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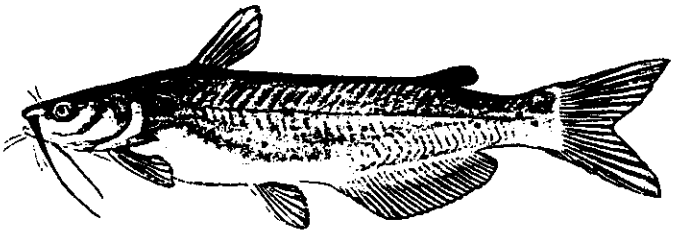
SEA GRANT PROGRAM



LAGNIAPPE

DEPARTMENT CLARIFIES NEW HOOP NET LAWS

The Louisiana Department of Wildlife and Fisheries has clarified several vague provisions in new hoop laws passed by the 1999 state legislature. Two separate legislative acts abolished the use of recreational hoop nets effective August 15. Unfortunately, a significant number of people purchased 1999-2000 recreational hoop net licenses prior the new fishing year which began July 1, and before the legislature passed these bills.

Strict interpretation of these acts would make these licenses worthless after August 15, 1999. In light of this, the department has decided to allow people holding recreational hoop net gear licenses marked with the expiration date of June 30, 2000 to use these licenses until December 31, 1999. It is important to note that the 100 catfish daily recreational limit did go into effect on August 15 and will be enforced.

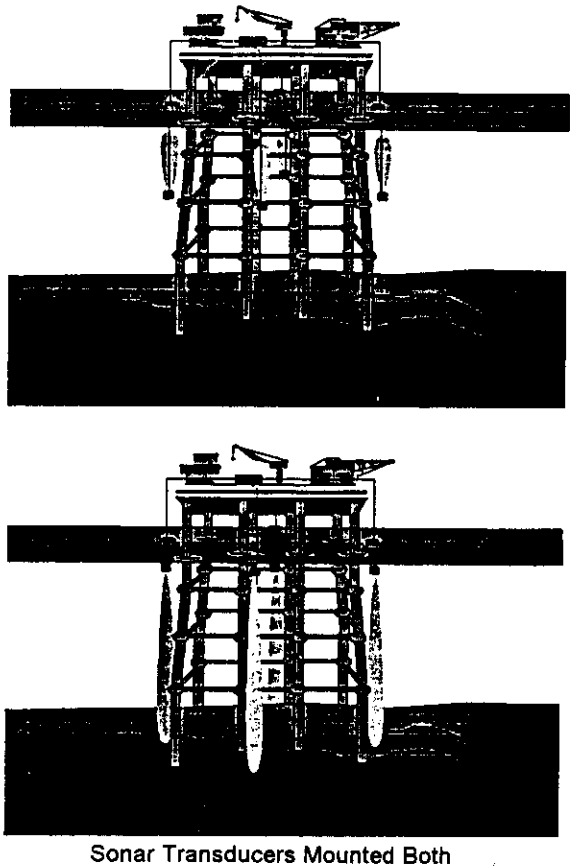
After December 31, the only recreational use of hoop nets that will be allowed will be that mobility-impaired (handicapped) people will be allowed to use one hoop net to catch fish for home consumption only. The department has not yet determined how people will need to qualify themselves for this provision.

In other action by the legislature, the use of hoop nets to commercially take mullet in freshwater areas was legalized. The effective date of this act was also August 15. Unfortunately, fishermen will not be allowed to immediately keep their mullet catch,

because under the law, the Wildlife and Fisheries Commission must create rules for zones, permits, fees and limits for the fishery. The legal process will begin in September, which means that the earliest possible date for mullet harvest with hoop nets would be December, 1999.

FISH AT PLATFORMS

Fishermen that regularly fish at any of the 4,200 oil and gas production platforms in the Gulf of Mexico know how good the fishing can be. Most rig fishermen also know that very often more fish are found on one side of the platform than another, but determining a pattern can be difficult.



Sonar Transducers Mounted Both Upward and Downward

Until recently, very little research has been done on how fish are distributed around these platforms. A project conducted by Louisiana State University scientists at Gulf platforms has now produced interesting results. Rather than use nets or divers which have problems with gear selectivity, visibility or diver avoidance, the researchers used sonar transmitters which were mounted to send their signals both upward and downward around the edges of the platforms used in the study. The sonar signals were able to pick up fish 1.2 inches long and longer, count the fish, and determine the size of the fish.

Sampling was done at three platforms over a several year period, South Timbalier 54 (72 feet deep), Grand Isle 94 (195 feet deep), and Green Canyon 18 (712 feet deep). The deepest platform was located off of the gently sloping bottom of the continental shelf, on the more steeply inclined continental slope.

At ST 54 the highest concentrations of fish by far, were found on the north side of the platform. At GI 94, highest concentrations were on the north side, closely followed by the west side. The least fish, by a wide margin, were on the east side. At GC 18, far fewer fish were found than at the two shallower sites, however the most fish were found on the west side with good numbers also on the north side of the platform. The high densities of fish on the north sides of platforms may be the result of more structure being on that side of platforms due to the location of the well bays.

Distribution of fish by depth showed even more variation. At the shallowest platform, ST 54, fish concentrations were highest in the upper 16 feet of water. Fish numbers dropped until 32 feet deep, and then increased from there steadily to the bottom at 72 feet.

The species of fish present were identified using a small remote controlled submarine carrying a video transmitter. It should be noted that at times, fish identification was difficult because of the presence of a murky layer of water, most often in the bottom 15-30 feet of water. At ST 54, the fish population was made up of the following species: spadefish (34%), blue runner (21%), sheepshead (17%), red snapper (11%), bluefish (2%), and 13 other species (15%).

The mid-depth platform, GI 94, held the most fish, and had a distribution pattern similar to the shallow platform. Large concentrations of fish were found near the surface. By the depth of 15-16 feet, numbers dropped off by about half and held steady to about 52 feet deep. Then fish numbers increased rapidly to their highest numbers about 30 feet off of the bottom. While dropping slightly from there to the bottom (195 ft), fish concentrations were still quite high.

At GI 94, by far the most common fish found during the study period was the blue runner (88%), followed by red snapper (3%), horseeye jack (3%), mangrove snapper (1%), amberjack (1%), barracuda (1%), and 18 other species combined (3%).

The platform standing in the deepest water, GC18, held the least fish. At this platform, the largest concentration of fish was at the surface. Fish density showed a spectacular drop down to a depth of 49 deep. From there, fish numbers were very low, but fairly consistent until 325 feet deep. Below this depth, down to the bottom at 712 feet, almost no fish were found. In fact, fish numbers were actually lower than in the open waters away from platforms up on the continental shelf.

The break-down on fish species at GC 18 was as follows: creole fish (50%), blue runners (21%), Bermuda chubs (6%), almaco jacks (6%), amberjacks (4%), horseeye jacks (4%), barracuda (2%), and 10 other species (7%). The researchers concluded that the low fish densities at GC 18 were likely due its location being distant from the highly productive waters discharged from the Mississippi River and that its waters were much like open ocean waters with low productivity.

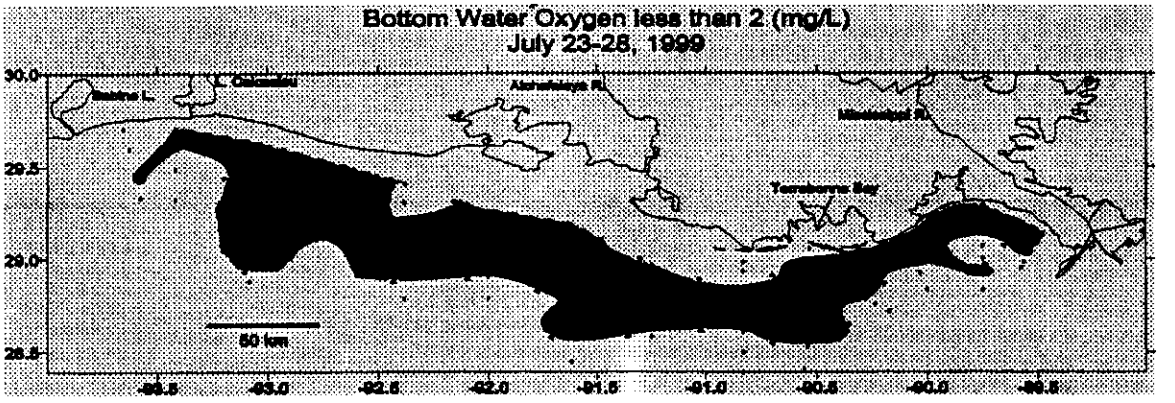
The researchers made one general observation that applied to all three platforms. Unlike on natural reefs, fish did not change depths with time of day. They also noted that at the deepest platform, that fish numbers did not change with the time of the year. At the two shallower platforms, fish densities were highest in fall and winter.

One final finding from this research applies to placing artificial reefs, which off of Louisiana are built of oil and gas platforms toppled onto their side. A toppled platform placed in a location that holds few fish near the bottom, such as near GC 18, will likely be a very poor artificial reef. In such waters, how high the platform reef extends up from the bottom will determine its effectiveness as a fish attractor.

Source: *Depth Effects on Platform Fish Communities.* David Stanley. Presented at U. S. Minerals Management Service Information Transfer Meeting. December 1998.

1999 DEAD ZONE UPDATE

Researchers who conducted the July 1999 survey of the Gulf of Mexico hypoxic area or "dead zone" as it is also called, have reported that it is the largest ever mapped. According to Dr. Nancy Rabalais of the Louisiana Universities Marine Consortium (LUMCON), the hypoxic zone covered 7,728 square miles. This is about 700 square miles larger than the previous record, set in 1995.

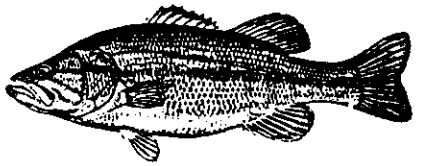


The dead zone is an area where bottom oxygen levels are below 2 milligrams per liter (parts per thousand). When oxygen levels fall this low, usually anything that can swim will either leave the area or move higher (if they can) in the water to find oxygen. Animals that can't escape such as clams, snails, and worms eventually die if the oxygen levels are too low for too long.

Typically this zone forms during the summer when low winds and calm seas are common. It usually does not break up and disappear until the waters are mixed by a tropical storm or passage of a cold front.

BASS TRACKS

Largemouth bass, by and large, are not considered to be a migratory fish. However, most bass do show some movement, at least for short distances. Knowing these movement patterns can be important, especially to competitive tournament fishermen.



Recently biologists in North Carolina studied the movement patterns of 11 largemouth bass from mid fall through the spring spawn by tagging them with radio transmitters and following them from November through early May. Efforts were made to find the fish at least once a week. Water temperatures during the tracking period ranged from a low of 42°F in December to a high of 77°F in late April.

All of the bass were tagged and released in one area of the lake and all were mature enough to spawn, but under the 16-inch minimum size limit, so as to prevent fishermen from keeping them. In spite of this, one radio-tagged fish was tracked to a fisherman's live well, from which the biologists released it.

Bass in the study showed both daily and long-term movement. From November through February, the bass shifted their positions offshore during the middle of the day. On average they were 28 yards offshore in the morning, 44 yards during the afternoon and 11 yards during the evening. By March, as the spawning season neared, this daily movement stopped and bass stayed near shore all day.

Some seasonal shifts also occurred. Four of the tagged fish moved from the initial home range that they were tagged in to a winter home range in deeper waters during the cooler months. In the spring, when the weather warmed, these fish moved back to their initial range. This shift in range was 440 to 1650 yards.

Both initial home ranges and winter home ranges were fairly small, indicating that largemouth bass tend to stay in one place. Initial home ranges ranged from 0.16 to 4.7 acres with an average of 1.3 acres. Winter home ranges were even smaller, ranging from no movement at all to 1.4 acres. No correlation existed between the size of the fish and the size of the home range.

Only one of the tagged fish, the smallest one, showed continuous movement with no home range. This fish moved an average of 940 yards weekly throughout the study. Bass in the study also did show a tendency to move short distances into newly flooded areas during periods of high water, especially during the warmer months.

Source: *Over-winter Movements of Adult Largemouth Bass in a North Carolina Reservoir.* Karle O. Woodward and Richard L. Noble. Proceedings of the 51st Annual Conference, Southeastern Association of Fish and Wildlife Agencies. 1997.

THE LOUISIANA CRABBER

In 1996, Louisiana Department of Wildlife and Fisheries biologists conducted two surveys of commercial crab fisherman. One survey consisted of personal interviews with 163 crabbers in the area between the Mississippi and Atchafalaya Rivers. The other was a mail survey in which every tenth commercial crab trap license holder statewide was sent a survey. A total of 284 (62%) responded.

In the mail survey, the largest age group was 30-39 years old (33.3%). Only 9.9% were under 30 years old, but 17% were 60 years old or older. Interviewed fishermen tended to be younger than those in the mail survey.

The majority of interviewed fishermen used fiberglass boats (62.6%), although aluminum (30.7%), and wood (6.7%) were also used. The most common boat size category was 16-21 feet (64.4%), followed by 22-27 feet (20.2%). Outboard motors were used by 91.4% of the fishermen. Only 4.9% used diesel engines.

Standard 24-inch by 24-inch traps were used by 79.9% of the fishermen, although larger (11.4%) and smaller (8.7%) traps were also used. More fishermen used hex mesh traps than square mesh traps. Three funnel (48.4%) and four funnel (49.5%) traps were about equally used, although some two funnel traps were also used. Styrofoam floats were used by 97.5% of the fishermen. Weighted traps were used by 57.7% of the fishermen, with the weight almost always being steel rebar. Many fishermen also used pick-up rigs (47.2%) and table graders (57.7%).

Results of the mail survey showed that 30% of the license holders did not commercially crab. Of those, 44.2% were merely holding the license (more than likely because of the license moratorium in effect than), 34.6% were recreational crabbers who wanted to use more than 10 traps, 13.5 % had medical problems that prevented crabbing, and 7.7% were trawlers who bought a license to avoid enforcement problems by having crab taps caught in their shrimp trawls aboard the vessel.

Of the active crabbers, sales of crabs provided 100% of the income for 13.3% of them, 70-99% for 21.6%, 40-69% for 25.0%, and 1-39% for 40%. Most (85%) of these fishermen participated in one or more other types of commercial fishing/trapping: shrimp (61.4%), finfish (31.4%), fur (9.9%), alligator (9.1%), oyster (7.4%), crawfish (3.3%), and bait minnows (0.8%).

Crabbers with 100% of their income from crabs used an average of 252 traps, and crabbed 47 weeks per year. Crabbers in the 70-99% income group used 270 taps and crabbed 45.6 weeks, and those in the 40-69% group averaged 302 traps and crabbed 26.2 weeks per year.

Large numbers of traps were lost or stolen, with an average of 257 traps lost or stolen per fisherman per year. Most crabbers ran their traps every day in the summer and every two days in the winter. The average crabber moved his trap lines a little over 7 times per year. Some crabbers shed shoftshell crabs (8.6%) and many (67.5%) sold their peeler crabs to other shedders.

Problems and issues brought up by the crabbers interviewed are as follows.

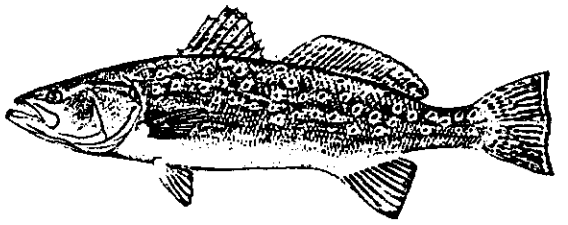
Problems	Percent
Trap theft	46.2
Too many traps and fishermen	21.2
Taking of undersized crabs	18.8
Theft of crabs	17.5
Low crab prices	17.5
Inconsistent law enforcement	9.4
Redfish and other fish predation	5.0
Bad or unclear laws	5.0
Imports	3.8
Boats cutting float lines	3.8
Conflicts with shrimpers	3.8
Otters and cormorants	1.9

The most recommended solution to problems by the crabbers was the mandatory use of escape rings in traps. This was passed by the Louisiana State Legislature in 1997. Also passed by the same legislature were stiffer penalties including loss of license for theft of crab traps or their contents, or possession of double the allowable tolerance of undersized crabs.

Source: *A Profile of 1996 Louisiana Commercial Blue Crab Fishermen (Unpublished)*. Vincent Guillory and Jerry Merrell. Louisiana Department of Wildlife and Fisheries. 1996

TRAVELING TROUT

That speckled trout move within an estuary on a yearly basis is well known. Typically trout spend their summers in the high salinity areas in the lower part of an estuary and their winters in the lower salinity waters of the upper estuary. But how far speckled trout move from estuary to estuary or bay to bay is not well known by most fishermen.



Speckled trout tend to live in or near the same bay system all their lives. In 1979, Louisiana researchers tagged over 2600 specks. Of the 30 returns that they got, 20 came from the tag and release site. Similar Louisiana research published in 1980 and 1982 showed that 98% of tag returns came from within one mile of where the trout were tagged, although another researcher in 1982 noted that two speckled trout tagged in Calcasieu Lake were recovered 96 miles to the east in Atchafalaya Bay.

Texas research results were similar. Results of 20,912 trout tagged in bays between 1975 and 1993 showed 84% of the returns were from the same bay as release. The longest distance traveled by any tagged speckled trout before recovery was 131 miles. Of 588 trout tagged in the Texas Gulf surf, 12 were recovered in the Gulf and 2 in Texas bays.

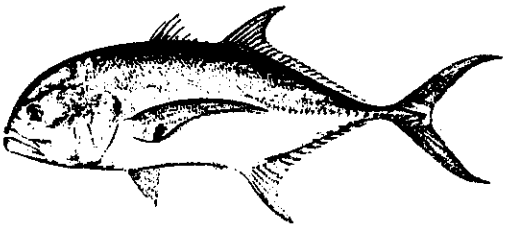
Other states showed similar research results. In Mississippi, 7,423 specks were tagged and 221 were recovered and 90% were recaptured within 5 miles of their release location. In Alabama, 53% of tagged speckled trout showed no movement and the longest distance traveled was under 20 miles. Multiple studies in Florida showed that speckled trout seldom move over 30 miles and that most fish never left the estuary, although one fish tagged in the Apalachicola, Florida area was recovered 315 miles away near Grand Isle, Louisiana.

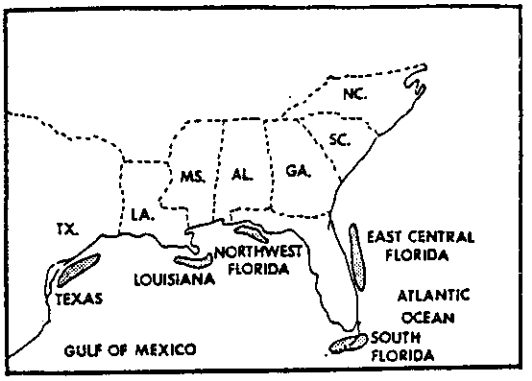
Research from all five Gulf states agrees that, contrary to popular belief, most speckled trout are homebodies rather than long distance travelers.

Source: *The Spotted Seatrout Fishery of The Gulf of Mexico, United States: A Regional Management Plan (Draft).* H. Blanchet and others. Gulf States Marine Fisheries Commission. 1999.

JACK CREVALLE FOOD HABITS

Jack crevalles are a very common fish, both off of Louisiana's coasts and in its saltwater bays. They have little commercial value at present, but are fierce and brutal fighters when hooked by recreational fishermen. Probably because of their limited food value (most sportsmen release them after capture), very little research has been done on the biology of this interesting fish.





Sampling Areas

One piece of work that has been done was a food habits study in 1984. For the study, fish were captured by hook and line and seine from the 5 areas shown at left. Each fish was measured and had its stomach removed and preserved for later analysis. A total of 3,623 fish were examined in this study. Almost 40% of the stomachs were empty. More smaller fish than larger fish had empty stomachs, indicating that larger fish probably ate more often, ate larger food items, or regurgitated (up-chucked) less often when caught.

Jack crevalles sampled off of Louisiana ate more fish than invertebrates (animals without backbones). Fish were found in over 82% of the stomachs that had food and invertebrates in 49% of the stomachs. Interestingly, 2% of the stomachs had pieces of wood in them.

The dietary breakdown of Louisiana jack crevalles in the study was as follows:

FISH

Food Item	Percentage of stomachs
Herrings (including menhaden)	41.2
Round scad (cigar minnows)	5.9
Sea catfish	2.0
Spot and croaker	7.8
Atlantic cutlassfish (silver eels)	2.0
Butterfish	3.9
Anchovies	5.9
Pearly razorfish	2.0
Snake eels	5.9
Unidentified fish remains	25.5

INVERTEBRATES

Food Item	Percentage of stomachs
Shrimp	3.9
Mud crabs	21.9
Swimming crabs (blue crab family)	2.0
Mantis shrimp (sea lice)	19.6
Squid	11.8
Clams	5.9

When the total volume of all the stomach contents is compared, 78% was fish and 22% was invertebrates. The researchers concluded that, in general, jack crevalle were a major predator on small schooling fishes in the Gulf of Mexico and south Atlantic.

Source: *Food of Crevalle Jack (Caranx hippos) from Florida, Louisiana, and Texas.* Carl H. Saloman and Steven P. Naughton. NOAA Technical Memorandum NMFS-SEFC-134. 1984

OYSTERS IN RETAIL MARKETS

In recent weeks, I have received several requests from retail seafood market operators about some of the laws pertaining to shucked oysters. Captain Jeff Mayne of the Louisiana Department of Wildlife and Fisheries Enforcement Division has answered some of these questions.

Can a seafood retailer shuck sack oysters for resale?

Yes, but only to the public. Selling to another dealer for resale requires the shucker to have a shucker-packer permit from the Louisiana Department of Health and Hospitals.

How should such oysters be packaged and handled?

These oysters cannot be packed into closed containers unless the dealer has a shucker-packer permit. They may be displayed in the service case or stored in the cooler in an open container. They may also be sold on the half-shell.

Does this mean that a retail dealer cannot put these oysters in a container at the time of sale?

No. Obviously, the oysters must be put into some sort of container for the customer to transport them home. The rule against storing oysters shucked by a retailer in a closed container applies to storage at the place of business or on a business vehicle.

What are the record keeping requirements for oysters shucked at a retail seafood market?

As for other raw oyster sales, the retailer must keep the tag from the sack for 90 days. The tag does not have to be displayed in the case with the oysters. Paperwork relating to the purchase of these oysters must be maintained the same way as for any other seafood purchase. These records should be maintained so that the oysters can be traced to their place of harvest.

When shucked oysters are purchased by the gallon from a shucking house, can the retailer dump the oysters into a display container?

Yes. Oysters may be emptied into a display container, but oysters from different lots should not be comingled (mixed).

Can oysters purchased by the gallon be split into smaller orders by a retailer?

Yes. But only at the time of sale.

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THE GUMBO POT
Oyster-Shrimp Rolls

This recipe comes to us from Beau Blackwell of Calcasieu Parish who won a 4-H Seafood Cookery Contest with it. It's great prepared either on a grill or in the oven.

2 pints raw oysters
1 pound medium shrimp tails
1 pound bacon
Creole seasoning
round toothpicks
lemon pepper liquid marinade

Drain oysters and peel shrimp. Cut bacon strips in half. On each bacon strip, place one oyster and one shrimp. If oysters are small, use two per strip. Sprinkle generously with Creole seasoning. Wrap bacon strip over oyster and shrimp and pin together with a toothpick. When finished wrapping, place all rolls in a bowl and pour lemon pepper marinade over them. Place in refrigerator for at least thirty minutes. Grill over hot coals or broil in oven at 350° F for 10 minutes or until bacon is crisp. Serves 6.

Sincerely,

Jerald Horst
Area Agent (Fisheries)
Jefferson, Orleans, St. Charles, St. John