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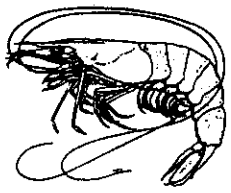
SHRIMP IMPORTS: EFFECTS ON PROCESSORS

The Gulf of Mexico shrimp industry is again undergoing one of its more stressful periods of trying to compete with ever-increasing imports. While shrimp imports have been a fact of life for many years, the modern era of massive imports began in 1983, when Latin American and then later, Asian farm-raised shrimp production seriously ramped up.



The southeastern U.S. shrimp industry has twice, in 1975 and again in 1984, appealed for protection from imports. The 1975 effort was a Section 201 petition filed with the U.S. International Trade Commission by the National Shrimp Congress. Their finding was that imports at that time were not large enough to injure U.S. shrimp processors, although they did find that injury to shrimp harvesters had occurred. They recommended adjustment assistance to the industry.

In 1984, another federal investigation of shrimp imports occurred under 322 (g) of the Tariff Act of 1930. Southeastern U.S. shrimp fishermen claimed that they were injured by imports and that foreign countries were providing government help to their shrimp producers, allowing their exports to the U.S. to be artificially low. In spite of their claims, the International Trade Commission recommended no action.

Further analysis of the effects of imports between 1973 and 1996 on U.S. shrimp processors has shown negative impacts on them. During that time, U.S. shrimp processors became dramatically less profitable. The difference between what processors had to pay for shrimp and what they were able to sell them for, decreased by 56% for peeled shrimp, by 39% for breaded shrimp, and by 30% for headless shell-on shrimp.

Three U.S. fisheries economists have evaluated what the impacts of these declines have been. To do so, they divided southeastern shrimp processors into 3 size groups: size category 1 are those processors that have between $20,000 and $1

million in annual sales, size category 2 are companies with sales between $1 million and $10 million, and size category 3 firms are those with annual shrimp sales over $10 million.

After 1983, because of the increased shrimp imports, shrimp became available to U.S. processors year round. As a result, prices paid to fishermen, wholesale prices, and processor profit margins went down. The narrowing of margins affected smaller processors more than larger ones. Between 1973 and 1996, the number of southeastern shrimp processors in size category 1 declined from 85 to 37 (-56%). The number of category 2 processors dropped from 58 to 35 (-40%), while the number of category 3 processors declined from 32 to 25 (-34%).

Before 1983, small, medium and large-sized processors had an average annual production of 32 thousand pounds, 536 thousand pounds, and 3.6 million pounds. After 1983 the averages had increased to 51 thousand pounds, 910 thousand pounds, and 5 million pounds per year. Shrimp processing firms in all 3 categories also increased their production per employee and decreased their number of workers.

Source: *Non-Stationary Markov Process Analysis of the Size Distribution of Shrimp Processing Firms in the Southeast United States.* Hamady Diop, Wes R. Harrison and Walter R. Keithly, Jr. International Institute of Fisheries Economics and Trade, 2000 Proceedings.

GATED WATERWAYS

In something of a break-through for fishermen and boaters, the Louisiana State Lands Office has announced that the buck stops on their desk in defining the legality of a gate or other blockage on a waterway. The announcement was made at the August 29 meeting of the Atchafalaya Basin Program's Living Resources Committee.

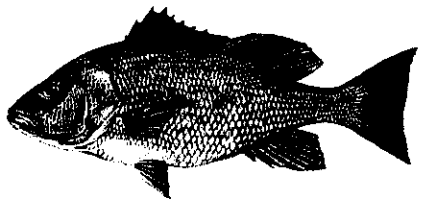
Baton Rouge bass angler Barry Joffrion brought the issue to the attention of Sandra Thompson-Decoteau, Director of the Atchafalaya Basin Program, who assigned it to the Living Resources Committee. Echoing the concern of boaters throughout the state, Joffrion said he knew that some of the waterway obstructions are legal because the waterways are on private property. "But", he said, "fishermen have no way of knowing which are legal and which aren't, and they have no one to call."

In the past, boaters with questions on gates and other blockages were referred to parish district attorneys, who are remote from the problem and don't have staff to send into the field. As a result, suspicions and tempers about the issue have been rising.

Clay Carter, speaking for the State Lands Office, said that boaters with questions should contact him. If the blockage is determined to be illegal, they will pursue removal with the necessary parties. Carter can be reached at 225/342-4600, Louisiana State Lands Office, P O Box 44124, Baton Rouge, LA 70804. Carter said that he must have

good map, like a quad sheet, accurately marked or GPS coordinates of the problem spot before he can act.

ARE PLATFORMS ESSENTIAL HABITAT?



Management of red snappers remains one of the most controversial fisheries issues. Both recreational and commercial fisheries are limited by strict size limits, creel or trip limits, quotas, and seasonal closures. Shrimp trawlers have had to put bycatch reduction devices in their trawls to reduce juvenile red snapper bycatch. Over the years, the red snapper fishery has also changed. One of the biggest changes is the location of the fishery in the Gulf. Since 1965, landings in Florida, Alabama and Mississippi have declined (at least until the last couple of years), and landings in Louisiana and Texas have increased since the 1970s.

Until about 1990, the number of oil and gas platforms off of Louisiana and Texas also increased rapidly. Since 1990, the number of offshore platforms has remained fairly constant at a level four times higher than in 1965. Since a very large percentage of the red snapper catch off of the two states is made at offshore platforms, some scientists have questioned the role that these platforms play in red snapper populations.

Young red snapper, under the age of 2, are known to use open bottoms, clustering near any small object, natural or man-made, on these bottoms. Some time before their second birthday, red snappers completely abandon these bottoms and move to high-relief areas such as natural reefs, shipwrecks, and platforms. Red snappers from 2 to 4 years old are found almost exclusively in these areas. Older, larger fish also use reefs, wrecks and platforms, but do spend some of their time on more open bottoms.

The almost complete dependence of 2 – 4 year old red snapper on these areas and the scarcity of natural reefs in the northern Gulf has raised the idea that perhaps offshore oil and gas platforms have become "essential" if large populations of this fish are to be maintained.

This raises interesting points. Federal law requires that each fishery management council identify "Essential Fish Habitat" for managed fishery species, with the intention that this habitat be protected. Can man-made habitat be considered "Essential Fish Habitat"? Federal law now requires that oil and gas platforms be removed when the oil and gas is depleted, unless the platform is used in an artificial reef program. As more oil and gas fields are depleted, the rate of platform removals is increasing. If these platforms are essential to keep snapper populations high, how many can be removed before red snapper populations are effected? If platform removal

does affect red snapper populations, should more platforms be recycled as artificial reefs? Also, how many artificial reef sites can be created without injuring the already financially stressed shrimp trawling industry by reducing trawlable bottom area?

Another question is what will happen when marine protected areas (MPAs) are proposed for the northern Gulf of Mexico. MPAs are usually viewed as marine wilderness areas or national parks, created to benefit populations of fish and other marine life. Will the MPAs be drawn to deliberately include or to exclude oil and gas platforms and the artificial reefs created from them?

Scientists at Louisiana State University hope to conduct more research in the future, to determine if platforms have become "essential" to large red snapper populations.

Source: *The Role of Oil and Gas Platforms in Providing Habitat for the Northern Gulf of Mexico Red Snapper (Lutjanus campechanus)*. Charles A. Wilson, Mark Miller and Dave L. Nieland. U.S. Minerals Management Service Information Transfer Meeting. January, 2002.

THE PEW VIEW ON AQUACULTURE/MARICULTURE

World aquaculture (including mariculture, the farming of marine species) is growing rapidly. Farmed finfish and shellfish now supply one-third of the seafood that people eat worldwide and that fraction is increasing. Since the mid-1990s, the harvest of wild fisheries has leveled off and shown little growth. Many experts point to aquaculture as the most important way to increase fish supplies for the world's growing human population. Mariculture is one-third of global seafood farming by weight and is growing faster than freshwater aquaculture.

Growth in the United States has not been as strong as elsewhere. One freshwater species, the channel catfish, accounts for over 70% of total U.S. fish farm production, although a few marine species such as hard clams and Atlantic salmon have shown growth. The U.S. has relied more on imports to fill its growing demand for seafood, rather than on domestic fish farming. The U.S. ranks third in the world in seafood consumption and fourth in wild fisheries harvests, but only eleventh in aquaculture production, with 1.1% of the world's production. Within the U.S., Louisiana ranks first in the number of fish farms (683), but seventh in harvest value ($53.3 million) behind Mississippi ($290.4), Arkansas ($84.1), Florida ($76.7), Maine ($66.6), Alabama ($59.7), and Washington ($56.6).

U.S. aquaculture/mariculture production is likely to expand, in spite of some problems. The U.S. Department of Commerce has called for production to increase five times from what it is now by 2025. Probably the biggest factor preventing more mariculture production is the lack of good sites with unpolluted water. Also, the U.S. is

a wealthy country, where the coastal zone is heavily used for other purposes, including fishing, recreation, wildlife protection, and navigation.

The lack of good coastal mariculture sites has caused attention to be directed more to offshore mariculture. At this time in the Gulf of Mexico, the Sea Grant Programs of the five Gulf states are developing a cooperative plan to study offshore net-pen mariculture using out-of-production offshore oil and gas platforms as bases of operation.

Problems exist with offshore mariculture though. Costs are high and risk from storm damage is severe. Regulation of offshore mariculture is confusing and unclear. Finally, ecological concerns about using these waters for mariculture exist. The Pew Oceans Commission, affiliated with the Pew Foundation, one of the largest environmentally active foundations in the United States, has cautioned that if the public sees offshore mariculture as an environmentally damaging industry, it will run into problems. In 2001, the Commission released a report that assessed the possible and real environmental problems with mariculture and options for solving those problems. The report divided the environmental effects of mariculture into five categories: 1) biological pollution, 2) use of fish for fish feeds, 3) organic pollution and eutrophication, 4) chemical pollution, and 5) habitat modification.

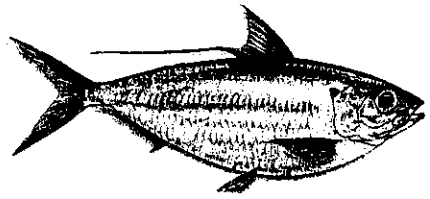
Biological Pollution

The farmed species and their parasites and diseases are considered a form of "pollution" when they escape into the wild. Non-native species, which are most of what is currently farmed, can feed on native species or compete with them for food and space. Some escapes come as "leakage" where only a few fish are lost, and others are large scale escapes when storms, marine mammals, vandals, or human error damage net pens. The report points, as an example, to Atlantic salmon escapes on the west coast, where a quarter of a million fish escaped between 1987 and 1997, with another 350,000 escapees in 1997 alone.

The report also says that escapes of native fish can genetically harm wild fish stocks. Farmed fish are often bred for culture and are genetically different. Some have smaller fins, larger bodies, and more aggressive feeding behavior. Wild fish of the same species, on the other hand, have evolved over millions of years to be best adapted for local conditions. Escapees can interbreed with native fish passing on their less desirable genes for survival in the wild. The same concern holds true for genetically engineered fish, if and when they are used in culture.

Diseases and parasites may also spread from cultured fish to wild fish. The report points to two examples. In the early 1990s, a worm and a snail were introduced with the Pacific oyster to the west coast, where they caused part of the decline of native oysters. Two foreign shrimp viruses have been found in the Gulf of Mexico, and the IHHN virus seems to have caused a decline in wild shrimp populations in Mexico.

Fish for Fish Feeds



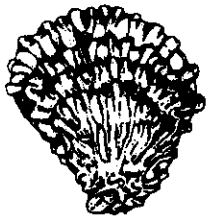
Although mariculture is often promoted as a way to produce fish without capturing wild fish, fish farms can have a large impact on marine ecosystems thousands of miles away. This is because most marine aquacultured species, including shrimp, are fed feeds high in fish meal and fish oil. These come from small, oily fish such as anchovies, sardines and menhaden. The report said that in 1998, fish foods used more than 40% of the world's production of fish meal and over three-fourths of the world's fish oil. Both shares are increasing and fish meal prices may double in the future.

Most of the wild fisheries for these oily fish are considered fully exploited, and have no room to grow without reducing the amount of food available to other fish, marine mammals and seabirds, or becoming overfished. As the price of fish meal increases, grains, oilseeds, fish and meat trimmings, and processing wastes are likely to be substituted for fish meal in feeds. These substitutes are not as digestible as fish meal which may cause farmed fish to grow slower and produce more waste. Replacing fish oil is even more of a problem, because vegetable oils can change fish flavors and the concentration of healthful omega-3 fatty acids, as well as reduce growth rates.

Organic Pollution and Eutrophication

Too many nutrients, especially nitrogen, but also phosphorus, are a major cause of eutrophication in marine waters. High concentrations of nutrients spur the growth of algae and undesirable species, resulting in low or no-oxygen conditions, murky waters, fish kills, and death of corals and sea grasses. These nutrients come from uneaten food, feces, urine, mucus, and dead fish. As much as 70% of the phosphorus and 80% of the nitrogen in fish feeds end up being released into the water.

Controlling the release of these wastes from mariculture is much more difficult than it is with land agriculture. Controlling nutrient releases is also easier with pond culture than net-pen culture. The report does recognize that fish farming's share of total nutrient releases in the U.S. is small, but states that they can be important on a local scale. A salmon farm of 200,000 fish releases nitrogen equal to the untreated sewage of 20,000 people, the phosphorus equivalent of 25,000 people and the fecal matter equivalent of 65,000 people. Net-pen culture can also affect the seafloor sediments under cages resulting in dead zones under the pens.



The report did recognize that in nutrient–poor coastal waters, some release of nutrients can increase the number and variety of fish desirable to fishermen. Also, not all mariculture adds to nutrient loading. Mollusk farming for species such as oysters, mussels and clams can actually improve water quality, and mollusk farmers usually have the loudest voice for clean water.

Chemical Pollution

Chemicals such as antibiotics, parasiticides (parasite-killers), pesticides, hormones, anesthetics, minerals, pigments, and vitamins are used in mariculture, although some operations such as mollusk-farmers, use no or almost no chemicals. The U.S. Food and Drug Administration (FDA) has approved only five drugs for aquaculture/mariculture, although under certain circumstances, other drugs can be used. Two of the five are antibiotics. Antibiotic use is much lower in U.S. fish farming than in land agriculture or overseas aquaculture, as it is illegal for aquaculturists to feed their fish feeds with antibiotics on a daily basis. The report found that antibiotic use in U.S. aquaculture was not an threat to the environment, but was concerned about antibiotic use creating drug-resistant bacteria. It also did not sound an alarm over pesticide use, although it noted that some herbicides were used in pond and tank-based culture, and that net-pen operators often treat their nets with copper paints to prevent fouling by algae.

Habitat Modification

Mariculture demands space and finding space that fishermen and coastal landowners don't challenge is difficult. Mariculture may also, in some cases, block passage of migrating wild fish. The harvesting of cultured bottom-living mollusks with dredges, tongs and rakes can cause bottom disturbance. In some areas, net-pens can be damaged and cultured fish destroyed by creatures such as river otters, seals and sea lions The use of noise makers such as "seal bombs" and underwater loudspeakers, can affect the hearing and behavior of many creatures besides those targeted to be scared away.

Recommendations

The second part of the report had recommendations to make U.S. aquaculture/mariculture more environmentally sound. They are as follows:

1) They urge the Environmental Protection Agency (EPA) to develop, and the industry to support, strong rules on all discharges from aquaculture/mariculture. In the past, the states have had their own rules on discharges, which were different from state to state. EPA is now developing such rules.

2) Agencies and the aquaculture/mariculture industry should support National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (FWS) actions under the Endangered Species Act to protect critically endangered wild Atlantic salmon runs in Maine.

3) Conservation incentives for animal producers (including fish farmers) to protect water quality should be added to the U.S. Farm Bill.

4) Increased financial appropriations for aquaculture/mariculture research that target environment goals are needed for the industry to reach conservation goals.

5) Congress should require that each offshore mariculture operation must receive both a National Pollution Discharge Elimination System permit from EPA under the Clean Water Act, and also an approval from NMFS based on a standard of no major impact on wild marine resources.

6) Congress should create a federal permitting system, administered by NMFS and FWS for all use of new organisms, including both non-native species and genetically-modified native species.

7) States with large or growing mariculture industries should consider strengthening their oversight, especially on discharges and new species. States should not exempt fish farmers from environmental laws and enforcement.

8) The U.S. and Canada should have a cooperative agreement to minimize the impacts of salmon farming. Also international agreements should be changed to allow a country to restrict aquaculture/mariculture imports from countries that produce these products in environmentally damaging ways.

The Pew Report recognizes that aquaculture/mariculture is here to stay. It may be the only way to increase seafood production to any degree in the future Also, mariculture/aquaculture may be a more desirable way to raise protein than agriculture on land.

While in the U.S., the marine aquaculture industry is small, fairly well-regulated, and has not caused widespread environmental problems, the report says that the same is not true in other countries, especially where shrimp and salmon farming are done. Shrimp farming in developing countries has caused water pollution, great loss of mangrove forests, and salt pollution of soil and freshwater. Even with this, the report notes, the effects of marine aquaculture are small compared to changes in ocean temperature, coral bleaching, and coastal flooding likely from global warming.

"The challenge" it says, "is to ensure the young and growing (mariculture) industry develops in a sustainable manner and does not cause serious ecological damage."

Source: *Marine Aquaculture in the United States: Environmental Impacts and Policy Options*. R. J. Goldberry, M.S. Elliot & R.L. Naylor, Pew Oceans Commission. 2001

UNDERWATER OBSTRUCTION REMOVAL REPORT

Underwater obstructions are serious threats to human life, boats and fishing gear. They are also expensive. Since the Louisiana Fishermen's Gear Compensation Fund began in 1980, nearly $20 million has been paid to commercial fishermen for damage. The Fund is funded by assessments on pipeline companies and oil and gas leaseholders. Because of these costs and the risk to human life the Louisiana Underwater Obstruction Removal Program was created within the Louisiana Department of Natural Resources in 1998. Funding for the program's creation was provided by a $1.49 million NOAA grant channeled to the program by the Louisiana Department of Wildlife and Fisheries.

A number of methods have been used to determine the exact location of obstructions, including side scan sonar, magnetometer, dragging a chain between trawl doors, and direct guidance by fishermen. Contractors to perform both obstruction location surveys and obstruction removal are chosen by public bid. Once an area is selected for work, the bidding, paperwork and surveying processes take between 5 and 6 months, before actual removal can begin. Removal is done with barges, a clamshell bucket dredge, jetting and washing equipment, cutting equipment, and slings. For very heavy obstructions, a 200-ton A-frame is used. Pilings make up a large number of obstructions and are particularly difficult to remove, especially in deep water. In the past, oil field operators cut many pilings at the mud line and over time, these became exposed. Sometimes their removal requires washing 5-10 feet deep down the sides of the pilings before a sling can pull them.

Up to December, 2001, the program conducted 14 removal projects.

Grand Isle, Phase I	Lake Borgne
Cameron, Phase I	Timbalier Bay
Grand Isle, Phase II	Breton Sound
Marsh Island	Terrebonne, Phase I
Lafitte	Vermilion-Iberia
East Plaquemines	West Plaquemines
Cameron, Phase II	Terrebonne, Phase II

Some obstructions were not removed because they were very large and would cost more than $3,000 to remove, some were on oyster leases and permission could not be obtained, and some were in water too shallow to work in. Pipes and flowlines, where at least one end could not be located, were also left in place. The cost to remove obstructions ranged from $630 for pipes to $10,424 for pontoons and tanks.

A total of $458,766 was spent on surveys, $1,368,342 on removals, and $163,892 on administration and miscellaneous items. The NOAA Grant contributed $1,491,000 and the Fishermen's Gear Compensation Fund has contributed another

$500,000. Program administrator Bruce Ballard estimates that virtually all the obstructions in Louisiana's inshore and offshore state waters could be removed for $7.2 million over a period of several years. Claim payments for damage from the Fishermen's Gear Compensation Fund have declined by 30% from 1997/1998 to 2000/2001.

Since November, 2001, the Removal Program has conducted a survey of Bayou Segnette in Jefferson Parish. As a result, the U.S. Army Corps of Engineers removed 4 abandoned large boats and some piers. The Program paid for removal of 38 boat hulls, a small barge and one pier in spring, 2002. In the fall of 2002, the Program completed a removal project in Vermilion-Iberia on 16 obstructions ranging from pipes and pilings to boats and a barge. Following this, the Program is planning a third phase removal project at Grand Isle on 19 identified obstructions and is starting another survey in Lafourche/Terrebonne.

Source: *The Success and Economic Feasibility of Establishing a Long-term Program of Underwater Obstruction Removal.* NOAA Financial Assistance Award Number NA76FK0431. Bruce Ballard. Louisiana Department of Natural Resources.

SEA GRANT LEGAL PROGRAM E-MAIL UPDATES

The Louisiana Sea Grant Legal Program conducts research projects into many issues of interest to fishermen and coastal residents, including new fisheries law, fisheries management, aquaculture, coastal management, coastal restoration, and exotic species. The program is now offering quarterly Louisiana Coastal Law E-mail Updates to keep the community informed on the program's current and upcoming research project. Anyone wishing to receive these updates may request to be placed on the list by e-mailing Legal Program Director Jim Wilkins at sglegal@lsu.edu.

UNDERWATER OBSTRUCTION LOCATIONS

The Louisiana Fishermen's Gear Compensation Fund has asked that we print the coordinates of sites for which damage has been claimed in the last month. The coordinates are listed below:

Loran Sites
NONE

Lat. & Long. Sites		
29 02.373	90 19.821	LAFOURCHE
29 16.045	89 51.726	JEFFERSON
29 24.448	89 59.976	JEFFERSON

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THE GUMBO POT

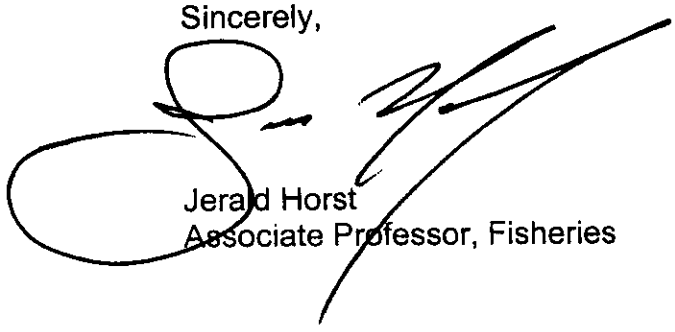
Baked Oysters With Crab-Cream Sauce

New Orleans Creole cooking shows a heavy Italian influence. This dish is no exception. Don't let the long list of ingredients scare you. Simply cut the ingredients up ahead of time and preparation will go quickly.

3	dozen shucked oysters, with liquor
¼	pound butter
¼	cup onions, diced
¼	cup celery, diced
¼	cup red bell pepper, diced
2	large cloves garlic, minced
¼	cup green onions, chopped
½	lb. Crabmeat
3	tbsp. flour
3	cups heavy whipping cream
1	jigger dry white wine
¾	cup mushrooms, finely sliced
½	cup grated Parmesan cheese
1	jigger sherry
½	cup parsley, chopped
2	egg yolks, beaten
	salt and cayenne pepper to taste
1	cup seasoned Italian bread crumbs

Preheat oven to 450 degrees. In a two quart heavy-bottom sauce pan, melt butter over medium-high heat. Add onions, celery, bell pepper and garlic. Sauté approximately three to five minutes or until vegetables are wilted. Add green onions and crabmeat, blending well into vegetable mixture. Sprinkle in flour and using a wire whip, stir until smoothly mixed. The flour will act as a thickening agent for the sauce. Add heavy whipping cream and dry white wine. Using the wire whip, stir constantly until the sauce begins to thicken. Add sliced mushrooms and Parmesan cheese, stirring well as cheese melts and mixture continues to thicken. Add sherry and chopped parsley. Combine oyster liquor with beaten eggs, blending well. Remove pan from heat and quickly whisk in egg yolk mixture. Season to taste using salt and cayenne pepper. Allow to cool slightly or until sauce can be spooned without dripping. Spread the oysters in as shallow a layer as possible in a glass baking dish. Top with sauce and sprinkle the bread crumbs over the mixture. Bake until sauce is bubbly and bread crumbs are browned. Serve with good hot bread. Serves 6

Sincerely,



Jerald Horst
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