



*Vegetated littoral zones improve water quality and can be attractive features.*

# Littorally Speaking

Littoral zones play an important role in the health of lakes and ponds

BY TODD LOWE

Lakes and ponds are important features on golf courses. In addition to providing strategic value on golf holes, lakes enhance golf course aesthetics and create habitats for wildlife. Some might feel that a green, grassy lake bank that slopes down to a clear body of water is the ideal standard. Some may feel that

aquatic plants create a “dirty” look along a shoreline and make it difficult to find lost balls. However, aquatic plants can be an important component of water bodies, and certain aquatic plant species should be encouraged.

While some golf course ponds are natural, many are man-made impoundments that are designed to capture

and treat runoff from surrounding communities. Stormwater ponds help filter pollutants like heavy metals from automobiles, salts, fecal matter from animals, and sediments from entering the local watershed. The littoral zone of a lake is the shallow area nearest the shore where enough sunlight penetrates the water to provide aquatic

plants with adequate light for photosynthesis. Generally speaking, littoral zones are only a few feet deep and extend several feet from shore, but they play an important role in the long-term health of a lake or pond and its water quality (see [A Beginner's Guide to Water Management](#)).

The littoral zone is the most biologically active area of a lake. Aquatic plants growing in littoral shelves provide food for fish and waterfowl as well as create living spaces for insects, snails, and amphibians. As a result, vegetated littoral zones become foraging areas for wading birds and fish. Additionally, some birds — like red-winged blackbirds — make their nests in emergent plants within littoral zones.

Additionally, vegetated littoral zones improve the chemical processes that take place within lakes. Plants in littoral zones can slow and filter runoff water while reducing erosion, which decreases the amount of pollutants that enter a lake. Aquatic plants also remove nutrients from water, which can reduce the likelihood and severity of algal blooms. Vegetated littoral zones also stabilize sediments, helping to improve water clarity. Furthermore, aquatic plants provide a physical barrier along shorelines that helps protect banks from waves and currents that may cause bank erosion.

There are different types of aquatic plants that inhabit littoral zones. Emergent plants, like pickerelweed, establish in the shallow water along the water's edge. Rooted floating plants, like water lily, root underwater but have vegetation that floats on the water surface. Submersed plants, like coontail, are generally located in the lower littoral zone and root in lake sediments with most of their vegetation submersed underwater.

Establishment of aquatic plants can take place naturally or via transplantation from other areas. Some landscape contractors specialize in aquatic plants and can recommend a variety of native plants that grow well in your location. Start small and plant in areas that receive less play to minimize lost balls and any negative effect on pace of play. Establish different species of aquatic plants to identify those that



*Signs educate golfers on the importance of littoral zones and may help improve their acceptance.*



*Vegetated littoral zones provide habitat and cover for a variety of wildlife.*



*Some aquatic plants must be aggressively thinned or removed to maintain good aesthetics.*

provide the most desirable qualities. Some plants, like bulrushes, can grow quite tall and disrupt views of a lake. Others, like cannas, produce beautiful flowers at times but also must be pruned each year to remove dead leaves and maintain aesthetics.

Not all aquatic plants are desirable, and aquatic weed management can be difficult in littoral zones. It is important to educate aquatic management contractors and spray technicians on the difference between aquatic weeds and desirable plants to avoid killing desirable plants. However, even desirable species can become overgrown and may require occasional thinning through physical removal or herbicide treatments.

Water level affects aquatic plant establishment and growth. Deep lakes with steep littoral shelves do not support as many aquatic plants as shallow lakes with gradual littoral shelves. However, littoral zones can be graded to increase width or soften slopes to improve the environment for aquatic plants. Also, fluctuating water tables, which can either expose or submerge plants in littoral areas for prolonged periods, can cause problems for certain aquatic plants. Some emergent plants — like pickerelweed, duck potato, golden canna, spikerush and blueflag iris — are more tolerant of fluctuating water tables (see [Florida-Friendly Plants for Stormwater Pond Shorelines](#)).

Like all things, communication is a key factor in golfer acceptance of vegetated littoral zones. It may seem to some as if the maintenance staff is not maintaining lake banks properly by encouraging vegetated littoral zones, but educating golfers on the important role littoral zones play in the health of lakes and the surrounding watershed should significantly improve your success. In addition to newsletters and blogs, signage in several key areas might be necessary to spread the word.

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