

Lagniappe

Sea Grant
 LOUISIANA

EXTENSION PROGRAMS
 Agriculture and Forestry
 Community Leadership
 Economic Development
 Environmental Sciences
 Family and Consumer Sciences
 4-H Youth Development
 Natural Resources

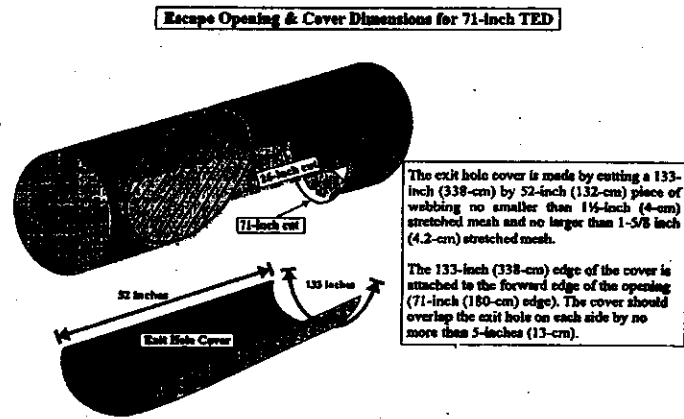
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KEEPING UP WITH SHRIMP SEASON

Each spring and fall, the opening of shrimp season is the talk of the bayou. The closing of shrimp season causes even more talk, because it is often on short notice, especially for brown shrimp. Fishermen who don't want to rely on word-of-mouth make telephone calls and often get a busy signal. Now those fishermen with internet access can find what they need at the touch of their fingers at the Louisiana Department of Wildlife and Fisheries website www.wlf.state.la.us. When the page appears, simply click on "News & Events", which is found under the big header ABOUT LDWF. This is a good site to save on your computer as a favorite.

TED RULE RATIONALE

In late February, NOAA Fisheries (National Marine Fisheries Service) announced new rules that will require the use of larger TEDs in both the South Atlantic and the Gulf of Mexico. Their reasoning is that the TED sizes that are currently permitted are too small to release leatherback and larger loggerhead turtles, and that these turtles were still being killed by shrimp trawls. Much of the information that the National Marine Fisheries Service (NMFS) used in making its decision was published in a NOAA Technical Memorandum in November, 2002.



The publication's information led to a Biological Opinion that some 62,000 loggerhead and 2,300 leatherback turtle are being killed by trawls. The publication built its case by determining shrimp fishing effort (hours fished in the Gulf area), reviewing turtle catch rates from observer data in the western Gulf, estimating turtle interactions with trawls, and then finally, estimating sea turtle deaths due to shrimp trawls.

The Gulf was divided into areas and the number of hours fished in each area was back-calculated by dividing the number of pounds of shrimp landed and reported as caught in that area by the average shrimp catch per hour for that area. Catch per hour was gotten from interviews that NMFS and state port agents made with shrimp boat captains after trips. Recreational shrimping was not included in the calculations of fishing effort.

Catch rates of sea turtles in the western Gulf (Texas and Louisiana) depended heavily on observer data gathered on shrimp boats in 1997-98 by a study funded by the Gulf and South Atlantic Fisheries Development Foundation. In the eastern Gulf, where little observer data existed, turtle catch rates were extrapolated by applying known catch rates for sea turtles from other areas to turtle counts taken by airplane surveys.

Foundation observers were present on shrimp vessels for 1,133 tows of trawls without TEDs in the western Gulf, during which 26 turtles were captured. Because no TEDs were in the trawls, tow times inside of 15 fathoms were limited to 55 minutes during April to October and 75 minutes the rest of the year. Sampling effort in the western Gulf consisted of 5,018 hours. The sea turtle species breakdown was Kemp's ridley—15, loggerhead—8, green—2, and leatherback—1. From this, they calculated the average number of hours of tow time per sea turtle caught in the western Gulf. The zeros indicate no catch or catch so low that calculations were not made.

Season/area	Kemp's Ridley	Loggerhead	Green	Leatherback
Summer Nearshore	27 hours	81 hours	385 hours	0
Summer Offshore	333 hours	1,667 hours	0	0
Winter Offshore	0	714 hours	1,250 hours	0

The aerial survey was made by flying a small plane at 750 feet with an observer on each side of the plane. Flights were made on parallel tracks extending from the shoreline outward during periods of calm seas. All sea turtles observed were recorded by species on a lap top computer. The surveys were divided into two groups, 0-10 fathoms (inshore) and 10-100 fathoms (offshore). The western Gulf, including Texas and Louisiana, were flown in 1992 and 1996, the central Gulf from eastern Louisiana to the Florida Panhandle during 1993, and the Florida Gulf coast during 1994.

637 sea turtles were sighted in the Gulf, although the report notes that many were certainly missed because they are small, colored much like seawater, and spend much of their time underwater. Kemp's ridleys were found primarily inshore and were more common in the eastern Gulf. Loggerheads were found throughout the Gulf, although they were sighted only in very low numbers in the offshore waters of the western Gulf. Green turtles occurred further offshore and were most common off the southern Florida coast. Overall, about 10 times more sea turtles were observed in the eastern Gulf than in the western Gulf.

From all this data, the number of trawl-sea turtle interactions was calculated for the entire Gulf. The report admits that the inshore numbers may be overestimated, since the average fishing power for an inshore vessel is likely to be less than for an offshore vessel.

ESTIMATED SEA TURTLE – SHRIMP TRAWL INTERACTIONS MARCH-NOVEMBER, 2001

Area	Kemp's Ridley	Loggerhead	Green	Leatherback
Western Gulf, Inshore	27,267	9,113	1,911	88
Western Gulf, Nearshore	71,735	23,976	5,027	224
Western Gulf, Offshore	529	1,057	4,053	335
Eastern Gulf, Inshore	314,537	24,641	2,919	434
Eastern Gulf, Nearshore	191,559	15,007	1,778	264
Eastern Gulf, Offshore	47,189	4,622	20,567	517

ESTIMATED SEA TURTLE – SHRIMP TRAWL INTERACTIONS, DECEMBER-FEBRUARY

Area	Kemp's Ridley	Loggerhead	Green	Leatherback
Western Gulf, Inshore	662	221	46	2
Western Gulf, Nearshore	12,722	4,252	892	40
Western Gulf, Offshore	134	624	347	85
Eastern Gulf, Inshore	13,678	1,072	127	19
Eastern Gulf, Nearshore	29,213	2,289	271	40
Eastern Gulf, Offshore	20,231	1,982	8,818	222

To be certified by NMFS, a TED design must release 97% of sea turtles in tests. This means that 3% of the sea turtles that enter trawls will likely not escape through the TED, regardless of the size of the turtle. Not all of these turtles drown, however.

Currently, the minimum size escape opening for Gulf of Mexico TEDs is 32 inches wide and 10 inches high. During the 1997-1998 Foundation study, 75% of the loggerhead turtles captured were too large to have fit through this TED opening, although all the Kemp's ridleys and green sea turtles were small enough to fit. NMFS assumes that all leatherback turtles, the largest species, are too large for this TED opening. The report said that since 1998, 68-79% of the dead loggerheads that washed up on shore (strandings) had bodies deeper than 10 inches.

Using these figures, NMFS estimates that 27,277 loggerheads and 699 leatherbacks die from trawling in the western Gulf each year. NMFS estimates that the new regulations requiring larger openings and other modifications will reduce western Gulf loggerhead deaths to 1,085 and loggerhead mortalities to less than 23. In the eastern Gulf, NMFS estimates loggerhead deaths to be 34,237 and leatherback deaths to be 1,294. Under the new rules, NMFS estimates that eastern Gulf mortalities will be reduced to 1,333 loggerheads and 41 leatherbacks.

NMFS did recognize in the report that some sea turtles in trawl interactions can be the same turtle caught more than once. In one 1980 study near Cape Canaveral,

Florida, 1,097 loggerhead turtles were caught, tagged, and moved to another area, before being released. Of the tagged turtles, 146 were captured again once, 22 were recaptured twice, 11 were recaptured 3 times, 3 were recaptured 4 times, and 1 was recaptured 5 times during the 132-day experiment.

The report found that making TEDs in trawls more efficient than 97% will be difficult, but that sea turtle deaths could be lowered by reducing shrimping effort or shrimping power. Also, the report said that turtle mortalities could be reduced by requiring TEDs in try nets, skimmer nets, beam trawls, channel nets, butterfly nets, and bait trawls, or to a lesser degree, by reducing their allowed tow times.

NMFS estimates that 11,244 small (60 ft and under) vessels use trawls in the southeastern U.S., with another 2,368 vessels being classified as large trawlers (over 60 ft). Shrimp harvest on small vessels averages \$12,435 annually with variable expenses being \$8,708. Large vessels average \$142,880 in harvest income and \$126,089 in variable expenses.

NMFS recognizes that the shrimp industry will be financially impacted by increased costs for the new gear and increased shrimp losses from the larger TEDs. Their estimate of losses of profits to the industry is \$444,000 - \$3.6 million annually. They maintain that average shrimp prices will increase by 0.7-1.7% because of the decline in harvest due to the new TED rules. The small vessel fleet is expected to lose 400-574 boats, with another 11 lost from the large vessel fleet due to the regulations.

The Louisiana Department of Wildlife and Fisheries (LDWF), in a letter to the shrimp industry, has explained that it took a strong position against the proposed changes during the rule-making process, citing that LDWF has over the years, made approximately 72,000 trawl samples in inshore and territorial (state outside) waters, with no sea turtle interactions. LDWF further said in its letter that it said in its written response to the proposed changes that "proposed increases in both TED grid and escape opening sizes were unwarranted in Louisiana waters and would create economic hardship to the Louisiana shrimp fishery."

Sources: *Analysis of Sea Turtle Bycatch in the Commercial Shrimp Fisheries of Southeast U.S. Waters and the Gulf of Mexico*. S. Epperly and others. NOAA Technical Memorandum NMFS-SEFSC-490. U.S. Department of Commerce, NOAA, National Marine Fisheries Service, Southeast Fisheries Science Center. November, 2002. *Federal Register*. Vol. 68, No. 35. pp 8456-8471. February 21, 2003.

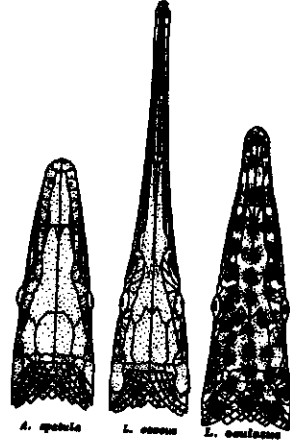
2003 HANG BOOK AVAILABLE

Bruce Ballard, Administrator of the Louisiana Underwater Obstruction Removal Program has announced the availability of the publication, **Hang Sites of Louisiana, 2003**. The publication lists both hangs and obstructions located by the program and those for which claims have been made on the Louisiana Fishermen's Gear

Compensation Fund. Copies of the publication can be obtained by writing Bruce Ballard, Office of Conservation, Underwater Program, P O Box 94275, Baton Rouge, LA 70804, or by e-mailing him at bruce@dnr.state.la.us, or by calling 225/342-6293.

GARFISH

Louisiana waters hold four species of gar. Probably the most well-known and certainly the largest species is the alligator gar, *Lepisosteus spatula*. It is widely distributed in the lakes and rivers of the state and reaches its peak of abundance in coastal fresh and brackish marshes. It is a heavy-bodied fish, with a broad bill or snout. Also fairly well known is the longnose gar, *Lepisosteus osseus*, often called the needle-nose gar. It is not as common in any one place as some of the other gar species, but is very widely distributed in the state's rivers and especially its freshwater lakes. The long narrow snout is a dead give-away for identification.



The other two species, the shortnose gar, *Lepisosteus platostomus*, and the spotted gar, *Lepisosteus oculatus*, are smaller fish with snouts that are shorter than the longnose gar and narrower than the alligator gar. They may be separated by the spots on the snout of the spotted gar. The shortnose gar has no such spots. Shortnose gar are also rarely found outside of big, muddy rivers like the Mississippi or Atchafalaya, where they can be quite common. The spotted gar is the gar of the swamps, where it is often extremely common. One such area of abundance is the Atchafalaya Basin, the huge river-swamp located between Simmesport and Morgan City. This vast area is laced with sluggish bayous and oil field canals, and has a large number of lakes and coves.

The Atchafalaya River extends down through the center of the Basin. Most years, the river swells to a flood pulse with runoff in the spring, and floods the swamps with water from several inches to several feet deep for an extended period. In the late 1990s, Louisiana State University biologists studied the spotted gar in the Atchafalaya Basin.

The biologists captured 37 adult spotted gar ranging from 23 to 30 inches long and attached radio transmitters to them. They followed the movements of the fish through the signals from the transmitters. The gar were relocated every 2 hours during the day and night for 5-7 weeks to determine daily movements, and twice a week for two years to determine seasonal movements. Also, stomachs of 120-spotted gar were examined to determine what they ate and when they ate it. Captures of these gar were equally divided between dawn, day, dusk, and night.

Spotted gar were found to move greater distances during the spring flood pulse in March, April, and May than during the low-water periods at other times of the year.

Spring movement averaged 429 feet per day compared to averages of 114 to 118 feet per day for the summer, fall, and winter. Spotted gar also showed much larger home ranges in the spring, at an average of 663 acres compared to 17 acres the rest of the year. During the spring flood pulse, the gar usually moved from open water to nearby flooded woods and backwater sloughs. Spotted gar spawn in the spring in grassy sloughs and flooded forests where their eggs are attached to submerged plants.

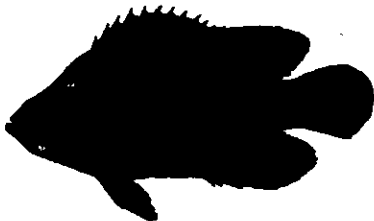
Daily movements were only tracked in the summer and the fall/winter. Although daily summer movements were greater than those in the fall/winter, spotted gar showed little to no movement during the day at any season. Usually they remained in one place for several hours near a fallen log or brush top, within 30 feet of the shoreline.

Although some time was still spent near cover during the night, spotted gar moved much more during darkness. Their movements showed a random wandering pattern with many direction changes. It seemed that the fish were patrolling their home ranges hunting for food. When the stomach contents of the 120 gar taken at dawn, daytime, and dusk. Most commonly eaten were crawfish, making up 48% of their diet, followed by sunfish (bream or perch) at 22%, shad (9%), crappie (5%), bass (4%), bowfin (choupique) at 2%, and shiners (1%).

Source: *Diel and Seasonal Patterns of Spotted Gar Movement and Habitat Use in the Lower Atchafalaya Basin, Louisiana.* Greg A. Snedden, William E. Kelso and D. Allen Rutherford. Transactions of the American Fisheries Society 128:44-154. 1999.

TRIPLETAIL

The tripletail, *Lobotes surinamensis*, is an unusual, open-water species found worldwide in tropical and subtropical waters. It is the only member of its family, and closely related to no other species. While tripletail are found almost everywhere, they are truly common nowhere. Juveniles are very often found in free-floating *Sargassum* seaweed. Adults are almost always found around some sort of cover – buoys, channel markers, jetties, and especially, floating debris.



Tripletail have a dark, blotchy body color. They get their common name from the large rear lobes of the dorsal and anal fins, that with the real tail fin, give the fish the faint appearance of having 3 tail fins. They have a chunky body that is heavily flattened from side-to-side, and delicious, mild, white flesh. In spite of its increasing popularity amongst fishermen, it is a poorly researched fish.

To learn more about this fish in the Gulf of Mexico, Mississippi biologists got 211 fish from recreational fishermen between 1994 and 1999. All were collected between late April and late September, when this migratory species is most common in the

northern Gulf. The biologists determined that tripletail grew fast and matured early. All 93 males were mature, with the smallest one being 11.6 inches long and not yet one year old. Of the 113 females, 74% were mature. Females began maturing at slightly under 18 inches long, and all females were mature by 21 inches. Most females mature at an age of 1 year old.

Tripletail in the northern Gulf spawn from June through August, with a peak in July, although males were found to be "running ripe" from May through September. During the 3-month period, females may spawn once every 3 to 5 days, or 18 to 31 times per season. Average-sized females of 25 inches will produce 4,619,866 to 7,956,429 eggs per year. Smaller fish produce less eggs and large fish will produce more eggs. Spawning appears to take place well offshore of the outer continental shelf.

Source: *Aspects of the Reproductive Biology of Tripletail, Lobotes surinamensis, in the Northern Gulf of Mexico.* Nancy J. Brown-Peterson and James S. Franks. Proceedings of the Fifty-second Annual Gulf and Caribbean Fisheries Institute. November 1999.

FISH TAGGERS NEEDED

Just a reminder, that as announced last fall, researchers are looking for fishermen willing to tag and release cobia and tripletail. The Mississippi Marine Sport Fish Tag and Release Program has produced great results on cobia so far and they are hoping to duplicate this success with tripletail. Both species are more common in northern Gulf of Mexico waters in the warmer months.

Fishermen interested in joining the Mississippi Marine Sport Fish Tag and Release Program should call (228) 872-4202 and ask for Read Hendon or Jim Franks. Louisiana fishermen are welcomed into the program. The fishermen will receive a tagging kit with 4-inch yellow spaghetti tags and instructions. This effort is funded by the Mississippi Department of Marine Resources.

BYCATCH BROUHAHA

On February 28, 2002, the non-profit international environmental advocacy group Oceana submitted a petition to U.S. Commerce Secretary Donald Evans for a request to count, cap, and control bycatch in the nation's fisheries. Specifically, they asked the National Marine Fisheries Service (NOAA Fisheries) to do the following:

- Develop and put into effect a plan to place more observers on fishing vessels to provide more reliable bycatch estimates in all fisheries.
- Include bycatch estimates in all total allowable catch levels (quotas).
- Set solid limits on the amount of catch and bycatch that can occur in any fishery and close the fishery when either the catch or bycatch limit is met.

- Develop and put into effect bycatch assessment and reduction plans for commercial and recreational fisheries with 12 months after rulemaking starts.
- Within 12 months after rulemaking begins, fishing should not be permitted in any fishery that does not have a working bycatch plan.

In early March, 2003, NOAA Fisheries responded by publishing its own new national bycatch reduction strategy. The plan is based on the 1998 NOAA Fisheries report, *Managing the Nation's Bycatch*. Six initiatives are set forth in the NOAA Fisheries strategy.

- I. Regional report cards to assess progress toward meeting the national bycatch goal must be submitted to the Assistant Administrator for Fisheries by July, 2003. Besides documenting progress toward goals, the report cards are to suggest ways to improve compliance with laws on bycatch in the Magnuson-Stevens Act and with take rules on endangered species and migratory birds.
- II. Develop a national approach to a standardized bycatch goal through regional implementation plans. Already in law is a requirement that any fishery management plan assess the type and amount of fish caught and released alive during recreational fishing under catch and release fishery management programs and the mortality of such fish. A final report is due by June, 2003.
- III. Put into effect the national bycatch goal through regional plans. This will include identification and evaluation of alternatives for reducing the impacts of bycatch discards, including at least the reduction or elimination of overfishing target species, modification of fishing gear and/or fishing practices, time and/or area fishing restrictions, and factors that determine the possibility of success of the alternatives. All implementation plans are to be submitted by September, 2003.
- IV. Conduct education and outreach efforts to develop fishery-specific, effective, and efficient methods for cooperatively reducing bycatch. These could include incentive programs such as allocating more fish or more fishing time to fishermen who voluntarily use gear or fishing techniques which successfully reduce bycatch.
- V. Expand international approaches to bycatch reduction.
- VI. Identifying long-term funding requirements to support the National Bycatch Strategy.

Oceana's response was swift, "The National Marine Fisheries Service (NMFS) failed to take immediate steps to enforce existing laws that require reductions on the capture and killing of ocean fish and wildlife caught incidentally during fishing (referred to as bycatch or wasted catch). Instead of developing new rules and regulations to

count, cap and control the millions of fish and thousands of marine mammals that needlessly die each year, NMFS just documented what they have done to comply with federal law and plan a review of the existing strategy.”

“The NMFS bycatch planning strategy won’t save a single fish, sea turtle, bird or other marine mammals for at least another year if not longer,” said Charlotte Gray, marine wildlife scientist for Oceana. “The needless killing of so many creatures is a moral outrage. NMFS has had legal obligations for years to control bycatch and despite a clear statement from the public asking for this, the agency is still just planning.”

We are considering what options are available to citizens to get a meaningful reduction in bycatch before it’s too late for our marine fish and wildlife,” said Sylvia Liu, senior attorney for Oceana. “We are not ruling anything out.”

The renewed attention to bycatch could not come at a worse time for the Gulf and South Atlantic shrimp fishery, which is reeling from extremely high fuel prices and record low shrimp prices. Eddie Gordon, owner of Gordon Enterprises and President of the Southern Shrimp Alliance, says that any increased cost of production due to regulation cannot be tolerated. “The shrimp market is saturated,” says Gordon, “and at the recent Boston Seafood Show, the number floated was that a 20-30% increase in shrimp imports can be expected this year.” Shrimp imports are increasingly expected to be shifted away from the larger count sizes. Gordon closed by saying “More bycatch regulation may accomplish the ultimate goal of some organizations of putting the U.S. fishing industry out of business.”

SAVING ELMER’S, PART II

For decades, cars, trucks, and campers from points as far apart as Lafayette, Baton Rouge and New Orleans converged every summer weekend on a lonely, undeveloped strip of beach called Elmer’s Island. Besides being known for its excellent surf fishing (a rare thing in Louisiana), it was a first class birding location, with thousands of shore, wading and seabirds. Each spring, large numbers of northward migrating birds also make their first stop there to “refuel” after the long flight across the Gulf of Mexico. Campfires flickered by tents and campers up and down the beach at night, and during the day both adults and kids crabbed, fished, beachcombed and swam.

Memories may be all that people will have of Elmer’s Island in the future. After the untimely accidental death of its owner, Jay Elmer, the road through the marsh to the beach has been closed and the entire 1,700-acre area has been marked “For Sale.” Fearing that the area was going to be developed into motels and condominiums, the Louisiana Wildlife Federation (LWF) passed a resolution at its 2002 annual meeting 14 months ago that urged the state to purchase Elmer’s Island for the public. LWF envisioned that the area be managed as a primitive recreation area and wildlife sanctuary and for traditional uses as camping, fishing, and birding. The Federation also notes that this is a key area in Louisiana’s coastal restoration plans. State ownership

would prevent development that could interfere with coastal restoration efforts and prevent land rights disputes.

The purchase and preservation of Elmer's Island made a step forward with the formation of a working group under the leadership of LWF board member and past president Keith Saucier. Strong support has been provided to the group by the Barataria-Terrebonne National Estuary Program and Foundation. An example is their creation of an excellent website, www.elmersisland.org. The site has facts on Elmer's Island and the background of the area, including a satellite image. It also has a list of supporting organizations and a call to action, with many links.

Saucier encourages anyone with an interest in the future of Elmer's Island to visit the site.

NEW RECREATIONAL REGULATIONS FOR HIGHLY MIGRATORY SPECIES

NOAA Fisheries has put new recreational regulations in place for Atlantic swordfish, blue marlin, white marlin, and sailfish. Anglers fishing for these species must purchase a HMS (highly migratory species) Angling Permit for \$22. The permit can be obtained by calling 1-888-872-8862 or online at www.nmfspermits.com. The new rules also require that recreational fishermen report all landings of any of the four species within 24 hours by calling NOAA Fisheries at 1-800-894-5528. This includes fish landed by charter and head boats. Landings are considered those fish killed and brought to shore. Individual anglers fishing in tournaments do not need to call in landings if the tournament operator is already reporting to NOAA Fisheries. Finally, a recreational bag limit of one per person, three per boat has been set for swordfish.

POVERTY POINT BASS REGULATIONS

The Louisiana Wildlife and Fisheries Commission has approved new bass regulations for Poverty Point Reservoir in Richland Parish. Now in place are a 14 to 17-inch slot limit and a five-fish daily bag limit. This means that it is illegal to keep or possess a bass whose maximum total length is 14 to 17 inches. The purpose of the slot limit is to allow larger sized fish to remain in the population and reproduce to pass on their genes.

INSHORE ARTIFICIAL REEF EVALUATION

The development of offshore artificial reefs in the Gulf of Mexico is a well-known success story. They effectively attract variety of snappers, groupers and jacks, and dramatically improve the success of fishermen. Because of their effectiveness, state agencies in several Gulf states have either permitted or constructed inshore, low-profile, artificial reefs for estuarine fish species.

How effective these low-profile reefs are at attracting inshore fish has not been well-studied. In an attempt to learn more about their fish attracting abilities, Mississippi

biologists sampled over a two year period the fish populations of four of these low-profile reefs, and for comparison, also sampled nearby non-reef areas. Both gill nets and trawls were used. Two of the reefs were built of concrete rubble and two of oyster shell and rock.

Speckled trout, Spanish mackerel, croaker, southern kingfish (channel mullet), and sand seatrout (white trout) were the primary recreational/commercial species collected. Of these, only speckled trout and croaker were more common on the reefs than off of them. No other significant differences were found for other on-reef versus off-reef comparisons. This suggests that low-profile inshore reefs are generally not as attractive or productive as offshore artificial reefs.

Source: *The Association of Recreational and Commercial Finfish Species With Low Profile, Inshore Reefs in Mississippi Coastal Waters.* James R. Warren and Lisa A. Hendon. 2002 Joint Annual Meeting, Mississippi and Louisiana Chapters of the American Fisheries Society. February, 2002.

THE GUMBO POT

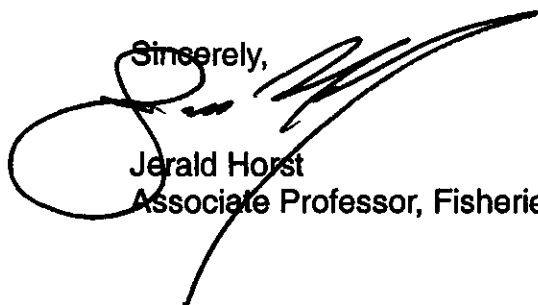
Fish Barbeque

This recipe is for fans of red sauces/marinades. The ketchup provides a distinct tomato taste. Any white-fleshed fish is suitable. I used sheepshead (rondeau seabream). A hinged wire basket makes grilling finfish a snap, so much easier than leaving the nasty skin on the fillets.

1½	pounds thick fish fillets	1	tsp salt
½	cup ketchup	1	tsp Worcestershire sauce
¼	cup cooking oil	½	tsp dry mustard
3	tbps lemon juice	¼	tsp paprika
2	tbps vinegar	1	clove garlic, minced
2	tbps liquid smoke	3	dashes hot sauce
1	tbps onion, minced		

Cut fish in serving size pieces. Combine all other ingredients and stir. Place fish and sauce in a bowl and mix well to spread sauce over all the fish. Marinade for 30 minutes. Remove fish and place in a hinged wire grilling basket. Reserve marinade. Cook over medium hot coals for 10-15 minutes or until fish flesh flakes to a fork or knife. Baste once or twice with marinade and turn basket several times. Serves 4.

Sincerely,



Jerald Horst
Associate Professor, Fisheries