Cooperative Extension Service
R. Glenn Thomas, Ph.D.
Associate Professor Fisheries
School of Renewable Natural Resources
Room 227 RNR Bldg., LSU
Phone: 225.578.0771 Fax: 225. 578.4227
Baton Rouge, LA 70803
gthomas@agctr.lsu.edu
Web site: www.lsuagcenter.com

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

Lagniappe
Sea Grant LOUISIANA

February 1, 2007 Volume 31, No. 2

New National Fisheries Law Passes

Most political authorities thought that passage of the Magnuson-Stevens Fishery Conservation and Management Act, which governs how fishing is regulated in federal waters, would not happen this year. First passed in 1976, the Act has not been amended and reauthorized within the last 10 years. While everyone involved with ocean fisheries agreed that the Act needed revision, the actual structure of the revision was extremely controversial.

However, in the final hours before recessing in December, Congress put together a compromise bill that included demands from wide-ranging positions. Generally, stakeholders from all interest groups were pleased with the results. Some conservation groups and commercial fishing interests remained unhappy with the concessions that they had to make, however.

Significant new management approaches are specified in the law, including increased emphasis on managing with market-based programs, such as individual quota shares. The reauthorization bill also demands greater use of science in the fishery management process, with fishing limits mandated to be set within the range of scientific recommendations. A national registry of recreational fishermen will be established, as will a stronger emphasis on ecosystem-based fisheries management. Language to protect coral reefs is also included for the first time.

The original Magnuson-Stevens Act was essential in establishing marine fisheries management as we know it. It created a stronger domestic fishery by phasing out foreign fishing in U.S. waters, and created the regional fishery management council system to govern fishing activities and conservation efforts. While no fishing or conservation groups are completely happy with the regional council system, it is an effective management system compared to previous methods.

Conservation groups are satisfied with one new revision that implements an overriding deadline to end overfishing of any species. As soon as the law takes effect, the regional management councils (and ultimately, the federal fisheries managers) must implement restrictions to end overfishing of any species within 30 months. However, most conservation groups were disappointed that a new method to assess total allowable quotas was not established. They had hoped that any time a quota is exceeded within one year, the excess would be deducted from the allowable catch the next season. The new bill only specifies that the amounts should be made “accountable.”

A State Partner in the Cooperative Extension System
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.

Commercial fishing interests sought (successfully) to make the time limits for rebuilding overfished stocks more flexible. A number of exceptions to a flat 10-year limit were included in the bill. Additionally, the new law includes language specifying that catch limits have to be set at a level that allows a fishery to be economically viable.

Many compromises had to be made by both harvesters and environmentalists in order to get this bill to move forward. Probably the best measure of its success is that both sides are equally unhappy with the results. However, fisheries managers and biologists are generally in agreement that this law is much better than the previous version. Management of marine resources is a rapidly evolving process that must employ the best knowledge and tools available, and the reauthorization Act is a good step in that direction.

Swamp Fish: Black Water, Brown Water, Green Water

Anyone who has fished in Louisiana backwaters knows that there are “types” of water that look different and hold different fish populations. A project conducted in the Atchafalaya Basin by LSU researchers showed just how well these appearances correlated with water chemistry and the use of different habitats by different species of fish.

Water in the main channels and bayous tends to be muddy, brown and flowing rapidly. This environment is characterized by high levels of dissolved oxygen (D.O.) and little oxygen “differential”: the moving water is well mixed, so that D.O. at the top and bottom is about the same. Brown water in the basin is prime habitat for blue catfish, spotted bass, longear sunfish, freshwater drum (gaspergou) and bullhead minnows.

When river water resides for any length of time in the deeper and slower-moving lakes and bayous, there is a tendency for sediment to settle and phytoplankton to grow. This green water is often well oxygenated but stratified with higher D.O. near the surface. Green water sites often have lots of floating vegetation and hold the widest assemblage of fish species. Numbers of bluegill, shad, white bass, largemouth bass, redear sunfish (chinquapin) and black crappie (sacalait) are all significantly higher in green water habitats.

Flooded wooded swamps tend to develop black water, which is often oxygen-poor, lower in pH (more acid) and lower in conductance (dissolved salts and minerals). A distinct group of fishes often inhabits black water sites: warmouth (goggle-eye), spotted gar, pirate perch, black bullhead and flier. These species may be better adapted to low oxygen conditions, but when D.O. gets really low they probably move to nearby oxygenated waters to survive.

The researchers noted that oxygen depletion is likely the most important factor in fish distribution and abundance in the basin. High flow conditions in the early spring promotes flushing of decomposing vegetation and gives the best water quality (and probably fish production) for the rest of the year.

Source: Rutherford, D.A., K.G. Gelwicks, and W.E. Kelso. 2001. Physiochemical effects of the flood pulse on fishes in the Atchafalaya River Basin, Louisiana. Trans. Amer. Fish. Soc. 130:276-288.

Family Profile: Gars

The gars are relics of a large group of primitive fishes and are often referred to as living fossils. Fossils from ancient gar relatives have been found in India, Europe and Africa, but living species are currently restricted to North America, Mexico, Cuba and the Pacific side of Middle America. This relic order of fish consist of a single family (*Lepisosteidae*), two genera (*Lepisosteus, Atractosteus*) and seven species world wide (four of which occur in Louisiana). Gars are predominately associated with freshwater, but some species enter brackish and marine waters.

U.S. Fish and Wildlife Service/Duane Raver

Gars are long, slender, predatory fish that can be distinguished from other fish by the tough, interlocking ganoid, or diamond-shaped scales that cover the body. Combined with a hard bony skeleton, gars are virtually equipped with an impenetrable suit of armor that protects them from most predators, and can even challenge a fillet knife. The snout of the gar is a long, extended, beaklike structure, closely rimmed with sharply-pointed teeth.

These fierce predators are among our most vicious fishes, and will attack nearly any fish in their path. Extremely hardy, gars typically inhabit quiet, weedy, often stagnant backwater areas basking in the sun near the surface of the water where, motionless, they await their prey. The swim bladder of the gar is connected to the esophagus and is abundantly supplied with blood vessels and serves as an auxiliary breathing organ. Besides using gills, the fish surface periodically to exchange the air in the swim bladder. This allows gars to survive periods when dissolved oxygen is low or even absent.

Of the four species found in Louisiana, the smaller species are by far the most common. The spotted gar (*Lepisosteus oculatus*) can be identified by the by the dark roundish spots on the top of the head, the pectoral fins and on the pelvic fins. The spotted gar can grow to three feet and weigh more than eight pounds. The shortnose gar (*Lepisosteus platystomus*) is a similar species minus the spots. The longnose gar (*Lepisosteus osseus*) can grow to six feet and may weigh more than 80 pounds. This species has a much longer, thinner snout than the other gars.

In a different genus, and growing to a much larger size, the alligator gar (*Atractosteus spatula*) can grow to 10 feet and weigh more than 300 pounds. They have a broad, short snout, with large teeth in two rows on each side of upper jaw. The alligator gar is one of the largest freshwater fishes. In some areas it is fished commercially and recreationally, and it has become very rare in certain parts of its range, such as the upper Midwest.

Although the alligator gar is still a bit mysterious, the reproductive and life cycles of the gars are similar in that gars spawn in shallow waters over vegetation during the spring. Yellow eggs are scattered in vegetation and other submerged structures, usually hatching within eight days of spawning. The hatched larvae of gars have an adhesive pad on the upper jaw, by which they attach themselves to aquatic plants. The fry remain in the yolk-sac phase for another week, at which time they begin to feed on insect larvae and small crustaceans. At little over an inch in length, fish appear in the diet.

Gars are often considered a nuisance by anglers because they feed on sport fish, and even waterfowl in the case of the alligator gar. They can also damage the nets of commercial fishermen who are

targeting smaller fish. However, netters with heavy gear find that the market for gar meat is steady, and anglers find the gar's large size and fighting potential are too much to resist. Besides using large hooks, gar anglers can use frayed nylon rope which entangles the teeth and jaws, or the simple bow and arrow. Although they are often viewed as hard to clean, and the roe (eggs) are toxic, many Louisianans swear by the delicious recipe prepared with gar meat – gar balls. In Louisiana, gars have actually achieved the "festival-name" status - the Annual Baldwin Garfish Festival is held on the first weekend in May.

— **Craig Gauthreaux**

Sources: Bond, C. E. 1996. Biology of Fishes: Second Edition. Saunders College Publishing, Fort Worth, Texas. 750 pp.

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.

Mayhew, J. (editor). 1987. Iowa Fish and Fishing. Iowa Department of Natural Resources, Des Moines, Iowa. 323 pp.

http://www.tpwd.state.tx.us/huntwild/wild/species/#fish. Texas Parks and Wildlife.

Shrimp Tariffs Struck Down

The appeals court of the World Trade Organization (WTO) has ruled against the United States' practice of "zeroing," which has been the method used for most of the shrimp tariffs imposed in 2005. Japan had filed several appeals to Anti-Dumping cases assessed by our Commerce Department. The WTO Appellate Body ruled against the U.S. in nearly every practice used by the Commerce Department for assessing tariffs on imported shrimp. The ruling against zeroing was unequivocal; there are no instances when the WTO views it as a legitimate practice.

To understand how the Commerce Department was calculating tariffs, you have to look at the definitions of "dumping" and "zeroing." Dumping is the sale of product at prices below the normal value that would provide a legitimate profit, usually for the purpose of killing competition and capturing an increased share of the market. Zeroing is method of calculating whether "dumping" has occurred. Rather than using the average price of an imported product, Commerce was using only the numbers that fell below the established anti-dumping level. Because they ignored any sales of shrimp that were above the anti-dumping margin, Commerce was able to impose anti-dumping duties on the shrimp arriving from Vietnam, Ecuador, India and Thailand .

This ruling comes on the heels of the repeal of the Byrd Amendment, and the cumulative effect will be felt in additional limits in the ability to control seafood imports into the U.S.

PLASTIC POLLUTION, PART II: The Great Pacific Garbage Patch

As discussed last month, the problem of plastic pollution is a growing threat to the world's oceans. In fact, the world's largest "landfill" is actually contained in the northern Pacific Ocean. The North Pacific Gyre is an area of approximately 10 million square miles, about the size of Africa, located between the equator and 50^{o} N latitude. In this vast expanse, a mountain of air is heated near the equator and

is slowly rotated in a clockwise circular pattern by the prevailing ocean currents: the North Equatorial Current to the south, the Kuroshio Current to the west, the North Pacific Current to the north, and the California Current to the east.

The center of the North Pacific Gyre is relatively stationary, and includes the area known as the "horse latitudes." This area has long been avoided by sailors for lack of wind, and fishermen for lack of nutrients. However, the circular rotation attracts any and all floating debris. This debris gathers in huge "clouds," thus lending it the informal name of the Great Pacific Garbage Patch.

Prior to the modern age of plastics, this floating waste would eventually biodegrade. Unfortunately, plastic only photo-degrades – a process in which it is broken down into smaller and smaller pieces, all of which are still inherently plastic, thus indigestible. These indigestible pieces of trash are often consumed by all types of marine life including birds, turtles, fish and invertebrates. In fact, some researchers estimate that there are six pounds of plastic for every pound of living plankton in this area.

As discussed last month, one problem with plastic in aquatic systems is that animals which ingest it can be killed from physical damage and malnutrition. Another problem with marine animals consuming this plastic is that plastic particles serve as a sponge for toxins like DDT and PCBs that are not water-soluble. Plastic pellets have been found to accumulate up to one million times the level of these toxins than the levels that are floating in the water itself.

Occasionally, shifts in the ocean currents release debris lost from cargo ships into the currents around the North Pacific Gyre, and this has led to predictable patterns of garbage washing up on the shores around the outskirts of the gyre. The most famous was the loss of approximately 80,000 Nike sneakers and boots from the ship Hansa Carrier in 1990. The currents of the gyre distributed the shoes around the shores of British Columbia, Washington, Oregon and Hawaii over the following three years.

Similar cargo spills have involved tens of thousands of bathtub toys in 1992 and hockey equipment in 1994. These events have become a major source of data on global-scale ocean currents. Various institutions have asked the public to report the landfall locations of the objects (trainers, rubber ducks, etc.) that wash up as a method of tracking surface waters' response to the deeper ocean currents.

There is even a community of beachcombers that meticulously track these cargo spills and landings. On the Web site www.beachcombers.org, beach-goers can report findings, thereby helping researchers determine the source of the spill and the oceanic patterns that dictate their landfall. This combined research and public awareness can hopefully spur development of agriculturally-based plastics which will biodegrade in a reasonable amount of time.

— **Craig Gauthreaux**

Sources: Moore, C. 2003. Trashed: Across the Pacific Ocean, plastics, plastics, everywhere. http://www.naturalhistorymag.com/master.html?http://www.naturalhistorymag.com/1103/1103_feature.html

Podsada, J. 2001. Lost sea cargo: beach bounty or junk? http://news.nationalgeographic.com/news/2001/06/0619_seacargo.html

Walton, M. 2003. How sneakers, toys, and hockey gear help ocean science. http://edition.cnn.com/2003/TECH/science/05/28/coolsc.oceansecrets/

Loans and Grants Available For Hurricane-Impacted Fishing Businesses

The Business Recovery Grant and Loan Program (BRGLP) is a pilot initiative to provide financial relief to restart and sustain small and independent businesses in areas of Louisiana impacted by Hurricanes Katrina and Rita, particularly those experiencing depressed revenues since the storm, by providing grants and no-interest loans. Fishing operations will generally qualify.

BRGLP will make available $100 million for grants of $20,000 each, and $38 million for 0 percent interest loans up to $250,000. The grant application period is Jan. 23 through Feb. 16. There is no application deadline for the loans. Loan applications will be accepted until available funds are depleted. Businesses can apply for both grants and loans.

Businesses must drop off applications in person at participating community-based financial organizations. A list is available by calling the 24-hour program hotline at 877/217-1777 or visiting www.louisianaforward.com. Orientation and application workshops will be held in Belle Chase, Chalmette, New Orleans, Metairie, St. Tammany, Lake Charles, Houma, Abbeville and Cameron.

Your Opinion Matters

Louisiana Sea Grant is conducting a Lagniappe readership survey. Please visit http://www.seagrantfish.lsu.edu/resources/lagniappe/2007.htm and click on the Lagniappe Survey box to complete the questionnaire. Responses will be used to determine future content of the publication. Your information will not be shared with anyone.

Underwater Obstruction Locations

In accordance with the provisions of R.S. 56:700.1 et. seq., notice is given that 2 claims in the amount of $7,975.14 were received for payment during the period December 1, 2006 - December 31, 2006.

There were 1 claim paid and 1 claim denied.

Loran Coordinates of reported underwater obstructions are:

######	######	UNKNOWN

Latitude/Longitude Coordinates of reported underwater obstructions are:

29 19.100	91 00.527	TERREBONNE

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.

THE GUMBO POT
Crawfish Salad

Renee Bourgeois

Ingredients
6 lbs crawfish tails, boiled and peeled
1/2 cup celery, chopped
1/2 cup olives, chopped
1 small onion, minced
2 1/2 cups mayonnaise
3 hard boiled eggs, chopped fine
1/8 tsp crab boil
salt and pepper to taste

Directions
Combine all ingredients. Best if prepared and refrigerated overnight. Garnish with paprika and parsley and serve on lettuce.

Serves 20

For more information, contact your local extension agent:

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

Albert 'Rusty' Gaudé – Associate Area Agent (Fisheries)
Plaquemines, St. Bernard, and Orleans Parishes
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 Professor (Fisheries)
School of Renewable Natural Resources
Phone: (225) 578-0771
E-mail: gthomas@agctr.lsu.edu