Understanding the Impacts of the Florida Net Ban (Article X, Section 16 of the State Constitution)

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ABSTRACT

This research examines the effects of Article X, Section 16 of the Florida State Constitution, which restricted the types and sizes of fishing nets that can be used in state waters. The methodology for the analysis relies on social impact assessment (SIA) and analytic inductive logic (Taylor et al. 1995).

The effects of the net ban amendment are assessed in terms of stakeholder groups. Groups are identified through a comprehensive review of the literature pertaining to fisheries management in Florida in the context of the events leading to the net ban amendment being voted upon in a general election in November 1994. Stakeholder groups include the biophysical environment (fish populations) and the commercial and recreational fishing industries.

Fishery resources are examined through data available from the National Marine Fisheries Service (NMFS). When coupled with anecdotal evidence, and the use of inductive logic, conclusions are reached about the effects of the net ban on the restoration of selected fish species.

The net ban amendment affected certain commercial fishers who depended on nets for their livelihood. Because small-scale commercial fishers are involved, the effect on commercial fishing families is assessed and reported. The dissatisfaction of these commercial fishers, manifested in protests and illegal activities, are also examined.

Recreational anglers view the net ban as a change in fisheries management practices in the state of Florida. The recreational angling literature regards the net ban as a success for conservation practices in the state. To examine the effects on recreational anglers, the conclusions reached about fishery resources are related to angling satisfaction, a necessary component of the recreational angling experience.

KEY WORDS: Recreational fisheries, commercial fisheries, net ban, Florida

INTRODUCTION

In 1994 the voters of Florida made one of the most controversial fisheries management decisions in state history. After much debate between commercial and recreational fishing interests over reasons and remedies for declining fish populations, a constitutional referendum, Article X, Section 16 of the State Constitution, was passed and implemented, placing new restrictions on the types of

nets that can be used in state waters. The rationale was that fish stocks would be significantly improved by this action.

The purpose of this research is to determine the impacts of the net ban policy. The methodology will rely on social impact assessment (SIA). SIA is defined as "a method of projecting social consequences of human actions that alter the environment" (Bryan 1996, p. 145). It is a tool for decision makers, not only to understand the social environment in which they make decisions, but also to use the information gathered in the SIA process "to optimize decisions having environmental consequences" (Bryan 1996, p. 145). Using the methodology established by Wolf (1983), and further revised by Taylor, Bryan and Goodrich (1995), the research identified the major stakeholders in the Florida fishing industry and examined the ways in which these stakeholders were involved in the net ban issue and affected by subsequent policy.

A description of the types of nets the amendment restricted is useful at this point. According to the amendment, a " 'gill net' means one or more walls of netting which captures saltwater finfish by ensnaring or entangling them in the meshes of the net by the gills," and an " 'entangling net' means a drift net, trammel net, stab net, or any other net which captures saltwater finfish, shellfish, or other marine animals by causing all or part of heads, fins, legs, or other body parts to become entangled or ensnared in the meshes of the net . . ." (Florida State Constitution, Article X, Sect. 16). The nets mentioned in the amendment are unselective in the types of fish that they catch: this was a major argument of the net ban proponents. The bycatch associated with these nets can be large and often dies in the net before it can be released alive.

A historical look at fisheries management in Florida is useful for understanding the issues that led to the net ban amendment. Prior to what can be called the modern era (post-1983) in fisheries management, authority resided first with state tax assessors who also served as fish commissioners. In 1980, a Saltwater Fisheries Study and Advisory Council was established which recommended that the legislature create the Marine Fisheries Commission (MFC). The MFC began operations in 1983. As Marston and Nelson (1994) point out, "the creation of the MFC was driven largely by vocal criticism from Florida's recreational fishing community over the lack of adequate management action on the part of the former Department of Natural Resources . . ." (p. 8). Another important aspect about the history of management in Florida, noted by Grimes (1996), is that, "Each time the Florida Legislature has created or reorganized the administrative structure, ultimate authority and accountability has resided with the Governor and Cabinet. Thus, the ultimate decision is made by a political office, rather than independent rulemaking [sic] within the administrative structure" (p. 32). The highly effective lobbying by the commercial fishing industry ultimately led to the net ban.

Beginning in the late 1980s, the MFC began to try to implement new management regimes for striped mullet (*Mugil cephalus*). Mullet, which is the major component of the inshore netting industry, is also important to anglers because of its importance as a food source to more sought after game fish. In June

1990, the MFC reviewed the effects of the new regulations. They had not achieved their goal of a twenty-percent reduction in effort or mortality. According to Marston and Nelson (1994), the following roe season actually saw a twelve percent increase in effort and a nine percent increase in mortality. The rules were "tweaked", but still remained ineffective.

In January 1991, the Florida Marine Research Institute (FMRI) delivered the first preliminary stock assessment of mullet populations. They indicated mullet stocks were in worse condition than previously thought. Several management alternatives were proposed, each dealing with extending the closure of the fishery for a number of days during the annual roe harvest. All efforts met with significant opposition by the commercial fishing industry and were successfully stalled in the legislature.

In October 1992, the official drive to implement the net ban began. Because of the apparent ineffectiveness of the MFC, the recreational industry began a petition drive that, with enough signatures, would allow the voters in Florida to decide if they wanted to restrict commercial netting practices within state waters. Launching a statewide media campaign, the Florida Conservation Association (FCA) and the *Florida Sportsman* magazine were successful in getting enough signatures to put the net ban initiative on the ballot in November 1994.

Ultimately the amendment passed by an overwhelming majority, 2,876,091 to 1,135,110, and went into effect on July 1, 1995. During 1995, after passing of the amendment but prior to its implementation, a number of questions were raised pertaining to how the affected fishers would cope with the loss of their livelihood.

METHODS

The following section includes discussion of the major components of SIA as they pertain to the current research. Taylor et al. (1995) recognize the following steps in the assessment process: scoping and profiling; formulation of alternatives; projection and estimation of effects; monitoring, mitigation, management and evaluation. Scoping and profiling will be the only two components detailed here, as they were an integral part of this research. For a detailed description of the methodology, see Anderson (1999).

In the origins of the SIA process, the scoping component is when stakeholders and their relative positions are recognized. Closely linked to scoping is profiling, which consists of creating the database of the key social variables found in the scoping exercise so that a social description of the community can be created. At this stage it is important to recognize all key stakeholders and their positions with regard to issues (Taylor et al. 1995). Scoping and profiling were performed by reviewing various forms of data concerning the state of Florida and particularly the state's fishing industry. The review of the scientific and popular literature provided coverage of the historical description of fishery management practices in Florida. It also provided an adequate social profile of both the commercial and recreational fishing industries and the people associated with these industries.

Analytic induction was used to formulate a consistent interpretation from a wide variety of data sources. Though these data sources are both qualitative and quantitative in nature, the inductive process allows for the interpretation of the data in a way that other methods could not. Thus, conclusions reached were consistent with all of the data used, and are considered reliable because of the power of the analytic inductive methodology.

This research is based largely on secondary sources, due to the constraints of time and money. However, this is not unusual for assessment research — for the same reasons, but also because the analytic inductive approach allows for the accommodation of a variety of data. For this research, magazine articles, newspaper clippings, scientific reports and other media were used as effective qualitative data. Also included are survey results from the National Marine Fisheries Service (NMFS), and the Florida Sea Grant College Program. These provide useful quantitative data that assist in the interpretation of qualitative data.

RESULTS

Stakeholder Identification

The biophysical environment is a particularly critical dimension in the analysis. It obviously cannot "speak for itself," yet it is the yardstick with which the success or failure of the net ban is judged. The net ban variable, its effects, and the perception of its effects are obviously linked to stakeholder outcomes.

Only those species that were popular targets for netters are identified. As previously mentioned, mullet is the most important species they targeted. Mullet is usually considered a low-end seafood product. However, with the opening up of the Asian roe market, the price of mullet skyrocketed, providing the incentive for a greater harvest.

Spanish mackerel (*Scomberomorus maculatus*), spotted seatrout (*Cynoscion nebulosus*) and king mackerel (*Scomberomorus cavalla*) are species that were targeted by commercial netting operations and also have a recreational fishing value. Red drum (*Sciaenops ocellatus*) were not directly affected by the net ban since this fishery was closed to commercial harvest in the 1980s. However, a historical look at the fishery can be useful for understanding the probable track of other fisheries affected by the ban.

Before the passage of the net ban amendment, approximately 7,500 people held commercial fishing licenses in Florida. The entire industry generated $1.2 billion, and employed between 12,000 and 15,000 people. Of these, around 1,000 people depended on gill nets for most of their income (Long 1994). Taking into account the number of commercial boat licenses (33,783) and the estimated number of boats affected by the amendment (2,225), it is possible to speculate on where these boats fished in relation to state waters. The gill net boats were not equipped to fish in deep water, so these boats probably concentrated their fishing effort within three miles of the Florida coast. The remaining boats, approximately 1,225, probably

fished anywhere from one to three miles on the Atlantic coast, and one to nine miles on the Gulf coast, depending on the type of nets they used.

Smith (1994) provides an effective typology of nearshore commercial fishers. The average fisher in the study had been involved with commercial fishing for twenty-two years, and the income derived from fishing operations accounted for seventy three percent of household income. The average fisher "derived great satisfaction from being on the water, doing physical work, being independent, and providing food for consumers" (Smith 1994). It is also important to realize that netting operations are often not an individual activity. The family is involved in the operation, with the husband and older sons being responsible for the "on the water" activities and the wives and daughters responsible for the bookkeeping and support activities (supplying ice and meals, repairing nets). The wives also provide emotional support to the family in this work intensive enterprise (Smith 1994).

The absence of gill nets also affects other industries related to commercial fishing, aside from individual family fishing operations. These include: gasoline, diesel and oil suppliers, ice, bait, and fishing gear suppliers (such as nets, rain coats, boots, gloves, groceries, boats, engines and electronic equipment), and services associated with docking, registration, and licenses. Also included in this category are the fish processing plants, warehouses, and distributors associated with the commercial fishing industry. These "flow-on" effects, when looked at cumulatively, are likely to be substantial. However, this analysis focuses only on first-order effects (e.g., those who are most directly affected by the net ban).

Recreational anglers are broken into two categories: residents and tourists. Resident anglers are mostly male, white, and married and prefer to spend their leisure time outdoors. About half of the resident anglers have lived in Florida for twenty years or more and most have children in the household. The majority had a higher than average education, with most having household incomes above $25,000. Benefits that recreational anglers expect from their time fishing include enjoying nature, relaxing, and the enjoyment of a challenge (Milon and Thunberg 1993). There are an estimated 2.3 million resident anglers in the state and they account for 20 million angler days. There are around three million tourist anglers per year, which account for 11.9 million angler days. In 1991, tourists were estimated to have spent $1.3 billion and supported 23,518 jobs in the retail and service sectors. Resident anglers were also estimated as having a total economic output in the state of $949.1 million in the same year (Florida Sea Grant 1993).

Trends in Catch Statistics

The net ban amendment directed the removal of all entanglement nets and other nets greater than five hundred square feet in state waters. The purpose of removing these nets was to protect the nearshore fisheries found in Florida state waters. Thus, an indicator of the biological success of the net ban for the years following the net ban can be determined by examining fishery resources data. Although the lack of baseline fisheries independent data was particularly troublesome, the SIA

methodology allows for other types of data to be used to gauge the reaction of fishery resources.

All catch data were obtained from the NMFS website. For the recreational data, the option "Florida" was used, the species was selected, and the option "All Modes Combined" and "State Waters" were chosen. Finally, the numbers represent total catch, which includes fish that were brought to the dock in a recognizable form (identification by scientists), fish that were filleted or released dead (identification by individual anglers), and fish that were released alive (identification by individual anglers). For the commercial statistics, "annual landings" was chosen, the species was selected and the option "Florida, State Total" was used.

Spotted seatrout are considered to be one of the more sought after gamefish found in Florida's state waters. The effect of the net ban amendment on seatrout is touted as a success in the recreational angling literature. *Florida Sportsman* ran articles in which they report that trout populations are on the increase, all due to the net ban (Farren 1998, *Florida Sportsman* 1998). The recreational catch of the species is presented in Figure1A (NMFS, pers. comm.).

An analysis of this data reveals that the recreational catch is somewhat static in nature. Excluding peaks in 1984, 1986, 1989 and 1991, and troughs in 1981, 1982 and 1985, the total catch has been hovering just under 10,000,000 fish. For the year of 1997, there is a preliminary trend of an increase in the recreational catch above the mean for the years 1981 - 1997.

A word of caution is necessary when interpreting the data. The total recreational catch for all species depends on much more than the presence of more fish in the water. Recreational catch rules and regulations (bag limits, size limits), as well as fishing effort in any given year will influence the number of fish in total catch statistics. Participation can be influenced by a variety of factors, including tourist visitation. Tourist visitation can be influenced by adverse weather in any given year (hurricanes), bad publicity for the state (murders at rest areas), and the price of traveling to the state. Nevertheless, the data are the best available to gauge the reaction of fish populations to the net ban policy. Data also exist for the commercial catch of spotted seatrout, also presented in Figure 1A. These data reveal a peak in 1982 followed by a downward trend throughout the late 1980s and early 1990s. As expected, when any cause of fish mortality is removed or restricted, the two years following the net ban show a sharp drop in commercial catch. Again, caution is advised when interpreting the data since commercial catch is influenced by the same factors that affect the recreational catch (rules and regulations, effort).

The recreational catch data for spanish mackerel are presented in Figure 1B. The data for 1986, although high, were double-checked by the scientists at NMFS, and are an accurate estimate. Reasons given for the peak in the data are that the spanish mackerel fishery is considered a "pulse" fishery, which means that peaks in the data are considered normal (NMFS personal comm.). The commercial catch data follows (See Figure 1B). There are two years in which the recreational catch slumped (1984 and 1985), and two peaks in 1986 and 1992. From the peak in 1992, recreational catch exhibits a declining trend until 1995 (the year of net ban

implementation). The following two years (1996 and 1997) reveal a slight positive trend over 1995, but remain below 1990 - 1994 levels.

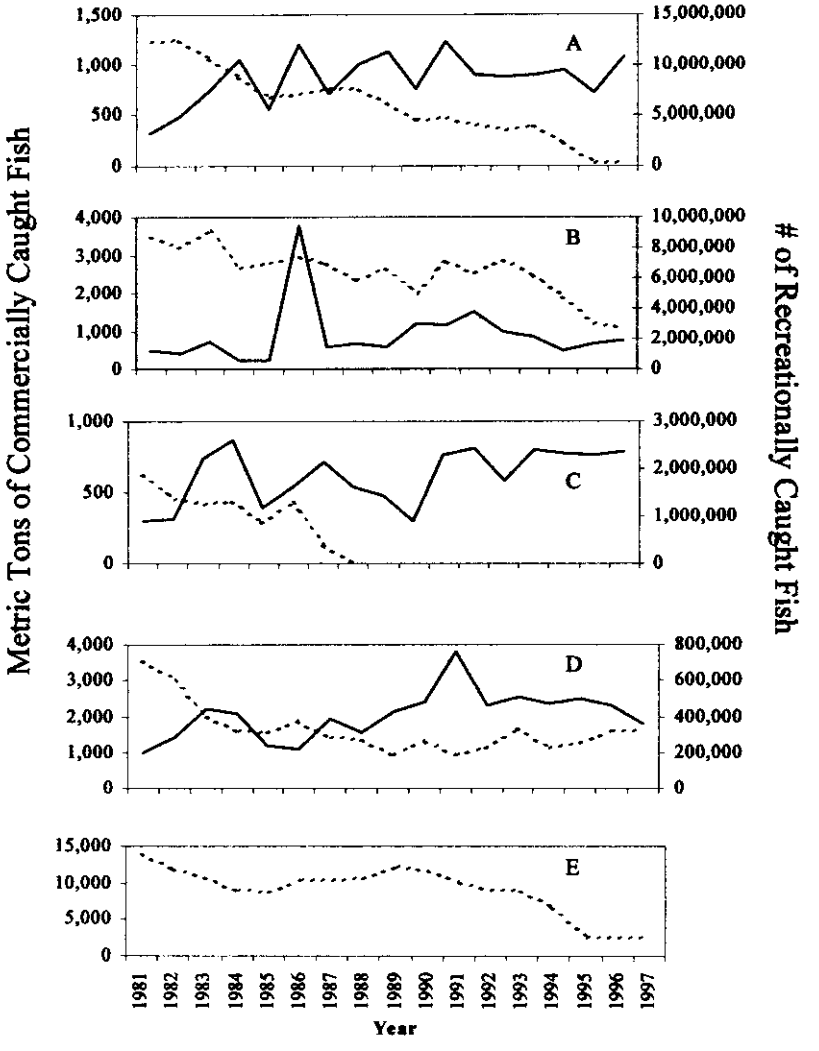

Figure 1 Trends in Catch Statistics for Selected Species—A) Spotted Seatrout, B) Spanish Mackerel, C) Red Drum, D) King Mackerel, E) Striped Mullet. The solid line represents recreational catch and the dashed line commercial catch.

Like the commercial catch of spotted seatrout, the commercial catch of spanish mackerel peaked in the early 1980s. From this point onward, the fishery exhibits a downward trend, excluding small increases in 1985, 1986, 1989, 1991 and 1993. However, these increases never reached the historical highs exhibited in the early 1980s. The years following the net ban show a substantial drop in catch from 1995 to 1996, with the trend continuing into 1997.

Red drum was not directly affected by the net ban since the fishery was closed to commercial harvest in the 1980s. The data for the recreational catch of this species are presented in Figure 1C. There is a peak in recreational catch in 1984 and several troughs (1981, 1982, and 1990) in the data. Other years they have been maintaining themselves just above the 2,000,000 level. There is a slight increase in recreational catch for the years following the net ban implementation; however, it is not as pronounced as the trend in the recreational catch of spotted seatrout. The commercial catch for the species exist for the same years until 1988, when the commercial catch was closed. The commercial catch was declining in the years leading up to the closure of the commercial fishery in 1988. There is one upward trend from 1985 to 1986, possibly a result of the expected closure of the fishery or a result of 1995 being an "off" year for this particular fishery.

Recreational and commercial catch rates for king mackerel are shown in Figure 1D. An analysis of these data reveals that, excluding one peak in 1991, the recreational catch has been static. There are downward trends from 1984 to 1987, followed by a positive trend leading to the peak in 1991. From 1991 on, the trend is negative, culminating in a trough for the last year (1997). Figure 1D also reveals two definitive dips in the commercial catch in 1989 and 1991. The trough in 1989 was preceded by a downward trend in catch, and the dip in 1991 is followed by an increase through 1997, excluding one minor dip in 1994. The two years shown for after the net ban maintain this increase in commercial catch. Reasons for this may be that this is the only species of fish where fishery resources are outside of the demarcation line established by the net ban. This is supported in the popular literature. The April 1999 issue of *Florida Sportsman* has an article in which they highlight this in the area around Key West (Conner 1999).

Recreational catch rates for mullet do not exist since this fishery is not a recreational fishery. Only commercial catch statistics exist for this fishery (See Figure 1E). The commercial catch of striped mullet has been declining in the years shown in Figure 1E. There is one positive trend from 1986 to 1989, possibly relating to the demand in the roe market. From 1989 onward, the trend is negative, culminating in a sharp decrease in 1995. This decrease in 1995 can be related to the net ban in that the roe season occurs in the fall, which is after the date of net ban implementation (July 1, 1995). The following two years do show a slight increase; however, the commercial catch in 1997 does not come close to the numbers for the years prior to net ban implementation.

Impacts to Commercial Fishing

As one would expect, the inshore gill netting industry was severely affected by the net ban amendment. Since this industry is considered to be a family enterprise, we must examine the effects the net ban had on fishing families involved with the industry. Smith et al. (1999) conducted an investigation to examine these effects and how the net ban has affected family life for this stakeholder group. Their research concentrated on a sample of fishing families identified prior to the net ban; they were studied to examine the ways fishing families were preparing to cope with the net ban. They concluded fishing families were coping with the net ban in several different ways. Women, who are primarily responsible for the day-to-day activities of the household, were still working outside of the home to supplement household income. Men were also looking outside of the fishing industry to maintain their status as "breadwinners." Men were also spending less time with on-the-water activities, as well as changing their perceptions about the future of commercial fishing. The research shows that men would be less likely to choose fishing as an occupation if they had to do it again, considered changing occupations more often than prior to the net ban, and expressed a decrease in their desire to stay in fishing as an occupation. Stress indicators taken before and after the net ban went into effect show that married couples had a higher incidence of emotional problems, used drugs or alcohol more frequently, and had increased sexual problems after the net ban went into effect. One of the most noteworthy results of the research is that divorce rates for this stakeholder group were four times higher than the state average.

Dissatisfaction among inshore gill-netters manifested itself in different ways. After the net ban amendment passed, a number of challenges were brought before the courts to question the legality of the constitutional amendment. One court case, ruled upon in May of 1995, questioned the wording of the amendment and the definitions found therein. Specifically, the plaintiffs wanted a ruling on the definition of trawl nets and how the square footage of a trawl net is interpreted. The stimulus for this case was the construction of a trawl net, termed the "Golden Crum" net, which according to the plaintiffs was constructed to meet the new regulations of the net ban amendment. The defendants in the case argued that the area of the trawl should be measured by using the formula to calculate the area of a cone with the mesh of net in the closed, or stretched, position. The plaintiffs argued that the amendment is not clear on the requirement of the mesh being in the closed position, which greatly increases the mesh area of any net. The judge in the case ruled in favor of the plaintiffs, and deemed the "Golden Crum" net to be legal under the net ban amendment (Millender, Crum & McClain v. State of Florida 1995).

In a separate case, the commercial fishing industry questioned the interpretation of the three-mile demarcation line used in the net ban amendment. The MFC maintained that three miles referred to three nautical miles, however a judge in Wakulla County ruled that the wording of the amendment was vague and that three miles refers to three statute miles, thus shortening the extent of waters affected by the net ban (Cotterell 1996). The ruling only affected the waters of Wakulla County. It was also in 1996 that several commercial fishers started experimenting with other

types of material to replace the nets outlawed by the net ban. The most controversial of these new nets is one fashioned out of tarpaulins that replaces the monofilament line used to make entanglement nets. The battle over the legality of this type of net lasted several months and resulted in seven companies being given permission to use the tarp nets as an experiment to continue harvesting baitfish off of the Panhandle.

Not only did the commercial fishing industry challenge the net ban amendment through legal means, illegal activities were also used to protest the amendment. As early as July 2, 1995, one day after the net ban amendment went into effect, a recreational fishing tournament was targeted in Fort Pierce. Hundreds of two-inch roofing nails were placed on the boat ramp at the marina where the tournament was being held. Other protests on this first day of the net ban implementation included another boat ramp being littered with nails, illegal nets being found strung between two channel markers, several pleasure boats being spray painted, and dead fish being left at the entrance to a tackle shop (Cocking 1995). Two incidents in 1998 are similar to these early protests. The Coastal Conservation Association of Florida (CCAF, formerly the FCA) reported that poachers left the filleted remains of snook carcasses in the road on Pine Island on two separate occasions within a period of two weeks (CCAF 1998). Ted Forsgren, Executive Director of CCAF, commented that the Pine Island area continues to be a center for illegal netting activities (CCAF 1998).

Illegal netting practices have continued to be a problem since the implementation of the net ban amendment. *Saltwater Sportsman*, a national recreational angling publication, ran an article to highlight this in June 1996. In the article, the magazine reports that in the second half of 1995 the Florida Marine Patrol (FMP) had given 135 citations for illegal netting. Most of the illegal netting was in response to the roe season for mullet, when prices for mullet reached three dollars a pound (Brownlee 1996). He also commented on how commercial netters were using discrepancies in the net ban amendment to illegally harvest fish in state waters. It is still legal for netters to traverse state waters to reach federal waters where the use of nets is legal. These net boats also carry cast nets, still legal in state waters. Illegal activity occurs when illegal nets are used in state waters, and fishers claim the catch was made with the cast net. Through the years these illegal activities have become even more creative. Reports in *Florida Sportsman* identify the use of night vision equipment, stowing illegal nets on barrier islands or underwater where they may be retrieved after leaving the dock, and the use of two boats to deceive authorities. This operation consists of a boat equipped with the illegal nets, which are legal to own (but not use in state waters), and the other boat equipped with a cast net. The boat with the illegal net transfers the catch to the boat with the cast net so as to appear legal. If the boat with the illegal net is stopped, they can claim that they were going to fish in federal waters.

The FMP provides a net ban arrest database at their website (Table 1). However, this table only reports those activities where someone was apprehended, so the total number of illegal net operations in Florida state waters is unknown. The

total numbers of arrests for net ban violations peaked in 1996 and have decreased in 1997 and 1998. It is also interesting to examine the totals given month by month. This reveals an increase in total arrests made in the months September through December, corresponding to the annual mullet roe harvest. Again, the numbers for these particular months peaked in 1996 and have decreased in 1997 and 1998.

Table 1. Arrests Due to Illegal Netting Activities

	1995	1996	1997	1998	1999	TOTAL
January	N/A	12	31	29	18	90
February	N/A	20	25	22	15	82
March	N/A	17	32	9	15	73
April	N/A	24	21	11	N/A	56
May	N/A	27	23	18	N/A	68
June	N/A	11	4	24	N/A	39
July	12	52	17	28	N/A	109
August	9	36	17	16	N/A	78
September	17	65	21	29	N/A	132
October	12	76	45	39	N/A	172
November	31	111	45	48	N/A	235
December	48	92	51	27	N/A	218
TOTAL	129	543	332	300	48	1352

Source: Florida Marine Patrol

Impacts to Recreational Fishing

Recreational fishing in Florida exhibits the same characteristics as angling elsewhere. The economic impact of recreational angling far outweighs that of commercial fishing. However, rather than elaborate on the economic indicators that obviously show that recreational fishing has a larger economic impact than commercial fishing within Florida, this research concentrates on the social components of the recreational angling experience and how those components may have changed as result of the net ban amendment.

An important social component of the recreational angling experience is angling satisfaction. Put simply, anglers who catch more fish are more satisfied with their experience. This is particularly true when anglers are asked about trip satisfaction on the same day the fishing trip occurred (Matlock et al. 1991). In the research described herein, the presence of more fish, as captured by the examination of popular literature, equates to increased satisfaction.

The anecdotal evidence from popular fishing literature was examined to gauge the perception of recreational anglers of what has happened to fish populations as a result of the net ban. In the April 1999 edition of *Sport Fishing*, a local captain makes the comment about recreational angling in Tampa Bay, "Three or four years ago, there were virtually no mullet, and now we see them everywhere" (Hahn 1999). *Florida Sportsman* has also reported on the resurgence of mullet populations. In an article devoted to the three-year anniversary of the net ban, the comment is made that, "Mullet populations also are surging to numbers not seen in a generation . . ."

(*Florida Sportsman*, 1998). The article goes on to report that mullet populations may not be recovering as quickly as expected due to illegal netting.

Anecdotal evidence also supports the resurgence of trout populations. *Florida Sportsman* reports, "Already, anglers are shaking their heads in amazement at the number of big seatrout being caught in areas that for several decades served as little more than nurseries for commercial netting" (*Florida Sportsman* 1998). Also, the magazine reports in the September 1998 issue, "Mainly because of the net ban, seatrout stocks have been growing in most areas" (Farren 1998).

DISCUSSION

Some preliminary conclusions can be reached. First, there has been a drastic reduction in the commercial catch of the individual species since the net ban policy went into effect. This represents more fish not being harvested for commercial use. Secondly, fish not being harvested by commercial fishers do not show up as recreational catch. This is important in that the net ban did not simply reallocate the harvest of these species to the recreational sector. Lastly, the anecdotal evidence strongly supports an increase in availability in species sought after by recreational anglers.

The Florida net ban policy is still a work in progress. Although five years have passed since the implementation of the policy, it is still a topic that will spark debate. Much of the opposition and associated protests from the commercial fishing industry will probably decline in the future as the policy ages, but opposition should not be dismissed lightly. The policy has forever closed one segment of the Florida commercial fishing industry, but it has not destroyed the industry outright. Some commercial fishers have moved to other forms of commercial fishing, i.e. cast nets, aquaculture, in order to remain within the industry. The commercial fishing industry has simply had to adjust to what the recreational fishing industry views as a victory for the recreational pursuit of the fishery resources in the state.

The net ban policy should not be viewed as a complete solution to the problem of dwindling fishery resources in the state; it is merely one step in protecting these valuable resources. Without continued effective management strategies, the people of Florida may find themselves in a similar situation in the future.

One problem concerning the net ban policy is the lack of adequate fisheries population data for the state of Florida. The data presented in this paper are estimates of catch made by NMFS and do not necessarily reflect the changing status of particular fish populations. However, this is the best available technical data currently available and, when coupled with anecdotal evidence in the literature, they provide the best insights to the status of these fish populations. In the future, better fishery-independent data are needed at the state and regional level.

There is no definitive answer to the question "Has the net ban been effective?" It has certainly been effective in reducing the commercial catch of selected species. However, recreational catch data are inconclusive at this time. One would certainly expect to see some sort of increase in recreational catch if selected fish populations

are on the rebound. This is simply not the case. Anecdotal evidence supports the resurgence of selected species, so perhaps an increase in catch rates will show up in the future. It is simply too early to tell if the net ban is responsible for any resurgence in Florida's fisheries. If anecdotal evidence is correct, Florida may be experiencing an increase in fish populations for reasons other than the net ban amendment, such as better habitat, a natural fluctuation in fish population cycles, or effective management strategies implemented prior to the net ban. In the future, if it is determined that the net ban is not responsible for an increase in fish populations, commercial fishers affected by the net ban policy would likely advocate a limited-entry return to inshore fishery resources. If it can be proven at a later date that the net ban is primarily responsible for increases in fish populations, then perhaps agencies need to focus on similar types of restrictions for other types of commercial fishing (such as longline fisheries) to help rebuild ocean fishery resources.

The state of the world's fisheries populations is not good (McGinn 1998). Throughout the world's oceans, there is evidence of overfishing for most resources. We can expect to see continued battles between recreational and commercial fishers in the future years, and continued problems for the fisheries managers who must both seek to protect and allocate the harvest of economically and socially valuable fishery resources.

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