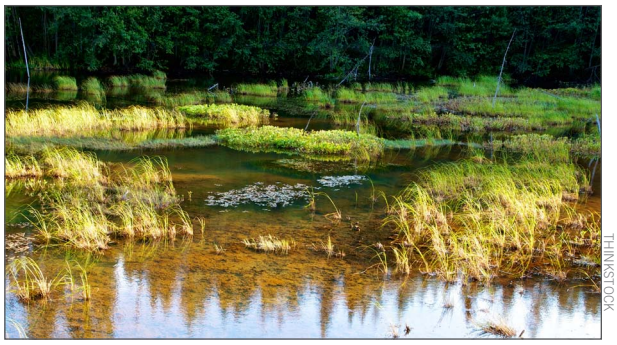
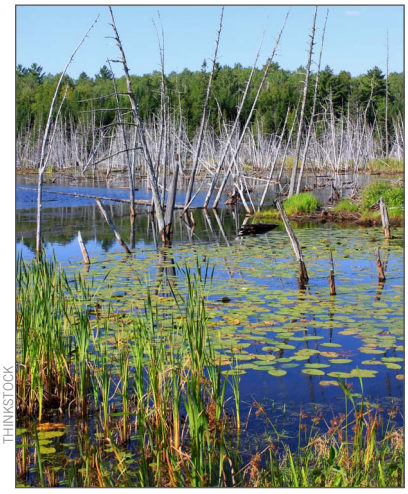
## TYPES OF WETLANDS

There are five major types of wetlands: shallow open water wetlands, marshes, swamps, bogs and fens, the last two being peatlands. Each has its own characteristics.



Marsh

A shallow open water wetland is a well-defined basin, filled with water and fringed with vegetation. It is fed mainly by rain and snowmelt but can sometimes have a small watercourse entering it. It loses water through seepage, direct evaporation and plant transpiration. During the summer, parts of a pond may dry out, exposing mudflats. The shallow depth of a pond allows water lilies and other bottom-rooted plants to reach the surface, while milfoils, pondweeds and other submerged plants flourish beneath.



Shallow open water wetland

A marsh is subject to periodic flooding, particularly if located near a river or lake or, in the case of saltwater marshes, near tidal waters. Consequently, its water level can change drastically. Its boundaries are not as well defined as those of a pond, and a marsh may dry out completely by late summer. A marsh is characterized by broad and leafy vegetation that emerges from the water or saturated soils, such as coarse grasses, sedges and rushes.

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The water-filled potholes and sloughs of the prairies may resemble ponds or marshes, depending on their characteristics and specific locations.

A swamp is essentially a wooded marsh, a waterlogged area supporting trees, tall shrubs, herbs and mosses. Still or gently flowing water can cover the surface during wetter seasons.

A bog is a peatland that is a poorly drained area covered by mats of moss. The moss slowly decomposes in successive layers to eventually form a material called peat. There are two types of peatlands: bogs and fens. In bogs, the process of decomposition and peat formation is further advanced than in fens, making the soil and water more acidic. The most common moss found on the surface of a bog is sphagnum moss. Other bog plants are sedges and low-growing shrubs of the heath family and sometimes trees such as spruce. In fens, sedges are the predominant vegetation and sphagnum moss is not common, though other mosses that require less acidic conditions may grow there. Fens also support reeds, grasses and low to medium-height shrubs. Occasionally, too, there may be treed areas—tamarack or cedar. In northern Canada, a large expanse of bog or fen is called muskeg.

ANNIE LANGLOIS

**Bog**


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## WHAT GOOD ARE WETLANDS?


Painted Turtle

It's easy to regard wetlands as mere wastelands, of little or no value. We don't build houses or factories in swamps, bogs or marshes, and we don't plant wheat or many other crops on land submerged in water. Wetlands are generally unsuitable for boating, swimming and most human activities. So it's not surprising that many people "reclaim" our wetlands by draining them or filling them in. However, doing so is a serious mistake.

Wetlands act like giant sponges, soaking up rain and snowmelt and slowly releasing water in drier seasons. Thus, they help reduce floods and ease the worst effects of drought. Draining ponds, sloughs and marshes often lowers the water table and can dry up drinking water wells. Wetlands also reduce soil erosion by checking or slowing the runoff from storms and thaws.

Without wetlands we would not have a ready supply of fresh drinking water. Much like our kidneys, wetlands filter the waters of our lakes, rivers, and streams, reducing pollution. The vegetation in wetlands removes phosphates and other plant nutrients washed in from the surrounding soil, thereby slowing the growth of algae and aquatic weeds. Abundant algae growth is a serious problem in some of Canada's major waterways where dead and decaying algae rob the deeper waters of their oxygen.


Green Heron

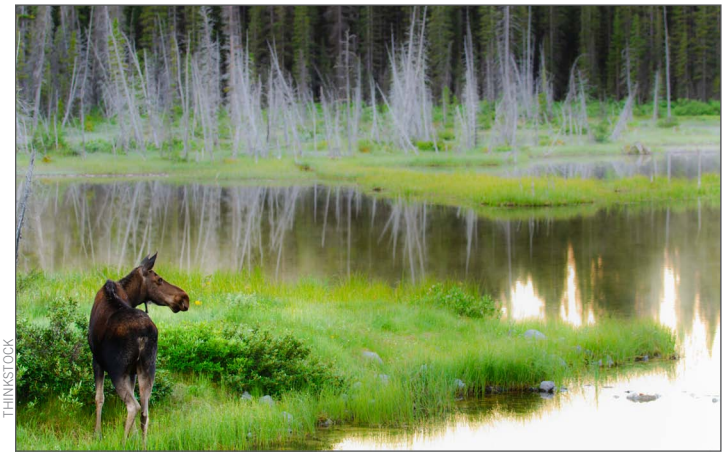



Wetlands are also the homes, for at least part of the year, of many fish, birds and other animals, meeting essential breeding, nesting, nursery and feeding needs. Without wetlands, some wildlife species would disappear.

Wetlands contribute to the growth and economy of the country. Some of the smaller mammals, such as the beaver and muskrat, that dwell in wetlands are important to the fur trade, and the millions of game birds and fish reared in and around our wetlands support a growing recreation and tourist industry.

## SUSTAINING LIFE

### Creatures large and small




Moose

A wetland who's who would list many creatures, ranging in size from the microscopic one-celled protozoa to the massive moose. Wetland ecosystems are some of the most diverse on earth. Some wetland species are born and live out their entire lives in wetlands; others spend only part of each day or part of their life there. Wetlands are the whole world for many salamanders, snakes, turtles and aquatic insects. On the other hand, many of our frogs and toads breed in temporary ponds and marshes but spend much of their adult life on the surrounding dry land. Fish, such as stickleback and pike, come to marshes to spawn and feed in the shallow waters.

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Among the smaller mammals living around the marsh are shrews, lemmings, voles, muskrats and beavers. Predators include mink, otters, bobcats and the elusive cougar and grey fox.

But wetlands are especially a boon for birds. More than 100 species inhabit or make use of Canada's marshes, swamps and sloughs. Some, like the Swamp Sparrow and Marsh Wren, nest there almost exclusively. Many millions of ducks, geese, gulls and other waterfowl also nest, breed and feed there along with numerous waders and shorebirds—herons, bitterns, rails, and sandpipers.

Kingfishers, owls, Ospreys and other predators feed in wetlands. Birds such as mallards and teals use wetlands while they moult because marshy areas provide excellent escape cover. Sandhill Cranes, geese and Tundra Swans stop over in marshes during migration to rest and feed or to regain their strength.

## WATERS OF LIFE

Wetlands are rich in nutrients and teem with more life than most people suspect. Billions of microscopic algae and larger plants grow and flourish in the shallow waters using the sun's energy. They serve as food for countless forms of animal life, which in turn are often consumed by birds and other animals. Bacteria and fungi are at work everywhere, breaking down dead plant and animal tissues and releasing nutrients for further use.

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**Damselfly**

The bottom sediments consist of decayed material, tiny shell fragments and other such leftovers deposited over a layer of organic and mineral soil. Beneath this, again, is a layer of clay or other impervious material. Among the bottom dwellers are snails and mayfly larvae. They feed on decaying material and bacteria and, in turn, are a major food source for many ducks and other animals.

So, too, are the free-swimming larvae of dragonflies and damselflies, which prey on waterfleas, fairy shrimps, mosquito larvae and other tiny creatures. Other free swimmers are water mites, often preyed upon by the diving beetle and the giant water bug.

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## A THREATENED RESOURCE

About one-third of all the species that call wetlands home are listed as species at risk in Canada. The natural, reversible changes in wetlands may be almost insignificant compared with the disruption caused by human interference. Dredging a pond can make it unsuitable for birds that require shallow water. Draining or filling in wetlands permanently destroys entire communities of plants and wildlife. Burning off or cutting down surrounding weeds, brush or other vegetation eliminates, at least temporarily, vital nesting places and escape cover. Building a highway through a coastal marsh or erecting a small dock at the marshy edge of a lake where you moor your rowboat is also damaging.

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**Pollution in a marsh**

Climate change, air pollution and water pollution are serious problems. Insecticides, weed killers and industrial wastes take a heavy toll on plants, fish and other wildlife.

This destruction is happening all across the country as industry, commerce, agriculture and our appetite for "the good life" continue to swallow up our wetlands. In southwestern Ontario, the marshes bordering Lake St. Clair have shrunk to only a fraction of what they once were. In the Prairies, millions of hectares have been drained and put to the plough—not only destroying wildlife habitat, but frequently also lowering the water table. Everywhere, bogs and other wetlands are regarded as prime dumping sites of garbage and other refuse.

Naturalists, ecologists and many other people are concerned about this trend. And millions more are realizing that this kind of "progress" threatens our world with impoverishment. Could we enjoy the truly good life in a land without wild places and without wildlife?

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## WHAT CAN WE DO?

Changing public attitudes is the essential first step in preserving our wetlands. We have to get rid of the mistaken notion that wetlands are wastelands and help other people to do the same. Then let's get behind our governments, conservation groups and other agencies in their efforts to save those important resources.

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**Researchers in a bog**

Governments at all levels have an important part to play—for example, they can acquire wetlands for parks, sanctuaries and reserves. At the federal level, on a limited scale, the Canadian Wildlife Service is already doing this through its habitat program and has created specially protected National Wildlife Areas across the country. Wetlands can also be protected by provincial regulation and municipal zoning and through compensation, tax concessions and other incentives to farmers and other property owners. Private citizens can do something too, either as individuals or as members of service clubs, conservation groups and other organizations. Contact your regional Canadian Wildlife Service office for more information on wetlands and on organizations in your area working to preserve or restore these valuable habitats.

Landowners can donate their wetlands to government or private agencies to preserve the habitat. Other citizens can pool their resources to lease or to purchase and protect wetlands while sponsoring or supporting much-needed programs of public education. To ease the pressure to drain and develop wetlands, we must promote the wiser use of land for agriculture and other purposes.

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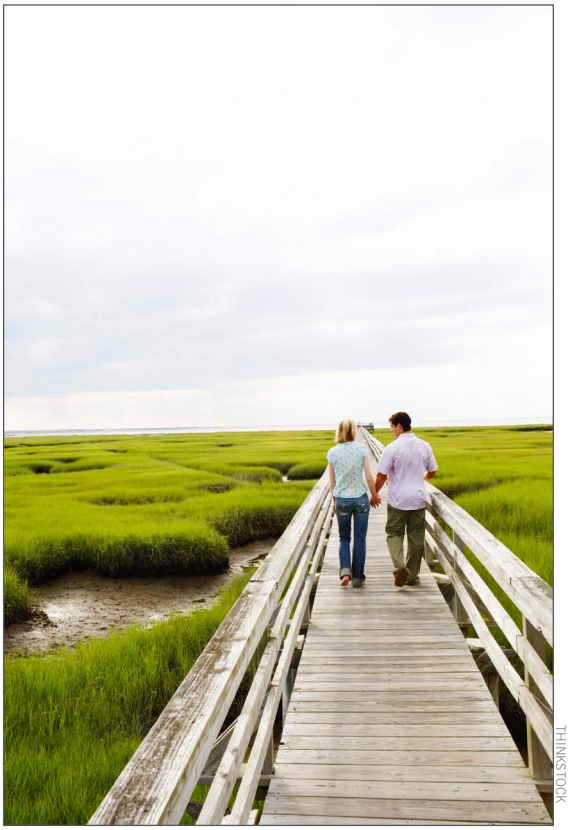
Resourceful farmers have learned to use wetlands without destroying them. In some places, fish farming in sloughs or marshes is a profitable venture.

Non-governmental organizations like the Canadian Wildlife Federation, Ducks Unlimited Canada, the Nature Conservancy of Canada and many smaller regional conservation agencies also play a vital role in on-the-ground protection and restoration of wetlands in some Canada's most modified landscapes. Government and non-government al organizations collaborate through "habitat joint ventures" that plan and implement wetland conservation projects across Canada.

It's easier to protect one wetland now than to restore or recreate one later. "Later" may be too late.



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**Exploring a saltwater marsh**




## RESOURCES

**Online resources**

Functions and Values of Wetlands
http://www.ecy.wa.gov/programs/sea/wetlands/functions.html

Wetland Network
http://www.wetlandnetwork.ca

Ducks Unlimited Canada, Learn About Wetlands
http://www.ducks.ca/learn-about-wetlands/

CWF Wetlands
http://cwf-fcf.org/en/do-something/challenges-projects/take-action-factsheets/habitat-projects/map-your-backyard/wetlands.html

**Print resources**

Lands Directorate. 1986. Wetlands in Canada: a valuable resource. Fact Sheet 86-4. Environment Canada, Ottawa.

National Wetlands Working Group. 1987. The Canadian wetland classification system. Ecological land classification series, no. 21. Lands Directorate, Canadian Wildlife Service, Environment Canada, Ottawa.

National Wetlands Working Group. 1988. Wetlands of Canada. Ecological land classification series, no. 24. Sustainable Development Branch, Environment Canada, Ottawa, and Polyscience Publications Inc., Montreal.



Revision: T. Turner and L. Swanson, 2013