

AQUAGUIDE

MISSOURI DEPARTMENT OF CONSERVATION



Turn Your Pond into an Aquatic Briar Patch



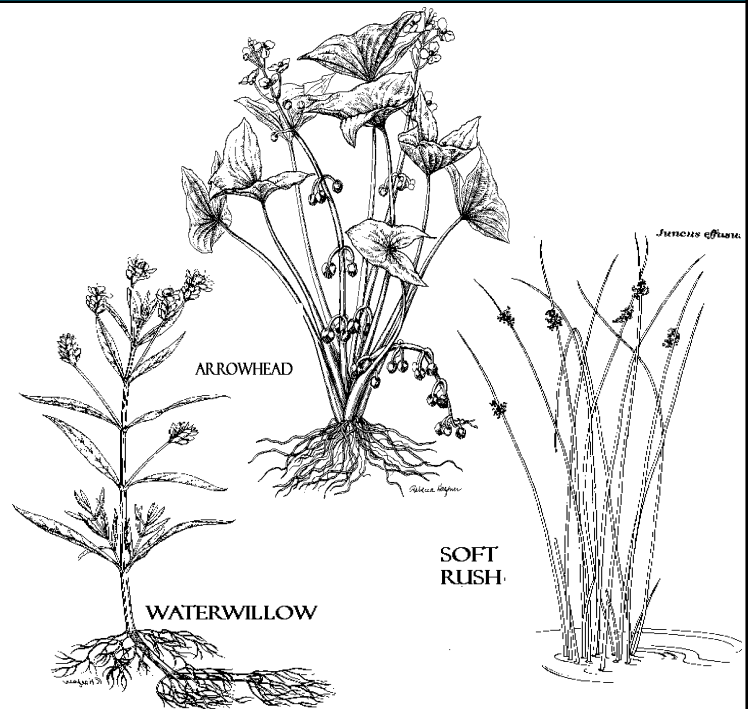
When Br'er Rabbit begged Br'er Fox not to throw him into the briar patch, he knew what he was doing. Br'er Rabbit knew that once he got into the briar patch he would have everything he needed to live and be safe from just about anything.

Most landowners who try to increase wildlife numbers on their property know that food, cover and water are the keys to success. These same people often overlook these keys when it comes to managing their farm ponds and lakes for good fishing.

For ponds, the water part is easy if the pond bottom and dam are watertight. But too many people stop there, failing to recognize the need to plan for fish food and cover in their pond. Because food and cover are so closely related in aquatic habitats, providing cover generally increases fish food production.

There are two main types of aquatic cover. Aquatic plants are the first. Hard cover such as logs, brush or large rocks are the second. Aquatic plants are not only a necessary part of the lake environment but also are highly desirable. Many are attractive and improve the aesthetics of a pond or lake. Their role is important since only plants can convert solar energy into stored chemical energy for use by animals. In fact, production values as high as 21,000 pounds per acre per year have been reported for some aquatic plants. Most insects used as food by fishes are herbivores - plant eaters - and require coarse organic matter for food. These insects feed directly on aquatic plants or on the microscopic plant and animal communities attached to plant surfaces.

Nearly all fishes use aquatic insects as major food items sometime during their life cycle. This makes it important to have an abundant supply for good fish



growth. Luckily all that is needed is to provide the water and the cover and the insects will quickly make themselves at home.

Aquatic plants also serve as escape cover for young fish and help prevent over-harvest of forage fishes (usually bluegill) by predator fishes (usually bass). Aquatic plants ensure that some forage fishes can grow large enough to produce young and thus maintain a sufficient food supply for predator fish.

Ponds without adequate aquatic plant cover often develop a fish population composed of many small, slow-growing bass and a few large adult bluegill. In this situation, the few bluegill just can't produce enough young to satisfy the appetites of all the hungry bass. Most of the young bluegill that are produced are eaten as fry before they grow large enough to promote growth in adult bass.

Aquatic plants help stabilize pond banks and

shorelines, reducing wind and wave erosion. Severe erosion can muddy the water and greatly reduce productivity and fish growth. Emergent plants, like reeds and other shoreline plants provide important foods and nesting areas for waterfowl and shorebirds. Bullfrogs like them also, as aquatic plants attract many insects.

Planning Plant Communities

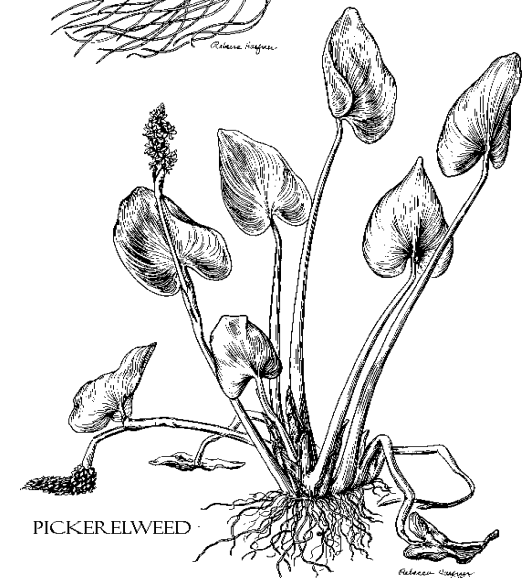
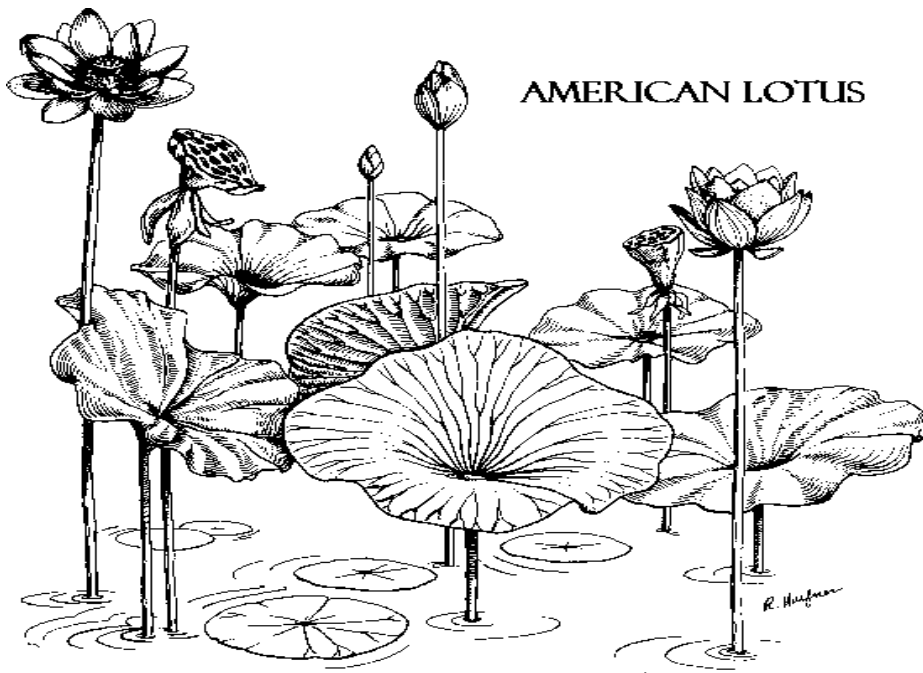
Good aquatic plant management is no accident; it must be planned before pond construction begins. Some aquatic plants will grow in almost any pond. The problem is that not all kinds of plants are desirable. Some plants grow in dense stands that can completely choke a small pond. Too much cover is as detrimental to good fish management as too little. Small fish are protected from predation and become so numerous they cannot get enough to eat to continue to grow.

A rule of thumb is that about 10 to 20 percent of the surface area of a pond should have aquatic plant cover. The best approach is to have the plants interspersed with open water areas, rather than all in one spot. Maintaining such interspersed cover will require active participation on the part of the owner and may involve annual thinning or planting of aquatic plants.

The best time to plan for plants is during pond construction. Since plants become established in shallow

waters most easily, the pond bottom in shallow areas should be sculpted with benches (high and low spots) to provide areas which either encourage or discourage plant growth. Aquatic plants must have sunlight to grow and to be productive. The deeper the water, the fewer the aquatic plants which receive enough sunlight.

Imagine a checkerboard with alternating red and black squares. The red squares represent deep water to discourage plants and the black squares represent shallow water to encourage plants. This is called plant interspersion. Plant interspersion has proven far more effective at producing desirable habitat than large full beds. It has open water for the angler and other predators but still provides plenty of cover and food for the forage fish. For even more diversity, sunken islands can be built in the middle of a pond. Such an area of shallow water with plant growth is an ideal fish attractor.



Artificial Habitat Structures (Hard cover)

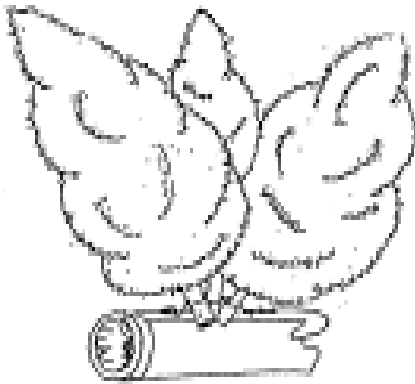
Materials other than plants can be used to provide resting areas, shade and escape cover for fishes. These materials also serve as fish attractors. Brush piles constructed with green cedar trees are probably the best known and the most often constructed, but other trees or brush can be used if cedars are not available. All woody material should be weighted individually with rocks and sunk, or several branches or trees may be anchored together with concrete blocks.

Many other materials are suitable for making fish attractors: clean rubble, cement blocks and clay tiles or pipe. Possibly the best attractor is comprised of a combination of several materials which provide both loosely packed and dense cover. The location of the attractor is very important, but water depth is the single most important factor. Points of land which extend out into the water and then drop off rapidly into deeper water are good sites. Coves or other areas sheltered from the wind are also excellent sites. For detailed construction and placement instruction see the Aquaguide, Fishing in a Barrel.

In small ponds, the area of deep water near the dam is an excellent spot for fish attractors. If your pond has a submerged creek channel a structure placed on the edge of it will usually produce good results. Attractors should be placed in water so that the top is not more than four to six feet under water. The grouping of attractors is important; groups of three arranged in a triangular design seem to attract more fish than three scattered single units.

Just like Br'er Rabbit's briar patch, aquatic cover plays an important role by providing food and shelter for fish.

EVERGREEN BUNDLE



BRUSH BUNDLE



TEEPEE OR PYRAMID

Some plants are more desirable than others in fishing lakes. An easy way to decide which will be beneficial in your pond is to refer to Water Plants for Missouri Ponds. All the plants found in it can be found in Missouri or can be purchased from commercial suppliers. Remember, too much of anything can be bad. If you have problems with too much aquatic plant cover, the Department has Aquaguides available on control measures. These may be obtained by contacting department personnel at:

Department of Conservation - Fisheries Division

P.O. Box 180

Jefferson City 65102-0180

You will also find them posted on the World Wide Web at:

www.conservation.state.mo.us

For immediate assistance they may be requested by telephone at, 573/751-4115.

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