

STREAM CORRIDOR MANAGEMENT:

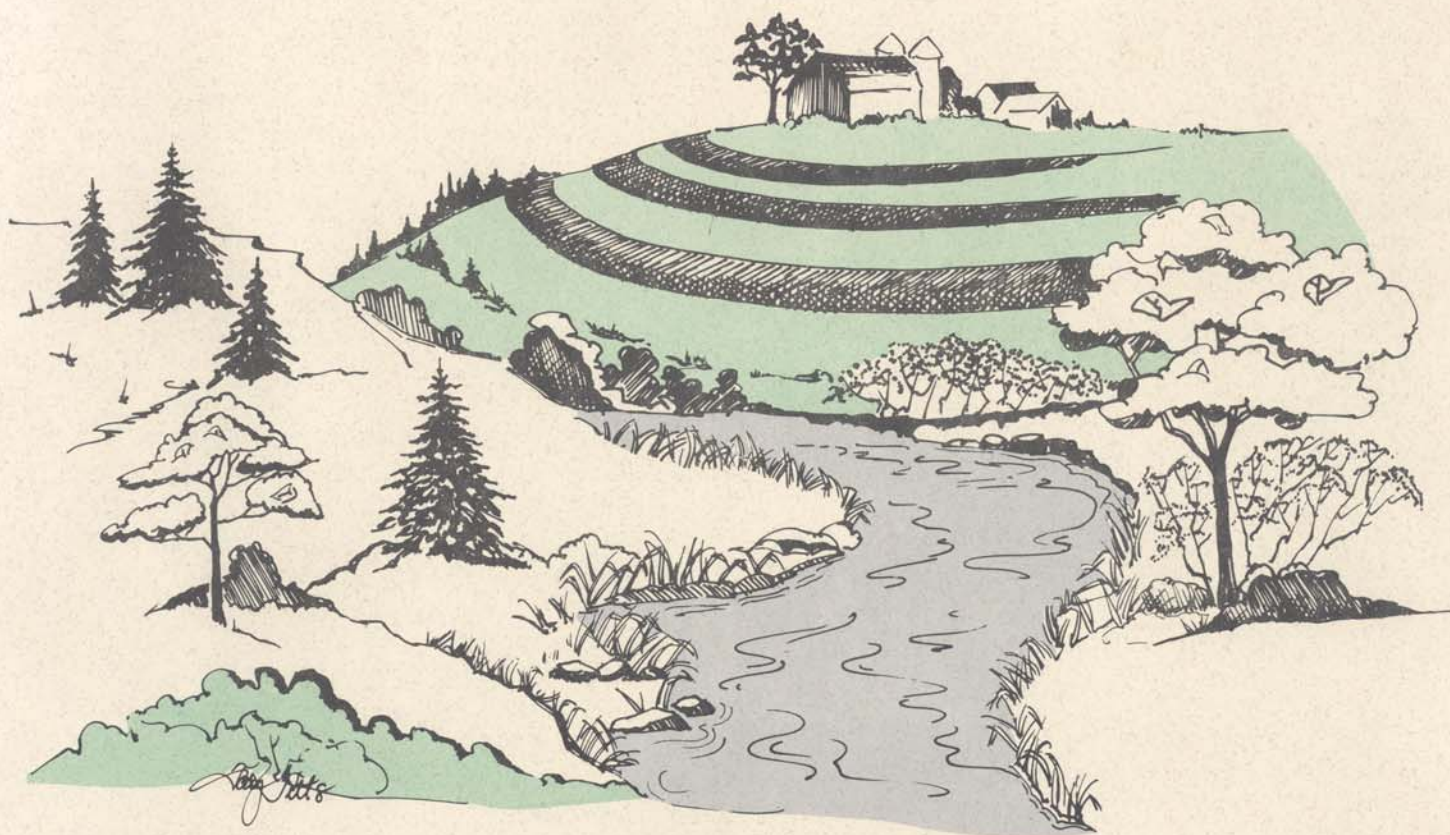
GUIDELINES FOR RURAL LANDOWNERS

A SERIES OF FACT SHEETS ON REGIONAL PLANNING ISSUES

Perhaps no part of the rural landscape offers more variety and valuable functions than the natural areas bordering our streams.

These unique stream "corridor" lands help filter pollutants from runoff, lessen downstream flooding, and maintain stream base flows. They also provide a variety of recreational opportunities and habitat for fish and wildlife with their rich ecological diversity. No matter how small a stream may be, these corridor lands are important to the environment.

Along many of our streams, however, the corridors no longer fulfill their potential due to the encroachment of agriculture and suburban development. This fact sheet describes common problems encountered in rural stream corridors, and the many benefits realized when these areas are voluntarily protected. It also explains what rural landowners can do to capitalize on waterfront opportunities, and some of the programs available to help. While the focus is on stream corridors, the ideas presented here may also apply to areas bordering lakes, ponds, and wetlands.



IMPACTS OF FARMING

It is usually true that rural streams are in better shape than urban streams. Yet the picture is far from rosy, as agriculture can have a great impact on stream corridors.

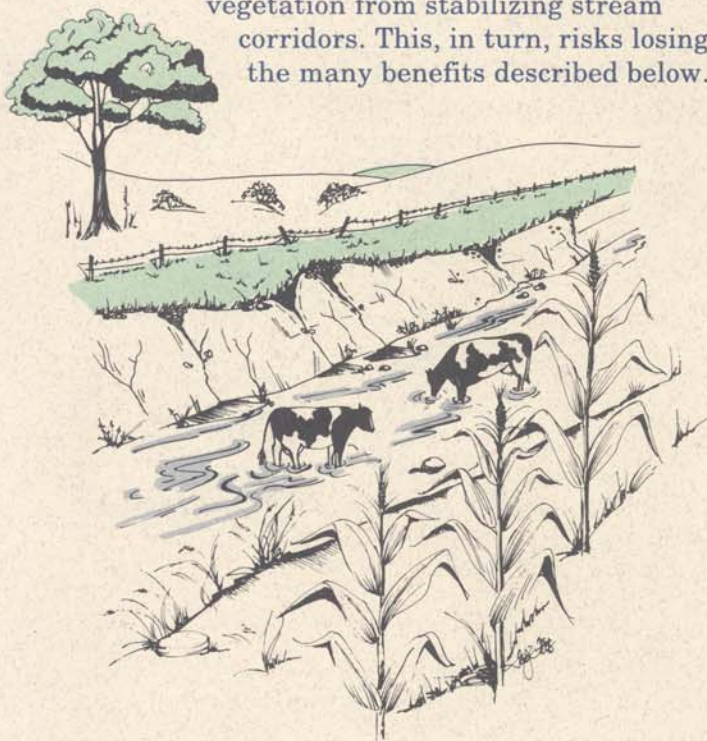
Two major farming activities in particular can create problems for healthy waterways:

- Planting row crops close to stream banks
- Allowing livestock unrestricted access to streams

Planting row crops exposes the soil to the erosive forces of rain, wind, and floodwaters. When a field is located close to a stream, this often increases the amount of sediment, chemical fertilizers, and pesticides that enter the water. If manure or other organic wastes are applied to fields, these could become additional pollution problems, especially during spring runoff periods.

Livestock concentrations in stream corridors can expose banks and adjacent lands to soil erosion, damage fish habitat, and directly pollute the water with wastes.

Both cropping too close and unrestricted livestock access prevent natural vegetation from stabilizing stream corridors. This, in turn, risks losing the many benefits described below.



WATER QUALITY CONNECTIONS

A natural stream corridor can protect the physical characteristics of a stream while improving its water quality. And clean, clear water is more aesthetic and an asset to property value.

A wide strip of vegetation prevents soil erosion in shorelands and can help stabilize weakened banks—two of the sediment sources otherwise most likely to pollute a stream. If the vegetation is thick and grassy, it can also filter out eroded soil and other pollutants carried by the runoff water from adjacent croplands. Heavy rains or snow melt periods can pose the greatest risks for bare stream sides.

Permanent stream corridor vegetation, on the other hand, allows more water to soak into the soil. Further filtering then occurs and the groundwater is recharged. As the groundwater later seeps slowly toward the stream, it helps reduce flash flooding (compared to rapid runoff) while maintaining flows during dry periods. When the inevitable flooding does occur, natural stream corridors help minimize some damages by retarding the flow. This helps settle out some of the sediment and other pollutants carried by floodwaters.

EFFECTS ON THE FISHERY

Many people, young and old, enjoy fishing, including rural landowners and their families. So, having quality fishing opportunities in a nearby stream corridor is a real plus.

But excessive sediment and animal wastes in streams will severely stress the fish community. Sediment smothers food sources and spawning areas, and causes abrasions on gills, leading to disease problems. "Muddy" water also makes it harder for surviving fish to find food.

Nutrients in animal wastes and attached to sediment can create nuisance weed and algae growth in streams. Since the decomposition of animal wastes and dying plants robs the water of life-giving oxygen, pollution tolerant species such as carp are favored. The carp, in turn, disturb bottom sediments, making the water murky much of the time. Game fish already hampered by lower oxygen levels are then dealt another blow—trouble seeing/pursuing young carp and other prey. Thus a "vicious cycle" is set in motion.

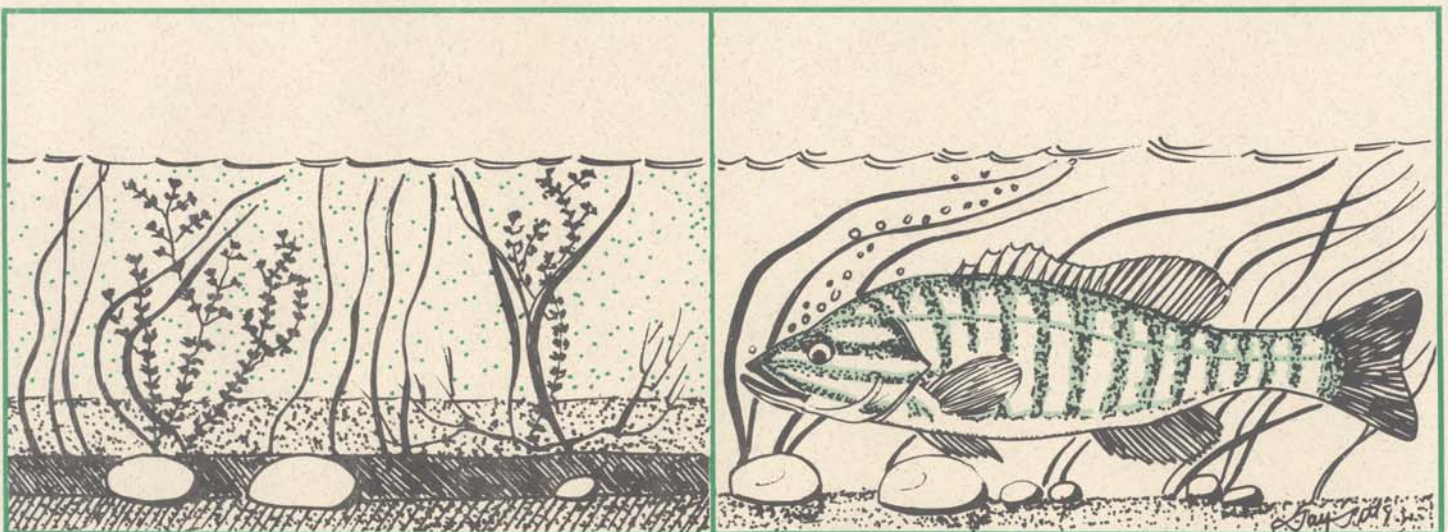
Wisconsin case studies have shown that game fish populations increase dramatically after stream corridors are protected from cattle access, manure runoff, and row cropping. Stable stream banks and reduced sedimentation often allow a

stream to recover by itself, becoming desirably deeper and narrower.

Pools and shallow rocky areas are flushed clean of accumulated silt during spring flows. The natural "pool and riffle" pattern that develops between stream meanders favors diverse aquatic life and healthy fish populations.

The rock and gravel bottom is home to aquatic insects, which provide food for fish. These insects also help clean the stream by eating organic matter, such as leaves, that fall into the water. Gravelly areas may produce good spawning beds for Walleye migrating from lakes, and habitat for Smallmouth Bass and minnows. Deeper pools offer shelter for larger game fish including Northern Pike, while protected upstream wetlands are vital for spawning.

Shrubs and overhanging grasses on stable stream banks provide additional cover, and harbor some of the insects that fish eat. The shade created especially by trees helps reduce summer water temperatures, which benefits most types of game fish. Trout, in fact, require cold water and cannot survive in just any stream. But where the potential exists, good stream corridor management boasts among the best success stories in restoring and improving trout populations.



THE ATTRACTION FOR WILDLIFE

As a transition between moist lowlands and drier uplands, natural stream corridors often contain diverse plants and “habitat conditions”—the combination of food, water, and shelter that wildlife need.

Waterfowl will frequent stream corridors and nest in the natural cover. Kingfishers, herons, and other fish-eating birds will take advantage of the healthy fishery. Fox, mink, and other smaller mammals often live or feed along banks and back-water areas. Turtles, frogs, and salamanders also populate shorelines and provide an important food source for other animals.

Deer will bed down in the thicker cover. Hawks and owls monitor such areas for their next meal of rabbit or mice. Game birds, including pheasant, grouse, and quail, often thrive along natural stream corridors. Songbirds and butterflies enjoy the tall grasses, wild flowers, and fruits of shrubs and trees.

Hunters know that stocking game is a very short-term objective unless the landscape is suitable for survival and reproduction. And few areas have more wildlife potential than stream corridors. Even so, wildlife use will increase if a stream corridor is linked to other natural areas. A tree line or hedge row running to a woods sometimes serves this purpose.



Farmers can help benefit wildlife, while reducing soil erosion, by not plowing under crop residues in fields adjacent to stream corridors. Leaving drainageways and headlands in permanent cover are other good practices. Rural landowners of all types can help through native plantings in the corridor—or even putting up nesting boxes and/or brush piles.

A SPECIAL TYPE OF STREAM CORRIDOR

“Environmental Corridor” is gaining widespread recognition as a term for the most important of our remaining natural resource areas. Often, these occur along streams and lakes where agriculture or urban development has not eliminated the natural vegetation or landscape. Primary environmental corridors, especially, have regional importance and should be protected at great lengths. A good example of their definition was originally advanced, and has been used for decades, by the Southeastern Wisconsin Regional Planning Commission: a minimum size of 400 acres, 200 feet in width, and 2 miles in length. This means that primary environmental corridors do not conform to property boundaries. Many are already publicly owned or have portions protected from outright destruction through ordinances (see box on page 7). However, their condition and performance of valuable functions are still largely determined by the management decisions of landowners. If your property contains one of these “jewels” of the natural resource base, you are privileged and should protect it. For more information see “*Environmental Corridors in Southeastern Wisconsin*” in the “Plan on It” fact sheet series.

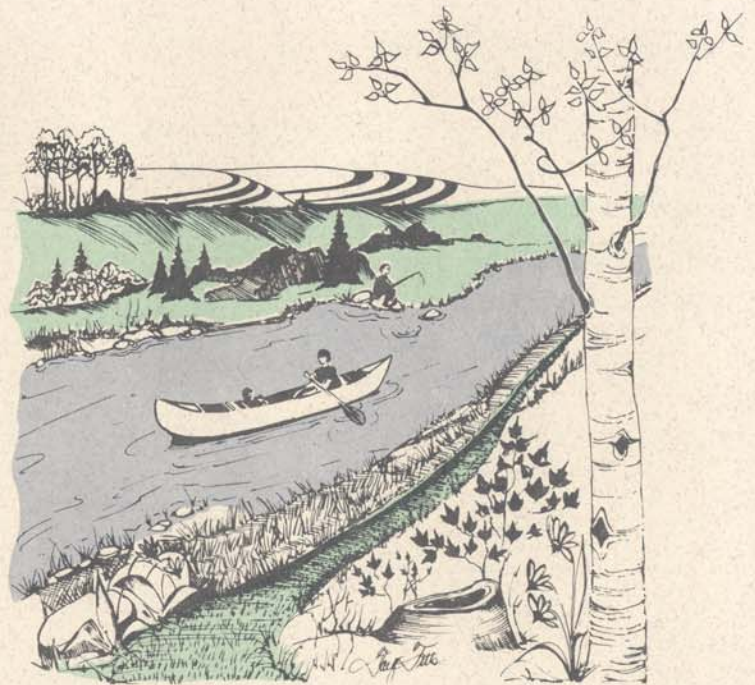
RECREATIONAL OPPORTUNITIES

Most people simply enjoy nature, especially with early experiences. A stream corridor is thus a natural playground and outdoor learning center for children and grandchildren.

When youth are out catching tadpoles or chasing butterflies, they are also learning more about their environment, and taking a healthy break from television or video games. Whether wading in small streams, or swimming, canoeing, or rafting in larger ones—cleaner water and a natural shoreline make all of these activities more enjoyable.

Improved fishing and hunting are obvious recreational benefits that natural stream corridors provide. However, they are certainly not the only ways to appreciate the thriving wildlife and natural setting.

The sight of a nesting bluebird, or a marsh hawk swooping in on its prey, can be a thrill for occasional and avid bird watchers alike. Similarly, a private hiking trail can offer even a casual fan of nature the chance to “get away from it all.” Armed with a camera, one might catch a close-up view of streamside wildlife or gain a new perspective on the changing seasons. During the winter months, a trail can be used for cross-county skiing or snowshoeing.



The recreational opportunities within a natural stream corridor are in some ways limited only by the imagination.¹

¹The Wisconsin Statutes (Section 895.52) protect landowners from possible liabilities associated with all types of recreational activities in a natural stream corridor—provided that information regarding unusual hazards is not knowingly withheld. For more information on Wisconsin's recreational use law, see UW-Extension publication G3326.

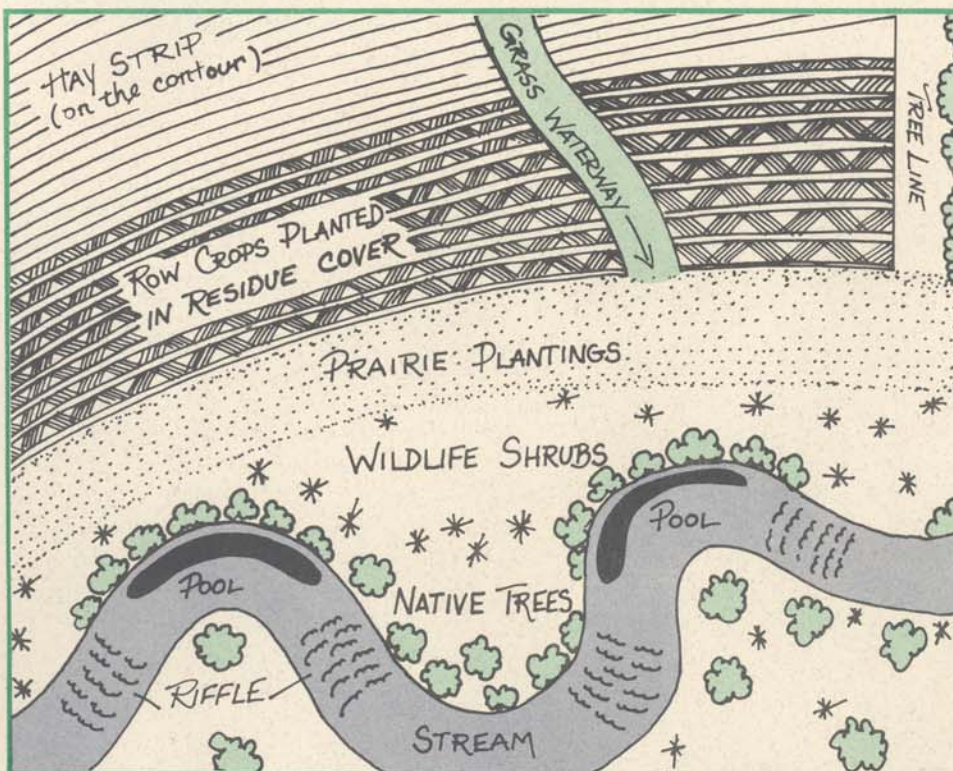
SIGNS OF THE TIMES

Few rural landowners would consciously harm stream corridors. Yet ignorance of the problem or good intentions alone are no longer enough. Gradual changes like cropping progressively closer, adding more animals, or converting from mechanical cultivators to herbicides, have taken a toll on our waters over time. Meanwhile, public sympathy for the challenge of farming has been fading. Fewer people are involved or have family connections, while remaining farms have grown bigger and more businesslike. Urbanites who have cleaned up discharges from industries and sewage treatment plants, and suburban residents valuing environmental quality, are now more critically observing farming practices. The parasite *Cryptosporidium*, with some ties to livestock wastes, is viewed as a threat to the provision of safe drinking water. Thus, stream corridors are a visible part of the rural landscape where the public will keep seeking changes (a State law excluding livestock from streams is regularly proposed). Fortunately, good management of stream corridors can also produce great results.

WHAT YOU CAN DO

As an owner of land that borders a stream or other water resource, you can help make a big difference for the local environment. If a natural corridor exists now, do what you can to protect it. If the stream corridor is presently degraded, there are some simple guidelines for you to consider:

- Mark off an area 50 to 100 feet wide between pastureland or cropland and the adjacent stream, lake, pond, or wetland. Look for logical boundaries, including sudden changes in slope or the chance to “even out” irregular fields.
- Fence out any livestock and don’t plant crops there. Often, this removes the most troublesome lands from active farming. Steep slopes toward the water pose hazards to livestock, while chronically wet or floodprone areas can mean harvest losses.
- Stabilize any erosion by establishing a permanent cover of vegetation as soon as possible. Native grasses and forbs are preferable, with a nurse crop sometimes helpful to get things going.
- Over time, try increasing diversity by planting native trees, shrubs, wild flowers, and grasses. Generally maintain a natural pattern and appearance, while enhancing the area for your enjoyment.



- Develop and follow a conservation plan for adjacent farmland. This will not only reduce sediment and other pollutants in runoff, but also preserve soil for the long-term productivity of your land.

PROGRAMS THAT CAN HELP FINANCIALLY

A number of conservation programs encourage natural stream corridors by providing financing, materials, or even free labor to rural landowners. Plus, the choice to participate is yours.

Opportunities that may be available through existing conservation programs are listed below. These will vary in each area, and with each farm and stream.

- Set-Aside Programs — take eroding or marginal lands out of production, so that they can heal. The Federal Conservation Reserve Program has offered a recent stream corridor (riparian) emphasis, paying cooperators rent for 10-15 years. Contact your county Farm Services Agency (FSA).
- Conservation Easements—lump sum payments for long-term preservation of natural corridors. These are offered through Wisconsin's Priority Watershed and Stewardship 2000 Programs and through some local conservation groups. Contact your county Land Conservation Department and ask for the UW-Extension publication entitled "*Conservation Easements*".
- County or Wisconsin Department of Natural Resources (WDNR) Tree Planting Programs—provide a low-cost source of native trees, shrubs, and sometimes prairie seed and/or planters. Contact your county Land Conservation or WDNR regional office.
- Cost Sharing—offering 50 to 70 percent funding for eligible seeding, tree planting, fencing, stream bank shaping, and other conservation work. Sources listed above, especially the State Priority Watershed Program plus the conservation programs administered by your county FSA office, have more information.
- Conservation, Civic, and Youth Groups—whose members often provide free labor for tree planting, fencing, seeding, shoreline cleanup, and other related activities. They also may have funding for materials, land purchases, or easements (local contacts vary).

ORDINANCE RESTRICTIONS

Some activities within stream corridors are already restricted by law. The streams themselves are waters of the State which may not be impounded or diverted and whose channel may not be altered without permit. The 100-year floodplain and the shoreland zone within 300 feet of a stream are regulated by ordinance in each Wisconsin county along with associated wetlands. A primary purpose is preventing nuisances and losses by limiting structures. However, limitations are also placed on filling, grading, ditching or diking, as well as on extensive tree removal. Also, any community or county may adopt an Agricultural Shoreland Management Ordinance restricting farming activities along streams. For example, no cropping would be allowed within 20 feet of the water—perhaps farther back where certain slopes or highly erodible soils exist. Other laws already prohibit substantial ongoing runoff pollution—often from animal lots—which may constitute an illegal discharge. Cost-sharing currently accompanies such regulations to assist farmers with compliance.

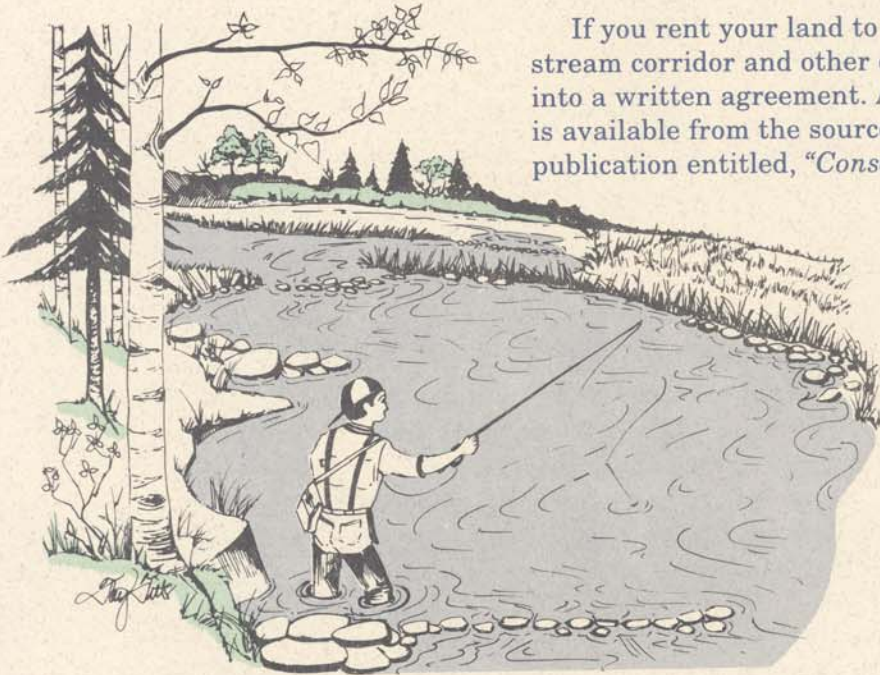
GETTING STARTED

The protection of a stream corridor is one of the best ways to demonstrate your commitment to a cleaner, healthier, environment.

The details on how to carry things out will of course vary, depending on site characteristics and the goals of each landowner. Technical assistance is readily available in most areas to help rural landowners who want to establish a natural stream corridor. Contact your county Land Conservation Department, USDA Natural Resources Conservation Service, or UW-Extension office for starters. Your local professionals there can also help answer questions you may have after reading this fact sheet.

If you rent your land to others for crop production, a natural stream corridor and other conservation practices can be worked into a written agreement. A sample conservation rental agreement is available from the sources noted above. Ask for the UW-Extension publication entitled, *"Conservation on Rented Land"*.

Above all, take time to think things through and have a conservation plan prepared for your land. Then take advantage of the many forms of assistance that are currently available and get started today toward tomorrow's healthier stream corridors.



"Plan on It" is a citizen fact sheet series produced by the University of Wisconsin-Extension in cooperation with the Southeastern Wisconsin Regional Planning Commission. Its purposes are to summarize and convey information, broaden avenues for public involvement, and serve as a general reference for matters of importance in planning. For questions regarding content or further information, please contact: Gary K. Korb, UW-Extension Regional Planning Educator, 916 North East Avenue, P. O. Box 1607, Waukesha, Wisconsin 53187-1607; Telephone (414) 547-6721, FAX (414) 547-1103 (5/96). This issue written by Gary K. Korb and Perry M. Lindquist, Washington County Conservationist. Illustration top of page 2 courtesy of the Natural Resources Conservation Service; all others by Fay L. Fitts, Kewaskum, Wisconsin.