

Streamside Management

Streams are an important part of fish and wildlife habitat, and more so than simply as a source of water. The vegetation associated with streams is equally important because it determines how beneficial the stream actually is for many animals. Strips of trees, shrubs, and other plant life along streams that are retained for environmental benefits are known as streamside management zones (Figure 1). These zones are vital because their fertile soils produce rich plant and animal life. For example, wood ducks and waterthrushes rely on insects and plants found primarily around streams and other wet areas. The number of wildlife species like these, and how much they use an area, directly depends on the food and cover the plants offer. Streamside vegetation also casts shade so that temperature and oxygen levels are properly maintained for fish and other aquatic life. Another reason streamside management zones are important is that they directly impact water quality by filtering out soil runoff, pesticides and fertilizer. In many situations, protection of streamside areas can even help landowners retain more of their bottomland property; some farmers see their bottomlands continually slumping into rivers or streambeds because of the lack of soil-stabilizing vegetation.



Figure 1. Streamside Management Zone adjacent to pasture and cropland.

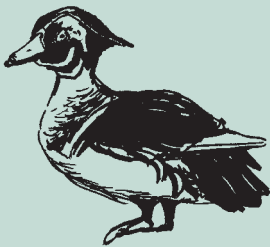
Trees, shrubs and grasses along stream-sides stabilize soils, provide wildlife habitat, and protect water quality.

Establishment

There are many options in streamside management. However, all of them include the maintenance or creation of adequate vegetation. Although any width of woody or grassy vegetation is better than none at all, providing at least 15 feet of permanent vegetation on a stream's sides should be a minimum goal for even the smallest streams (see Table 1). Ideally, streamside management zones of at least 150 feet on each side of a stream or river should be maintained. Where adequate tree or shrub cover is already

Table 1. Widths of streamside management zones (SMZ) and associated benefits, with grass border widths recommended for each zone width.

SMZ Width	Benefits
15 feet	Stabilizing streambanks, reducing algae
25 feet	Stabilizing streambanks, water quality, some wildlife habitat
50 feet	Stabilizing streambanks, water quality, wildlife & fish habitat
100-150 feet	Stabilizing streambanks, water quality, wildlife & fish habitat, some timber production



Wildlife and fish species such as the wood duck, the prothonotary warbler, and the rainbow trout depend on vegetation along streams and rivers for suitable habitat.



present along a stream, it can simply be preserved or perhaps enhanced. For help with streams that have severe erosion problems you should consult your county Natural Resources Conservation Service office, the Kentucky Division of Water, or your regional Kentucky Department of Fish and Wildlife Resources Wildlife Division office.

Trees are the best type of vegetation to establish and/or maintain on the 15-100 feet of ground directly adjacent to each side of streams. If you are planting trees, use species that are suited to the soil type and water conditions present. Planted tree seedlings should be spaced 10-12 feet apart (or about 500 trees per acre). In flood-prone bottomland areas, use tree species such as swamp white oak, swamp chestnut oak, pin oak, Shumard oak, bald cypress, pecan, shellbark hickory, and green ash. For streambanks that are not normally flooded, select from species such as white ash, white oak, northern red oak, cherrybark oak, shagbark hickory, tulip poplar, persimmon, American sycamore, and American beech. Shrubs such as elderberry, viburnum, and dogwoods can be planted also, but they usually volunteer anyway.

Natural revegetation, or simply allowing a streamside to grow up in volunteer trees, is a viable option in many situations. However, you have less control over the species of trees that will grow up in the streamside management zone and it may take longer to get the desired

results. Typically, light-seeded tree and shrub species such as elms, maples, sycamore and ash grow up in a naturally revegetated area during the first several years.

Establishing of a zone of grasses and forbs (desirable broadleaf plants) between the zone of woody vegetation and crop, hay, or pasture fields is highly beneficial. A field border of native warm-season grasses or beneficial cool-season grasses (see figure 2) would increase the nutrient and sediment filtration effectiveness of the zone, while also providing grassland cover to wildlife in the area. When planting grasses, do not use tall fescue. Fescue is poor wildlife cover, plus its invasiveness limits other plants that are more beneficial to wildlife.

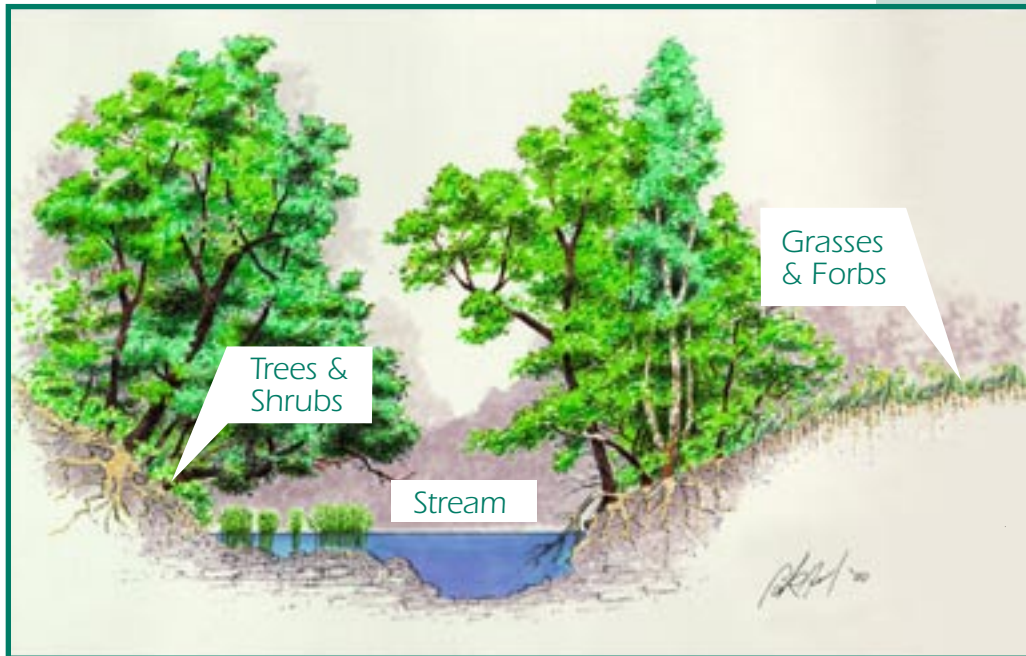


Figure 2. Diagram of a streamside management zone with a field border of grasses and forbs.

Management

The most important thing a landowner can do for a streamside area is to protect it. Protecting stable streamside zones are much less expensive than correcting severe erosion problems and restoring degraded streams. Where a pasture field borders a streamside protection zone, cattle should be excluded from the streamside zone by fencing. Developing upland water sources such as ponds and stock tanks for cattle is recommended. When cattle have unrestricted access to streams they destroy beneficial streamside vegetation, causing banks to become unstable and erode. Livestock manure also reduces water quality



Trees such as oaks, ashes and bald cypress are excellent choices for planting along streamsides.



State and federal programs are available to share your costs for establishment of beneficial vegetation adjacent to streamsides, as well as sinkholes and wetlands.

SUMMARY OF OPTIONS:

Zone Widths:

15 feet, 25 feet, 50 feet,
100-150 feet

Zone Types:

Trees and shrubs, grasses
and forbs

Methods of Establishment:

Natural regeneration,
planting, etc.

Management:

Fencing, timber
stand improvement, etc.

(for example, high *E. coli* bacteria levels in the water supply) if access to streams is not limited. Unfortunately, on many farms streams are the only water sources for cattle. In those cases fencing can be used to provide limited access points to stream water supplies.

Some landowners may wish to remove a few trees, or perform “timber stand improvement,” on the wooded portion of their streamside protection zones. This may be beneficial in some situations, provided that a sufficient number of favored trees are left. Consult with a wildlife biologist or forester before thinning along a streamside.

Placement of nesting boxes would be a welcome addition to any streamside area with the right cover type. Some wildlife species that use properly constructed nesting boxes in this setting include wood ducks, prothonotary warblers, great-crested flycatchers, and eastern phoebes. Another enhancement for streamside zones would be the addition of brush piles for cover. Given the opportunity to thrive, the natural or planted permanent vegetation along a streamside will provide numerous benefits to wildlife, fish, water, and soil.

Planning For My Property



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Related *Habitat How-To* references:

[Brush Piles](#)

[Natural Revegetation](#)

[Buffers](#)

[Nesting Structures](#)

[Field Borders & Filter Strips](#)

[Planting Trees & Shrubs](#)

[Grazing & Haying](#)

[Timber Stand Improvement](#)