

Cooperative Extension Service 500 Main Street, Room 314 Franklin, LA 70538 (337) 828-4100, Ext. 300 Fax: (337) 828-0616 gthomas@agctr.lsu.edu Web site: <u>www.lsuagcenter.com</u>

> Research and Extension Programs Agriculture Economic/Community Development Environment/Natural Resources Families/Nutrition/Health 4-H Youth Programs

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SEA MONSTERS

The north-central Gulf of Mexico is blessed, or cursed, depending on your point of view, with a great many species of eels. Counting the American (freshwater) eel, *Anguilla rostrata*, which migrates from rivers through the Gulf to spawn in the mid-Atlantic's Sargasso Sea, fully 22 species of eels from seven families, can be found along Louisiana's coast. Without a doubt, the two biggest and fiercest species are the king snake eel *Ophichthus rex* and the conger eel, *Conger oceanicus*.



Of the two, the king snake eel is the most common. It is found in waters from Florida to Texas in waters 50 to 1,200 feet deep. It is less common in waters under 200 feet deep and most of the eels found in shallower waters are smaller than those from deeper waters. They are almost always found on soft mud bottoms—the softer, the better.

In color, they are yellowish-brown above, with a dark band at the nape of the neck and 14 broad dark saddle-like marks on their back. The belly is white. They grow to over 7 feet in length and well over 50 pounds. More impressive, they possess a mouth full of razor sharp teeth that they do not hesitate to use on anyone or anything handy.

Crews of exploratory bottom longline vessels in the Gulf in the 1980s respectfully called them "snakes," due to their aggressive nature. Few things in fisheries are more awesome than trying to keep one's balance on the deck of a vessel pitching in 6 to 8-foot seas, and at the same time trying to avoid a slimy 8-foot sea monster with razor teeth shooting across the deck at you. Crewmen rapidly learned to hang them overboard along the bulwarks by the gangions (dropper lines) for a while, to subdue them before decking them for dehooking.

During that same time period, University of Florida food scientists attempted to develop processing techniques and marketing strategies to sell the eel, which they called "rex eel" or "keogh fish." All of their efforts failed because the flesh of this eel, while beautifully white, contained countless numbers of tiny free-floating bones. No way could be found to fillet around the bones.

They concluded that the rex eel was suitable for sale only in unique domestic markets and in certain international markets, such as England and Japan, where they may be acceptable for cultural reasons. Some Louisiana longliners did indeed find a small unique market for the eels in New Orleans, amongst immigrants from Caribbean countries.

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The LSU Agricultural Center is a statewide campus of the LSU System and provides equal opportunities in programs and employment. Louisiana State University and A. & M. College, Louisiana parish governing bodies, Southern University, and United States Department of Agriculture cooperating.

Some speculation exists among scientists that this may be an easily overfished species that would be slow to recover if fished too hard. As common as it is in the northern Gulf, the king snake eel was not known to science until 1980.

The conger eel has been known since 1818 and is better researched than the king snake eel. Conger eels are found in waters from the shore to 1,570 feet from Cape Cod, Mass., south to Florida, then up the Florida Gulf Coast to the Mississippi River Delta. The deepest record for this fish is from a trawl haul off Mississippi.



Conger eels are also large, up to 7 feet and over 80 pounds. As big as they are, they are small compared to their European cousin, *Conger conger*, which is reported to reach over 12 feet in length and 200 pounds.

It is brown to gray to bluish gray above and white below. The long dorsal and anal fins have wide black edges. It most closely resembles the American eel, but its dorsal fin begins further forward than the American eel's. The upper jaw is longer than the lower jaw and the snout is noticeably flattened. The color is much lighter than the greenish color of the American eel, which is where one of its common names, silver eel, comes from.

Conger eels spend much of their time hidden in burrows or crevices in the bottom. They are often found in shipwrecks and other debris. They grow to at least 13 years of age. Females mature at around 32 inches. Males are much smaller than females, seldom being found over 20 inches long. In mature males, the sex organs make up one-third of their total body weight.

Little else is known of their spawning habits. Research on the Atlantic coast has found that as the conger's eggs develop to be nearly ready to spawn, the eels disappear. This, plus the fact that the smallest larval conger eels have been found in the Sargasso Sea, supports the theory that this eel, like the American eel, migrates to the Sargasso Sea to spawn.

Conger eels in areas near shore in the mid-Atlantic coast feed most heavily on crustaceans, especially crabs, including hermit crabs, and common estuarine shrimp. Finfish, most especially bay anchovies, pipefish and cusk eels, are important in near-shore eels' diets.

Conger eels offshore, near the edge of the continental shelf, feed more heavily on finfish than crustaceans. The most common finfish eaten there are cusk eels, followed by other conger eels, with butterfish being a distant third. The most important crustaceans in the diets off offshore congers are crabs and squat lobsters.

Larger conger eels depend much more on finfish in their diets (instead of crustaceans) than smaller congers. All congers seem to prefer to feed on large prey items. Most eels only have one or two large items in their stomachs instead of many small ones.

Conger eels are thought to hunt and feed at night. Many of the prey species they eat, such as cusk eels, come out of the bottom mud only at night. Additionally, cameras on deep-diving research submarines rarely pick up conger eels during the day.

Conger eels are not eaten in the U.S, but they are important food fish in parts of Europe, Africa and Asia. When hooked by sportsmen, they are hard-fighting fish and very difficult to unhook.

 Sources: A Field Guide to Atlantic Coast Fishes of North America. C. Richard Robins and G. Carleton Ray. Houghton Mifflin Co. 354 pp. 1986. Research and Marketing Developments for the Rex Eel, <u>Opichthus</u> rex. Larry E. Barton, W. Steven Otwell and George N. Burgess, Jr. University of Florida. 6 pp. Biology of the Conger Eel <u>Conger oceanicus</u> in the Mid-Atlantic Bight: I. Distribution, Age, Growth and Reproduction. P. B. Hood, K. W. Able and C. B. Grimes. Marine Biology 98, 587-596. 1988. Biology of the Conger Eel <u>Conger oceanicus</u> in the Mid-Atlantic Bight: II Foods and Feeding Ecology. A. Levy, K. W. Able, C. B. Grimes and P. Hood. Marine Biology 98, 597-600. 1988. FAO Species Identification Sheets for Fishery Purposes, Western Central Atlantic (Fishing Area 31). Fisheries Department, FAO, Rome. 1978.

FISH RECORDS SEEING REBOUND FROM KATRINA AND RITA

Needless to say, both Hurricanes Katrina and Rita caused unimaginable havoc to Louisiana's precious coast, along with all the direct and indirect related industries connected to outdoor opportunities. Although a year has yet to pass since these tragic storms, Louisiana's strong endurance has brought people and businesses back to the coast. Along with this, saltwater fishing has returned both recreationally and commercially. Where there is fishing, there are records to be made and records to be broken.

As could be expected, the year started off slow for applicants to the Louisiana State Fish Records, but with more and more people traveling to the coast, more applications for state record fish are coming in to the Louisiana Outdoor Writers Association. Although still about half of previous year's, application numbers are climbing. Of interest to all anglers, both fresh and salt-water, is that there are many categories of fish within the state records that have relatively few, if any, entries. Some of these are in the fly fishing group, in both fresh and salt-water divisions. The rod and reel division also has many "openings," especially in the recently new species introductions for 2005 and 2006.

Some notable new 1st place records belong to Capt. Ed Frekey of Houma and his new record for a 358.25lb Warsaw Grouper. The Fly-Fishing Division had two new 1st place records: Tony Kirk of Arlington Texas, 7.82lb Sheepshead, and Tom Stevenson's 54.55lb Black Drum.

Everyone should be aware of the new requirements for submitting their catches for recognition. Starting this year applicants are asked to email digital pictures of their catches so that they can be circulated. Below is a picture of one of the LOWA Fish of the Year winners for 2005, Keith Day, (110.3 pound blue catfish) who will be awarded a plaque at the LOWA annual convention in St. Francisville, LA in mid-August.



Applications and required rules for both Rod and Reel and Fly-Fishing can be downloaded from their site: *www.laoutdoorwriters.com* under "Fish Records." If more information about individual record holders is needed, please contact, Fish Records Chairman, Bill Ford at *fishrecords@yahoo.com*.

LOWA is a non-profit organization of professional outdoor writers and journalists following the principles of educating the citizens of Louisiana about preservation and conservation of our state's natural resources. LOWA has been the official curator of the Louisiana State Fish Records since the 1940s. Interested individuals should contact LOWA through its Web site: *www.laoutdoorwriters.com*.

LOWA Fish of the Year Winner, Keith Day

ENDANGERED STATUS CONSIDERATION FOR THE AMERICAN EEL

American eels begin their lives as eggs hatching in the Sargasso Sea, a 2-million-square-mile warm-water lens in the North Atlantic between the West Indies and the Azores. They take years to reach freshwater streams where they mature, and then they return to their Sargasso Sea birth waters to spawn and die. They are the only species of freshwater eels in the Western Hemisphere.



American eel (Anguilla rostrata). Credit:USFWS

Eels have been a part of the human diet, especially in Europe

and Asia, for hundreds and even thousands of years. European eels are facing extinction; their population has crashed over the last 20 years, possibly as much as 99 percent. American eels, too, have been especially impacted by dams and other obstructions in rivers, hydropower plants, and in many parts of the world, overfishing.



Glass eel, an early phase in the American eel's life cycle. Credit: USFWS

Glass eels fetch a high price on the Asian market, and this young life phase of American eels has been heavily harvested in the United States during the past 30 years or more. In addition, some adults that have made the trip upstream and have lived long enough to mature are caught and killed in hydropower turbines on their downstream swim to the ocean. It is not known how or why American eels go to certain streams for their long maturing period. We do know that more than 20 percent of female

spawning eels have come from Canadian waters, and those waters are now experiencing a serious crash in numbers of yellow eels. A decline in one area such as this affects the entire population. American eel populations are already in decline and the eels could become scarce and could even disappear if current trends continue.

The U.S. Fish and Wildlife Service and the National Marine Fisheries Service agreed in September 2004 to review the status of the American eel at the request of the Atlantic States Marine Fisheries Commission in light of an apparent decline in the commercial eel harvest. These two services have announced their intention to consider extending Endangered Species Act protection to the American eel.

At a recent meeting, more than 30 biologists exchanged information about eels in Shepherdstown, W.Va. The U.S. Fish and Wildlife Service invited the biologists to the workshop as a first step toward an assessment of the American eel it is preparing in cooperation with the National Marine Fisheries Service.

Fish and Wildlife Service biologist Heather Bell said, "The information the eel experts provided will shape further exploration and assist us in making a recommendation on whether or not to provide Endangered Species Act protection for the American eel."

The eel experts ensured that the service has all the available information on potential threats to eels, assisted in interpreting the information and identified areas with critical information gaps. Experts from federal and state agencies, non-profit organizations, private industry, academia and the Atlantic States Marine Fisheries Commission attended the workshop. Most were from the United States, but Canada, England and Japan were also represented.

The experts debated the effects on the American eel population of migration barriers, commercial harvest and changes in the ocean, Bell said. Barriers to migration, although clearly an issue on some large rivers, are difficult to assess for the entire eel population. Unknowns such as what actually acts as a barrier, as well as details of the species' unique life history, leave this question unanswered. Commercial harvest peaked in the 1970s and now appears to be relatively stable. Although mostly hypothetical, conditions in the ocean and their possible effect may explain variations in the number of young eels surviving to reach the coasts of North and South America.

For more information, see http://www.fws.gov/northeast/ameel/

PROTECT YOUR BOAT DURING HURRICANE SEASON

You need to take some precautions during hurricane season if you have a boat moored, docked or stored in a recreational harbor along the Gulf Coast.

Dr. Brian LeBlanc, an associate professor with Louisiana Sea Grant and the LSU AgCenter, says even relatively small storms can damage boats, so he advises making decisions before hurricane season about what to do with your boat if a storm threatens. "Even a Category 1 hurricane, with winds between 74 and 95 miles per hour and a storm surge of 4 to 5 feet above normal, can have devastating effects in a crowded harbor," LeBlanc says.

"You need to consider your situation, determine the safest place for the vessel to ride out a storm, think about the adequacy of the present mooring or dock and evaluate what type of equipment is necessary to have onboard," he explains. "Then put those decisions into play well in advance of the approaching storm."

LeBlanc stresses protecting human life is the most important factor. "Storms of the magnitude of Katrina or Rita can override even the best precautions," he says. "If you cannot get your vessel out of harm's way, secure it the best you can, then get you and your family out."

While the LSU AgCenter expert says only boat owners can decide what is best for them, he offers these general suggestions for guarding your vessel against storm damage:

- The best choice, if possible, is to get it out of the water. If the vessel is small and can be easily transported on a trailer, get it out of the water and move it to higher ground. Just be sure your tow vehicle is capable of adequately moving your boat. Also, check your trailer tires, bearings and axles to make sure all are in good shape and ready days or weeks prior to a possible departure.
- Consider rain and wind. Getting a vessel out of the water does not automatically mean it's safe. That just protects the boat from the storm surge and wave action. Rain and wind still must be considered and taken into account in your plans for storing the boat.
- Store the boat in a covered area. The best solution is to store small vessels removed from the water in a covered area such as a garage or other dry storage facility. If in dry storage, lash the boat to its cradle with heavy lines.
- Protect boat and contents. If it is not possible to store your boat inside a shelter, remove all equipment and store that indoors. If you have it on a trailer, place the trailer frame on

blocks so the frame, instead of the axle and springs, will carry the boat's weight. The drain plug should be installed and the boat partially filled with water if the hull is strong enough to withstand the weight (as are most fiberglass hulls). Also, secure your boat with heavy lines to fixed objects from four directions, if possible, in case storm surge hits the area. If the hull is not strong enough to hold water (such as plywood or wooden planked hulls), use heavy lines to fixed objects from four directions, if available, or use multiple anchor tie-downs, such as large tent pegs or house trailer tie-downs, to hold the boat in position and make sure the drain plug is removed.

If you can't remove the vessel from the water because of its size or other conditions, LeBlanc offers these tips for protecting a boat that remains in the water:

- Take precautions if the boat is to remain at dock. Keeping a boat at the dock may be the most hazardous location, even during moderate storms. Many marinas have particular guidelines you must follow, and some may require you to move your boat from the facility. Talk to the harbor master about these policies well in advance of a storm so you can make the best possible decisions. If the decision is to stay at the dock and the facility doesn't have standard policies about tie-down procedures, ensure all lines are doubled and that chafing protection is in place where dock lines pass through fairlead chocks or over the sides of the vessel. The best chafing protection is to cover lines with a rubber hose of the same diameter and then tightly wind it with fabric and fasten with heavy tape. A vessel tied to a dock also should have ample fenders to provide protection to the hull. Dock lines should be fastened to the pilings rather than to the cleats or other fastenings on the dock. As flooding and storm surge raise the water level, dock lines will move up the pilings. Do not stay on board!
- Staying at a "safe" mooring is an option for boats in the water if you have ensured that the mooring tackle meets safety standards and has been inspected for wear. Any mooring gear that has worn by one-third of its original diameter should be considered unsafe. On the other hand, like staying at the dock, one of the drawbacks of staying at the mooring is the threat of the storm surge. If the water level rises even moderately above normal conditions, the mooring scope may not provide sufficient holding power. Check the expected storm surge reports. Do not stay on board!
- Minimize the amount of surface area exposed to wind. Whether the boat stays at the dock or mooring strain on your vessel and the dock mooring increases as more surface area is exposed to the wind.
- Remove the sails and stow them below deck. If it's not possible to remove the sails, you must fasten the sails as securely as possible.
- Look around and remove other possible objects that can catch wind such as flags and pennants. After you have removed flags and pennants, make sure all loose items are stored away or tied down.
- Make sure all ports are closed securely and that all funnels are removed and capped.
- Using lines from both sides, secure the tiller or wheels that operate the rudder.
- Do not leave coils of line on the deck without proper stops or other means of rendering them immovable, and take out all slack from any running lines on the deck or mast.

• To minimize the impact of loose vessels, all protruding objects such as anchors must be removed and stowed, and fenders should be set on both sides of the vessel.

If your boat is in a crowded area, LeBlanc says you may want to consider moving to an area of safe anchorage, also known as a safe harbor.

"Before making such a move, however, consider that safe harbors can become crowded with other vessels seeking refuge from approaching storms," he says, adding, "Safe harbors should be located before the storm season by consulting an inland chart. Several options should be available."

He also offers these tips on locating a safe harbor and taking your vessel there:

- Look for a location that has deep water (you may have to arrive at low tide) and is close.
- The best spot has a route free of highway and railroad bridges and has good protection, such as a high bluff, outer reefs or tall trees on as many sides as possible. Visit potential areas ahead of time, if possible.
- Arrive at the area of safe harbor at least 12 hours before the storm's landfall and set the anchor with at least a 7-to-1 scope. (For example, in 7 feet of water, 49 feet of anchor line is needed.) Nylon is the best anchor line, and chafing protection should be used where the anchor line passes through the anchor chute chocks.
- Leave your vessel by means of a small boat once it is securely anchored and you have rechecked all automatic switches.
- If you elect to stay aboard, which is not advisable, stay in touch with all weather advisories and stock up on fuel, water, food, ice, clothing, portable radio, flashlight(s), extra batteries and prescription medications. Also remember it might be necessary to put the engine in gear during the worst part of the storm to ease the strain on the anchor line, so stay awake at all times to prevent the boat from drifting.

LeBlanc's final message is not to attempt to take your vessel offshore when a storm is approaching or expected to approach. "Unless you have a large recreational vessel of 100 feet or more, experts do not recommend that you go offshore," he cautions.

For more general information on preparing for a storm, visit the LSU AgCenter's Web site at *www.lsuagcenter.com* and consult the variety of storm-related links found there under "Features."

FISHERMEN'S GEAR COMPENSATION FUND

In accordance with the provisions of R.S. 56:700.1 et. seq., notice is given that 4 claims in the amount of \$13,993.29 were received for payment during the period June 1, 2006 - June 30, 2006.

Latitude/Longitude Coordinates of reported underwater obstructions are:

89 11.470	PLAQUEMINES
90 07.947	JEFFERSON
93 20.554	CAMERON
93 20.044	CAMERON
	89 11.470 90 07.947 93 20.554 93 20.044

There were 4 claims paid and 0 claims denied. A list of claimants and amounts paid can be obtained from Verlie Wims, administrator, Fishermen's Gear Compensation Fund, P.O. Box 44277, Baton Rouge, LA 70804 or you can call (225)342-0122.

PUBLIC COMMENTS SOLICITED

In accordance with the Sea Grant Act of 1998 and guidelines set forth by the National Sea Grant Office, NOAA, a board of outside reviewers, called a Program Assessment Team (PAT), will be conducting a review of the Louisiana Sea Grant College Program, September 10-15, 2006. In an effort to assure that all concerned parties have access to the PAT review process, individuals or groups knowledgeable about Louisiana Sea Grant may submit signed, written comments relative to the management and performance of the Louisiana Sea Grant College Program. Signed, written comments should be submitted in advance of the PAT review to:

Dr. John V. Bryne, Chairman Program Assessment Team Autzen House 811 SW Jefferson Av. Corvallis, OR 97333-4506

Comments thought to be material to the review will be provided to the Program Assessment Team for their consideration and for discussion with the Louisiana Sea Grant Program director.

THE GUMBO POT Seafood Quiche

Submitted by JoPaula Lantier

2 pie shells

- 1 pint whipping cream
- 5 eggs

- 1 onion chopped
- 12 mushrooms chopped

1 pkg Monterey Jack cheese, grated

1 lb. crabmeat

- 1 pkg mild cheddar cheese, grated 3 stalks celery, chopped
- 1 lb. shrimp, peeled and chopped

Saute onions, bellpepper, celery and mushrooms until soft. Mix whipping cream and eggs until thoroughly blended. Grate cheeses together and set aside. Saute shrimp and crabmeat in butter or oil; do not cook for very long.

Put pie shells in glass pie plates for an even crust. Start layering with onion mixture, then cheese, then shrimp/crab and whipping cream/egg mixture. Layer until all ingredients are exhausted. Top with cheese or lattice with pie crust.

Cook in a preheated 325 degree oven for approximately 45 minutes, or until knife inserted in the center comes out clean.

For more information, contact your local extension agent:

David Bourgeois – Area Agent (Fisheries) Lafourche & Terrebonne Parishes Phone: (985) 632-6852 or (985) 873-6495 E-mail: dbourgeois@agctr.lsu.edu

Albert 'Rusty' Gaudé – Associate Area Agent (Fisheries) Statewide Phone: (504) 682-0081 ext. 1242 E-mail: agaudet@agctr.lsu.edu

Thomas Hymel – Watershed Educator Iberia, St. Martin, Lafayette, Vermilion, St. Landry, & Avoyelles Parishes Phone: (337) 276-5527 E-mail: thymel@agctr.lsu.edu

Kevin Savoie – Area Agent (Southwest Region) Natural Resources-Fisheries Phone: (337) 475-8812 E-mail: ksavoie@agctr.lsu.edu Mark Schexnayder – Coastal Advisor (Fisheries) St. John, St. Charles, Jefferson & parts of Orleans Parishes Phone: (504) 838-1170 E-mail: mschexnayder@agctr.lsu.edu

Mark Shirley – Area Agent (Aquaculture & Coastal Resources) Jefferson Davis, Vermilion, Acadia, St. Landry, Evangeline, Cameron, Calcasieu, Lafayette, Beauregard, & Allen Parishes Phone: (337) 898-4335 E-mail: mshirley@agctr.lsu.edu

Glenn Thomas – Associate Area Agent (Fisheries) St. Martin, St. Mary, Iberia, Iberville & Assumption Parishes Phone: (337) 828-4100, ext. 300 gthomas@agctr.Isu.edu