## Lebanon Youth

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stone size) can be used by fish for spawning habitat.

The fishermen also were permitted a limited number of streambank plantings, mainly willows that were mainly planted in the bank at critical stress areas associated with the stream flow control devices.

In the intervening years, the stream bottom has filled in with sediment, and most of the devices in the former fishing stretch are gone or hidden.

Though the water quality is still considered good (limited stream water quality sampling was done showing low nitrogen and phosphorus), the stream bottom currently appears that it would not permit reproduction of fish such as trout. Previously it was considered to have some limited trout reproduction, and there is potential for restoring spawning sites.

The Copenhaver farm is currently operated by Ron Copenhaver, a member of the family for whom the county farm is named. Copenhaver operates a unique cash crop operation growing string beans.

In recent years, Copenhaver has

fenced the stream, allowing grasses and some perennials to take hold. He has also allowed it to meander somewhat.

The stream has long had a sizeable muskrat population, which can easily reduce the stability of stream banks to withstand erosive forces.

But muskrat activity isn't an unnatural state. The lower elevation reaches of many streams in the clay and soil valley bottoms have naturally unstable banks, where muskrats are natural water mammals.

What's missing are the plants which historically serve to prevent excessively rapid course changes.

That compares to the typical rock beds and banks of streams of higher elevations, and where streams cut through a mountain.

(Side note: The meanders of a stream are a consequence of wave action in a stream, and the resistance of the materials over and through which it flows. If allowed to, or forced to meander, the length of a stream through a pasture can be increased tremendously, thereby retaining water longer, and also providing considerably more habitat for a nutrient-using aquatic community.)



Standing at the back of a Lebanon County Conservation District pickup, and wearing a baseball cap and holding a cup of coffee, Chuck Wertz, district director, points out some of the tree planting plans to students awaiting further instructions before helping to unload the truck. Wearing sunglasses, district nutrient management specialist Andrea Long stands to the right.

Riparian buffer plantings are not a new concept for promotion, but it is new for government to promote such activity.

During the 1970s, through federal incentives, many natural riparian tree and brush buffers and forests were removed as well as many stream-bordering wetlands and short-distance spring streams. At the same time, many windbreaks were also removed in order to gain additional acreage exposed to the sun for maximum crop yield.

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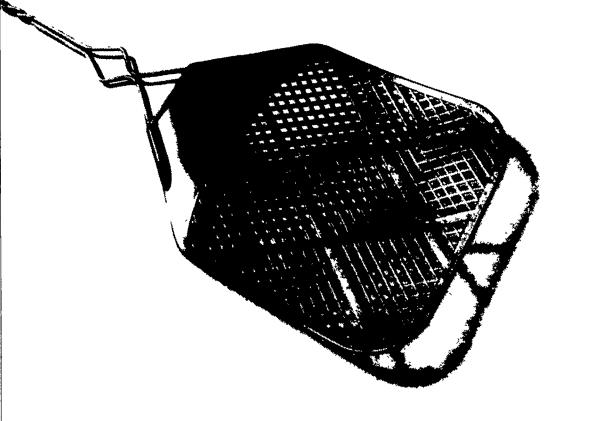
However, while shady areas along field edges can reduce a field's total potential yield, there is increased risk of field and crop damage from high wind exposure.

Windbreaks prevent wind erosion and allow greater retention of soil moisture — ground moisture evaporation is reduced when air flow close to the ground is reduced.

As far as riparian buffer plantings, though aquatic biologists, limnologists, and long-time professional experts on streams have promoted such plantings for years, many people have seemed to express a cultural preference for denuded, or otherwise "sanitary

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