

## Managing a Pond for Wildlife

There are a number of things you can do to maximize the habitat potential of a pond, no matter what its size. A pond's attractiveness to wildlife is largely dependent upon the number and variety of aquatic and shoreline plants surrounding it. While you may be familiar with planting trees, shrubs, or flowers on your property to attract wildlife, planting a pond requires special consideration and generally presents even experienced gardeners with unique challenges.

### Create a Balanced Pond Ecology

A pond's natural aging process, known as succession, refers to the transition from open water to marsh and, ultimately, upland that slowly occurs over many years. Nutrients introduced into a waterway can greatly accelerate plant growth, speed natural succession, and create an unhealthy pond ecosystem.

A combination of sunlight, warm temperatures, and phosphorous promotes plant growth. If nutrient-rich surface water drains directly into water bodies, excessive growth of aquatic plants and algae is stimulated. The resulting murky-green water is not only unattractive, but too much algae depletes the oxygen in the water, adversely affecting fish and other aquatic creatures. Unfortunately, the perception that all pond vegetation is unwanted often results.

Aquatic plants play an important role in the health of a pond and have many positive attributes such as producing oxygen to aerate the water and supplying food for aquatic organisms. They also provide shelter and a spawning medium for fish and freshwater invertebrates. Plants provide nesting sites and food for water fowl as well as filter pollutants and nutrients. In addition to these things, plants provide aesthetic appeal.

### Eliminating Nutrient Loading

To create a balanced pond ecology, it is essential to eliminate nutrient loading to ponds. A careful review of maintenance practices is a good place to start. Spring fertilization programs are a common culprit of pond problems since these nutrient applications coincide with warmer temperatures and increasing sunlight. Several simple practices can help to minimize runoff.

- ❑ **Buffers:** Vegetation such as taller grasses, emergent plants, and shrubs serve as effective buffers, and they provide additional value as food and cover sources for wildlife. A vegetative buffer surrounding all sides of the pond would provide the best nutrient filter. A filter, such as a swale, around the receiving edge of the pond will intercept surface flow and help to reduce the nutrient load.
- ❑ **No-Spray Zones:** Designating a zone around the pond in which no chemicals will be used eliminates runoff from the immediate surrounding area and decreases drift that may enter the water.



*Birds and mammals rely on ponds to drink, bathe, and cool off, while numerous species of fish, salamanders, frogs, and aquatic insects live or fulfill vital aspects of their life cycle in the water. If you have a pond on your property or are thinking about installing one, consider turning it into a haven for wildlife.*

- ❑ **Slow-Release Fertilizers:** These products have less potential for leaching since they release fertilizers more slowly.
- ❑ **Floating Plants:** Plants such as water lilies can be installed to shade the water surface, thus reducing sunlight and water temperature. The leaves of a single, mature water lily can cover an area of eight square feet or more. Small-leaved species can be used in smaller pools. Planting overhanging vegetation along pond margins can have the same effect.
- ❑ **Aerators:** The amount of oxygen in the water can be increased by using oxygenating plants such as water celery and coontail or by installing oxygen diffusers or waterfalls which aerate the water. This promotes healthy fish populations which will feed on algae and insect larvae and help control mosquitoes.
- ❑ **Filters:** Pond filters rid the water of algae and debris, thus promoting a cleaner pond environment.



*The leaf of a water lily not only reduces the amount of penetrable sunlight in a pond resulting in lower water temperatures, but numerous aquatic insects also utilize the leaf to lay their eggs.*

### Enhancing a Pond

Depending on the size and planned usage of the pond, different ways can be used to enhance a pond for aesthetic value as well as for wildlife. Planting in small portions will allow you to get a feel for what you want in and around your pond.

- ❑ **Existing Vegetation:** Take stock of the existing plants in and around your pond. This will give you valuable information about what types of plants seem to grow well. In some cases, you may choose to expand existing natural areas or add to their diversity by introducing different types of shoreline plants.
- ❑ **Sunlight and Water Depth:** Use a yardstick to measure the depth to the bottom along the edge of the pond. Also note how many hours of sun the pond receives each day. Knowing this information will help you to decide what plants will grow best in and around the pond. For example, many aquatic plants, including pond lilies, prefer full sun, while others, such as tall scouring-rush, can tolerate shade. Aquatic plants are also adapted to survive at varying water depths. Emergent plants, including arrowheads, bulrushes, and rice cutgrass need to be planted in the water to survive. Others prefer to be along the edge of the pond and can only tolerate moist soil, not inundation.



*Where upland shorelines cannot be naturalized, planting aquatic vegetation in shallow areas can greatly enhance a pond for wildlife.*

- ❑ **Wildlife Value and Aesthetics:** Other factors to consider when choosing aquatic plants include their wildlife and aesthetics value. While certain plants provide both food and cover, many offer only one or the other. Choosing native plants with a high wildlife value will help you to attract the greatest diversity of species. At the same time, you may also want to choose a few plants simply for their aesthetic value. For example, blue flag iris and marsh marigold offer limited food and cover, but a small clump can provide beautiful ornamental interest along the shoreline of your pond.
- ❑ **Rocks and Logs:** Adding rocks and logs provides islands and shallow water areas. These will be used for protection and nesting sites by small creatures and serve as basking sites for turtles. Sinking a tree can provide shelter for fish.

## Controlling Aquatic Plants

Sometimes plants can become too numerous or invasive species take over the natural plant-life. Eliminating nutrient loading will help prevent this, but if it has happened there are many ways to control plants.

- ❑ **Physical Removal:** The least harmful of methods is to manually or mechanically remove unwanted plants. Many rooted aquatic plants can be pulled while floating plants and algae can be raked or skimmed off. Physical removal has the added benefit of “harvesting” nutrients from the pond.
- ❑ **Bottom Barriers:** Plastic, rubber, or fiberglass can be used to inhibit or prevent rooted growth in selected areas.
- ❑ **Shading:** Floating vegetation, overhanging plants, shrubs, and trees, and/or artificial structures can be used to shade out aquatic plant growth. Soluble dyes have little effect on shallow ponds as they do not prevent the sunlight from reaching the bottom.
- ❑ **Drawdown/Dredging:** Periodic lowering of water levels will expose bottom sediments and allow some plants to be dried out, frozen, and/or removed.
- ❑ **Biological Controls:** Fish such as grass carp or white amur can be introduced to eat certain plant material. Insects such as moth larvae or weevils can be used to selectively eat water hyacinth and alligator weed. Introduction of pathogens such as bacteria, viruses, fungi, or other micro-organisms has been used. These methods should be restricted to water features that are not connected to other water bodies.
- ❑ **Chemical Controls:** There are many chemical products on the market and are the most common strategy for controlling plants. However, chemical management often treats the symptom and not the cause of weed and algae problems. Chemicals can do more damage than good, compound the problem, and harm desired plants and animals. Chemical controls should be a last resort and great care should be taken in their application.
- ❑ **Controlled or Prescribed Burns:** Controlled burns can kill or set back certain invasive species that do not tolerate fire, but burning is only effective if done a few years in a row for many species. Otherwise, it could result in invasives returning with more vigor. Burning is a dangerous activity that requires planning, coordination, equipment, and trained personnel, and should not be taken lightly. More information on burning can be found at:
  - ❑ <http://wiki.bugwood.org/Invasipedia>
  - ❑ <http://www.invasive.org/gist/control.html>
  - ❑ <http://www.imapinvasives.org/GIST/ESA/index.html>



*Manual removal of algae and aquatic weeds helps to remove nutrients from the pond.*



*The effectiveness of control burns depends on the targeted species, fuel type, and associated risks.*

### Enhancement for Water Birds

Loss and destruction of water bird habitat is a critical problem facing water bird populations. Pollution and development in wetland areas has had severe consequences for many species of wading birds. Protecting breeding and critical migration habitat must be a priority for ensuring water bird survival. In the course of managing a pond, some steps already mentioned, such as providing plants for food and cover, help to ensure habitat for water birds. The following are some special concerns:



*Turtles use rocks or fallen tree limbs to bask in the sun.*

- ❑ A pond or marsh created for water birds should have a gentle slope and water depth of no greater than 18" deep. Most birds can't feed in water of greater depth. Ponds with steep banks also inhibit vegetative growth that provides nesting areas and food.
- ❑ Keep the water level of a pond stable to encourage the growth of aquatic vegetation.
- ❑ Fence edges of ponds with sensitive nesting areas or vegetation to keep people from trampling these valuable habitats.
- ❑ Do not let ponds or marshes be drained for repair or other purposes during important migration times (early winter) or the breeding season (spring).
- ❑ Provide resting sites for water birds, such as bare spots on the shore, floating logs, rafts, or islands.