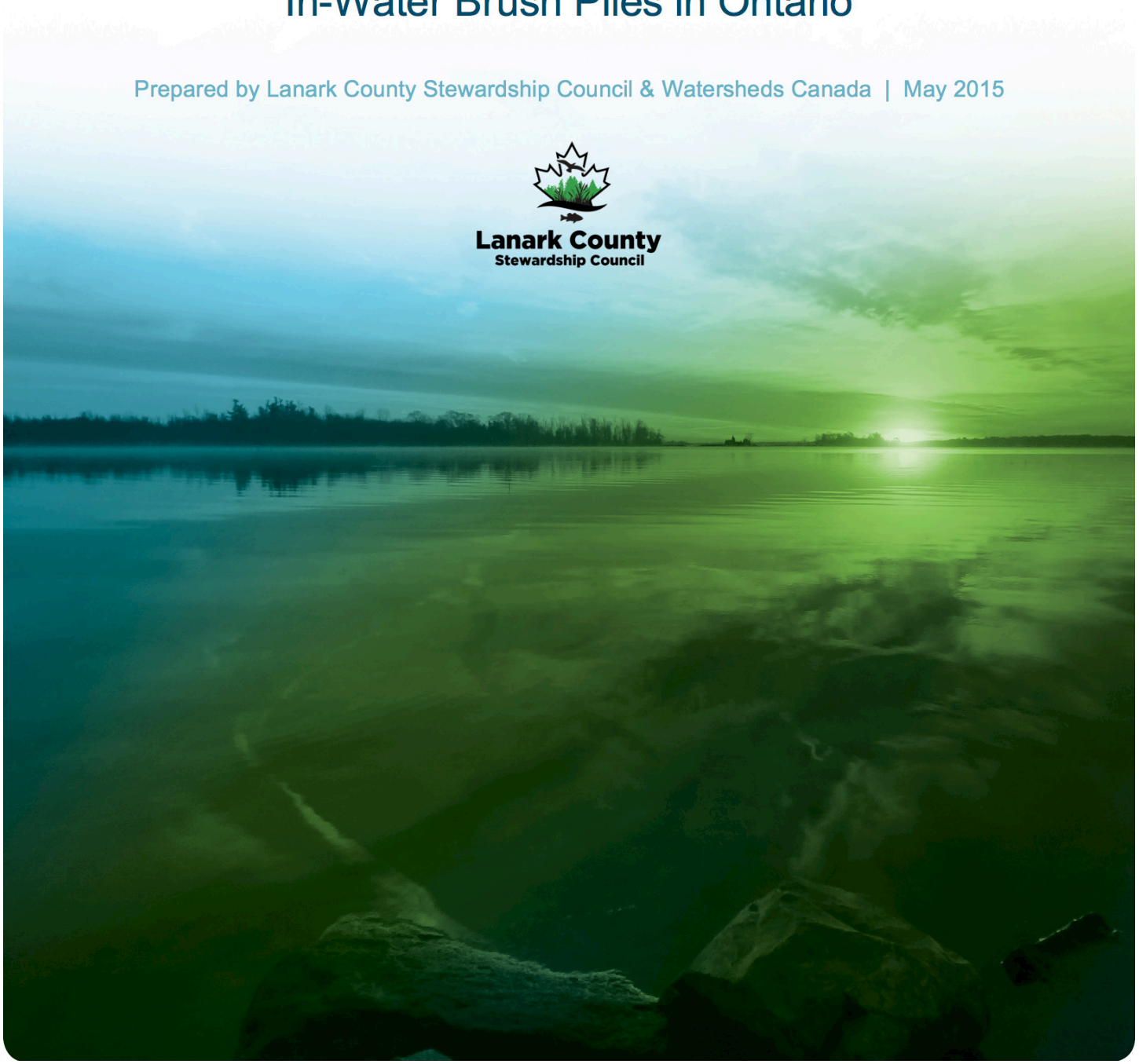
Watersheds CANADA

FISH HABITAT TOOLKIT

In-Water Brush Piles in Ontario

Prepared by Lanark County Stewardship Council & Watersheds Canada | May 2015

Lanark County
Stewardship Council



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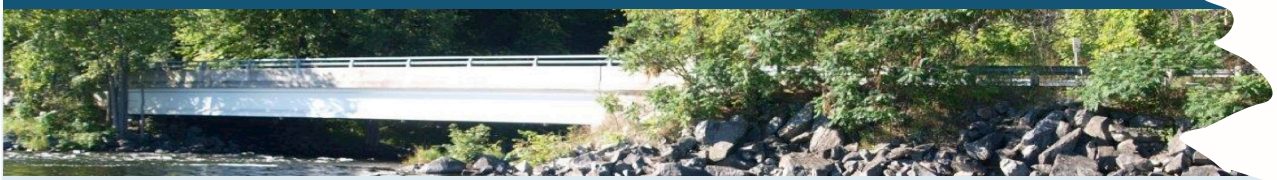

In-Water Brush Piles in Ontario

Introduction

Underwater woody debris is a healthy component of lake environments. Sunken logs, trees, branches, and balls provide excellent habitat for wildlife, including fish, turtles, birds, invertebrates, and more. Beaver activity, wind, erosion, or water inflows from rivers or creeks naturally deposit such woody debris into a lake. However, human activity and development have significantly reduced the amount of natural woody debris from lakes.

Communities can promote the health of wildlife populations and improve water quality by creating additional woody debris habitat, such as in-water brush piles. Brush piles can provide fish with a food source, as well as shaded areas to rest, spawn, and escape predators.

This document outlines planning and implementation guidelines for an in-water brush pile project. Lanark County Stewardship Council has also produced a video demonstrating this type of project (available to watch at *NatureInDeed.com*).

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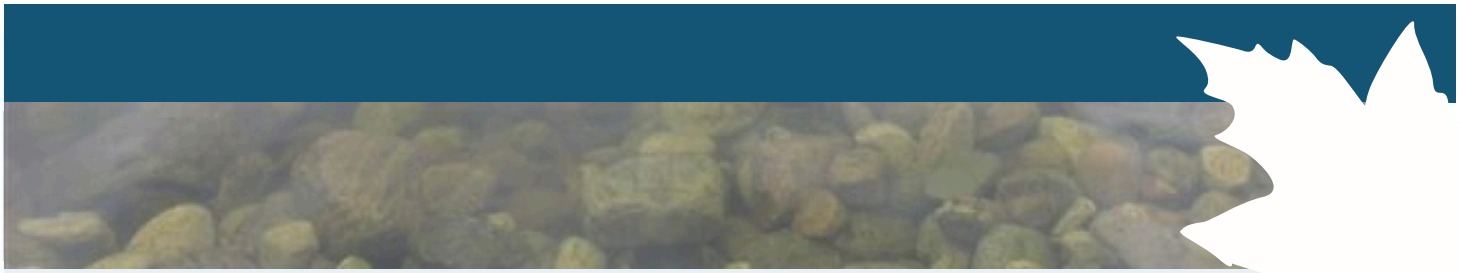

About

Natural Woody Habitat

What is it?

Fallen trees, limbs, branches, and roots.

Where does it come from?

Beaver activity, wind, flooding, ice scouring, or human activity.

Why is it important?

It provides food sources, feeding areas, shelter, and spawning habitat for wildlife.

What species of wildlife benefit from it?

Fish[1,2], turtles, birds, aquatic invertebrates, and others[3,4].

How does it affect specific fish communities?

Smallmouth and largemouth bass often build their nests close to coarse woody habitat, especially large logs[2,5]. Several studies indicate that largemouth bass increase their growth rate when there is woody habitat available because they are able to search and capture prey more easily without using as much energy[4].

Newly hatched smallmouth bass will often inhabit woody habitat and there are fewer young smallmouth bass when this habitat is removed[6].

Yellow perch lay their eggs on woody debris and vegetative structures[10]. Restoring woody habitat in shallow or non-navigable bays that are potentially used by spawning perch may increase their spawning success and abundance. Since yellow perch is an important forage species for walleye, restoring woody habitat will also benefit walleye.]

Many species will use this new habitat. Sixteen fish species were observed using woody habitat in a lake in Wisconsin[11].

FACT

Fish like crappie, bass, and panfish spend most of their time near cover, not in open water.

How is it a food source?

Algae grow on the woody debris → Macroinvertebrates[3,4] eat the algae → Fish, birds, and other species eat the macroinvertebrates

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How does it affect water quality?

It prevents suspension of sediments and improves water clarity by reducing the current and wave action that can move sediments[4]. This is similar to how trees reduce erosion.

Why is more needed?

Undeveloped lakes without cottages, marinas, or camps usually have hundreds of logs per kilometre of shoreline[7], which provides abundant natural woody habitat. However, shoreline property owners often remove woody debris from their waterfronts for aesthetic reasons, easier swimming, and safer boating, reducing habitat for fish species and other wildlife.

As waterfront development increases, the amount of woody debris decreases[8,9]:

Brush Piles and Woody Debris

What are brush piles?

Bundles of branches, sticks, twigs, and roots of trees that are tied together using nylon rope or wire. Cement blocks are attached as anchors to sink the bundles to the bottom of the waterbody, waterlogging the woody debris so that it doesn't float back up to the surface. These can also be called underwater brush bundles or in-water brush piles.

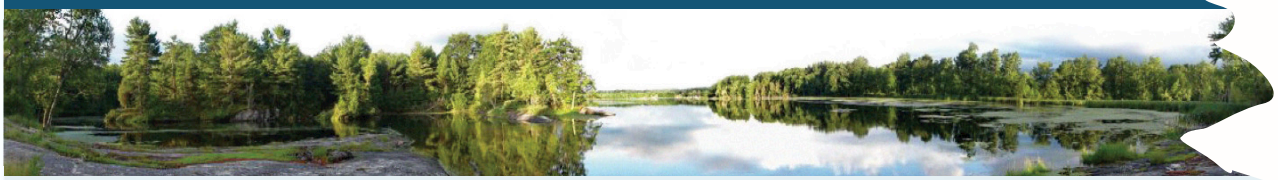
Figure 1: Brush piles ready to be dropped into the lake.

Where are brush piles placed?

In waters that are more than 12 feet deep, to ensure they don't interfere with boating or other cottage activities like swimming, tubing, or water skiing.

What other woody debris would work well for aquatic habitat?

- *Old Christmas trees.*
- *Cuttings from trees.*
- *Fallen mature trees from along the shoreline that fall into the water or from upland that are moved into the water (most appropriate along shorelines with little to no development). Called 'fishsticks,' these trees are anchored to the shoreline using cable wire to prevent displacement into unsafe areas. This protocol only covers in-water brush piles, not fishsticks.*



PLANNING

Fish habitat enhancement projects are a way for stewardship organizations, lake associations, fish and game clubs, and other groups to improve their local lake ecosystems. By working collaboratively with others, the community can rally together and enhance lake quality and fish habitat.

Planning an in-water brush pile project involves seven key steps:

1. *Determine your Objective*
2. *Consult Key Stakeholders*
3. *Obtain the Necessary Permits*
4. *Choose your Project Site*
5. *Plan your Project*
6. *Fund your Project*
7. *Communicate your Project Plan*

1. Determine your Objective

Determine the objective of your in-water brush piles by considering:

- *Is the habitat being improved for a particular fish species?*
- *What are the habitat requirements and life cycle for the species that are targeted?*
- *Will this project improve the habitat required for that species?*
- *Will this project be harmful to other species?*
- *Will the project be conducted on all or part of the lake?*

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2. Consult Key Stakeholders

Fish habitat enhancement projects will be most successful if key stakeholders are supportive. While this document provides a guide to the groups you should consult for projects involving Ontario waterbodies, be sure to identify the key stakeholders specific to your project before you begin. You may have to consult certain groups several times throughout the planning process.

Ontario Ministry of Natural Resources and Forestry

The Ontario Ministry of Natural Resources and Forestry (MNRF) is responsible for fisheries management planning in 20 fisheries management zones. These zones help the province protect and re-establish fish populations in specific bodies of water.

Consult with the local MNRF office to ensure that your project objective does not conflict with its fisheries management objectives and management plan for the waterbody in question.

MNRF can also inform you about:

- *Required permits*
- *Environmental assessment requirements*

The local office may also have information on fish populations, spawning sites, and habitat for the area you plan to work in. Look up your fisheries management zone at *Ontario.ca*.

Conservation Authorities

Consult the Conservation Authority for your area, if there is one, for information about required permits, management plans, and fish habitat. Find your local Conservation Authority at *conservation-ontario.on.ca*.

Department of Fisheries and Oceans

The Department of Fisheries and Oceans (DFO) has an online self-assessment tool to determine whether approval is required from this agency. Their permit application forms may require drawings and photos. Visit *DFO-MPO.gc.ca* for more information.

Parks Canada

If your project occurs in a federal waterbody such as the Rideau Canal or Trent-Severn Waterway, consult Parks Canada about required permits, management plans, and fish habitat. Visit PC.gc.ca for more information.

Local Fish and Game Clubs, Lake Associations, Stewardship Councils, and Residents

Consult local fish and game clubs, lake associations, Stewardship Councils, and residents for their knowledge of fish habitat, populations and waterbody environment. These agencies and groups have valuable expertise and may be possible partners for your project.

3. Obtain the Necessary Permits

You may need permits from several different government agencies before conducting your project. MNRF, Conservation Authorities, DFO, and Parks Canada will provide guidance on what is required when applying for a permit, and so be sure to consult them early in the planning process.

TIP

Permit application forms may require detailed drawings of the proposed work site, including cross-sectional drawings and photos. Also, permits may take two or three months to obtain, depending on the agency and the number of applications it is reviewing.

The most common permits needed for in-water brush pile projects are:

- *Ministry of Natural Resources and Forestry (MNRF) work permits (if project area exceeds 15 m^2)*
- *Parks Canada approvals (if the project is in a federal waterway)*

This section provides additional detail about these permits and approvals. Keep in mind that you may require additional paperwork in order to proceed with your project.

Ministry of Natural Resources and Forestry (MNRF) Work Permit

Why do you need a work permit from MNRF?

The beds of most waterbodies are Crown land in Ontario and managed by MNRF. A MNRF work permit may also be required if your project is located on shore lands, (i.e., lands covered or seasonally inundated by the water of a lake, river, stream, or pond).

What types of projects may require a MNRF work permit?

- *Filling in shore lands or Crown land if project area exceeds 15 m^2*
- *Certain types of docks and boathouses*
- *Certain types of dredging projects*
- *Removal of aquatic vegetation on the Canadian Shield*

What must your MNRF work permit application contain?

- *Completed application form (available online or at MNRF offices)*
- *Location map that includes lot, concession, township, lake or river name, and directions to the site*
- *A survey plan that shows property lines, water's edge, and roads, including measurements of the property lines and their distance to the water*
- *Two signed and dated work sketches:*
  - *One indicating where work will take place in relation to lot lines and the water's edge*
  - *One showing a side view of the proposed work, including construction techniques, mitigation measures, building materials, and measurements*
- *Two sets of shoreline photographs indicating the work area.*

Refer to MNRF Work Permit Application Guide 2014 for complete details.

Where do you submit a MNRF work permit application?

Mail your application to the local MNRF office.

How is a MNRF work permit application processed?

MNRF will review your application. In most cases, MNRF will forward your proposal to DFO and the Conservation Authority for fish habitat review. MNRF reviews comments received from these other agencies.

What happens if your application is approved?

If approved, MNRF issues a work permit or indicates that a permit is not required. A copy of the work permit should be kept at the work site. The permit may list times when in-water work may not take place in order to protect the local fisheries resource.

Department of Fisheries and Oceans (DFO) Approval

Why do you need approval from DFO?

The Fisheries Act requires that projects avoid causing serious harm to fish unless authorized by the Minister of Fisheries and Oceans Canada. This applies to work conducted in or near waterbodies that support fish or commercial, recreational, or Aboriginal fisheries.

How do you know if your project requires DFO approval?

Complete DFO's online self-assessment for the work you propose to do, available at *DFO-MPO.gc.ca*. The assessment is based on waterbody and project type. The self-assessment tool will advise whether your project requires DFO review.

How do you submit an application for approval?

Visit *DFO-MPO.gc.ca* for guidance on how to submit your project for review.

Parks Canada Approval

Why do you need approval from Parks Canada?

Any work in the water or along the shoreline in a federal waterway such as the Rideau Canal or the Trent-Severn Waterway requires a permit from Parks Canada.

What types of activities may require Parks Canada approval?

Parks Canada has jurisdiction over in-water activities, shoreline works and related activities, including installation, repairs and replacements, modifications or additions and annual or sporadic maintenance.

How do you apply for a Parks Canada permit?

Visit *PC.gc.ca* for instructions on applying for a Parks Canada permit. This site also has information on working along the shoreline or in water on federal waterways.

4. Choose your Project Site

Visit Prospective Sites

Conduct a site visit early in the planning process to determine if the lake requires additional in-water structures and if there are suitable locations that will not disturb boating and cottage activities.

What you'll need:

- *Permission from landowners to access sites*
- *Lake maps with depth contours (available from MNRF)*
- *Aerial photography of the area, if available*
- *GPS device (record possible sites on a map and note the GPS coordinates)*
- *Depth sounder*
- *Camera*

Accessibility

When visiting sites, also consider accessibility for equipment. In-water brush pile projects usually need a location to stockpile brush, and may need road access for equipment such as skid steers and loaders.

Create Maps

Clear and accurate maps are essential when communicating with local lake associations, agencies, and residents who may have concerns about your project.

Following the site visit, create a map showing the suitable locations for your project, indicating:

- *Water depths*
- *Islands*
- *Shoals*
- *Creeks (including the direction of water flow)*
- *Possible sites for the brush piles*

Dalhousie Lake –
Brush Piles August 2014

Figure 2: Map indicating location of brush piles.

- *Dalhousie Lake Brush Piles*

5. Plan your Project

With community and MNRF support, a clear project objective, and suitable sites, create a timeline and budget for your project. Community collaboration and site information will strengthen your funding applications.

Timelines

Several factors will affect your project's timeline:

- ***Restriction periods:*** *certain areas have restriction periods during which no work is allowed. For example, no work is allowed in warmwater lakes from mid-March to the beginning of July in MNRF Kemptville District. For coldwater lakes, no work is allowed from October to mid-May. There are a few lakes that have both warmwater and coldwater fish species where no work is allowed from October to the beginning of July. Check with MNRF for information about restriction periods where you will be doing your project.*
- ***Season:*** *most in-water brush pile projects can be completed in summer after July 1. Projects in warmwater lakes may also be possible in autumn. Refer to the Implementation section on page 12 for more information.*
- ***Materials and equipment:*** *order material and reserve equipment well in advance of implementing the project to ensure availability.*
- ***Permits:*** *permit approval can take months; find out what permits you need and apply as soon as possible.*
- ***Funding:*** *grants run on variable cycles; ensure you know application deadlines for major grants. For a current list of grants and deadlines, contact your local Stewardship Council, Conservation Authority and Watersheds Canada. See page 9 for more information about funding your project.*

Materials and Equipment

Materials required for in-water brush piles:

- *Cut brush (tree branches, twigs, or roots) or old Christmas trees*
- *3/8-inch nylon rope (about 600 feet)*
- *10- or 12-inch cement blocks (2-4 needed per brush pile)*

TIP

Be sure to use nylon rope; polypropylene rope will deteriorate in sunlight and float upwards from your in-water brush piles.

Equipment required:

- *GPS device*
- *Depth sounder*
- *Truck and trailer*
- *Skid steer, high-hoe, or loader (optional if brush piles are light enough to lift manually)*
- *Barge or pontoon boat, at least 21 feet long*
- *Life preservers and boat safety equipment*
- *Underwater camera or angler*

Other items:

- *Map and aerial photography*
- *Required permits*

For brush piles, determine whether local residents can help you assemble brush or if you have to harvest it yourself. Lake associations can ask cottagers through newsletters or meetings to bring any brush they cut on their property to a central location where brush bundles can be assembled. Alternatively, you can often obtain old Christmas trees for free from residents and businesses.

TIP

If you are harvesting fresh trees for brush, be sure that volunteers collecting the trees are trained in using chainsaws. Trees should be collected far from the shoreline and with landowner permission.

Cedar and harder woods, such as oak and ironwood, are preferred because they will last longer compared to species of softer woods, such as basswood and evergreens.

Figure 3: Picking up donated Christmas trees from Home Hardware following the Christmas season.

Volunteers

In-water brush pile projects require about 8-12 volunteers capable of doing physical work.

Budget and Costs

The majority of your costs will come from the materials and equipment required to complete your project. A detailed budget is important when applying for grants and other funding sources. The cost of a project is generally a few thousand dollars. As a reference, constructing 15 brush piles without renting a loader costs about $1,550; the same project costs about $3,370 with a rented loader and a more expensive underwater camera. Donations from local stores and landowners will reduce overall material and equipment costs. Obtain quotes to ensure that your budget is accurate. As a guide, Table 1 shows approximate costs for rental equipment and material.

Table 1: Approximate Costs for Material and Equipment

Item	Approximate Cost
Cut brush or Christmas trees	Free from local residents or Christmas tree suppliers
Nylon Rope	$130 per 600 feet
Cement blocks	$150 for 60 blocks
GPS device	$500
Depth sounder	$300
Truck and trailer	Provided by project organizers or volunteers
Skid steer, high-hoe or loader	$140 per hour; $500 delivery
Barge or pontoon boat	$150 per day; $100 delivery
Life preservers and boat safety equipment	Provided by volunteers
Underwater camera	$300 to $500 for Aqua-Vu or GoPro camera
Permits	Variable

Permits

Refer to your consultation with MNRF, Conservation Authorities, DFO and Parks Canada for the permits required for your project.

6. Fund your Project

Funding for your project can come from partners and grants. Volunteering and in-kind support (e.g., donations of materials and equipment) can also help reduce your costs.

Create a Project Outline

Creating a concise project outline will help you communicate your project idea with your partners and potential funders.

Your outline should answer the following questions:

- *What do you want to do?*
- *How are you going to do it?*
- *Who are you working with?*
- *When are you doing this work?*

If possible, keep your project outline to a single page.

Create a Budget

Creating a budget will allow you to document:

- *What resources you already have*
- *What you're missing*
- *In-kind and cash contributions from your organization and project partners*

While budget formats vary, keep in mind:

- *Typical funding requests ask for four expenses categories: materials and supplies, human resources, other, and administration. Structure your budget based on these categories.*
- *Include the value of all donations and contributions in your budget. Most funders require a 50% match to any cash they provide.*
- *Itemize everything you need to complete your project, along with a cost estimate and where you will get these items.*

In the *Sample Project Budget* below, the total project value is $7,920, including both cash needs and in-kind donations. The project's five partners are contributing a total in-kind value of $6,110. This project requires an additional $1,810 in funding.

Table 2: Sample Project Budget

Item	Description	Total Cost	Cash	In-Kind	Source
Materials and Supplies					
Cement block	60 blocks for $150	$150	$150	$0	ABC Company
Christmas trees	100 trees @ $15/tree	$1,500	$0	$1,500	ABC Tree Nursery
Nylon rope	$130/600 feet	$260	$260	$0	ABC Company
Pontoon boat	2 days @ $150/day; $100 delivery	$400	$400	$0	ABC Boat Rental
Human Resources					
Installation labour	168 hours @ $20/hour	$3,360	$0	$3,360	ABC Lake Association
Project manager	40 hours @ $25/hour	$1,000	$1,000	$0	ABC Stewardship Council
Other					
Travel	1,000 km @ $0.45/km	$450	$0	$450	ABC Stewardship Council
Administration Overhead (computers, bookkeeping, etc.)	10% of total project cost	$800	$0	$800	ABC Stewardship Council
TOTAL:	**$7,920**	**$1,810**	**$6,110**		

Local Partners

Local partners such as fish and game clubs, conservation organizations, or businesses will often contribute funding towards your project if you communicate your project goal clearly. Complete your budget and your project outline before approaching partners for contributions.

Grants

Contact the local Conservation Authority, Stewardship Council and Watersheds Canada for a current list of possible grants to fund the project. Some grants require that the applicant be incorporated or a charitable organization.

Comprehensive lists of funding opportunities can be found online at:

- *Environment Canada's Green Source Funding Database*
- *Canadian Environmental Grantmakers' Network*
- *Charity Village*

Recognition and Reporting

Recognize your partners and supporters for their contributions in all the communications materials you create. Read your funding agreements carefully, as some funders may have specific recognition and reporting requirements.

7. Communicate your Project Plan

Consulting your community is an ongoing process; you may need to meet with your stakeholders several times as your project plan develops.

General Communications Tips

Before reaching out to any stakeholders, answer the following questions:

Who is your audience?

Identifying your audience helps you tailor your communications accordingly. For example, you will describe your project differently to landowners with no environmental experience compared to experts at MNRF.

What are you trying to accomplish by communicating with this audience?

You will have particular reasons for reaching out to each stakeholder: you may be looking for funding or volunteer support, seeking landowner permission, applying for a grant, or informing neighbours about the value of your project.

What are your key messages?

Keep your communications simple by prioritizing your most important messages and using them consistently.

When and how often should you be communicating with this audience?

Consider how far in advance you need to communicate with stakeholders and how often you need to update them as the project progresses. Are there any groups you need to thank or recognize after the project is complete? Are there any groups interested in the long-term results of your project?

What is the best way of communicating with this audience?

Different audiences and purposes may require different communications tactics, such as phone calls, emails, newsletter articles, one-on-one meetings, presentations, or media releases. Consider which tactics will be most effective with each audience.

How will you address feedback?

Depending on the goal of your communications, your audience may have questions or concerns. How do you plan to address their feedback? How can they contact you if they want to follow up further?

How will you keep track of supporters of your project?

You will find supporters as you communicate your project plan. Be sure that you have a system for collecting their contact information and ask permission to contact them regarding future initiatives.

Engage the Local Community

After completing your project plan, communicate the details of your project to your key stakeholders, including local fish and game clubs, lake associations, and residents. Ensure that these groups understand what your project will accomplish and that it will not interfere with their lake activities. Before reaching out to these groups with project details, evaluate any concerns they may have.

Your goal is to answer questions, dispel myths, and gain volunteers and partners.

Ways to communicate with community partners include:

- *Newsletters*
- *Attending their meetings*
- *Phone calls and one-on-one meetings*
- *Presenting information at the annual lake association meeting*
- *Annual Lake Links workshop (eastern Ontario only; visit Watersheds.ca for more information)*

Build Partnerships

Possible partners for your project include:

- *Government agencies*
- *Conservation Authorities*
- *Fish and game clubs*
- *Lake associations*
- *Stewardship Councils*
- *Non-governmental organizations (NGOs)*
- *Youth groups such as Scouts or Girl Guides*
- *Universities, colleges, and other educational institutions*

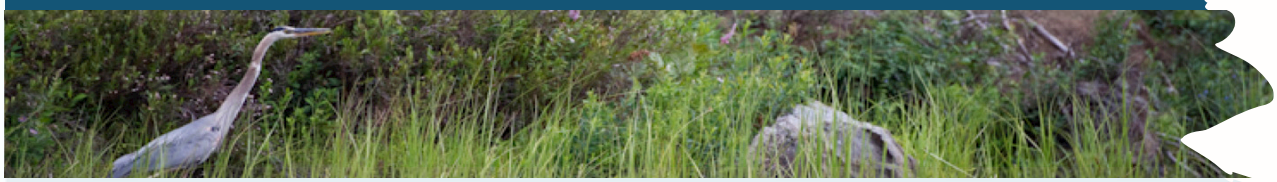
Engaging with these groups will strengthen your project and may make you eligible for certain grants. These partners are also key in providing volunteers, funding, and other support, including spreading the word about your project.

Communicate Your Project Success

After your project is complete:

- *Thank and recognize all project partners and contributors*
- *Inform your stakeholders of the project's success*
- *Keep in touch with groups interested in the project's long-term results*

Also consider sending a media release to local news agencies to gain greater coverage of your project's success.



IMPLEMENTATION

Order Material and Equipment

Order material and reserve equipment well in advance of implementing the project to ensure availability.

Stockpile Cut Brush

Locate a suitable property to stockpile and assemble brush into brush piles, and obtain the landowner's permission. Consider if the cut brush can be easily loaded and transported to a boat ramp, where it would be loaded onto a boat.

Construct Brush Piles

Unless you're using old Christmas trees, you will first need to construct brush piles.

What you'll need:

- *8-12 volunteers*
- *Cut brush*
- *Nylon rope (about 60 feet per brush pile)*
- *Skid steer or loader to lift brush from a large pile (optional)*

Step 1: Place three pieces of 20-foot nylon rope on the ground, about three feet apart. You want one piece of rope at each end of the brush pile, and one in the middle.

Step 2: Lay the brush on top of the rope. Brush piles should be about 10-15 feet long, 3-4 feet wide, and 3-4 feet high.

Step 3: Tie the ropes around the brush pile (one at each end and one in the centre). This can be done easily by tying a loop at one end of the rope and then inserting the other end of the rope through the loop and winching it tight.

TIP

Make the brush piles small enough that they can be lifted by two or three people. Try lifting one of your first brush pile before constructing more.

Figure 4: Tying together a brush pile.

Step 4: Cut off any excess rope from the ends of the brush pile; the centre rope should be left long enough to tie 2-4 cement blocks as an anchor (about 10 feet).

Transport Brush Piles

Once brush piles are constructed, they must be transported to each site.

What you'll need:

- *Required permits*
- *8-12 volunteers*
- *Brush piles*
- *Cement blocks*
- *Nylon rope*
- *Trailers*
- *Skid steer or loader (optional if brush piles can be lifted manually)*
- *Barge or pontoon boat*

Step 1: Load brush piles onto the trailer and transport them to the boat ramp.

Step 2: Unload brush piles from the trailer and load them onto the barge or pontoon. If you are moving the brush piles manually, rather than with a loader, station 2-3 volunteers at the trailer and 2-3 volunteers in the boat. You will be able to load 3-4 brush piles into the boat, depending on its size.

Figure 5: Using a skit steer to load a brush pile onto a trailer.

TIP

Ensure adequate water depth at the boat ramp for loading the brush onto the boat.

Figure 6: Transporting the brush piles to the boat ramp and onto the boat.

Step 3: Load 2-3 cement blocks and 4-6 feet of rope per brush pile onto the boat.

Deposit Brush Piles

You will need at least three volunteers on the boat in addition to the driver to lift and deposit the brush piles. All volunteers should wear life preservers while on the water.

What you'll need:

- *Required permits*
- *Brush piles*
- *Cement blocks*
- *GPS device*
- *Map*
- *Rope*
- *Depth sounder*
- *Life preservers*
- *Barge or pontoon boat*

Step 1: Drive the boat to a suitable brush pile site.

Step 2: Measure the water depth with the depth sounder. Waters must be at least 12 feet deep.

TIP

Select sites with a variety of water depths to ensure that new brush piles will remain as viable fish habitat even if water levels fluctuate.

Step 3: Tie 2-3 cement blocks to each brush pile, using the extra rope left from tying the brush pile together.

Step 4: Deposit the brush pile and attached anchor at the selected site. Use at least 2-3 people to lift the brush pile.

Step 5: Record the GPS coordinates of the site and mark its location on your map.

Figure 7: Tying an anchor to a brush pile and depositing it into the lake.

Evaluate Success

Returning to your in-water brush pile sites and recording changes every few years will demonstrate whether the brush piles have been effective in providing healthy fish habitat.

What you'll need:

- *Underwater camera*
- *Angler reports*

Step 1: Use the underwater camera to document the fish and wildlife that use the brush piles. Record the fish species, age class (young or adults), and approximate numbers.

Step 2: Record any other species using the habitat, such as turtles, frogs, snakes, snails, or invertebrates.

Step 3: Record the plant life and whether there are new types of aquatic vegetation in the surrounding area. Be aware of invasive species in the area and record whether any of the new vegetation is considered invasive. If you do spot an invasive species, report it to *Ontario's Invading Species Awareness Program*.

Step 4: Conduct an angling survey adjacent to the brush piles and record the date, time of day, time spent fishing, fish caught, and the fish species found nearby; they are likely using the new habitat.

Conclusion

Congratulations!

You've completed your fish habitat enhancement project.

For additional support, consult the Resources section below and watch Lanark County Stewardship Council's video demonstrating this type of project (available to watch at *NatureInDeed.com*).

Resources

Government

Conservation Ontario
Protects and manages water and other natural resourcesin partnership with government, landowners, and other organizations.
905-895-0716
info@conservationontario.ca
Conservation-Ontario.on.ca

Department of Fisheries and Oceans
Provides information and permits regulating fish habitat.
DFO-MPO.gc.ca

Ontario Ministry of the Environment and Climate Change (MOECC)
Responsible for protecting air, land and water. Contact for water quality, algal blooms, and air and water pollution.
Ontario.ca/Ministry-Environment-and-Climate-Change

Ontario Ministry of Natural Resources and Forestry
Responsible for fish and wildlife populations, Species at Risk, invasive species, nuisance wildlife, forestry, Crown land, shore lands, aggregates, and resources.
1-800-667-1940
Ontario.ca/MNRF

Parks Canada
Water levels, permits for docks, fill, and construction along federal canals.
PC.gc.ca

Transport Canada
Responsible for enforcing the Navigation Protection Act. Contact for permits and information on docks, floating rafts or other structures that could infringe on navigable waters.
613-990-2309; 1-866-995-9737 (toll free)
questions@tc.gc.ca; TC.gc.ca

Ontario's Invading Species Awareness Program
Provides information and resources about invasive species in Ontario.
1-800-563-7711
InvadingSpecies.com

Funding

Canadian Environmental Grantmakers' Network
CEGN.org

Charity Village
CharityVillage.com

The Green Source Funding Database
EC.gc.ca/Financement-Funding

Snowmobiling and Ice Safety

HydroOne.com; RedCross.ca
LifeSavingSociety.com; WildernessSafetySystems.com

Other Useful Contacts

Ducks Unlimited Canada (DUC)
Provides programs and services for the conservation of wetlands.
1-800-665-DUCK (3825)
Ducks.ca

Federation of Ontario Cottagers' Association
Serves as an information centre, providing assistance and leadership to Ontario's cottage associations and their members.
705-749-FOCA (3622)
info@foca.on.ca
FOCA.on.ca

Lanark County Stewardship Council
Volunteer-led non-profit organization with experience in fish habitat restoration projects and other environmental protection and restoration initiatives.
info@lanarkstewardshipcouncil.ca
LanarkStewardshipCouncil.ca

Ontario Federation of Anglers & Hunters (OFAH)
Provides anglers and hunters with information and resources.
705-748-6324
ofah@ofah.org
OFAH.org

Watersheds Canada
Works with landowners, communities, and organizations to protect lakes and rivers by developing effective, transferable, long-term solutions.
613-264-1244
info@watersheds.ca
Watersheds.ca

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