LAND STEWARDSHIP PROJECT

LSP *Myth Buster* #29

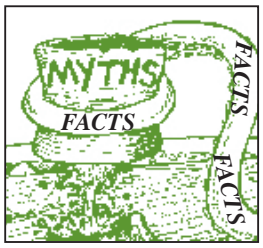
An ongoing Land Stewardship Project series on ag myths and ways of deflating them.

Updated: Jan. 2011

Myth: Producing clean water in rural areas will require taking the majority of our farmland out of production.

Fact:

Whenever people raise the concern that, for the sake of water quality, perhaps we've converted too much of our landscape to annual row crops which cover the soil just a few months out of the year, supporters of large-scale monocultural agriculture hit the panic button. They argue that any questioning of fencerow-to-fencerow planting is automatically a vote for returning our entire breadbasket to a vast expanse of prairies, trees and wetlands, dooming us all to choose environmental quality over filling our stomachs.



But a growing pile of research shows that farming practices that utilize perennial plant cover on just a small percentage of a watershed's landscape can produce major water quality benefits.

For example, a preliminary study in Iowa has shown that strategically planting just 10 to 20 percent of a crop field to strips of deep-rooted prairie grasses cut sediment loss by 95 percent. Measurements taken during the spring of 2008 showed the average loss during precipitation events from areas without prairie strips was 8.5 tons per acre. The areas with prairie plantings interspersed amongst corn averaged only a .5 ton-per-acre loss.

In western Minnesota's Chippewa River watershed, scientific studies and on-the-farm experience suggest that introducing more diverse cropping systems, pasture-based livestock production, small grains and forages into this intensely farmed region could result in dramatic reductions in water pollution. According to a modeling study done in the watershed a few years ago by the Multiple Benefits of Agriculture Project, which the Land Stewardship Project helped lead, sediment loading was cut almost in half when farms were diversified.

The study used modeling to predict what would happen to sediment loading in the Chippewa based on four land use scenarios. The scenarios ranged from extension of current farming trends in each watershed (Scenario A: fewer and larger farms, with increased acreage in row crops and the loss of small and medium-sized livestock farms) to conversion of some row crop acres to year-round permanent plant cover such as grass, hay and trees (Scenario D). Under this last scenario, land would be rotationally grazed for livestock production, diverse cropping rotations would be implemented to build soil quality, and prairies and wetlands would be restored.

By getting more perennial vegetation on the land in the form of grasses, hay crops and trees, water runoff was reduced as much as 35 percent in the watershed, according to the modeling study, which simulated land use activities over a 50-year period. That meant more water was percolating into the soil and less was rushing to the waterways, carrying soil and other contaminants along the way.

Overall, a more diverse agricultural landscape led to reductions in sediment loading of up to 49 percent in the Chippewa River. These land use changes also produced other water quality benefits such as reductions in nitrogen pollution. Keep in mind this diversification was done while retaining corn and soybeans as major parts of the planting mix.

There is a caveat, however: just placing soil-friendly plant cover anywhere in a watershed may not do the trick. In order to attain significant environmental benefits, such cover must be targeted at fields (steep slopes, adjacent to water, etc.) that are particularly sensitive to erosion and runoff. Using market incentives to target such areas is one of the things the recently launched Chippewa 10% Project is trying to do.

One other thing to keep in mind is that it's often those most vulnerable areas that are the least productive as far as row crops are concerned. That helps make them more attractive places for replacing corn and soybeans with perennials such as grasses—especially if those perennials can produce income via grass-fed livestock production or biomass fuel generation.

➔ *More information*

◆ For more on the Multiple Benefits of Agriculture initiative, see www.landstewardshipproject.org/programs_mba.html.

◆ To read more about Iowa State University's research on prairie strips, see www.leopold.iastate.edu and type in the search phrase "prairie strips."

◆ For more on the Chippewa 10% Project, see www.chippewa10.org or call Julia Ahlers Ness at 320-269-2105.

Myth Busters on the Internet

You can download pdf versions of *Myth Busters* at www.landstewardshipproject.org/resources-myth.htm. For paper copies, contact Brian DeVore at 612-722-6377 or bdevore@landstewardshipproject.org.

This **Myth Buster** *is brought to you by the members and staff of the Land Stewardship Project, a private, nonprofit organization devoted to fostering an ethic of stewardship for farmland and to seeing more successful farmers on the land raising crops and livestock. For more information, call 612-722-6377 or visit www.landstewardshipproject.org.*