

Recreational Fishing as Tourism

In addition to being an outdoor recreation activity for residents in each state, fishing can also be considered a form of tourism when anglers cross state lines to go fishing. Efforts are underway in each state to promote tourism, including recreational fishing, in the name of economic development. These efforts are usually independent from fishery management. Data from the "1996 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation" were analyzed to indicate the extent that various states attract anglers to their states as well as supply anglers to others. The top five destination states in terms of days of fishing by nonresidents were Minnesota, Florida, Wisconsin, North Carolina, and New York. The top five states in numbers of resident fishing days exported to other states were Illinois, Texas, Pennsylvania, California, and Virginia. A stakeholder perspective including managers and resident anglers is presented to illustrate the diversity of thought on the fishing as tourism issue. Ecotourism is defined, illustrated with examples, and offered as a future means for coping with the fishing days being exported to various states. Fishery managers need to acquire a greater awareness of fishing tourism in their states and develop effective partnerships with state and local tourism promotion organizations.

Fishing is one of the most popular forms of outdoor recreation in the United States (Cordell et al. 1999). Estimates of the rate of participation and number of persons 16 years and older participating range from 17% or 35.2 million to 29% or 57.9 million (USDOI and USDOC 1997; Cordell et al. 1999). Reasons for the popularity of fishing vis-à-vis other outdoor activities include its relatively low cost and lack of physical demands. Nationally, there were 29.6 million paid fishing license holders in 1999, up slightly from 1997 (29.3 million) (ASA 2001).

National surveys of anglers conducted by the U.S. Fish and Wildlife Service since 1955 afford a unique perspective on the number of anglers in the United States, how frequently they participate in various types of fishing (i.e., freshwater, saltwater, Great Lakes), and where they fish generally (USDOI and USDOC 1997). The two most recent surveys indicate that out-of-state visitors accounted for 12% and 11% of the days fished in the United States (USDOI and USDOC 1992, 1997). Overall, a disproportionate percentage (24% and 26%) of anglers 16 and older fished one or more times in 1991 and 1996, respectively, in other states (USDOI and USDOC 1992, 1997). But, to which states do the anglers travel to fish?

States will likely vary in the extent they attract nonresident anglers and lose resident anglers to other states. This is probably because some states are perceived as having better fishing opportunities than others. Some states will attract large numbers of nonresident fishing days or, if not large numbers, large proportions of nonresident days compared to total days in their home state. Other states will provide large numbers of nonresident fishing days to destination states or large proportions of nonresident days to total days in

destination states. From an economic demand standpoint, we would expect more anglers to choose destinations that are similar in quality, nearby, and at lower cost so they can make more trips than they would to more distant destinations (Loomis and Walsh 1997). Thus, those states with large population concentrations on their borders in adjacent states and good fishing opportunities are likely to benefit most. Unfortunately, though the most recent USDOI study (1997) provides insight on days of fishing by nonresidents in each state, the days are aggregated for each state making it impossible to know where anglers originated. This prevents us from understanding the exact nature of relationships between particular supplier and recipient states.

The purpose of this article is to explore the extent of recreational fishing as tourism on a national scale, namely, the extent to which each state's residents fish in other states, the spatial patterns of supplier (origin) and recipient (host) states, and the net gain or loss of fishing days by individual states. We also explore some fishing tourism issues and their implications for fisheries management.

A Tourism Perspective

Tourism is big business globally. The tourism industry accounted for 8% of the world's gross domestic product and about 9% of the world's employment in 1998 (World Travel Organization 1998). Tourism is the third largest retail industry (behind automotive and food) in the United

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States, generating an estimated \$502 billion in expenditures in 1997. Tourism is either the first, second, or third largest employer in 32 states. Spending by domestic and international travelers generated about \$72 billion in tax revenues for federal, state, and local governments in 1997. In 1997, Americans took nearly 1.3 billion person-trips (one person traveling 100+ miles one way, away from home), an increase of 8% over 1996 (Travel Industry of America 2000).

Sectors of the tourism business include: transportation (planes, automobiles, trains, buses, cruise ships, charter boats, etc.), accommodations (hotels, motels, bed and breakfasts, campgrounds, lodges, etc.), attractions (quality fishing, beaches, state and national parks and forests, theme parks, festivals, etc.), food & beverages (restaurants, bars, fast-food outlets, quick-stop stores, etc.) typically located on the way to or in tourist destination areas, specialty retail outlets (T-shirts, souvenirs, fishing tackle and bait supply, camp supply stores, etc.) and information sectors (visitor and welcome centers, web pages, travel guidebooks, promotion advertising, maps, local brochures, etc., Goeldner et al. 2000). In addition, there are investments in infrastructure such as roads, airports, sewage treatment facilities in destination communities, dredging of river channels, fishing piers, boat ramps, etc.

There are many definitions of tourists (Chadwick 1994). For example, the National Tourism Resources Review Commission (1973) defined a tourist as “one who travels away from home for a distance of at least 50 miles (one way) for any purpose except to commute to work.” The U.S. Travel Data Center (Goeldner et al. 2000) reported on all round trips with a one-way mileage

route of 100 or more miles or all trips involving an overnight stay away from home, regardless of distance. For government purposes, the focus is usually on nonresidents crossing a border, sometimes discriminating between business and pleasure reasons for travel. Many states use the state’s boundaries as the operational trigger for what constitutes a tourist. That is, any non-state resident who travels to the state is a tourist (some include a minimum stay requirement, e.g., one night). Therefore, for purposes of this paper, tourist anglers are anglers who fish in a state other than their own. Such a definition produces a conservative estimate of total travel since it fails to count internal state tourists who may have driven farther than some out-of-state tourists, who may have expended just as much to make their trip, and whose expenditures are just as important to the local economy where the fishery is located.

Fishing as tourism in the U.S.

A national perspective on fishing tourism is provided in Table 1. We modified the table provided by the USDOJ (1997: Table 59) to include a rank order of the number of fishing days by nonresidents in each state and of the number of days of fishing by each state’s residents elsewhere in the U.S. Recipient states attract nonresident fishing days; these can be viewed as a percent of total fishing days in each state. Likewise, supplier states provide resident fishing days to other states; these can be viewed as a percent of total resident fishing days in their home state. Lastly, we calculated the net gain or loss of fishing days in each state as a result of exchanges. Figures 1 and 2 show state distributions.

Confidence intervals can be calculated for the number of days by nonresidents in a state and the days exported by state residents. The formula, provided in Appendix D in the National Survey, is as follows:

$$S = \sqrt{ax^2 + bx + \frac{cx^2}{y}}$$

where S = standard deviation of the estimate and x = the estimate provided in Table 1. The parameters for a, b, and c can be found in Table D-8 in the National Survey and vary by state. The parameter y is the base of the estimate and can be found in Table 3 of each individual state report (available at www.census.gov/prod/www/abs/fishing.html). For example, the standard deviation for the estimate of the number of days that nonresidents fished in Texas is as follows:

$$S = \sqrt{(.06433)(1,209,000)^2 + (-20,030)(1,209,000) + \frac{(28,511)(1,209,000)^2}{(235,000)}}$$

$$S = 497,141.61$$

Thus, the 95% confidence interval is [235,000 ; 2,183,000]. The same can be done for the number of days by Texas residents in other states, which equals [2,032,000 ; 9,496,000]. Furthermore, the confidence interval for the net gain or loss for the state of Texas can be found by subtracting the two confidence intervals from each other, which equals [-1,797,000 ; -7,313,000].

Recipient states

- The top 10 recipient states in 1996 in terms of days of fishing by nonresidents were: 1) Minnesota, 2) Florida, 3) Wisconsin, 4) North Carolina, 5) New York, 6) South Carolina, 7) Alaska, 8) Michigan, 9) New Jersey, and 10) Alabama.
- The top 10 states in terms of nonresident fishing days as a percent of total fishing days (residents

Table 1. Days of fishing by nonresidents and by state residents in other states (1996). Population 16 years and older, numbers in thousands.

State	Days by nonresidents			Days by residents in other states			Net gain or loss
	Number	Rank	Percent	Number	Rank	Percent	
Alabama	1,992	10	12	797	28	5	1,195
Alaska	2,146	7	40	33	50	1	2,113
Arizona	658	36	14	717	31	15	-59
Arkansas	1,924	12	20	281	44	3	1,643
California	1,099	24	3	3,344	4	9	-2,245
Colorado	1,442	18	18	1,065	23	14	377
Connecticut	542	37	10	1,141	21	19	-599
Delaware	730	35	29	548	36	24	182
Florida	5,675	2	12	1,699	14	4	3,976
Georgia	1,705	15	11	2,673	6	17	-968
Hawaii	460	40	15	71	49	3	389
Idaho	1,067	26	24	380	42	10	687
Illinois	463	39	2	6,751	1	25	-6,288
Indiana	1,274	19	8	1,869	12	11	-595
Iowa	138	49	2	1,752	13	20	-1,614
Kansas	181	48	3	930	27	13	-749
Kentucky	755	34	8	1,430	17	14	-675
Louisiana	799	33	4	745	30	4	54
Maine	1,152	22	23	77	48	2	1,075
Maryland	1,775	14	17	1,594	16	16	181
Massachusetts	989	27	10	1,879	11	17	-890
Michigan	2,114	8	7	1,007	25	4	1,107
Minnesota	6,726	1	25	961	26	5	5,765
Mississippi	1,877	13	19	621	35	7	1,256
Missouri	1,946	11	13	2,399	10	16	-453
Montana	846	32	32	85	47	5	761
Nebraska	355	46	12	623	34	19	-268
Nevada	204	47	10	1,128	22	39	-924
New Hampshire	866	31	24	484	38	15	382
New Jersey	2,066	9	13	2,623	7	16	-557
New Mexico	533	38	19	458	39	17	75
New York	3,178	5	11	1,389	18	5	1,789
North Carolina	3,287	4	15	1,659	15	8	1,628
North Dakota ^a				514	37	29	-514
Ohio	941	29	5	2,527	9	13	-1,586
Oklahoma	1,545	17	11	706	33	5	83
Oregon	442	42	6	713	32	9	-271
Pennsylvania	1,648	16	8	5,031	3	21	-3,383
Rhode Island	433	43	20	436	40	20	-3
South Carolina	2,323	6	15	1,320	19	9	1,003
South Dakota	448	41	16	173	45	7	275
Tennessee	987	28	9	2,597	8	20	-1,610
Texas	1,209	20	2	5,764	2	10	-4,555
Utah	1,083	25	28	418	41	13	665
Vermont	408	44	21	325	43	17	83
Virginia	1,163	21	8	2,848	5	18	-1,685
Washington	896	30	7	793	29	6	103
West Virginia	391	45	8	1,030	24	18	-639
Wisconsin	3,745	3	22	1,161	20	8	2,584
Wyoming	1,148	23	48	145	46	10	1,003

^aSample size too small to report data reliably.
Note: U.S. totals include responses from participants residing in the District of Columbia

and nonresidents) were: 1) Wyoming, 2) Alaska, 3) Montana, 4) Delaware, 5) Utah, 6) Minnesota, 7) Idaho, 7) New Hampshire, 9) Maine, 10) Wisconsin.

Three (Florida, New York, and New Jersey) of the top 10 states in terms of fishing days are also in the top 10 states in terms of revenues derived from tourism (Travel Industry Association of America 1998). In addition to attracting overall tourism, they must be competitive in terms of fishing opportunities to attract such large numbers of anglers from other states. Only three states (Minnesota, Wisconsin, and Alaska) appear on both lists of recipient states, pointing to the significance of non-resident fishing in these states.

Supplier states

- The top 10 states in 1996 in terms of days of fishing by their residents in other states were: 1) Illinois, 2) Texas, 3) Pennsylvania, 4) California, 5) Virginia, 6) Georgia, 7) New Jersey, 8) Tennessee, 9) Ohio, 10) Missouri.
- The top 10 states in terms of days fishing by state residents in other states as a percent of total days of fishing by state residents were: 1) Nevada, 2) North Dakota, 3) Illinois, 4) Delaware, 5) Pennsylvania, 6) Iowa, 6) Rhode Island, 6) Tennessee, 9) Connecticut, 9) Nebraska.

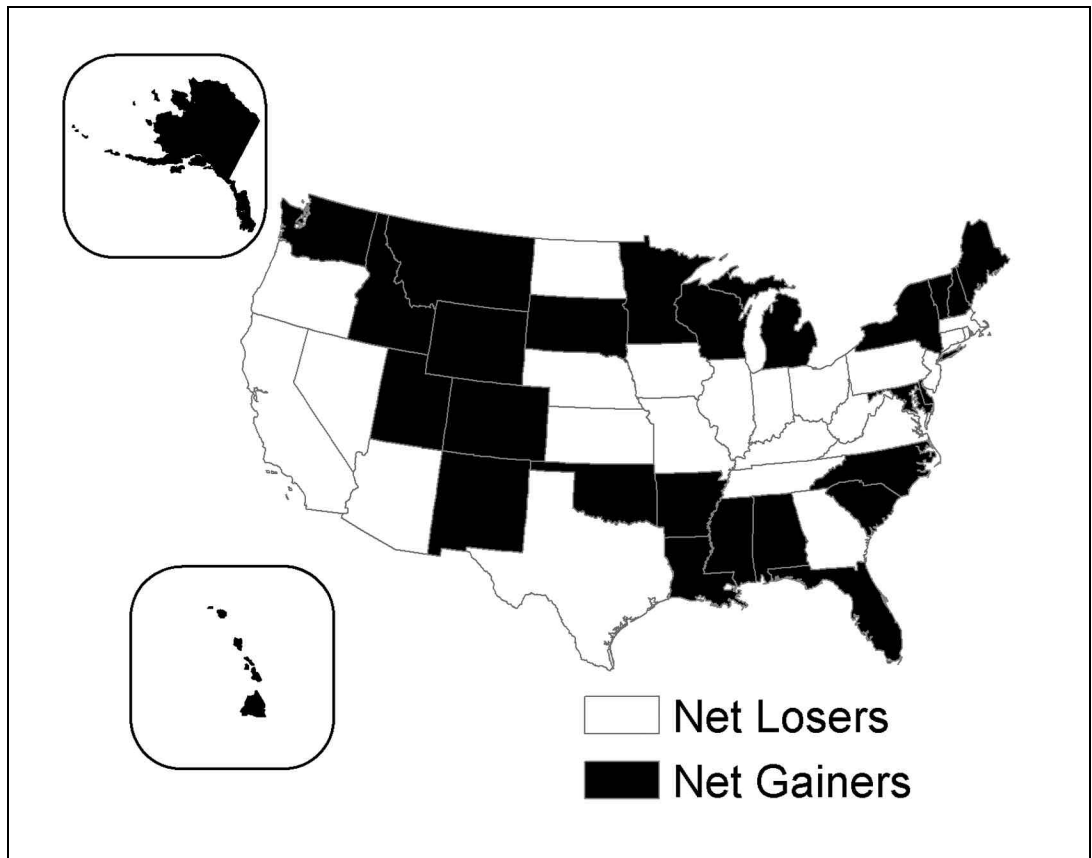
Not surprisingly, states with large populations have more anglers and fishing days than states with small populations and thus are major suppliers of anglers for other states. Some urban states are major suppliers of anglers to other states, even though the number of out-of-state angler days for each is small in comparison to resident angler days. States like Illinois, Texas, Pennsylvania, California, and Virginia are ranked 5th, 2nd, 6th, 1st, and 12th in terms of 2000 population (USDOC 2001). Only 3 states (Illinois, Pennsylvania, and Tennessee) were top 10 supplier states in terms of both numbers and percent. These states have both large numbers of resident anglers, and competitive fishing opportunities in nearby states. Possibly due to these factors, 20% to 25% of a large base number of resident fishing days in each of these states is being exported.

Net gain or loss of fishing days

- The top five states with a net gain in fishing days (nonresident fishing days gained minus resident fishing days lost) in 1996 were 1) Minnesota, 2) Florida, 3) Wisconsin, 4) Alaska, and 5) New York.
- The top five states with a net loss in fishing days in 1996 were 1) Illinois, 2) Texas, 3) Pennsylvania, 4) California, and 5) Virginia.

The 5 states with a net gain in fishing days were ranked 21st, 4th, 18th, 48th, and 3rd, respectively, in

Figure 1. States classified as net gainers or net losers in terms of the number of resident fishing days in other states and nonresident fishing days in the state.



population in 2000 (USDOC 2001). Other factors besides population level appear to be responsible for their ability to attract nonresidents and keep resident anglers at home. Among the net loss states, California (1), Texas (2), Illinois (5), and Pennsylvania (6) rank among the six most populated states in 2000. Fishing days by their residents in other states ranged from 25% to 9% of 2,848,000 to 6,751,000 days, respectively; nonresident days coming to these states did not exceed 8% of resident days in any of these five states. Texas, for example, is surrounded by states with comparable freshwater fishing opportunities; economic demand theory suggests anglers in these states would make more low cost trips in their home state than travel to Texas (Loomis and Walsh 1997). On the other hand, Texas boasts the largest chapter of Trout Unlimited despite a lack of trout streams (Moyers, S.) Trout Unlimited, Arlington, VA, personal communication). These anglers export their fishing days to the Mountain West and Alaska to find the type of fishing they want. Since the factors underlying net gain/loss results are not yet clear, we do not know whether a state can take action to achieve a net gain in fishing days.

The fishing tourism market

Understanding where anglers go fishing is typically accomplished at the state level through studies of random samples of licensed resident anglers (e.g., Milon

and Thunberg 1993; Bohnsack and Ditton 1999) and nonresident anglers (e.g., Donaldson et al. 1992; Bell 1993) as well as nonresident anglers fishing at particular water bodies (e.g., Hunt and Ditton 1996; Ditton et al. 1998). These studies also provide insight to the characteristics and fishing behavior of nonresident anglers and how they differ from resident anglers.

Nonresident anglers fishing for largemouth bass (*Micropterus salmoides*) at Lake Fork Reservoir in Texas, for example, were notably different from resident anglers. Not only did the former spend more money per day in the local area, they were also more likely to have more years of experience than resident anglers, have more money invested in fishing equipment, and report different fishing motivations (Hunt and Ditton 1996). Likewise, populations of nonresident anglers fishing in Texas and Florida were notably different on other variables. For example, nonresident anglers in Texas were older and had more years of experience than Texas anglers. They also reported greater annual fishing frequency than resident anglers (Donaldson et al. 1992). There were two discernible groups of nonresident anglers in Florida, those that did not come to Florida specifically to fish and those that did (Bell 1993). The latter group exhibited characteristics of a more specialized clientele.

The theory of recreation specialization can be used to segment the fishing tourist market. Specialization has been defined as “a continuum of behavior from the general to the particular, reflected by equipment and skills used in the sport and activity setting preferences”

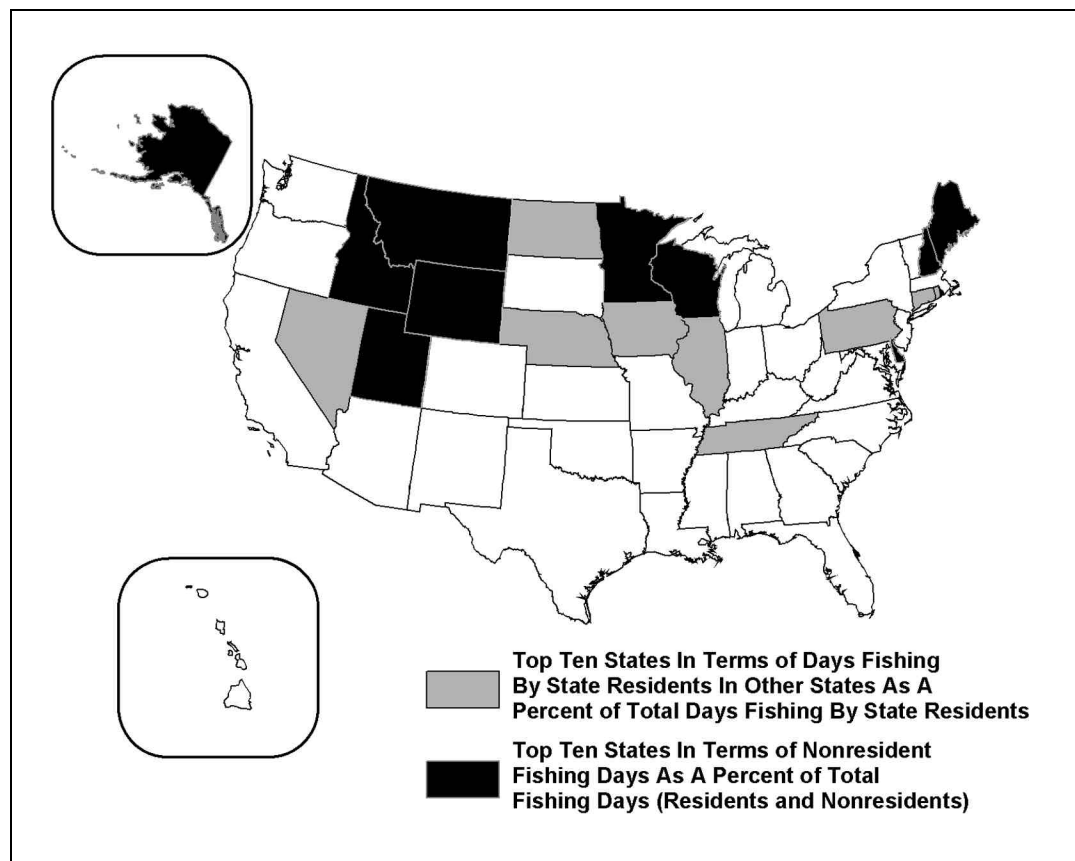


Figure 2. Top 10 states in terms of percentages of nonresident days and resident days of fishing.

(Bryan 1977). An angler's position along the continuum is reflected by variables such as frequency of participation, years of fishing experience, skillful use of equipment, commitment to the sport, and dependence on particular fishery resources. From specialization theory, we would expect to find those anglers making a major commitment of time and resources to fish out-of-state toward the upper end of the specialization continuum. Using a market segmentation approach to classify nonresident anglers in Alaska, Romberg (1999) confirmed that the majority (66%) of nonresident anglers could be labeled as "fairly specialized."

Fishing tourism issues

Recently, there have been numerous state and national efforts to promote fishing tourism and remove constraints for travelers (SFBPC 1998; Fedler and Ditton 2000). Efforts like the development of the 1-800-ASK-FISH toll-free phone number by the American Sportfishing Association, fishing reports posted on the web, and point of sale licensing by states are intended to remove constraints to participation and have been directed toward tourist and resident anglers alike. These, along with promotion by state tourism agencies and private fishing businesses, are all likely to increase the number of nonresident anglers and fishing days. These efforts also pose a variety of issues for fishery managers and resident anglers alike.

As early as 1902 at an organizational meeting of what would become the International Association of Fish and Wildlife Agencies, nonresident resource users, their numbers, and the potential for negative impacts on resources were of concern to managers (Belanger 1988). At that same meeting, high cost nonresident hunting licenses were advocated to raise revenue and keep out "those who kill for speculative purposes." Other representatives at this meeting stressed the need for state authority and interstate cooperation if they were to be effective in fisheries and wildlife management (Belanger 1988).

A stakeholder approach reveals the nonresident angler issue is not as simple today. The recreational fishing industry in one state is likely to welcome new angling recruits from another. Despite a concern for protecting their state's fishery resources, managers may face legislative pressure to promote nonresident fishing tourism to enhance their state's economy. They may actually welcome increasing numbers of nonresident anglers in light of data on the extent of resident angler "drop outs" and the respective loss of Sport Fish Restoration (SFR) funds. If statewide fishing opportunity is perceived as good by resident anglers, then residents are less likely to object to increasing numbers of new nonresident anglers coming to their states. But if angling is not evaluated as good, resident anglers are likely to resent those from out-of-state and take action to show their displeasure (Doxey, G.), York University, Toronto, Canada, personal communication). In either case, resident anglers are likely to want nonresidents to

pay more for their licenses to discourage them from participating, and because residents will likely pay more when they fish out-of-state. Finally, state tourism agencies are interested in promoting visitation to their states in the name of economic development and will promote fishing or any other activity and attraction to achieve their goals.

The above perspectives suggest several questions about fishing tourism. Unfortunately, there are few, if any, answers in the human dimensions of fisheries literature. In the future, these questions will need to be addressed by research and/or facilitated discussion.

- What are the major social, geographic, and natural resource predictors of current levels of fishing by nonresidents? Specifically, why do some states attract nonresident anglers? What, if anything, can be done by fishery managers to retain resident anglers and perhaps attract nonresident anglers?
- Are there cases where increasing the fishing days of nonresident anglers has exacerbated overfishing or its perception by resident anglers?
- Will those states expecting high levels of population growth in the future be able to serve resident as well as nonresident anglers or will there need to be restrictions on the number of nonresident licenses?
- Do economic development concerns always trump resource concerns or can the number of nonresident anglers and their fishing days be regulated in some way when and if they become a problem?
- Has fishing by nonresident anglers led to social impacts in communities that negate the economic impacts generated?
- To what extent are the values of resident and nonresident anglers in conflict on catch and release, the use of live bait, bag limits, and other fishing issues?
- Do legislatures do more harm than good when they rapidly escalate the costs of nonresident fishing licenses?
- Do reciprocity agreements between adjacent states that allow anglers from one state to fish in the other with a resident license create benefits for each state?
- Will there be a time when state fisheries management officials must consider all of the above concerns and determine an optimum number of nonresidents to be allowed to purchase a license or restrict nonresident licenses to a particular number of days?
- And finally, what can be done by agencies and private sector businesses to make sure the benefits of nonresident fishing exceed the costs for resident anglers and the fishery resource?

An ecotourism approach


To the extent fishing tourism promotion is successful and more anglers travel for recreational fishing

in the future, it will be increasingly important to consider the social, economic, and environmental impacts of this activity. The ecotourism concept, though often applied to nonconsumptive activities like birding and whale watching, provides a useful means for understanding, evaluating, and mitigating the various impacts of nonresident anglers (Holland et al. 1998; 2000).

Ecotourism is a component of a broader category of tourism—nature tourism. The main attraction in nature tourism is a natural-resource based destination with activities such as viewing the natural scenery, plants, wildlife or birds, and canoeing, biking, hiking, scuba diving, etc. (Laarman and Durst 1993). The purpose of nature tourism is enjoying mostly undeveloped natural areas or wildlife. Ecotourism has added dimensions. Goodwin (1996) defines ecotourism as low impact nature tourism that contributes to species or habitat maintenance either directly through a contribution to conservation and/or indirectly by providing revenue to the local community sufficient for local people to value, and therefore protect, their wildlife heritage as a source of income. Honey (1999) defines ecotourism as travel to fragile, pristine and usually protected areas that is low impact and small scale. In addition, it should help educate the traveler; provide funds for conservation, directly benefit the economic development and political empowerment of local communities, and foster respect for different cultures and their human rights. Most tourism scholars would not consider fishing “ecotourism” (Ceballos-Lascurain 1996; Goodwin 1996; Fennell 2000) because of its consumptive nature. A case has been made, however, that some forms of fishing can be viewed as ecotourism (Holland et al. 1998, 2000). In these cases, fishing is practiced on a catch-and-release basis and provides positive economic benefits for local communities (employment, importation of new revenues, etc.), and direct financial support (e.g., license sales, park entrance fees, sales of local crafts) in the local area. Even more importantly, it seeks to foster ethical behaviors that protect and sustain fish populations, provide political support for clean water and local conservation initiatives, promote a respect for nature and natural settings, and encourage a stewardship ethic.

Increasing the number of tourists at a fishing destination can maximize these benefits if fishing is approached from an ecotourism standpoint. Given that many tourist fishing licenses cost more than resident fishing licenses (Fedler 2000), the former can also add substantially to the funds available to state fishery agencies. For example, in 1998, Florida sold \$7.9 million worth of nonresident fishing licenses (\$4.8 million saltwater and \$3.1 million freshwater, Fedler 2000). Other evidence of the economic potential of fishing tourism includes the case of recreational catch-and-release fisheries for billfish. For example, nonresident anglers spent \$17.8 million in Costa Rica while practicing catch-and-release billfish angling only (Ditton and Grimes 1996). These

expenditures bring new monies to the local and regional economy that increase the area’s economic base and give local residents an alternative to more consumptive forms of fishing.

In conclusion, increasing or decreasing tourist angler fishing days to a state or region has both costs and benefits. There is wide variation in the numbers and percentages of nonresident fishing days being exported across state lines. Many factors likely influence this, including distance, cost, season, awareness, ease and/or cost of obtaining a nonresident license, perceived attractiveness of fishing opportunities, and level of fishing specialization among others. Some of these factors are exogenous to management, but for those that are not, and where increased angling visitation can be sustainable using an ecotourism approach, there are opportunities. In order to be realized, however, fisheries managers will need to acquire a greater awareness of fishing tourism, tourism overall, and develop working partnerships with local and state tourism promotion organizations. 

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