Trout Angling and Regional Development
A Case Study of Southwestern Wisconsin

"The trout streams ran clear, deep, narrow, and full . . ."
—Aldo Leopold remembering the Coon Valley watershed
(American Forests)

In this 1935 article, Leopold was lamenting the loss of clean water in southwestern Wisconsin due to agricultural practices in the late 1800s and early 1900s. This article was published at the start of a major soil and water conservation project in the Coon Valley watershed. Sixty years later the area has witnessed a startling recovery of the local water resource base, proving the effectiveness of programs that attempt to heal the land. Indeed, the Coon Valley watershed has seen its streams return to the quality once yearned for by Leopold.

The Setting

Trout angling is an important recreational activity occurring throughout regions of North America that support trout fisheries. Regional characteristics that foster premier trout fisheries include the availability of cold water streams, relatively clean waters, and fisheries management activities that act to maintain, improve or otherwise control fish habitat, fish populations, and angling activities. Southwestern Wisconsin is one region that possesses these characteristics and offers recreationists some of the finest trout angling in the Upper Midwest.

Trout anglers appear to comprise a rather unique form of recreationist. Their activities make up a surprisingly large share of all fishing that takes place. The U.S. Fish and Wildlife Service has ongoing research that tracks fishing-associated recreation.1 Nationwide, almost 30 percent of all anglers fish for trout. Fully 20 percent of all angler days in the U.S. are spent fishing for trout. Much of the trout fishing that occurs in local regions is done by people from outside the region. For example, in Wisconsin, non-residents comprise more than 20 percent of the trout angling days fished. These visitors bring with them important impacts for the local region.

The characteristics, attitudes and experiences of trout anglers are important to both fisheries management and rural development of surrounding areas. In a review of previous research reported by Robin Knox,2 trout anglers in the western United States were characterized as white males over 25 years of age who possess varying attitudes toward fishery resources. Increasingly, anglers in the West are interested in "wild" trout fisheries that include both wild native fishes and wild naturalized fishes. Information on demographic characteristics, use patterns and attitudes toward fishery resources for Wisconsin are lacking.

One reason why southwestern Wisconsin offers some of the finest trout angling opportunities in the nation is that the state sponsors active fisheries management programs. These before-and-after images of Timber Coulee Creek near Coon Valley, Wisconsin, show the dramatic change in stream characteristics after two years of dynamic efforts to stabilize the streambanks. Over the last 25 years roughly $350,000 was spent in this region on stream improvements.

Photos by Dave Vetrano.
Trout fishing is an important component of rural economic development in regions possessing trout fishery resources. The economic benefits of trout angling are often said to include both economic impacts from visitor spending and total economic value, including components of the resource valued by anglers but not paid for outright. Economic impact accounts for the positive reaction of local businesses to increased sales due to trout angling. Typically measured in terms of income generated, economic impact includes the “ripple” effects from growing business activity in the regional economy. Total economic value also includes individual anglers’ “willingness-to-pay” for use of the fishery in excess of what they are currently spending. Typically, this amount helps estimate the value of having the fishery available for use in the future. Data on the economic impact or total economic value of trout fishery resources in Wisconsin are also lacking.

Local businesses reap the benefits of having trout anglers in the region. Nonlocal residents who fished the two streams highlighted in this study spent about $220,000 on fishing-related items during 1994. Photo by Ron Shaffer.

**Human Dimensions of Trout Management**

From 1992 through 1994, numerous groups approached the University of Wisconsin-Extension to request specific information on trout angling in the southwestern part of the state. The questions asked involved both characteristics of anglers fishing in the region and impacts of angler activity on the region. In an effort to respond to these questions, staff from UW-Extension and UW-Madison began a joint research project to gather and analyze the necessary data. Staff and resources were drawn from UW-Extension’s Tourism Research and Resource Center, and from the Kickapoo Valley Project, sponsored by UW-Madison’s College of Agricultural and Life Sciences. The Kickapoo Valley Project is funded through a bequest from a Viroqua lumberman, Ralph E. Nuzum; the bequest is administered by the college’s School of Natural Resources. Numerous other groups joined the effort with both time and money. These groups included the Wisconsin Department of Natural Resources, Trout Unlimited, and two regional sporting clubs—the Badger Fly Fishers and the West Fork Sports Club.

The intent of our study was to identify characteristics and impacts of anglers who visited a portion of southwestern Wisconsin, including the Kickapoo River Valley. These characteristics included attitudes about the fisheries resource, motivations to fish this region, barriers to usage and local economic impacts. Furthermore, there was special interest for this study to provide estimates of the value of a developed trout fishery and assess the barriers to further development. An important driving force behind this research was the need to provide baseline data and answer policy questions about the development potential of trout angling in southwestern Wisconsin. Specifically, we set out to characterize anglers in southwestern Wisconsin with respect to:

- Their demographic makeup;
- The manner in which they fish for trout;
- Their motivations to fish this region;
- Their perception of this region as compared to others;
- Barriers to usage; and
- Local economic impacts of fishing.

We also addressed links between fishery management and economic development by measuring the regional impacts of related goods and services, including the market impacts of angler spending and non-market attributes of the fisheries resource. The ultimate goal of this research project was to assess the barriers to further expansion of regional development related to trout fishing.

We addressed these objectives through a two-stage survey that included an initial intercept in the field and a subsequent mail survey. A total of 442 intercepts yielded 246 complete responses from anglers on the Timber Coulee stream complex and the West Fork of the Kickapoo River. In addition to the quantitative mail survey, a series of focus group interviews with regional trout fishing stakeholders were held during the spring of 1995. This research summary is intended to present important research findings and discuss implications of the findings for regional development and fisheries management policy.
Results of Our Study

Trout anglers are an interesting and unique group of recreationists. In general, we found that southwestern Wisconsin trout anglers are dedicated and experienced. Trout angling is an important part of their lifestyles, taking up a significant portion of their leisure time. The anglers appear to be loyal to the region. Even though they are aware of trout angling in other regions and have traveled extensively to fish for trout in the western United States, they return to southwestern Wisconsin regularly.

This angler once wrote President Franklin D. Roosevelt about the poor condition of Vernon county streams, but now finds them to be the cleanest water he fishes. The increase in popularity of southwestern Wisconsin streams in recent years has been linked to clean water and has brought more nonlocal visitors to the region. Fly-fishing and “catch-and-release” are the most commonly used techniques to capture trout in this region. Photo courtesy of the Vernon County Broadcaster. Photographer: Pete Hollister.

There are important differences between local and visiting anglers that could have implications for further development of trout fisheries. Whereas locals tend to have fished a greater number of days on average, their enthusiasm for angling and the importance it plays in their lifestyles tends to be lower than nonlocal trout anglers. For nonlocals, the greater importance of angling to their lifestyle might explain their willingness to commit time and dollars to recreational fishing trips. Differences in income, education and occupation also show how the groups differ. Out-of-town anglers are generally wealthier (and more able to afford trips), of higher educational status (and more likely to earn higher salaries), and tend to work in more manageral-type occupations when compared to local anglers.

The survey results show that the region provides a level of familiarity to most of the trout anglers who fish there. Many anglers, both locals and nonlocals, fish this region regularly throughout the fishing season. In general, trout angling is done using fly-fishing equipment with most anglers practicing “catch-and-release.” Survey results suggest that local anglers vary from nonlocals in this characteristic. A slightly higher proportion of locals fish with live bait and spin-casting equipment and keep the fish they catch.

Because of the solitary nature of angling, crowding can limit further development. While crowding is not currently a problem on the two streams assessed in this study, it could become so in the future. Frequent monitoring of stream pressure and angler satisfaction will identify the limits that crowding places on a stream’s recreational carrying capacity. Trout anglers perceive improving fisheries management to be an important regional issue. The survey respondents identified important issues through their answers to questions about:

- Water quality;
- Stream improvement;
- Public stream access;
- Experience of the catch; and
- Aesthetics of the region.

In general, anglers on the two stream complexes had positive experiences. Maintaining a high level of satisfaction appears to be a good way to continue developing southwestern Wisconsin as a trout angling destination because most current anglers learned of the region through word-of-mouth.

Roughly half of the anglers encountered fishing on the two stream complexes were nonlocal anglers. They are important in many respects, perhaps most importantly because they bring new dollars to the region. These new dollars are used by local businesses to generate jobs and income sources for local residents. Many visiting anglers spend at least one night in the region camping, staying in motels, or with friends and relatives. There is reason to believe that visiting anglers have interests in recreational property and its development. It is expected that recreational property development will continue as the popularity of trout angling in the region expands.

Visiting anglers spent almost $220,000 during the 1994 season and contributed almost one-half million dollars to total gross output. Regional economic
What This Means for Fisheries Management

As the word spreads about quality trout fishing experiences in southwestern Wisconsin, crowding is a potential concern. If crowding becomes a problem, the growth in trout angling may reach a plateau. To respond to this potential growth, the region needs to increase stream accessibility and improve existing streams. The Kickapoo River watershed, which covers parts of Vernon and Crawford counties, has over 50 trout streams and over 280 miles of designated trout water. If additional streams in and around the Kickapoo watershed could improve to the level of the Timber Coulee system or the West Fork of the Kickapoo, the area could handle more anglers.

This photo of Coon Creek illustrates the efforts that the Wisconsin Department of Natural Resources has invested in developing stream access and fish habitat improvements. Numerous area streams, however, could be developed in the same fashion. Given increased popularity of regional trout fishing, further stream development will help alleviate crowding problems and allow further economic development. Photo by Alan Anderson.

A number of our findings could affect management policy decisions for the future. According to Dave Vetrano, the Department of Natural Resources fish manager for Vernon and Crawford counties, the types of streambank improvements made in the Timber Coulee system would cost nearly $330,000 in 1994 dollars. This does not include the cost of land purchases or fishing easements acquisition. Although fish management has been concerned with improving the fishing experiences of anglers, it is important not to overlook the significant improvement in local economic conditions. The same improvements that attracted visiting anglers and their dollars to the Timber Coulee system could benefit other streams in the area.

Both locals and nonlocals are lured to streams in southwestern Wisconsin by the possibility of catching the occasional trophy trout. Anglers also appreciate opportunities to catch many fish during a visit, as well as uncrowded streams and readily available public access. Photo courtesy of the Epitaph News. Photographer: Bonnie Sherman.

activity is stimulated as businesses require more “inputs” to provide goods and services to nonlocal anglers, while local jobs and incomes increase and boost local consumption. The market effects, however, show only one side of trout angling’s economic value. Trout anglers value more things than are paid for through local purchases or trout stamps. For example, we studied four attributes of fisheries management that anglers value. Our results suggest that attempts to produce larger fish by creating suitable habitat and managing fishing pressure are highly valued. Anglers also value efforts to produce more fish or greater species diversity. In addition, they want less crowded conditions.

Observations by local guides, a fly-fishing shop owner in Coon Valley, and local motel and restaurant owners indicate that fishing activity is increasing in the area. Improvements in fisheries management and the word-of-mouth marketing system would appear to be the ticket to bring in more visiting anglers. In addition, newspaper and magazine articles have provided some publicity to the area. Trout Unlimited’s national magazine Trout ran a feature article on the region in the fall 1995 issue.
Management activities also affect other aspects of the fishing experience, for example, the ability of trout anglers to catch trophy fish. Fisheries managers must find resources to increase miles of productive public trout streams and improve existing streams so that anglers can catch more or larger trout. In the Timber Coulee system, this has largely been achieved. Although anglers in our focus groups indicated concern for the disappearance of trophy fish in the Timber Coulee system, this does not appear to be the case for the West Fork of the Kickapoo. In this stream, large wily trout can still be caught. To some degree, large trout are also living in downstream portions of the Timber Coulee system, such as Coon Creek. The nature of trout habitat improvement and the types of streams available in southwestern Wisconsin will dictate where large trophy fish can survive. These fish may not be a part of every trout stream in the region, but should be a part of some of the larger streams, especially those that have been improved.

Southwestern Wisconsin, particularly the Kickapoo River Valley, is an economically distressed area. It is a region, however, rich in natural amenities. It has a tremendous resource base of streams, most capable of supporting significant trout fisheries. An important component of the region's future development could be to expand the number of easily accessible streams and trout habitat improvements. Trout angling may not provide the sole solution to the region's economic problems, but should be viewed as a piece of the puzzle for future economic development.

Notes


3 A good quick overview of assessing the benefits of fisheries to local regions can be found in an article by Tony Fedler entitled "How to Assess the Economic Benefit and Impacts of Fisheries in Your River" contained in the Spring 1995 issue of River Voices (pages 12 and 13).

This fact sheet provides excerpts from the full report entitled, "Trout Angling in Southwestern Wisconsin and Implications for Regional Development."

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1996
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