Money in the bank

Little Plover River in April 1970.

This research proved that trout numbers increase dramatically when banks of small streams are brushed out to form meadow. Cost is only $3,000 per mile and some of the $2.50 trout stamp money is earmarked for such work.

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Several hundred miles of small trout streams in Wisconsin are heavily shaded by woody vegetation. Especially common is speckled alder brush. This can make the stream hard to fish and be a blessing or a curse for trout carrying capacity.

Initially, brushy growth of alder, willow or other shrubs helps stabilize streambanks and adds hiding cover as stems and limbs arch over or drape into the water. Their shade keeps the stream cool enough to sustain trout. Eventually, however, these brushy reaches hinder. Aquatic vegetation is shaded out and the invertebrate supply of trout food diminishes. The shape of the channel changes because of silt and debris from woody stems and branches. Streambanks gradually weaken and cave in as annual accumulations of snow and ice weigh down the trunks and limbs. Once tipped into the stream they seldom erect themselves again. With time, stream channels straighten and become wider. Maximum depth shifts to the middle where hiding cover for trout is sparse.

What would happen if the brush were taken out? To assess this, three heavily shaded trout streams were selected for experiment. Nearly all woody vegetation was to be removed from both streambanks. The project, begun in 1971 was to document the impact on stream structure, trout abundance and angler use. Water temperatures would also be monitored.

One stream selected was Spring Creek in west-central Wisconsin.

Two study zones were established on it: a 1,000-yard "reference zone" and upstream a 600-yard "treatment zone." Both had brush-lined alder banks of similar canopy density.

The brook trout population in both study zones was inventoried with electrofishing gear each spring and fall in 1971, '72 and '73. All woody vegetation was then cut at ground level for an approximate 30-foot strip along each bank of the treatment zone during the winter of 1973-74. Trout population inventories were continued in 1974, '75 and '76.

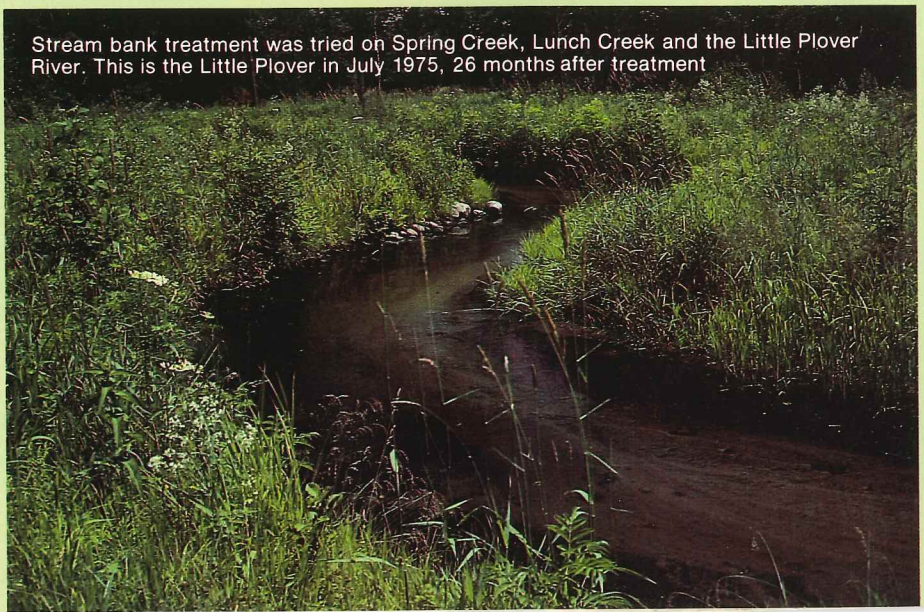
Soon after brush removal, a marsh-meadow habitat of grass, sedge and weeds grew up naturally. In the next few summers an increasingly strong turf developed that proved to be more stable in high water than brush-lined banks of the reference zone. Some narrowing of the treatment zone channel also occurred. Instream vegetation flourished and as a result stream flow was more confined. New pools were scoured out and old pools enlarged and deepened.

Water temperatures during the summer increased from 2 to 5°F. but remained well within tolerable limits for brook trout. Maximum heating occurred during the first summer after brush removal. These slightly increased water temperatures may actually have helped trout assimilate food and convert it to better growth. This is only conjectural but growth rates of brook trout in the treatment zone were found to improve after brush removal.

More important, the abundance and weight of brook trout in the treatment zone increased as compared to the reference zone. Creation of the marsh-meadow habitat with greater instream vegetation is what did it.

For example, before brush was cut the treatment zone held an average of only 26% more trout per acre in April than the reference zone. After removal, the treatment zone held an average of 83% more. And, in October, before cutting, the treatment zone held 4% fewer trout per acre over six inches, but with the new marsh-meadow habitat it averaged 111% more.

This kind of streambank renovation is all handwork. Cost varies depending on the density of vegetation and whether both banks require treatment. The Spring Creek project got plenty of assistance from New Auburn High School students and from the local rod and gun club. Price tag was only $520. If done entirely by a paid work crew, cost would be about $3,000 per mile. Because of this research, a regular annual allotment of trout stamp money has been earmarked for brush removal on small brook trout streams. At least five miles will be treated every year.



Stream bank treatment was tried on Spring Creek, Lunch Creek and the Little Plover River. This is the Little Plover in July 1975, 26 months after treatment

Photos by Robert Hunt