SHORELINE HABITAT CREATION MANUAL

Protecting our Biodiversity



HABITAT CREATION MANUAL

This manual is intended for landowners wanting to enhance their properties, or create habitat which is essential for fish and wildlife species.

As we develop our waterfront properties, we can sometimes unintentially destroy sensitive areas that are vital to many of our mammals, birds, fish, and amphibians.

The shoreline area, sometimes called the ribbon of life, is made up of the first 10-15m of land that surround lakes and rivers and is up to 500% more diverse than other areas upland!

To maintain fish and wildlife populations, it is important to do your part by following some of our habitat creation tips.

Restoring the *Ribbon* of Life

Shoreline Habitat

Vegetation along shorelines provides essential habitat to many fish, amphibians, birds, and mammals.

With changing land use and increased development along waterways, natural vegetation is often removed. This loss of vegetation can lead to the decline of species diversity as vegetated shorelines are home to over 70% of land-based wildlife species and 90% of aquatic species at somepoint in their lifetime. It is used by reptiles, amphibians, fish, mammals, insects, and birds for mating, raising their young, obtaining food and shelter, and evading predators.



There are some simple ways through which we can work to help protect this very valuable habitat...

1. Plant native trees and shrubs along your shoreline. As plants along the shoreline grow, the branches and leaves will overhang creating shade and cover. Small fish and frogs often hang around in shaded areas as it protects them from the sun and birds that may be preying overhead. As well, overhanging plants provide a source of food as insects will often fall into the water for the waiting fish.



Additionally, choosing native shrubs that produce flowers and berries are a great food source for many birds, pollinators such as bees and butterflies, and small mammals as it provides them with a reliable source of food throughout the summer and autumn months

2. Leave downed trees. Trees and branches that have fallen into the water or along the shoreline should be left alone. Woody structures such as trees and branches are great fish and wildlife habitat. They act as cover for small fish and other aquatic life as they can be used to hide from predators, and provide protection from both the sun and preying overhead birds. As well, any insects



that were living on the tree before it fell are now a source of food.



In addition, these logs create an easy transition from land to water for many frogs and turtles. Turtles can often be seen basking on downed trees to warm themselves up in the sun.

3. Leave aquatic vegetation. Aquatic vegetation such as water lillies, and emergent plants are another key habitat for aquatic life. Many people remove these plants as they want beach-like swimming areas. However, by pulling these "weeds" landowners are inadvertantly destroying primary fish habitat. The best way to access your lake is to clear a small area through the existing vegetation to get to deeper water, and leave the rest untouched. The aquatic vegetation is important as it is used for shelter to escape predators, protection from the sun, and as a food source. Additionally, removing native aquatic vegetation creates room for invasive aquatic plants, such as Eurasian Milfoil, thus allowing them to take over.

4. Leave dead sturdy trees and woody debris in place.

<u>Cavity trees:</u> Large trees with hollow cavities are a vital source of food, shelter, and safety for many species. In Ontario, more than 50 species of birds and mammals (including pileated woodpeckers and barred owls) depend on cavity trees for nesting, rearing young, roosting, feeding, storing food, escaping predators, and hibernating. By retaining cavity trees on your property, you provide important habitat for wildlife.



Fallen logs: Fallen logs are essential for small mammals, such as moles, certain woodpeckers, toads, and many insects. As the log rots, reptiles and amphibians lay their eggs in the moist wood. A decaying log is also great habitat for beetles and ants that burrow under the bark or lay eggs, which then becomes a food source for wildlife.

Brush Piles: These provide habitat for snowshoe hares, cottontail rabbits, and others. Brush Piles can be constructed with the cut materials from trail clearing or woodlot management (pruning). Pile the brush waist-high on a stump, log or boulder, or along fencerows. For added benefit, train climbing vines, such as Virginia creeper, onto the brush pile.

NATIVE PLANTS: LOW HEIGHT

[ferns, shrubs, groundcover]			
Species	Moisture Requirements	Light Preference	
Bearberry, <i>Arctostaphylos</i> <i>uva-ursi</i>	Dry to moist	Full sun to part shade	
Black Chokeberry, <i>Aronia</i> melanocarpa	Moist to wet	Full sun to part shade	
Bracken Fern, <i>Pteridium</i> <i>aquilinum</i>	Dry to moist	Full sun to part shade	
Buch Honeysuckle, <i>Diervilla</i> <i>lonicera</i>	Dry to moist	Full sun to part shade	
Creeping Juniper, <i>Juniperus</i> horizontalis	Dry to moist	Full sun	
Fragrant Sumac, <i>Rhus aro-matica</i>	Dry to moist	Full sun to part shade	
Meadowsweet, Spiraea alba	Moist to wet	Full sun to part shade	
Pasture Rose, Rosa carolina	Dry to moist	Full sun to part shade	
Snowberry, <i>Symphoricarpos albus</i>	Dry to moist	Full sun to part shade	
Swamp Rose, Rosa palustris	Moist to wet	Full sun to part shade	

NATIVE PLANTS: MEDIUM HEIGHT [shrubs]			
Species	Moisture Requirements	Light Preference	
Alternate-Leaved Dogwood, Cornus alternifolia	Moist	Part shade to shade	
Black Elderberry, Sambucus nigra	Moist to wet	Full sun	
Buttonbush, Cephalanthus occidentalis	Moist to wet	Full sun to part shade	
Chokecherry, Prunus virgin- iana	Dry to moist	Full sun to part shade	
Gray Dogwood, <i>Cornus</i> racemosa	Moist to wet	Full sun to part shade	
Highbush Cranberry, <i>Vibur- num trilobum</i>	Moist to wet	Full sun to part shade	
Nannyberry, <i>Viburnum</i> <i>lentago</i>	Moist to wet	Full sun to part shade	
Ninebark, <i>Physocarpus opu-</i> <i>lifolius</i>	Dry to wet	Full sun to part shade	
Red Osier Dogwood, <i>Cornus</i> sericea, syn. Cornus stolonifera	Moist to wet	Full sun to part shade	
Saskatoon Serviceberry, Amel- anchier alnifolia	Dry to moist	Full sun to part shade	
Silky Dogwood, <i>Cornus amo-</i> <i>mum</i>	Moist to wet	Full sun to part shade	
Shadblow Serviceberry, Amel- anchier canadensis	Dry to moist	Full sun to part shade	
Speckled Alder, Alnus incana	Moist to wet	Full sun	
Witch Hazel, <i>Hamamelis</i> <i>virginiana</i>	Dry to moist	Part shade to shade	

NATIVE PLANTS: TALL HEIGHT [trees]			
Species	Moisture Requirements	Light Preferences	
Balsam Fir, Abies balsamea	Moist	Full sun to full shade	
Black Ash, Fraxinus nigra	Moist to wet	Full sun to full shade	
Black Cherry, Prunus serotina	Dry to moist	Full sun to part shade	
Black Spruce, Picea mariana	Moist to wet	Full sun to full shade	
Black Willow, Salix nigra	Moist to wet	Full sun to part shade	
Eastern Red Cedar, <i>Juniperus virginiana</i>	Dry to moist	Full sun to part shade	
Eastern Hemlock, <i>Tsuga</i> <i>canadensis</i>	Moist	Part shade to shade	
Eastern White Cedar, <i>Thuja</i> occidentalis	Dry to wet	Full sun to part shade	
Pussy Willow, Salix discolor	Moist to wet	Full sun to part shade	
Red Maple, Acer rubrum	Moist to wet	Full sun to full shade	
Red Oak, Quercus rubra	Dry to moist	Full sun to full shade	
Red Pine, Pinus resinosa	Dry to moist	Full sun	
Sandbar Willow, <i>Salix exigua</i>	Wet	Full sun to part shade	
Silver Maple, <i>Acer sacchari-</i> <i>num</i>	Moist to wet	Full sun to part shade	
Showy Mountain Ash, <i>Sorbus decora</i>	Moist to wet	Part shade to shade	
Sugar Maple, Acer saccharum	Dry to moist	Full sun to part shade	
Tamarack, Larix laricina	Moist to wet	Full sun to part shade	
White Birch, Betula papyrifera	Moist to wet	Full sun to part shade	
White Elm, Ulmus americana	Moist to wet	Full sun to part shade	
White Oak, Quercus alba	Dry to moist	Full sun to part shade	
White Pine, <i>Pinus strobus</i>	Dry to moist	Full sun to part shade	
White Spruce, Picea glauca	Dry to moist	Full sun to part shade	
Yellow Birch, <i>Betula al- leghaniensis</i>	Moist to wet	Part shade to shade	

BAT BENEFITS

Bat populations are declining as a result of habitat loss and an increase in the spread of a disease known as white-nose syndrome (WNS). Whitenose syndrome is a fungus that grows on the nose, ears, and wings of bats. It causes the bats to wake from hibernation before springtime, therefore there isn't a food source available and the awakened bats die from starvation.

In addition, female bats only produce one pup per year, making it hard for bat populations to recover from large losses. Therefore, by installing a bat box on your property you are providing a safe place for females to raise their young, which can aid in the recovery of our bat population.

Bats provide many services that most people may not realize.

<u>Pest Control</u>: Bats are great to have flying around your property because every night bats eat their own bodyweight in insects! Therefore, the more bats around your property, the less bugs you'll have, especially those pesky mosquitoes!

Farming: Bats help keep our food healthier. Since bats eat their own bodyweight in insects every night, they reduce the amount of pests present on food crops, therefore, less pesticides are needed as pest control.

BAT BOXES

Bats can be picky when choosing a home, therefore there are a few key rules to follow when building/installing a bat box.





Firstly, bat boxes should be made of un-treated wood and, if possible, painted a dark colour using water-based, non-toxic latex paint. The inside should be rough and lined with mesh or scored wood. This allows for easy climbing and attachment. For instructions on how to build a bat box visit: http://www.watersheds.ca/how-to-build-a-bat-box for information provided by The National Wildlife Federation.

When installing a bat box, choose a location that is 15-20 ft high, has a clear flyway in (ie. no branches or objects blocking the box), and is exposed to the sun for part of the day. Getting a few hours of sun exposure will keep the bat box warm, and a dark coloured box will help absorb even more heat.





BIRD HOUSES

Bird houses are an easy way you can help protect, as well as, enjoy your local bird populations.

With expanding city limits and loss of habitat, many species are having a difficult time finding a safe place to nest and raise their young. Therefore, by installing bird houses on your property you are doing your part in helping to sustain healthy bird populations which provide pest and insect control, seed dispersal through their dietary means, and are an integral part of ecological systems.

A PROPER BIRD HOUSE

A successful bird house is one that is well constructed.

1.) Use untreated wood. Treated wood can leach toxins onto the birds and into the eggs. Therefore, natural wood like cedar or pine is best.

2.) Sloped, overhanging roof. The sloped roof allows the water to runoff while the overhang prevents water from entering the house. It should overhang 2 inches off the sides and even more along the front.

3.) Raised floor. The floor should be raised a 1/4 inch above the sides of the box. It should also have four drainage holes 1/4 inch in diameter to let any possible water drain and keep the nest dry.

4.) Ventilation holes. Bird houses can get hot, therefore two holes, 5/8 inch in diameter should be drilled at the top of the box, on either side. This allows for the best exchange of hot and cold air within the box.

5.) Fledging friendly. Baby birds need a rough surface to grab onto when climbing out of the bird house, therefore either a wire mesh should be place on the inside of the wood, or rough wood should be used.

6.) Hinged roof or front. You should build your bird house with either a hinged roof or front. This allows you to open the bird house and clean out old nests allowing new birds to move in.

7.) The right hole. Birds can be picky when choosing a house as different species prefer different sized holes. Please see diagram below to help you choose the type of bird you want to build a home for.

8.) Clean the bird house after every season to allow other birds to nest.





For more information contact:

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Watersheds Canada is a federally incorporated non-profit organization and registered Canadian charity. We are committed to providing programs in communities across the country to engage and help shoreline owners enhance and protect the health of lakes and rivers.

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