

WHAT IS A BUFFER?

Placed between turfgrass and a body of water, a buffer can significantly reduce nutrient and sediment runoff.

by JEAN MACKAY

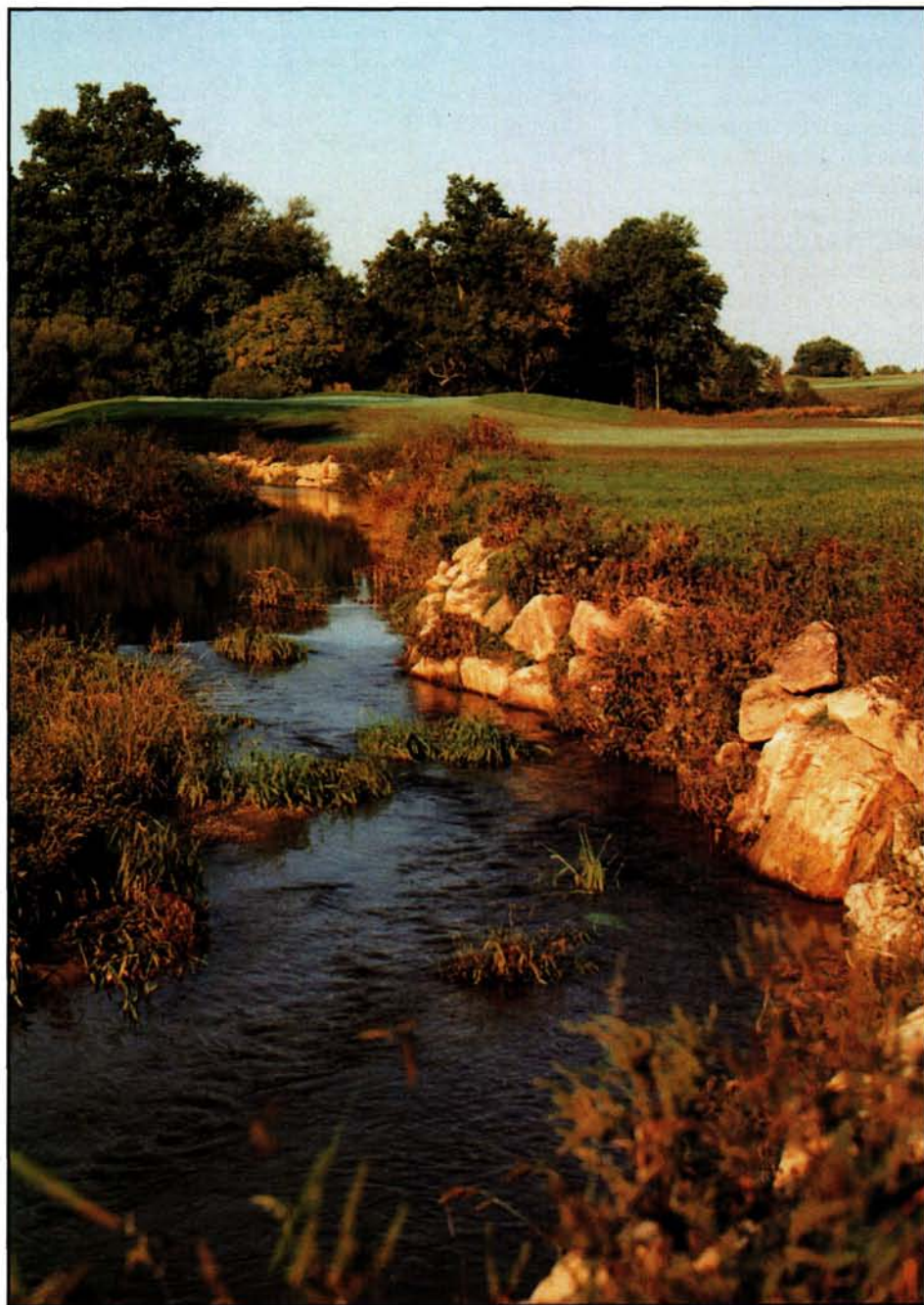
MAINTAINING good water quality is a prominent environmental concern for golf courses. The Audubon Cooperative Sanctuary Program and many regional best management practice (BMP) guidelines routinely recommend that superintendents maintain a *vegetated buffer* around water bodies. On sites where fertilizers and pesticides are routinely used, these buffers are an important way to protect water quality, as well as provide habitat for aquatic creatures. "But what, exactly, is a buffer?" people often ask.

A vegetated buffer is an area around the edge of a water body specifically maintained with plants that reduce storm water flow and potential pollution from runoff. A buffer may be made up primarily of turfgrass, or include a combination of grasses, herbaceous (non-woody) plants, and shrubs. The plants in a vegetated buffer absorb nutrients, trap sediments, reduce erosion, and slow down water as it moves from the land into a pond, lake, or stream.

One type of effective vegetated buffer, often referred to as a *vegetated filter strip*, is turfgrass mown at a height of three inches, or as high as possible for the particular turfgrass species. In research trials, such filter strips, maintained at widths between 15 feet and 30 feet, reduced nutrient runoff from adjacent areas by 90% to 99%, respectively. Sediment removal rates are generally greater than 70% (USEPA, 1993).

Choosing What's Best for Your Site

In the field, the best height, width, and overall size of a vegetated buffer



A combination of turfgrass and taller vegetation provides an effective natural buffer along this stream bank at Honeybrook Golf Club (Honey Brook, Pa.). Such management practices have become increasingly accepted at many golf courses.

depend on several factors: slope, type of vegetation, playability, and potential pollution from maintenance practices, including chemical applications.

Many golf courses are able to maintain a full buffer all the way around a pond or stream bank. For sites where this is not feasible, golf courses combine partial vegetated buffers with specialized management zones, such as no-spray zones or limited-spray zones that may involve spot treatment of disease and weed problems. The proper

use of slow-release or natural organic fertilizers or spoon-feeding also reduces the potential for chemical runoff into water sources.

Because of the Audubon Cooperative Sanctuary Program's focus on both water quality and wildlife habitat, we also recommend that golf courses add emergent and shoreline plants *other than turfgrass* around water bodies where practical. Taller emergent vegetation, such as arrowhead, pickerelweed, sedges, and bulrushes, help



Cattails and yarrow provide an extended and dense buffer for this lake on Hole #9 at Haymaker Golf Course (Steamboat Springs, Colo.). Buffering water bodies filters storm water runoff and provides wildlife habitat. Haymaker G.C. is a certified Signature course in the Audubon Signature Program.



To protect water quality, Blue Hills Country Club (Kansas City, Mo.) maintains a higher mowing height around water features and widened no-spray zones to 25 feet. Blue Hills C.C. is fully certified in the Audubon Cooperative Sanctuary Program for Golf Courses.

oxygenate the water and provide food and shelter for a great variety of wildlife.

This type of naturalization alters both the aesthetics and wildlife value of streams, lakes, and ponds. On golf courses, it also may affect playability, or at least the perception of playability, and therefore must be undertaken with careful consideration. Where taller plants cannot be added, a turfgrass buffer remains a valuable management strategy.

Sources

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