

# Establishing Limited Entry in the Texas Inshore Shrimp Fishery: A Case Study

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## EPILOGUE

On June 8, 1995, Texas Governor George Bush signed into law legislation which established the first ever license limitation program in a Texas fishery. This program will eventually have significant biologic, economic and social impacts on about 2500 licensed inshore (bay and bait) shrimp vessel owners, as well as the coastal communities where they work and live. The successful process of developing limited entry in this fishery and the subsequent implementation of the program requirements will also have a major bearing on management of other Texas fisheries in the future.

## SHRIMP FISHERY CHARACTERISTICS

The shrimp fishery is Texas' most valuable commercial fishery with annual landings approaching 100 million pounds and an economic impact to the state of nearly one-half billion dollars (Cody *et al.*, 1990). While the number of recorded license holders have decreased since the early 1980's, 1993 license totals (bait - 1512, bay - 1800, gulf - 2099) (Robinson *et al.*, 1994) still reflect a very large and important fishery along the Texas coast.

Historically, management of the shrimp fishery in Texas has been complicated by a variety of factors. The two main species are white (*Penaeus setiferus*) and brown (*P. aztecus*) shrimp, but pink (*P. duorarum*) shrimp are seasonably important along some areas of the coast (TPWD 1995). The life history of each species is somewhat different, although, in general, adults live and spawn in the Gulf while juveniles reside in the bays before migrating to the Gulf as larger shrimp. Additionally, the three license types (bay, bait, Gulf) represent fisheries separated historically by use of product or geographic location of the prosecuted fishery. In the bays, there are food and bait shrimp fisheries. There are participants who fish only in the bay, in the bay and gulf, and only in the gulf. The allocation issues among these three distinct groups and the effect that shrimp life history characteristics have on this allocation makes for a very complex fishery. Further compounding management is that gulf waters off Texas are subject to interjurisdictional management between Texas and the Gulf of Mexico Fishery Management Council (GMFMC 1981). In addition, shrimp stocks off Texas are influenced by movements between Louisiana and Mexico waters.

### **PROBLEMS WITHIN THE FISHERY**

Unlimited entry has led to overcapitalization of the shrimp fleets and excessive effort (Griffin, *et al.*, 1976; Klima 1990) in both the inshore and offshore fisheries. Particularly within the more restricted waters of the inshore fishery, too many vessels are putting too much pressure on limited shrimp stocks. Although licenses have decreased, total effort within the inshore fishery has continued to increase, subsequently leading to increased numbers and pounds of shrimp being landed (Cody *et al.*, 1990; TPWD 1995).

Further, the data illustrate the allocation issues between the inshore and offshore fisheries. For example, while pounds of food shrimp landed from the Gulf have decreased 18% since 1972, landings from the bays have increased 135%. When pounds are converted to the number of individual shrimp landed, the trends become more dramatic. While numbers of shrimp landed from the Gulf have remained basically stable, numbers from the bay have increased over 300% since 1972.

A dramatic shift is also evident within the bay landings themselves, with the previous emphasis of the bay fleet on white shrimp being redirected to brown shrimp. Much of these changes in the historical patterns within the shrimp fishery can be attributed to a pronounced increase in bay shrimping effort. Since 1972, the bay fleet has increased effort by over 300%.

Focusing on the brown shrimp fishery, which has become the dominant bay fishery, the level of concern becomes more apparent. Numbers of brown shrimp landed, not including bait, have seen nearly a 400% increase. Landings of the smallest size brown shrimp, which are above 67 count (shrimp in numbers per pound) heads off, have increased almost 600% since 1972.

These data document an increase in growth overfishing, or stated more simply, an increase in the number of small shrimp landed. This also represents a significant departure from the historical balance between bay and gulf landings. A reflection of this increasing risk for the shrimp population and increasing problem for the individual shrimper is the overall decline in the catch in pounds per trawling hour of brown shrimp in the bays. Since 1972 40% fewer pounds on average are landed for each hour of shrimping effort.

### **MANAGEMENT HISTORY**

The Texas Shrimp Fishery historically was managed by the Legislature and the Shrimp Conservation Act of 1959. The Texas Parks and Wildlife Department was charged with administering monitoring programs and conducting research on the shrimp fishery and enforcing the rules and regulations established in the legislature.

Through time, more oversight and authority of the shrimp fishery has been transferred from the Legislature to the Texas Parks and Wildlife Commission (TPWC), ultimately resulting in the adoption of the Texas Shrimp Fishery

Management Plan in 1989. The Plan basically was the prerequisite for the TPWC being granted expanded authority over the shrimp fishery, resulting in control over the traditional regulation of means and methods, *e.g.* gear, seasons, time of day, quantity and size of harvest.

The Commission also established a Shrimp Advisory Committee, consisting of various industry representatives and other interested parties, to advise on implementing recommendations of the Shrimp Plan.

In response to one of the recommendations of the Shrimp Plan, which stated "The necessary data should be obtained to assess the feasibility of implementing a limited entry program into the Texas shrimp fishery to achieve optimum yield.", the Shrimp Advisory Committee requested and received a presentation concerning the general advantages and disadvantages of a limited entry system in the shrimp fishery. However, legislative action was needed to establish any type (form) of a limited entry system.

The Shrimp Advisory Committee approached the 72nd Legislature in 1991 requesting a license moratorium, as an initial step for an effort limitation plan. No legislative action was taken by the 72nd Legislature, but the Committee on Environmental Affairs, Texas House of Representatives did conduct an interim study on limited entry and created a report in 1992 to the House of Representatives for the 73rd Texas Legislature. In conclusion the report states, "Some form of limited entry may be needed in the Texas shrimp fishery in the future to stabilize the industry. Based on the current status of the shrimp fishery in Texas, any measures which promote economic efficiency throughout the industry should be considered." .... "any limited entry system will need both government and industry support in order to develop and implement a scheme that will be successful."

#### RECENT MANAGEMENT ACTIONS

Based on continuing overfishing trends within the fishery, the Commission proposed in early 1994 additional harvest restrictions in the inshore fishery. These time closures and gear restrictions were designed to reduce the increasing harvest of brown shrimp within the bays, specifically juvenile (very small) brown shrimp.

Opposition from inshore shrimpers to these proposed restrictions was severe. Coastal public hearings resulted in packed meeting rooms and very vocal protests (over 500 individuals attended coastal meetings). On March 24, 1994 the Commission adopted a compromise package of less restrictive (less conservative for the resource) regulations based on evaluation of the public testimony which was obtained at the public hearings and the commission hearing on that day. Many people spoke in opposition, including several public officials who provided testimony on behalf of their constituents, and many more arrived on that day to support those who spoke and demonstrate their opposition to the

proposed rule changes. This compromise resulted from the recognition by the Commission that traditional management methods, such as gear restrictions, area and time closures, and size and bag limits, serve to reduce the efficiency of individual fishermen who cannot fish to their maximum potential and, therefore, cannot maximize their profits. These methods also increase enforcement costs, cause a decline in product quality, and promote "capital stuffing" (effort increases through gear, horsepower, hours fished, etc.). This uncontrolled expansion of effort in the long-run creates the need for continued additional restrictive regulations.

However, in adopting the weaker regulations the Commission also provided a clear statement that stricter regulations to reduce effort would be adopted if a viable Bay (inshore) Shrimp Fishery Limited Entry Plan was not developed by the industry in concert with departmental staff.

#### **DEVELOPMENT OF THE SHRIMP FISHERY LIMITED ENTRY PLAN**

Following this new guidance from the Commission, the Department began extensive efforts to educate industry members and solicit their input in the development of a draft limited entry plan. All license holders were notified about limited entry workshops to be held in nine coastal cities in May, 1994. The workshops were designed to introduce and educate the shrimp industry concerning limited entry. Specific examples of key elements found in other limited entry programs were discussed, *e.g.* determining eligibility, renewal of license, transferability, buyback, and review of the program. In addition, at each meeting shrimpers were asked to identify two representatives from their area to participate in a leaders group which would work with the Department on the specifics of a Limited Entry Plan, as well as provide communication back to each local community.

Concurrently, several other actions were taken by the department to enhance the development of the Limited Entry Plan. A cultural anthropologist was hired to facilitate limited entry meetings between the Department and shrimpers and to develop social and cultural background information on the shrimping industry. Additionally, this consultant took the role of an information conduit between industry members who were not being heard from, or those who did not want to communicate directly with staff members.

Additionally, another consultant was hired to complete a public policy analysis of other forms of limited entry being used in the management of other natural resources or public goods in Texas. Forms of limited entry are used by other agencies to control the take or use of state resources such as oil, gas, and timber. These management tools were compared to those traditional methods which the Commission had existing authority to use.

Lastly, limited entry systems for fisheries successfully employed throughout the world, including Australia, New Zealand, Canada, Alaska, and

California were identified. These systems were reviewed to determine which key elements were important for effective implementation and to explore if the benefits of increased fishermen profits, long-term resource conservation, and maximum benefits from a publicly owned renewable natural resource have been realized. A synopsis of the literature reviewed and possible scenarios for the Texas shrimp fishery were provided to area leaders and other interested parties.

#### **ELEMENTS OF THE LIMITED ENTRY PLAN**

The shrimp area leaders attended a series of meetings from June 1994 to January 1995 to discuss specific elements needed in a limited entry plan. Majority votes were used to select the final wording of each plan element. Prior to the final elements of the Limited Entry Plan being solidified a second set of workshops were held in the nine coastal communities in September 1994. These workshops provided feedback to the industry and a forum for greater industry input based on the options being considered for the key elements.

Presented below are the basic elements that the leaders and the Department determined that the limited entry plan must contain and the concern or issue that each element must address.

1. Eligibility - Who gets into the fishery when limited entry goes into effect?

Concern - Allowing for bona fide fishermen, or the historical participants in the fishery, to remain in the fishery without increasing speculation in the fishery.

2. License renewal - Once the historical participants are qualified into the fishery, how will license renewal occur on an annual basis?

Concern - How to keep bona fide shrimpers in the fishery without allowing and increasing the amount of speculation that may occur surrounding the holding of shrimp fishery licenses.

3. Transferability - To whom and when can licenses be transferred?

Concern - To allow for the transfer of licenses so that shrimpers have the ability to profit from the sale of their license, and the flexibility to move out of the industry, or even purchase another vessel, while balancing these desires against the need to allow for a mechanism which will reduce the number of licenses in the long-run.

4. Vessel Upgrades - How to allow for vessel upgrades, without compromising the goal of long-run effort reduction?

Concern - To allow for individual vessel improvements for safety and comfort without allowing for the long term expansion in effort in the fishery. Increased vessel length, increases in horsepower, and new advances in gear can all attribute to increases in the overall effort with no increases in the number of licensed vessels.

5. Anti-Monopoly Feature - How many licenses (vessels) can a person or business own?

Concern - Should a cap on the number of licenses an individual can receive from the fishery be put in the Limited Entry Plan to prevent only a small number of business's owning and controlling the fishery.

6. License Revocation - How can a license be revoked permanently or suspended for abusive use or flagrant violations of the license?

Concern - To allow for effective deterrence of flagrant violators without excessively providing hardship and punishment to minor violators or those who do not violate the law.

7. Review Board - Who should be on the review board? And what authority should the review board have?

Concern - The review board should be set up to allow for effective review and advice on limited entry actions without compromising the short- and long-term goals of the limited entry program.

8. License Buy-Back - Should there be a license buy-back program which would allow for the voluntary sell of an individual's license to the Department for retirement of that license.

Concern - The program would allow for voluntary participation in a buy out program removing effort or vessels from the fishery, without excessively taxing the industry or state revenues.

9. Review of The Limited Entry Plan - How and when should a review of the limited entry program occur?

Concern - The concern here is to allow for an effective review of the program without compromising the long-term goals of the limited entry program.

#### **EVOLUTION OF LEGISLATION**

Prior to finalizing the key elements with the area leaders a briefing to discuss the process to date and the options being considered was provided for Coastal legislators and their staff. Several legislators had routinely inquired about the process of the plan and some had staff members attend the coastal meetings and area representative meetings.

After the key elements were solidified, legislators who had agreed to sponsor the legislation worked with members of the area leaders and the Department to draft legislation which embodied the "spirit and intent" of the key elements. Ultimately this led to filing of Senate Bill 750, Senate Bill 825, and House Bill 1841. Senate Bill 750 and House Bill 1841 were companion (identical) Bills and were supported by the majority of the area leaders and Senate Bill 825 was supported by a minority group of the area leaders. Differences in the bills were associated with eligibility, definition of flagrant offenses, timeframes associated with those offenses in which suspensions may occur, and a landings qualification or standard for renewability each year. All

three bills were referred to the appropriate House or Senate committee for hearings.

Senate Bill 825 was tabled in Committee while Senate Bill 750 was passed unanimously by the Senate Committee and full Senate and by the House Committee and the full House of Representatives. Key testimony at both the Senate and House committee's was provided by coastal legislators and the area leaders who had worked to create the legislation. Despite very heated disagreements throughout the Plan development process, particularly between the Department and shrimpers, there was no unfavorable testimony presented during any of the legislative forums.

Key elements (Table 1) in Senate Bill 750 include an eligibility criteria which states an individual must have purchased a bay and/or bait license from September 1, 1994 but no later than April 1, 1995 to be eligible to participate in the fishery beginning September 1, 1995. Also, a buyback program is established which creates a fund for buying back licenses of individuals who voluntarily want to sell and who can qualify into the buyback program. A Review Board of bay and bait license holders was established to review hardship and appeal cases and to advise the Department on all aspects of program administration and a mandatory review by the legislature is required in 1999. Other key features of the bill include restrictions on vessel upgrades, license suspensions for flagrant violations, and restrictions on license transfers.

### **CONCLUSIONS**

Limited entry programs offer the promise of maximizing biological benefits without the social and economic disruptions in the fishery that often accompany traditional management methods. Developing such programs, however, can be difficult at best given the uncertainties, mistrust, misinformation, and instability inherent in many of today's fishing communities.

The creation of the Texas shrimp limited entry program speaks to the success of some of the methods utilized in this development process. Key among these may be the "process" itself, that objectively solicits input from all relevant stakeholders and provides a forum for reasonable debate and consensus building. Critical within this process is the use of a variety of communication tools, such as broad-based mailouts, academic reports, educational workshops, and facilitated decision-making meetings. The validity and credibility of the end product, as well as its ability to withstand legal challenges, may well hinge on the development process, specifically, the open and comprehensive nature of the process.

No doubt each fisher in the process of developing a limited entry program will encounter its own unique set of problems and pitfalls. However, some of the larger impediments in the Texas experience may be common themes for many fisheries, including the following four issues:

**Table 1. Elements of the Texas Inshore Shrimp Limited Entry Plan**

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<b>Element</b>	<b>Option</b>
Eligibility	Must have been licensed from Sept. 1, 1994 but no later than April 1, 1995.
License Renewal	Must have had a license in the previous year.
Transferability	Transferability will be restricted until Sept. 1, 1999, with intra-industry, captains, and inheritability as exceptions.
Capital Stuffing-Vessel Upgrades	Upgrades allowed only once - up to 15% of original length. Maximum of 400 Hp and 60-ft vessel length set. Those over max. will be grandfathered at entry into program.
Anti-Monopoly	Ownership of no more than 4 licenses of each type (current holders of more than 4 licenses grandfathered but not past 8-31-2002).
License Revocation	Invoke suspension of license after 3 flagrant violations within any 24-month period. Flagrant violations are defined. Three suspensions are justification for permanent revocation of license.
Review Board	Industry-elected 9-member board with geographic distribution. Advisory to Commission on changes to Limited Entry Program and Executive Director oversight.
License Buyback	Create buyback program using increased license fees and through license transfer fees. Increases will have a 15% or \$25 ceiling - whichever is less. Commission establishes buyback qualifications.
Program Review	Provide a report to the governor and legislature no later than Jan. 1, 1999.



### **Timing**

The time available from the March 1994 Commission meeting to having legislation drafted with industry support by January 1995 was very short. Having more time to educate and involve appropriate individuals (shrimpers, legislators, and staff) would have reduced conflicts and confusion.

### **Racial Overtones**

In the 1970's the ethnicity of the shrimping fleet in Texas began to change (Osburn *et al.*, 1990). Currently it is estimated that the fleet consists of 30-35% Asian-American fishermen. The increase in the Asian-American influence in the fleet did not occur without conflict (Johnson and Libecap 1982). These racial conflicts have had lingering effects in the fishery. The Department was blamed for allowing the initial entry of these fishermen and then accused of racism or favoring one side or the other during the limited entry program development. Also, the natural cultural and language barriers often lead to low attendance at public meetings and created unique communication problems.

### **Blackmail**

Due to the Commissions authority over the traditional regulatory measures, many fishermen viewed the process as blackmail since if limited entry was not established the Commission could always pass other types of harvest restrictions to limit effort. These feelings of blackmail made it difficult to focus shrimper's attention on the fact that limited entry is designed to solve social and economic problems as well as biological.

### **Conflicts Among User Groups**

Conflicts between segments of the shrimp industry (gulf fishermen vs. bay fishermen, processors vs. boat owners), and between shrimpers and other users, such as recreational anglers and environmental groups arose throughout the process. These groups would generally defend a position which would eventually be advantageous to their particular agenda or cause. Additionally, within the area leaders themselves there were disputes over who could claim legitimate representation of inshore shrimpers. These conflicts frequently disrupted the negotiation process. In addition, the Department's ongoing dialogue with all the various stakeholders in the fishery lead to mistrust and charges of secret negotiations or negotiating not in good faith.

### **SUMMARY**

The passage of shrimp limited entry legislation, in the form of Senate Bill 750, validates the overall success of the process which created new and unprecedented authority in Texas' fisheries management. The paradigm shift towards "co-management" with the industry which the Texas Shrimp Advisory

Committee began in 1989, has the potential to create enormous benefits for the management of the shrimp resources of Texas and all the users of the resource. Greater conservation ethics and resource husbandry in concert with the Department's goal of effort reduction will lead to a long-term sustainable fishery without the economic instability that currently plagues the industry. Already, outside interest in monetarily supporting the buy-back fund has occurred. In addition, the Department has been approached by fishermen in other fisheries within Texas who believe that a limited entry program may be beneficial for their industry. Hopefully, this first case study of establishing a limited entry program in Texas will not be the last.

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