

Lagniappe



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Spotted Seatrout Telemetry Project Begins on Calcasieu Lake

Researchers from Louisiana State University (LSU) are teaming up with the Louisiana Department of Wildlife and Fisheries (LDWF) for a study on the movement patterns of spotted seatrout in Calcasieu Lake. The two-year study will begin May 2007 and roughly 120 adult spotted seatrout will be outfitted with acoustic transmitters or “pingers.”

All fish with acoustic transmitters will be marked with a yellow dart tag below the dorsal fin that states “LSU-REWARD-PLEASE RELEASE.” Fishermen who catch fish with this tag should release the fish alive and call 1-800-891-3977 to report the tag number and where and when the fish was caught. It is vital that these fish be released alive so that researchers can continue to collect movement data.

The tag number is given at both ends of the tag. An example of an LSU tag number is “LT166001.”

Fishermen who provide recapture information and release the tagged fish alive will receive a Louisiana Sport Fish Tagging Program hat and T-shirt, and be entered in an annual drawing for GPS units and cash prizes of up to \$500.

An array of receivers also will be placed throughout Calcasieu Lake to “listen” for fish with transmitters. Receivers will be placed on channel markers in the Calcasieu Ship Channel and on buoys in the main body of the lake. Boaters and fishermen should not tamper with or moor to the buoys.

The Coastal Conservation Association (CCA) and LDWF also tag fish in Calcasieu Lake. These dart tags are placed in the same location on the fish, but have different text on them.

RESEARCH GOALS

A better understanding of movement and seasonal migration patterns of spotted seatrout is critical for effective management of this species. The study will address questions such as: Do fish leave Calcasieu Lake and move offshore? If so, do they return and when? Where do fish spawn and over-winter? Do migration patterns differ by size and sex?



Research buoy



Tagged fish

In addition to exploring seasonal migration patterns, this study will examine how fish use different habitat types and change their behavior when their environment changes. The degree to which and how spotted seatrout use natural and artificial oyster reefs also will be evaluated.

Artificial reefs are often assumed to act as beneficial habitat for spotted seatrout, but few studies have compared habitat use on natural and artificial reefs to confirm this notion. Some questions that will be addressed about behavior include: Do fish move to deeper waters or offshore for refuge during storms/ fronts or when water temperatures peak in the summer? How do fish move in response to seasonal

changes in temperature and salinity? Is there more feeding activity under conditions of increased tidal flow and decreased turbidity? Does fish movement closely follow prey distributions, such as shrimp? And, are large, old females or “sows” more solitary than smaller females and males?

To answer all of these questions, researchers will use acoustic telemetry. This involves surgically implanting fish with an acoustic transmitter below the stomach that sends out a sound ping. When a fish carrying a transmitter passes within the detection range of a receiver (200 to 300 yards), the receiver records the fish identification number and date and time of the detection.

While this study of movement patterns is focused only on Calcasieu Lake, a system renowned for its large trophy trout and also a hot topic because of the recent change to more stringent fishing regulations, this particular project is part of a larger state-wide study aimed at better understanding stock structure and characteristics, seasonal migration and habitat use of spotted seatrout.

A volunteer recreational angler tagging program (CCA, LDWF) is one part of this larger study. Data from this tagging program provides important scientific information, collected from recreational anglers, on movements and stock characteristics (stock size, mortality and growth). Fishermen wanting to participate in the tagging program should call 1-800-891-3977 or email fishtags@wlf.louisiana.gov for more information.

Tagged Fish in Calcasieu Lake

Researchers	Tag Color	Tag Text	Call	Reward
LSU	Yellow	LSU-REWARD-PLEASE RELEASE	800/891-3977 with tag number, date/time, latitude, longitude	T-Shirt, hat, drawing entry
LDWF	Green or White	INFORMATION-REWARD-LOTTERY or INFORMATION-REWARD	800/891-3977 with tag number, date/location, length in centimeters	T-Shirt or hat
CCA	Yellow or Red	REWARD-CONTACT NMFS	800/567-2182	\$2.50
* Tags may foul with algae and need to be scraped to be read				
* Release all fish alive				

Identification of Billfish Species Under Revision

New genetic studies of the world's billfishes are demonstrating just how little is known about these fish. This work has also found that some previous classifications may have been incorrect, with serious implications for stock management.

Last year, two studies were published on the genetics of billfish. One looked at the relationships of all the billfish species (Collette and others) and another investigated the presence of the roundscale spearfish on our side of the Atlantic (Shivji and others).

It was previously believed that billfish can be broken into two families, Xiphidae (with only one species, the swordfish) and Istiophoridae (including the sailfish genus *Istiophorus*, the genus of large marlins, *Makaira*, and the genus *Tetrapturus*, which includes the spearfishes and the white and striped marlins). While the swordfish clearly belonged in his own group, some researchers thought that the Atlantic and Indo-Pacific populations of both sailfishes and blue marlins included separate species; that white and striped marlin were actually one species; and no one was really sure how many spearfish species existed. This uncertainty makes management of these stocks an equally uncertain process.

The Collette study used mitochondrial and nuclear gene sequencing to demonstrate that even some of the classifications that have been widely accepted are probably incorrect. The researchers found that there are likely five genera within the family Istiophoridae, and proposed revision of the nomenclature for these groups: *Makaira* (blue marlin), *Istiophorus* (sailfish), *Istiompax* (black marlin), *Kajika* (striped and white marlin) and *Tetrapturus* (four spearfish species). The selected gene sequences also showed no evidence that separate species of Atlantic and Indo-Pacific sailfish or blue marlin existed.

The situation gets even more interesting with the new data on the spearfishes. Collette found that the four species of spearfishes are closely related. In the Atlantic are the longbill (*Tetrapturus pfluegeri*), the Mediterranean (*T. belone*) and the roundscale (*T. georgii*), whose speciation had been questionable. The Indo-Pacific region has the shortbill spearfish, *T. angustirostris*. Another possible species has been seen in the western Atlantic and the Gulf of Mexico: The "hatchet marlin" has been collected only a few times. Collette's DNA work showed that the "hatchet marlin" is very closely related to the roundscale spearfish, and does not exclude the possibility that they are the same species.

Extensive analysis of the roundscale spearfish by Shivji (and others) used DNA, body form and scale characteristics. It was found that this is almost definitely a distinct species, and that the few specimens collected in the past did not represent the full distribution of this fish. Those specimens were from the Eastern North Atlantic, but new collections from the Western North Atlantic (near the U.S.) also included roundscale spearfish. That this species looks almost identical to the white marlin forces fishery managers to consider the possibility that roundscale spearfish specimens have been counted in the stock assessments for white marlin. Stock assessments for white marlin have recently highlighted extreme concern for this species (classified as severely overfished), so the possibility of species misidentification is a very serious matter. Furthermore, the possibility that the "hatchet marlin," which has been found in the Gulf, may be the same fish as the roundscale spearfish, extends this uncertainty about billfish populations into our region.

Sources:

Shivji, M.S., J.E. Magnussen, L.E. Beerkircher, G. Hinteregger, D.W. Lee, J.E. Serafy, and E.D. Prince. 2006. Validity, identification, and distribution of the Roundscale Spearfish, *Tetrapturus georgii* (Teleostei: Istiophoridae): morphological

and molecular evidence. *Bulletin of Marine Science*, 79(3): 483-491.

Collette, B.B., J.R. McDowell, and J.E. Graves. 2006. Phylogeny of recent billfishes (Xiphiidae). *Bulletin of Marine Science* 79(3): 455-468.

Hoese, H.D. and R.H. Moore. 1998. *Fishes of the Gulf of Mexico: Texas, Louisiana, and Adjacent Waters*. College Station: Texas A&M University Press.

Hurricane Rita Fishery Recovery Monitoring in SW Louisiana

The Louisiana Department of Wildlife and Fisheries (LDWF), Inland Fish Division, District 5, has been monitoring the streams and rivers of Southwest Louisiana for water quality and fisheries resources since Hurricane Rita hit the area on Sept. 24, 2005. Massive fish kills were widespread in the coastal plain marshes and on area rivers from three to five days following the storm. Water quality stations were set up on the Calcasieu, Mermentau and Sabine rivers and standard parameters measured weekly beginning October 2005 through January 2006. Some stations were slower to return to “normal” than others, however, all of the 21 stations were showing acceptable water quality by January 2006.

Twelve sampling stations had been established by LDWF in these rivers some 20 years before, so there was good baseline data on the fisheries resources before the storm. October and November 2005 samples showed the impacts to be far worse than originally expected. No centrarchids (bass/sunfish), clupeids (shad/herring) or cyprinids (minnows) were captured in over three hours of electrofishing. Water quality samples showed that the streams were in better shape further inland from the coast. April 2006 samples brought little good news -- one 11-inch largemouth bass, one 5-inch bluegill and one 12-inch channel catfish -- all on the Calcasieu. The LDWF crews began to see a few gar fish and bowfin, but there were still no centrarchids found on either the Mermentau or the Sabine rivers. But in October 2006, samples demonstrated the resiliency of Mother Nature that few could have believed. While biologists expected the fisheries to rebound eventually in the impacted waters, few expected what was found just one short year later. The summer spawn of surviving centrarchids had been extraordinary: Largemouth bass production on the Calcasieu and Sabine rivers not only exceeded the 20 previous years, but doubled the catch-per-unit-effort numbers of the “best” years. The Mermentau River samples also indicated a good rebound: This spring fishermen are reporting good catches of 8 to 12 inch bass that are in excellent condition. Most of the smaller fish are being released, according to LDWF creel surveys. Again, nature shows us that no ecological niche will remain unfilled for long.

– **Bobby Reed**

Know Your Tunas – The BIG Tuna: Atlantic Bluefin

(Second in the series: this article focuses on the largest tuna species in the Gulf of Mexico (and the world), and its complex management issues).

Atlantic Bluefin Tuna (*Thunnus thynnus*) – Bluefin tuna are efficient, relentless and fast-growing predators, and even form attacking U-shaped schools in order to surround and consume prey. This species is the largest of the tunas, growing to more than 10 feet long and weighing more than 1,000 pounds. They can be distinguished from the other tunas by the reddish-brown second dorsal fin, and short, almost stubby, pectoral fins. They make tremendous migrations and dive to depths of more than 3,000 feet in search of food and mates.

Atlantic bluefin tuna are found in the deep waters of the Gulf of Mexico, but only in the winter months. The species is actually separated into two separate stocks based on their spawning grounds. The western stock uses the Gulf of Mexico as spawning grounds, which they leave each spring and travel north along the U.S. East Coast up to Canada, where they gorge on pollock, herring and mackerel. As the summer ends, they may travel completely across the Atlantic Ocean to the shores of Europe and North Africa before returning to the Gulf to spawn in late December and early January. The eastern stock spawns in the Mediterranean Sea; however, recent tagging studies suggest there is more interaction than previously thought.



Atlantic Bluefin Tuna

Image courtesy NOAA

Initially bluefin tuna fishing was done on just a recreational basis. In the 1950s a market began to develop for small bluefin in the western Atlantic for canning purposes. In the 1970s, a huge demand began to develop for giant bluefin to supply the Japanese sushi and sashimi markets. Fresh bluefin meat is the fattiest of tuna species, and is considered a supreme delicacy. As the fishery evolved it became apparent that some form of management was needed, thus the International Convention for the Conservation of Atlantic Tunas (ICCAT) was formed. Concern over the status of the stocks, particularly the western stock, led to international quotas. A controversial decision was made to manage the stocks separately, yet both stocks continued to decline calling into question the ability of ICCAT to manage the species.

The present status of the Atlantic bluefin tuna stocks is unquestionably a serious situation. The good news is that the more recent restrictions on fishing have apparently stopped the decline of the western stock in the last few years. The bad news is that the western stock is either not recovering or recovering very slowly. Additionally, the eastern stock (with presumably the occasional migrant from the western stock) is being subjected to illegal fishing spurred by the astronomical prices paid by the Japanese markets.

Unfortunately for bluefin tuna, which can live to 30 years, sexual maturity is not reached until 4 to 8 years of age. As a result, fish are often harvested before they have a chance to spawn. This further complicates the issue of management and recovery.

An interesting twist to the bluefin tuna saga is the development of tuna ranching and farming. In tuna ranching, wild tuna are caught and held in a pen where they are fed until they reach the ideal fat content and market value. Tuna "ranchers" believe that their operations take pressure off wild tuna populations because the tuna fishermen get a better price for their catch and therefore need to fish less intensively. Critics of the industry say that these ranching operations are adding to an excessive hunt that is steadily pushing some populations toward commercial extinction. They say that the fish being caught for ranching are not necessarily counted against international quotas that are set to conserve the species. Tuna farming involves the growth of the tuna through all of its life stages. This is a much more intensive and costlier operation, but may be the only possible option for maintaining both the species and its markets if natural stocks do not recover quickly.

– Craig Gothreaux

Sources:

Gilbert, C. R. and J. D. Williams. 2002. *Field Guide to North American Fishes: Revised Edition*. National Audobon Society. Knopf, New York, New York. 608 pp.

Horst, Jerald. *Fishes of the Gulf of Mexico*. RodnReel.com <http://www.rodreel.com/gulffish/gulffishasp?cmd=view&FishID=79>

Laws, Edward. 2006. *OCS 4001: Marine Fisheries and Aquaculture. Chapter 8*.

Louisiana Fisheries Biological Info: Species Information. Louisiana SeaGrant. <http://www.seagrantfish.lsu.edu/biological/www.bbc.co.uk/news>

www.pbs.org/emptyoceans

New Fisheries Legislation Proposed

Although this is a fiscal session, state legislators may each propose up to five non-fiscal bills and a number of bills that affect fisheries have already been introduced before the Natural Resources Committees. These are briefly described here, or visit www.legis.state.la.us for more information. Contact your legislators to weigh in on these issues.

Legislators Jack Smith and Karen St. Germain introduced **House Bill 311**, which exempts the sale of wild-caught crawfish from the trip ticket program for two years. It also requires the Department of Wildlife and Fisheries (LDWF) and the Crawfish Task Force to meet during the two-year period to develop a plan for applying the trip ticket program to the sale of crawfish without overburdening the fishermen.

Legislators Eddie Lambert, Jack Smith and Germain and Joe McPherson introduced **HB 327**, which provides penalties for the intentional concealment, destruction or deposit of fish, wildlife and other animals that would affect a criminal proceeding.

Legislators St. Germain, Mickey Frith, Wilfred Pierre, Gary Smith, Jack Smith and McPherson introduced **HB 329**, adds skimmer nets and butterfly nets to the list of gear that may be used to take crabs; to the list of gear prohibited in Lake Des Allemands, Lake Maurepas, Calcasieu Lake, Black Bayou, Grand Bayou, Little Burton's Ditch, Lake Catherine and Lake Pontchartrain Sanctuary; and prohibited at night in White Lake and Grand Lake; and to the list of prohibited obstructions in inlets and passes and near water control structures.

Rep. Ken Odinet introduced **HB 453**, which makes the vessel monitoring penalty for illegal taking of oysters consistent whether the illegal taking be undersized oysters or taking from leased acreage or public seed grounds.

Legislators Pierre, Damon Baldone, William Daniel, St. Germain and Max Malone introduced **HB 330**, which provides for fish stock assessment reports on black drum, sheepshead, flounder and mullet to be submitted biennially to the Legislature, and it authorizes the submission, for Wildlife and Fisheries Commission approval, of stock management regimes by LDWF. The Commission will be required to monitor the fish species and report biennially to the legislature relative to the spawning potential ratio (SPR) and the biological condition and profile of the species and stock assessment. If the data indicate the SPR is below 30 percent, the department must close the season within two weeks after the finding is peer reviewed and confirmed, or it may provide management options for Commission approval. The management options must be derived from data that indicate a 50 percent chance of recovery to the 30 percent SPR within 10 years or an appropriate recovery period based on the

biology of the fish, environmental conditions and the needs of the fishing communities.

Rep. Lelon Kenney introduced **HB 514**, which exempts largemouth bass from the current length limitation requirements. Present law permits the purchase, sale or exchange of largemouth bass fingerlings, not exceeding a maximum total length of 10 inches, brought into the state by and from legal and certified out-of-state commercial fish hatcheries for sale to Louisiana residents for stocking private and approved public waters. HB 514 will allow largemouth bass of any size brought into the state by these sources and for these purposes.

Rep. Jack Smith introduced **HB 572**, which requires the Louisiana Wildlife and Fisheries Commission to provide for a minimum issuance of 70,000 alligator hide tags per season to licensed alligator hunters, and provides for a maximum return rate of 6 percent of live alligators for alligator egg collectors.

Rep. Ernest Wooton introduced **HB 830**, which establishes a fish trawl gear license and provides for the requirements, restrictions and regulations for use of such gear and the penalties for violations.

Sen. Chris Ullo introduced **SB 123**, which changes the termination date of the Underwater Obstruction Removal Fund from June 30, 2007, to June 30, 2012.

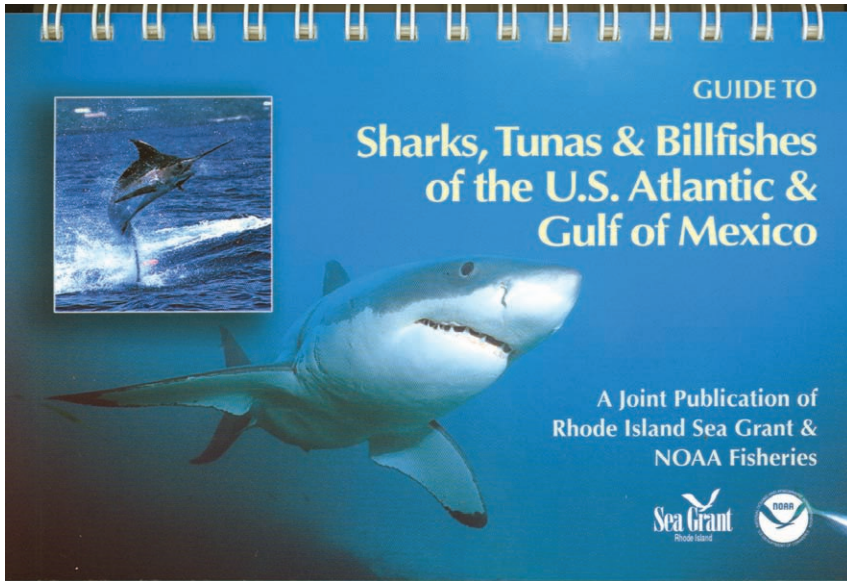
Comments Sought on Vermilion Snapper Regulations

Gulf fishermen may be feeling that catch restrictions just keep getting tighter and tighter. However, we can't lose sight of the fact that the overall goals are to give maximum fishing opportunities while keeping stocks healthy. In an example of a heavily-regulated-but-improving fishery, there may be an opportunity to increase the take of vermilion snapper in the Gulf. A recent assessment indicates that the vermilion snapper is no longer overfished or undergoing overfishing, and that current harvest levels are below the optimum level. NOAA Fisheries Service is currently reviewing a regulatory amendment submitted by the Gulf of Mexico Fishery Management Council, which proposes to increase harvest of vermilion snapper in the Gulf of Mexico. The public comment period on the rule that proposes to implement these regulatory changes is open through May 14, 2007.

Management measures proposed in this rule are:

- Reduce the commercial and recreational vermilion snapper minimum size limit from 11 inches to 10 inches total length;
- Eliminate the 10-fish recreational bag limit for vermilion snapper within the existing 20-fish aggregate reef fish bag limit; and
- Eliminate the 40-day commercial closure for vermilion snapper, which extends from April 22 through May 31 each year..

Current regulations require closure of the commercial fishery for vermilion snapper from April 22 through May 31, 2007. Any change in that closure resulting from this proposed rulemaking would be announced by NOAA Fisheries Service as soon as a final rule is published. To comment on the proposed regulation options visit <http://sero.nmfs.noaa.gov>, call 727/824-5305 or fax 727/824-5308.



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THE GUMBO POT

Bar-B-Qued Shrimp

Leigh Anne Gibbons

4 lbs jumbo headless shrimp	1/4 cup olive oil
1/4 lb butter	1 lemon sliced
1/4 lb margarine	1/4 tsp hot sauce
1 1/2 ozs Worcestershire sauce	1 tsp salt
2 tbl black pepper	1/2 garlic clove
1/4 tsp oregano	1/4 tsp ground rosemary

In a saucepan, melt butter and margarine. Add worcestershire, pepper, rosemary, oregano, olive oil, lemon slices, hot sauce, salt, and garlic. Mix thoroughly. Put shrimp in a 2-quart 8x12 inch casserole dish. Pour the heated sauce over the shrimp. Stir well. Cook in a 400 degree oven aqbout 15-20 minutes, turning once. Shells should be pink, the meat white, and not translucent.

Serves 6-8 as an appetizer

Reprinted from *A Louisiana Seafood Cookbook*, available for \$6 from Louisiana Sea Grant. Make checks payable to Louisiana Sea Grant College Program, 105 Sea Grant Building, LSU, Baton Rouge, LA 70803.

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