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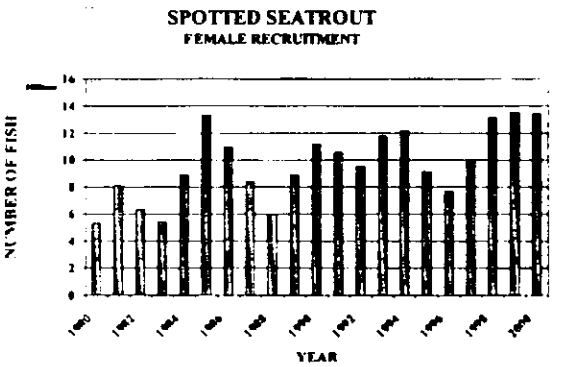
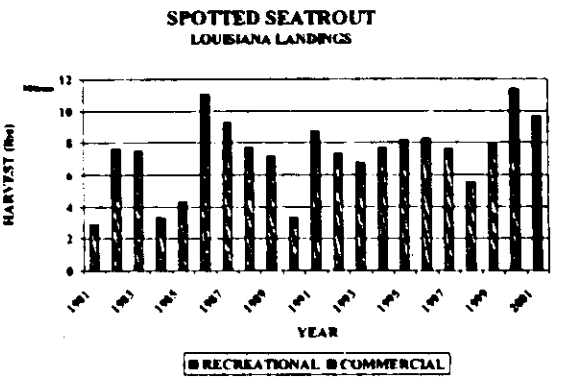
SPECKLED TROUT UPS & DOWNS

Any speckled trout fisherman that has fished for the fish over 10 years knows that some years are a lot better than others. Weather and other factors play a role in yearly landings. Even the economy plays a role. When it is good, more people can afford to fish. More anglers mean more landings, but also more people to divide the catch amongst. However, the most important factor in landings of speckled trout is recruitment. The term is simply a measure of the number of fish that successfully hatch and survive long enough to enter the fishery.





The two graphs above show the relationship between recruitment on the left and landings on the right. Notice the poor recruitment years of 1980, 1982, 1983, and 1989. Each of these years were followed by years of poor landings — 1981, 1984, 1985, and 1990 — a year or two later.

Most importantly, notice that the years 1998, 1999, and 2000 were bumper recruitment years. These are the year classes (spawns) that have produced the excellent fishing of the last few years. As these year classes die out, speckled trout fishing will surely return to more "normal" levels, with an occasional poor year or two thrown in here and there. Anglers with memories of the fishing years produced by the good recruitment years of 1998-2000 may mistakenly feel speckled trout have been overfished.

Louisiana Department of Wildlife and Fisheries (LDWF) analyses indicate the spawning potential ratio (SPR) of speckled trout has hovered around 20% since 1980. Minimum "safe" SPR is considered by LDWF to be 18%. SPR is simply the ratio of the egg-producing ability of all the mature fish in a fished stock compared to the estimated egg-producing ability if the stock wasn't fished.

Data Source: Louisiana Department of Wildlife and Fisheries.

L.D.W.F. MAKES BOAT RENEWALS AVAILABLE BY PHONE

The Louisiana Department of Wildlife and Fisheries announced that boat registrations may be renewed over the phone. Until now, renewals were handled either in person at LDWF offices or through the mail. This is another step in the department's effort to become even more customer friendly.

Boat registrations expiring after September 2002 may be renewed by calling 1-888-765-2602. The call is toll-free statewide. The customer will be given a confirmation number, and the registration certificate and decals will be received by mail within 30 days. Acceptable methods of payment are Visa and MasterCard.

However, renewals that require changes such as address and telephone numbers will not be accepted over the phone. Those renewals must be handled at LDWF offices or by mail. All new registrations must also be made at LDWF offices or by mail.

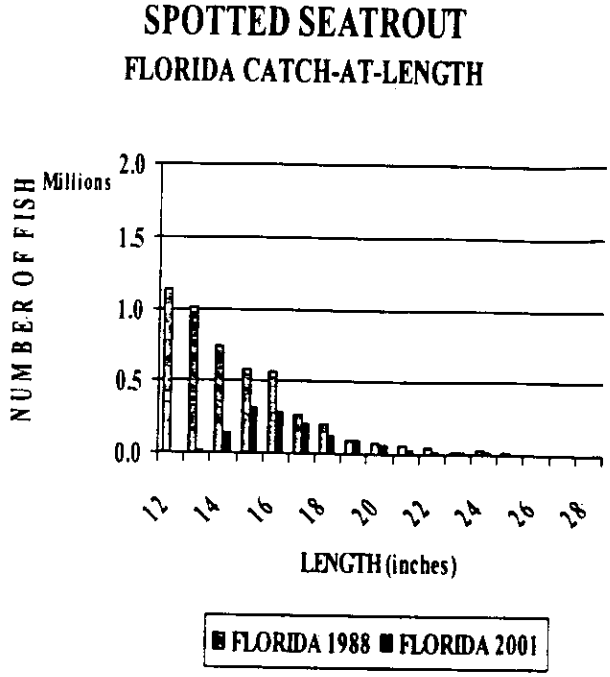
Registrations for homemade boats or boats with missing hull identification numbers require an inspection which costs $25, in addition to the registration fee. An inspection application and a registration application must be submitted together for such boats. When LDWF gets the paperwork they will send the applicant contact information for the inspection. The applications can be obtained by calling the Baton Rouge, 504/765-2982, or New Orleans, 504/568-5616, LDWF offices.

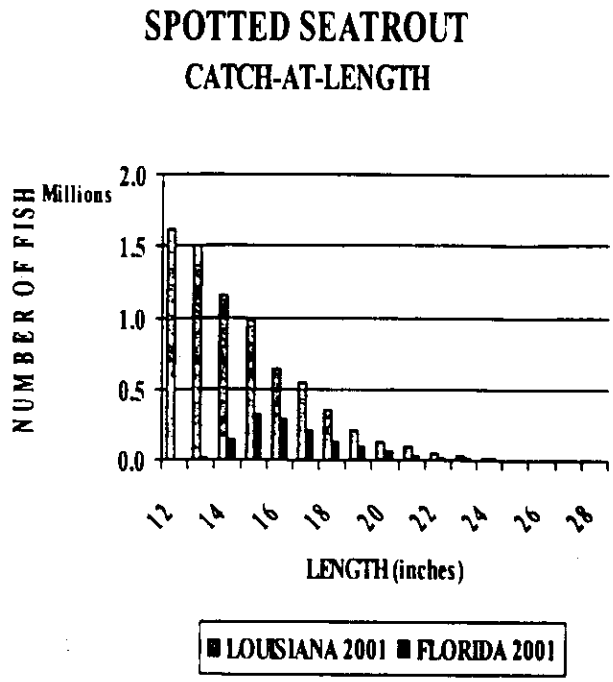
FISHERIES SURVEYS

Surveys of fishermen are a very important part of fisheries management. In Louisiana, recreational and charter fishermen are surveyed by representatives of the Marine Recreational Fishing Statistics Survey (MRFSS). Being surveyed can be a nuisance, especially at the end of a long day or when otherwise busy. However, good data produces good decisions, which in turn produce good management. An example of how survey data can be used is with speckled trout management.

Florida and Texas have both adopted lower bag limits and larger minimum size limits on speckled trout than Louisiana. Florida has a 4 or 5 fish limit and a minimum

size of 15 inches, with only one speck over 20 inches allowed. Texas has a 10 fish bag limit and a 15-inch minimum size. Now some Louisiana anglers are suggesting that Louisiana adopt a lower bag limit and larger minimum size limit, with the goal being the harvest of larger fish. Data from recreational fishing statistics surveys sheds some light on how stricter speckled trout regulations have affected the fishery in Florida and Texas.

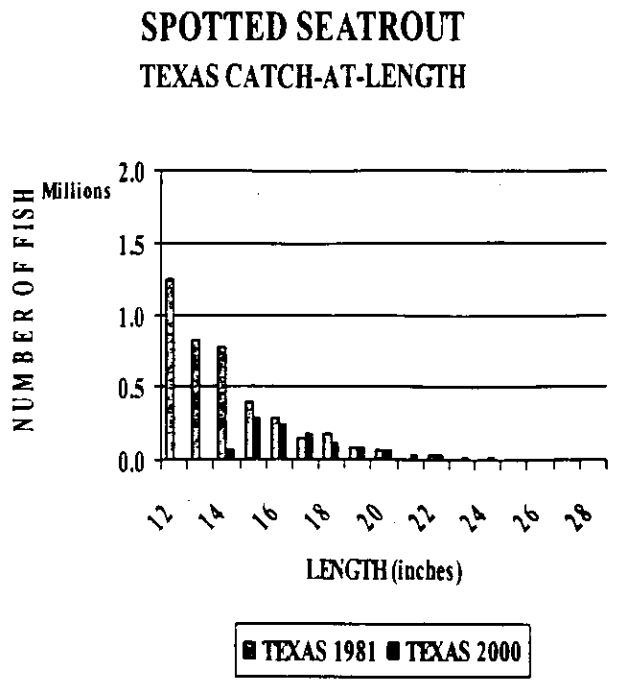


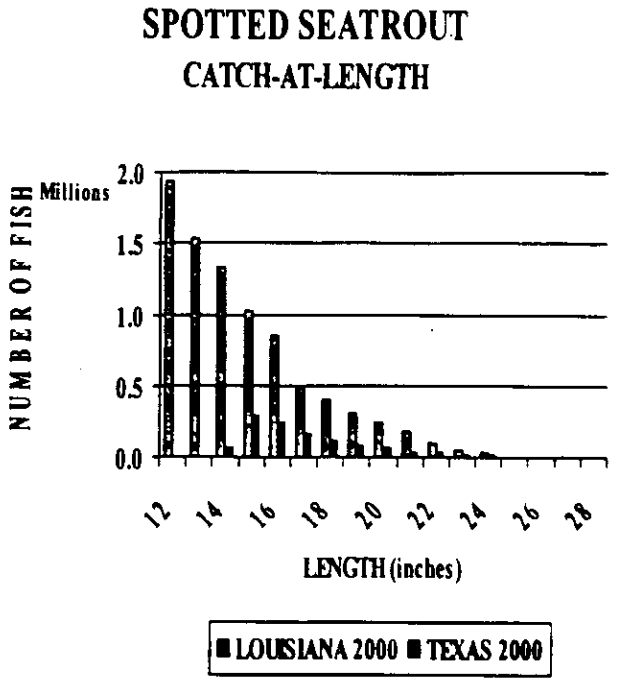


The graph on the left above shows the catch of speckled trout in Florida before and after tighter fishing regulations were put in place. Two things jump out. First, all of the harvest of fish under 15 inches has declined dramatically, as one would expect with an increased minimum size. Secondly, not keeping smaller fish did not result in an increase in the harvest of fish larger than 15 inches. In fact, less larger trout were harvested in 2001, after the new regulations, than in 1988, before the new regulations.

Many of the fish under 15 inches not harvested by fisherman died because of natural causes. However, some also died because of the stress and injury of being caught and released. Louisiana Department of Wildlife and Fisheries biologists rate release mortality at 10% from being caught a single time. Certainly, before they reach 15 inches, some specks will be caught and released several times.

The graph on the above right compares Louisiana's 2001 speckled trout harvest with Florida's. If Louisiana increased its minimum size limit to 14 or 15 inches, and the same pattern occurred here as in Florida, Louisiana fishermen would lose the harvest represented in the first 2 or 3 vertical bars, with little or no increase in harvest of larger fish.





The graphs above show the same scenario for Texas. The one on left shows the Texas speckled trout harvest before and after more restrictive regulations, and the one on the right compares the Louisiana and the Texas harvest of speckled trout in 2000. Texas anglers also lost almost all of the harvest below 15 inches. Very little gain, if any, was made in the harvest of larger fish. The graph on the right shows the possible harvest loss of fish under 14 or 15 inches that could occur if Louisiana were to adopt regulations similar to Texas.

Data Source: Louisiana Department of Wildlife and Fisheries

COMMERCIAL FISHING BUYBACKS

After passage of the federal Magnuson-Stevens Act in the mid-1970s, U.S. commercial fishing fleets grew rapidly. However, declining fish stocks and poor economics have thrown the number of fish and the number of fishing vessels out of balance. One tool that has been used to reduce fishing fleets is government-funded "buybacks". Under these programs, government funds are used to buy commercial fishing permits, vessels and gear out of a fishery. Buybacks provide economic assistance for displaced fishermen, rather than just legislating them out of the fishery. Doing nothing is not an option either, as the too-large number of fishermen just competes harder for what there is to catch, which does not help fisheries conservation efforts.

The dollars spent show that increasingly, buybacks are considered an important option in reducing fishing effort. From 1976 through 1994, $20 million was spent on buybacks. From 1995 to 1999, a total of $140 million was spent on buybacks. However, in a report to Congress, the U.S. General Accounting Office (GAO) said that

buyback programs can be improved. Specifically, GAO made three recommendations to the U.S. Secretary of Commerce.

1) A buyback program should be designed to prevent fishermen from re-entering the fishery by using previously inactive vessels or permits. The $24.4 million buyback program for the New England groundfish (cod, haddock, and flounder) fishery removed 79 vessels from the fishery. However, because fishermen activated unused permits for the fishery, 62 previously inactive vessels began fishing goundfish after the buyback. In contrast, in the Bering Sea pollack fishery, no vessels entered the fishery, because the buyback legislation prevented it.

2) Other incentives to prevent the "race to fish" must be included in buyback programs. Without them, the vessels remaining in the fishery increase their fishing power by adding gear, increasing engine power, adding crew, increasing their time at sea, or by replacing their vessels with larger, more productive vessels. Under the race to fish, every fisherman is in competition with others to catch the fish before his competitors do. This was prevented under the Bering Sea buyback program by the formation of a cooperative of the remaining fishermen. Each fisherman was assigned a share of the total quota. Cooperative members catch their own quota at their own pace. The result is higher profits and longer seasons for the remaining trawlers.

3) Plans for evaluating the results of buybacks should be considered when these programs are being designed. The federal government has done little to evaluate whether recent buyback programs have achieved their intended benefits.

Source: *Commercial Fisheries: Effectiveness of Fishing Buyback Programs Can Be Improved.* Testimony of Barry T. Hill, Director, Natural Resources and Environment, U.S. General Accounting Office, to the Subcommittee on Fisheries Conservation, Wildlife and Oceans, Committee on Resources, House of Representatives. 2002

COPPERNOSE BLUEGILL

The bluegill is an important freshwater recreational species, as well as an important forage (food) species for other gamefish, such as largemouth bass. The coppernose bluegill is being promoted by private fish hatcheries for pond stocking purposes. Their claim is that this fish grows faster and reaches much larger sizes than native bluegill. The coppernose bluegill, or as it is more properly known, the eastern bluegill, is the same species as the native bluegill, but a different subspecies or race. They are native to the Florida-Georgia area, the same range as the Florida bass.

Louisiana has, through the Department of Louisiana Wildlife and Fisheries (LDWF), a large Florida bass stocking program. Some discussion has also occurred concerning the stocking of eastern (coppernose) bluegill in natural waters.

Stocking of a non-native fish can, however, have negative effects that outweigh the benefits. For example, eastern bluegill could possibly out-compete native bluegill for food and nest space, but not be able to survive Louisiana's cooler winter temperatures as well as natives. The two subspecies will easily hybridize (cross – breed). It is not known whether these hybrids will show superior growth, reduced spawning ability, or lop-sided male-to-female ratios.

In the late 1980s, a researcher at LSU conducted research to answer some of these questions. He conducted field studies in Lake Buhlow, near Pineville, Louisiana. The 263-acre lake has been drained for repairs. When refilled by the local stream, LDWF stocked 301 adult and 2097 fingerling eastern bluegill, followed by 24,000 fingerlings the next year.

The researcher also conducted laboratory and small research pond experiments at the LSU Ben Hur Biological Research Area in Baton Rouge. Pond studies involved stocking natives, easterns and mixtures of the two subspecies in nine ponds to study overwintering survival. Lab studies involved putting both subspecies in tanks. Some fish were studied for cold survival by lowering temperatures in the tanks about two degrees per day until the fish showed negative effects.

In other lab experiments, fish were held and fed for as long as 200 days with the water temperature gradually lowered to 50°F, then gradually raised to 77 degrees. At the end of the study, the fish of both subspecies were weighed and measured to determine if cooler water temperatures affected their growth rates.

The lab research produced some clear results. Eastern bluegill showed less ability to survive in colder waters than natives did. Small eastern bluegill showed serious stress and survival problems at temperatures as high as 49°F, a common Louisiana winter temperature. On the other hand, the overwintering study in ponds did not show a decrease in the number of eastern bluegill originally stocked.

Tank observations showed that as water temperature dropped below 54°F, eastern bluegills stopped moving and feeding, and clustered near the bottom of the tank. Native bluegill continued to show normal behavior. Stopping feeding early in the fall may weaken the fish and result in more loss to predators and environmental problems.

In the part of the study focusing on the effect of low temperature on growth, mixed results were gathered. In one lab study where easterns and natives were kept in separate tanks, natives outgrew easterns. In the other study, where the two subspecies were mixed, eastern bluegill grew faster than natives did because they were very aggressive and out-competed natives for food. This was especially true for males.

Data from the bluegill collected from Lake Buhlow showed slightly slower growth rates for easterns than natives.

The Buhlow Lake population analysis indicated that the number of eastern bluegills had declined since stocking was done. Based on stocking rates, the percentage of eastern bluegills in the entire bluegill population should have been around 20%, especially since the pond research at Ben Hur showed that easterns produced about twice as many larvae (baby fish) as natives. Sampling results of Buhlow lake showed only 1.5% eastern bluegills, with 92.4% natives, and 6.1% hybrids of the two.

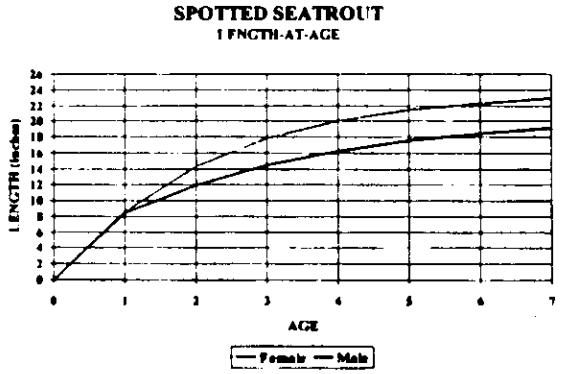
One conclusion that the researcher drew was that the bluegills stocked in the lake contained a large number of hybrids as well as pure eastern bluegills. Another problem the researcher also noted could have been a higher than expected death rate of the stocked easterns due to handling stress. He noted in the laboratory part of his research that over half of the eastern bluegills brought in from ponds died. No native bluegills died from handling. This could have reduced the results from the Lake Buhlow stocking program, if similar stress deaths occurred there.

The researcher concluded that widespread stocking of eastern bluegill would not improve the quality of bluegill fishing. He stated that eastern bluegill were not the answer to preventing stunted populations and that they did not grow much faster in natural waters than native bluegills did. He did note that in closed systems like man-made ponds, that are well managed, eastern bluegills may possibly provide a quality fishery.

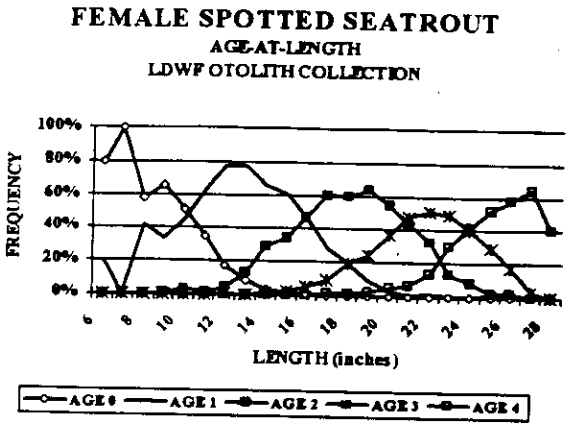
Source: *Biological and Genetic Assessments of Eastern Bluegill, Lepomis macrochirus purpurescens Introductions in Louisiana Waters.* Ralph J. LaPrairie. MS Thesis, School of Forestry, Wildlife, and Fisheries, LSU. 1988.

GUESSING THE AGE OF SPECKS

Everyone likes to catch big speckled trout. Most anglers also assume that a big speck is always an old speck. But aging speckled trout is much more complicated than just looking at their size — for several reasons. First, speckled trout males and females grow at different rates. The graph at the right shows that both sexes grow at about the same rate up to their first birthday. Then the females begin to pull ahead of the males, reaching an average size difference of four inches by age-4. At that age, the length difference translates into about a 1.4-pound difference between males and females. By age-7, the 4-inch gap can mean about a 2.7 pound average difference.



Add to this the fact that fish of the same "age" can really be quite different in actual age in the early years of their life. Speckled trout spawn from April well into September. A trout hatched in early April will be nearly 6 months older than one hatched very late in the season, even though both will be considered one year old the next year. The extra growing months can make a large difference in size when combined with different growth rates between sexes, and genetic and habitat differences.



As with any other living creature produced from an egg and a sperm, every trout is genetically different, just as every animal is from others of the same species. Some grow very large quickly. Others never grow large no matter how much they eat. Also, some habitats are just better for some fish than others are. The graph on the left illustrates the huge spread of sizes that can be found at any age.

Each line represents an age. Age-0 are fish under 1 year old. Age-1 fish are those past their first year but not yet 2 years old. The spread for each age in the graph is shaped like a mountain, peaking at the most common size for that age group. For example, when 14-inch fish are aged, almost 80% of them were found to be age-1 and over 60% of 20-inch fish are age-2.

However, it isn't that simple. Age-1 speckled trout can be as small as 6 inches and as large as 22 inches, a decent fish by anyone's standards. Also, the larger any fish is, the harder it is to guess age from size, as more overlap of ages exists. The data in this graph was obtained by counting the growth rings in speckled trout otoliths (ear bones), generally accepted as the most accurate way to age most species of fish.

The high variation in growth rates complicates any management method targeted at growing larger speckled trout. Large speckled trout are not necessarily old fish and old speckled trout are not necessarily large fish.

Date Source: Louisiana Department of Wildlife and Fisheries

DO YOU KNOW HOW TO USE YOUR E.P.I.R.B.?

Captains and vessel operators all know how important it is to have their equipment in good working condition, especially equipment that might only be needed in case of an emergency, such as sinking. An Emergency Position Indicating Radio Beacon (EPIRB) is one of those items that must not only be ready to use, but must be used correctly when they are deployed.

EPIRBs are designed to transmit a homing signal when activated, usually by floating free when a vessel goes below the surface of the water. But sometimes crew members try to protect the EPIRB by taking it with them into a life raft, or lashing it to the

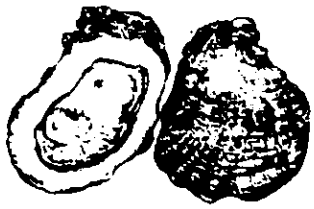
rail of a vessel that has swamped to keep it away from damage. The problem with this is that EPIRBs are designed to be used in the water, and actually use the water to maximize the signal strength from the EPIRB.

Always test and store your EPIRB in strict accordance with the manufacturer's recommendations. Most EPIRB activation switches have a test position. This test position allows the entire unit (electronics, battery, and antenna) to be tested without generating a false alarm. NEVER tie or strap down your EPIRB. It should be able to float freely to the surface during an emergency.

Contact your U.S. Coast Guard Commercial Fishing Vessel Safety Coordinator to schedule a free EPIRB test at 504/589-4554.

HARVESTING THE OYSTER

Because oysters and some other molluscan shellfish are filter feeders and are eaten raw, special efforts are made to protect public health. U.S. coastal waters are surveyed according to guidelines provided by the National Shellfish Sanitation Program. The surveys cover 4,230 shellfish growing areas in 21 coastal states. These areas are put into one of 5 categories.



1) **Approved.** Shellfish from those areas may be harvested for direct marketing unless the area is specially closed for some reason.

2) **Conditionally Approved**. These are shellfish-growing waters that meet the Approved classification under predictable conditions, such as with seasonal changes in river flows.

3) **Restricted.** Shellfish may only be harvested from these waters if they are relayed or depurated before marketing.

4) **Conditionally Restricted.** These waters do not meet the Restricted classification if they have off-and-on bacterial pollution, but the shellfish may be harvested if they are put through a suitable purification process.

5) **Prohibited.** No shellfish harvest is allowed from these waters.

Shellfish-growing water quality has improved dramatically. Between 1974 and 1995, the number of acres in the Approved classification has increased by over 40%. The acreage in the Conditionally Approved and Restricted classifications has also increased and the acreage classified as Prohibited has declined.

Oyster relaying is a method of harvesting oysters from Conditionally Approved or Restricted waters and moving them to Approved waters for a period of time to cleanse themselves before sale. In order to relay oysters in Louisiana, an oysterman is required to purchase for a small fee, a permit good for two weeks, and to post a $5,000 bond, which is returned if no violations occur during the relaying process. Also, in 1988, the

Louisiana Department of Health and Hospitals added a requirement that a security agent, paid for by the oyster harvester, must be on board any vessel relaying oysters from harvest-limited waters to approved waters.

The history of oyster relaying in Louisiana is interesting. From 1976 to 1984, less than 40 relaying permits were issued each year. The number of permits then increased rapidly, peaking at over 100 in 1987. Then beginning in 1988, the number fell sharply for two years, rose again to around 50 in 1990, and then declined to extremely low levels for the rest of the 1990s.

Two Louisiana fisheries economists have studied oyster relaying to determine why these trends have occurred and if relaying will likely play a role in the future of the oyster industry. The first conclusion that they drew was fairly obvious. The very expensive requirement for a on-board security guard caused much of the drop in the number relaying permits in 1988. But other factors, they concluded, were involved.

The price received for oysters is very important. As price drops, so does the feasibility of relaying oysters profitably. After 1990, the price, after inflation was removed, that oystermen received for their product declined sharply. The economists also found a correlation between the acres of water bottom leased out by the state for oyster cultivation and the demand for relaying permits. The more acres of waterbottom leased, the higher the demand for relaying permits was.

Finally, when more seed and sack oysters are available from public grounds, the demand for relaying permits is less. Seed oysters are small oysters harvested and moved to private leases for grow-out. Market-sized oysters (3-inches minimum) may also be harvested for direct sale from these grounds. These public seed grounds total 896 thousand acres and include some of the most productive natural reefs east of the Mississippi River. Since 1993, oyster production from public grounds has increased due to favorable environmental conditions, and the salinity-lowering diversion of fresh water from the east side of the Mississippi River.

Louisiana is the usually nation's largest oyster producer, with the majority of its production coming from private leases. Its waters also account for almost one-fifth of all estuarine shellfish-growing waters in the country. The economists concluded that relaying is not commonly done in Louisiana, at least partly because of the state's extremely large amount of growing water.

In other states with less growing waters, relaying is of more importance in getting production up. They point to the state of Washington as an example. Louisiana has 14 times as much shellfish-growing waters. However, because of more intensive efforts, Washington producers land 32 pounds of oysters per acre compared to 4 pounds per acre in Louisiana. They did finally conclude that while demand for relaying permits is limited now, that future price increases and other changes may increase relaying in the future.

Source: *The Demand for Relaying by the Louisiana Oyster Industry.* Assane Diagne and Walter R. Keithly, Jr. Proceedings of the Tenth Biennial Conference of the Institute of Economics and Trade. 2000.

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THE GUMBO POT

Red's Garfish Patties

The fishery for gar, primarily alligator gar, is one of Louisiana's little-known but valuable fisheries. Gar command a higher market price than any of Louisiana's other freshwater fish. Alligator gar can be found in the state's brackish marshes as well as in fresh water. Garfish patties are a well-known delicacy in the Atchafalaya Basin region and in north Louisiana. Victor "Red" Jones, Jr. of St. Martinville prepared this recipe at the duck camp on the Atchafalaya Delta this year. It was delicious! The gar roast referred to in the recipe is a bone-in piece that can come from any place on the fish. Victor suggests that you flour and fry only one patty and taste it. You can then add more seasoning to the mixture to suit your taste before forming the other patties.

4	lb gar roast	cayenne pepper
2	lb potatoes, peeled	salt
1	large onion, chopped	Creole seasoning
1	bell pepper, chopped	garlic powder
3	cloves garlic, minced	flour
1	bunch green onion tops, chopped	cooking oil
2	eggs	

Use a spoon to scrape all the gar flesh in small pieces from the bone and membranes. Boil the potatoes and mash well. Add onion, bell pepper, garlic, green onion tops, and eggs, mix well. Season to taste with salt, cayenne pepper, Creole seasoning, and garlic powder. Form mixture into patties 4 inches in diameter and dredge in four. Deep fry until golden brown. Serves 4.

Sincerely,

Jerald Horst
Associate Professor, Fisheries