

Best practices  
and regulations  
for your  
**artificial ponds**



OWNERS OF ARTIFICIAL PONDS, BE INFORMED!



Version anglaise disponible sur le site Internet <https://obvbm.org> | English version available on the website <https://obvbm.org>

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Cover photo: Brome Lake Conservation

## Q What is an artificial pond?

A shallow body of water with no hydrological connection to a river or lake, resulting from human action, that is used for recreational, aesthetic and/or wildlife purposes (agricultural, irrigation and fire ponds are excluded in this document). The Ministry of the Environment (MELCCFP) specifies: “[...] whose lowest level is less than two meters and if vegetation is present, it comprises floating or submerged plants and emergent plants covering less than 25% of the surface area of the pond”. (Art. 4 Regulation respecting activities in wetlands, bodies of water and sensitive areas. MELCCFP)

## Q What are the regulations\*?

\*This guide does not include agricultural ponds, irrigation ponds or fire ponds.

**A Caution: Before proceeding with the construction and maintenance of an artificial pond, please inform yourself of the regulations in effect and the mandatory permits, both at the municipal and provincial levels and with your MRC. ATTENTION: The regulations are different for ponds and artificial lakes.**

A pond is a wetland subject to the Environment Quality Act. Activities planned in wetlands or water areas may be subject to authorization under the Act respecting the conservation and development of wildlife and to ministerial authorization under the Environment Quality Act (EQA).

### GET INFORMED

Laws and regulations wetlands and bodies of water:  
<https://www.environnement.gouv.qc.ca/eau/rives/lois-reglements.htm>

Regulation on activities in wetlands, bodies of water and sensitive areas:  
<https://mddefp.gouv.qc.ca/eau/milieux-humides/reglement-activites-mhhs.htm>



Photo: OBVBM

The current regulations concerning riparian buffers vary from one municipality to another.

## As a homeowner, YOU have the power to act!

Ponds have significant impacts on groundwater quality, surface water quality and the water table. Ponds that are poorly constructed and maintained can have negative impacts on wildlife, plants and the entire ecosystem of the area.

### DO YOUR OWN SELF-DIAGNOSIS!

My pond is healthy:

- Clear and fresh water
- Well oxygenated water

- Little organic matter
- Balanced ecosystem of animal and plant species

My pond is in poor health:

- Filamentous algae and/or cyanobacteria blooms
- More than 50% of the surface area is covered by invasive aquatic plants

- Cloudy water
- Siltation and decrease in water depth
- Few plant and animal species

### IS YOUR POND IN POOR HEALTH?

- Improving riparian buffers helps limit the warming of water and sources of pollutant inputs into the pond.
- Learn about best practices (see page 9 of this guide) and follow the expert recommendations to use the right technique and comply with current regulations.



Municipality of Austin



Municipality of Austin

## Q What are the positive impacts of properly managing your pond?

A Artificial ponds provide important habitat for many plant and animal species (iris, turtles, birds, etc.).

### A well-vegetated riparian buffer and a gentle slope:

- Stabilize the shoreline and prevent erosion
- Help cool the water temperature by providing shade
- Prevent algae and aquatic plant growth by absorbing nitrogen and phosphorus inputs
- Keep water clear by slowing down sedimentation
- Filter pollutants through the roots and slow down runoff
- Reduce the intensity of floods and the risk of flooding
- Limit the phenomenon of eutrophication or the accelerated aging of your pond
- Supports fauna and flora, protects biodiversity

Native aquatic plants\*, which occupy less than 50% of the pond's surface:

- Compete with cyanobacteria for nutrients and therefore prevent the proliferation of harmful algae
- Help maintain the sediment on the bottom of the pond
- Cool the water temperature and increase its oxygen concentration
- Provide a habitat for wildlife

\*Plants that grow naturally in a given area without human intervention.



Photo: Painted turtles, OBVBM



OBVBM



Photo: American Toads, OBVBM



Photo: Iris versicolore, OBVBM

## Q What are the impacts of poor management of your pond?

A The lack of a riparian buffer or a poorly vegetated shoreline can lead to negative consequences:

- Erosion and increased input of sediment and suspended solids including phosphorus
- Growth of algae and aquatic plants (in excessive quantities)
- Presence of cyanobacteria that degrade water quality
- Cloudy water and loss of oxygen
- Warming of the water
- Premature aging of your pond
- Degradation of water quality (including groundwater), health risks and lower property values
- Decrease in biodiversity

—  
Grass does not provide an adequate barrier for water quality protection.  
—



Photo: Lack of riparian buffers, Brome Lake Conservation



Photo: Cyanobacteria, ACBVLB

**A** By introducing invasive alien species (IAS) (aquatic plants, aquarium goldfish, etc.), the impacts are:

- > Contamination of the pond, decrease in the presence of essential native plants and local wildlife
- > Disruption of ecosystems when IAS spread outside the pond. They are virtually impossible to eliminate.

**Did you know that?**

It is forbidden to introduce invasive exotic animal or plant species into a pond.

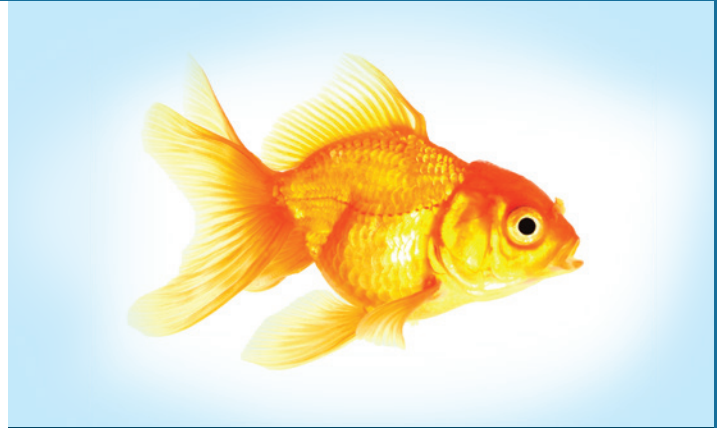


Photo: Goldfish, Depositphotos

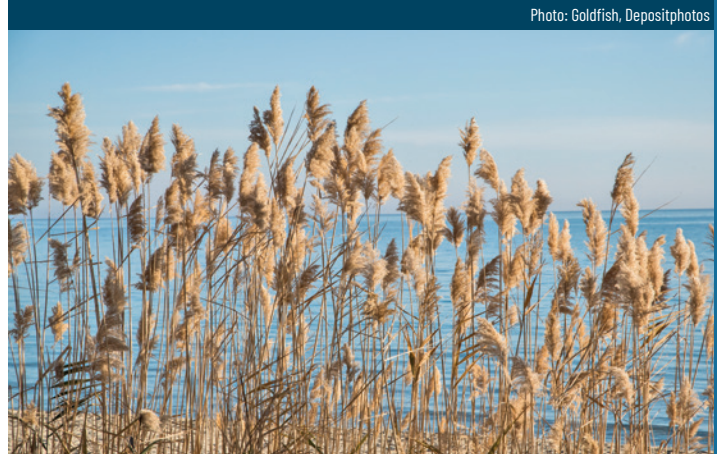
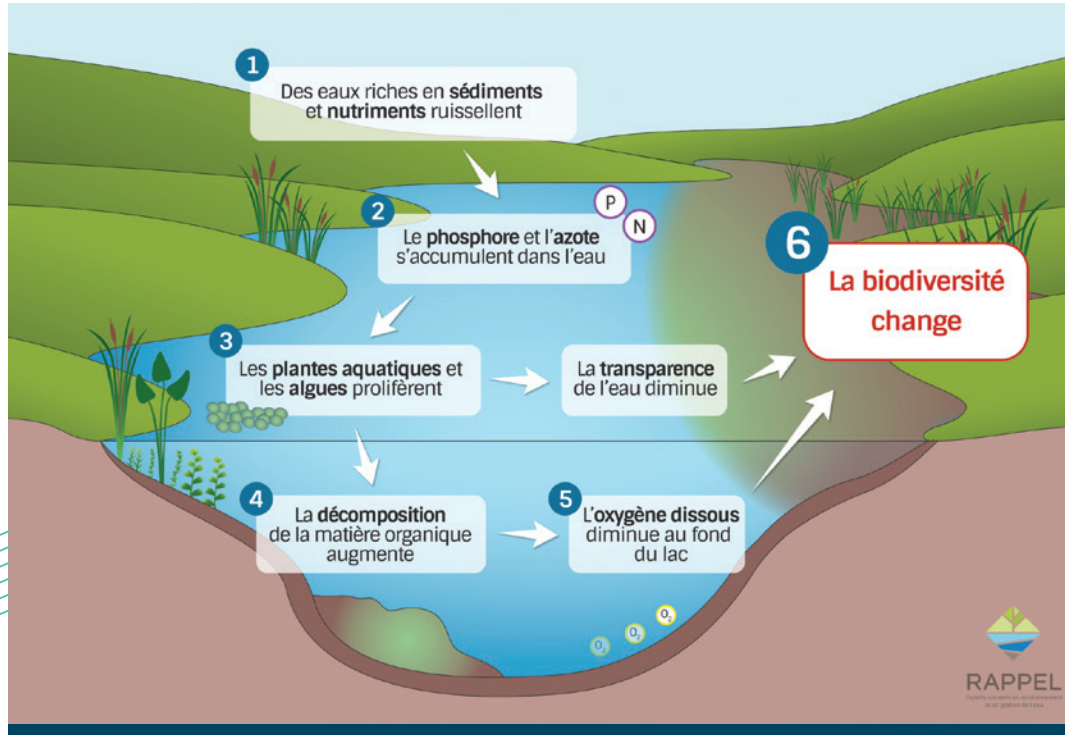


Photo: Common reed, Depositphotos

## Premature aging of your pond!





## Q What are good practices for a healthy pond?

### A Healthy riparian buffer = good water quality:

- Leave enough vegetation to limit erosion. Check with your municipality for regulations!
- Replace the rocks and gravel of your shoreline with a vegetated strip.
- Make sure you have all three layers of vegetation: herbaceous, shrubby and tree-like. This will help reduce the warming of the water.
- Diversify the environment by having native trees in the outer riparian strip on the west, south and east sides (excellent cover, shade, and bird habitat).
- Let nature take its course, even local and natural plant growth will provide ecological benefit to the ecosystem.
- Choose plants that are native to your area.



Photo: Vegetated riparian buffer strips, ACBVLB

### Other good practices in your pond:

- Maintain a mixed community of submerged, floating, and emergent native aquatic plants (list provided in document). The ideal ratio is 50% emergent and floating vegetation and 50% open water, including submerged vegetation (Fondation de la Faune du Québec, 1996).
- Do not add algaecides (unnecessary and harmful) and herbicides.
- Do not use manures and fertilizers near the pond. This is a sure way to limit the input of nutrients that promote the growth of unwanted algae.
- Do not introduce any invasive exotic animal or plant species. Prevention is the key to success!
- Avoid stocking your pond with fish, as this will alter the balance of the pond.
- Do not feed ducks or geese (droppings = nutrients).



Be careful not to introduce invasive exotic plants

Emptying the pond (dredging) is not recommended. It is a last resort technique that, when poorly executed, causes many negative impacts on downstream water quality.

## Q Which native plants for my riparian buffer?

A Ideally, plant species should be selected based on the climate of the area, the level of sunlight and the soil type (references provided at the end of the guide).

**A TIP** Observe the species already naturally present in the area.

### Herbaceous stratum:

Harlequin blue flag iris (*Iris versicolor*), Spotted Joe Pye weed (*Eupatorium maculatum*) or ferns (*Matteuccia struthiopteris*, *Thelypteris phegopteris*, *Adiantum pedatum*), etc.

### Shrub stratum:

Upper bank: Narrow-leaved blueberry (*Vaccinium angustifolium*), Red raspberry (*Rubus idaeus*), broad-leaved Spirea (*Spiraea alba* var. *latifolia*), etc.

Bank footing: Black-fruited Aronia (*Aronia melanocarpa*), Balsam Fir (*Myrica gale*), Palustrine Rose (*Rosa palustris*), etc.

### Tree stratum:

Yellow birch (*Betula alleghaniensis*), Fragile willow (*Salix fragilis*), American lime (*Tilia americana*), etc.

Note that softwoods are not recommended for pond edges (poor decomposition of thorns).



Photo: Black locust, Depositphotos



Photo: Spirea, Depositphotos



Photo: Eupatorium, Depositphotos



Photo: Fragile willow, Depositphotos

## Q What native aquatic plants for my pond?

A Aquatic plants are not algae. They are essential to the health of the pond because they oxygenate the water, capture nutrients and provide habitat for wildlife.

### PLEASE NOTE

Naturally aquatic plants will grow in your pond.

### TO WATCH

Aquatic plants should not occupy more than 50% of the pond surface (including submerged plants).



### SOME AQUATIC PLANTS FOR YOUR POND:

#### Emergent:

Scented water lily (*Nymphaea odorata*), Small yellow water lily (*Nuphar microphylla*), Cattail (*Typha* sp.), etc.

#### Floating:

Schreber's Brasenia (*Brasenia schreberi*), Callitriche (*Callitriche hermaphroditica*), Littering Heteranthera (*Heteranthera dubia*), etc.

#### Submerged and filtering:

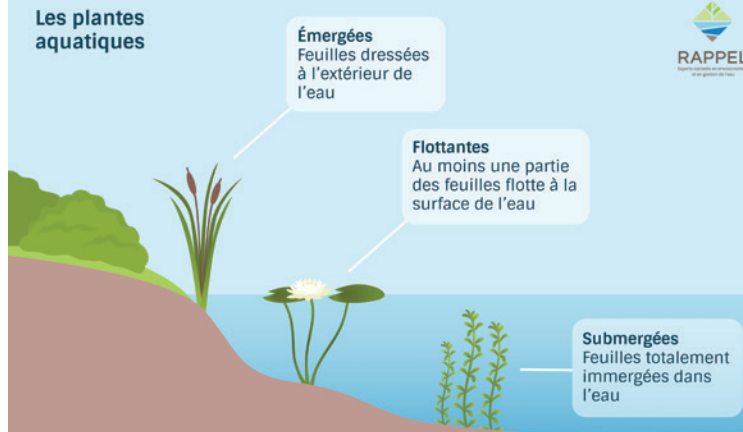
Canada elodea (*Elodea canadensis*), Isoetes (*Isoete* sp.), Dortmann's lobelia (*Lobelia dortmanna*), etc.

### Les plantes aquatiques

**Émergées**  
Feuilles dressées à l'extérieur de l'eau

**Flottantes**  
Au moins une partie des feuilles flotte à la surface de l'eau

**Submergées**  
Feuilles totalement immergées dans l'eau



## DO YOU HAVE INVASIVE AQUATIC PLANTS?

- Early intervention is necessary to have a chance to control or eradicate the invasive alien species.
- Different techniques exist to control or eliminate the species (pulling up, tarping, etc.). These methods can vary depending on the characteristics of the pond and the species of plant.
- It is important to consult with environmental professionals before acting in order to use the right technique and to comply with the current regulations.

## EXAMPLES OF INVASIVE EXOTIC AQUATIC PLANTS



Photo: Water hyacinth, Pixabay



Photo: Eurasian water milfoil, OBVBM



Photo: False water lily, Depositphoto

## Q You have questions, contact:

- A
- 1 - Your municipality!
  - 2 - Organisme de bassin versant de la baie Missisquoi (OBVBM)  
at [info@obvbm.org](mailto:info@obvbm.org)

### ADDITIONAL RESOURCES\*

- Information on how to vegetate your shoreline:  
<http://banderiveraine.org>
- Lists of recommended plant species for your riparian buffer strip:
  - <https://rappe1.qc.ca/fiches-informatives/vegetaux-adaptes-a-la-rive>
  - <http://vegetaux.fihq.com>
- Identification of invasive alien aquatic plants:
  - <https://www.environnement.gouv.qc.ca/eau/paee>
  - <https://rappe1.qc.ca/fiches-informatives/especes-exotiques-envahissantes>
- Before intervening in a wetland, get informed!  
<https://www.environnement.gouv.qc.ca/eau/rives/entrepreneur/index.htm>
- Your lakes and rivers, a collective wealth to be preserved:  
<https://www.environnement.gouv.qc.ca/eau/rives/riche1se/index.htm>

\*Complete bibliography on request



Photo: Conservation lac Brome



Photo: Conservation lac Brome



