

Lagniappe



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

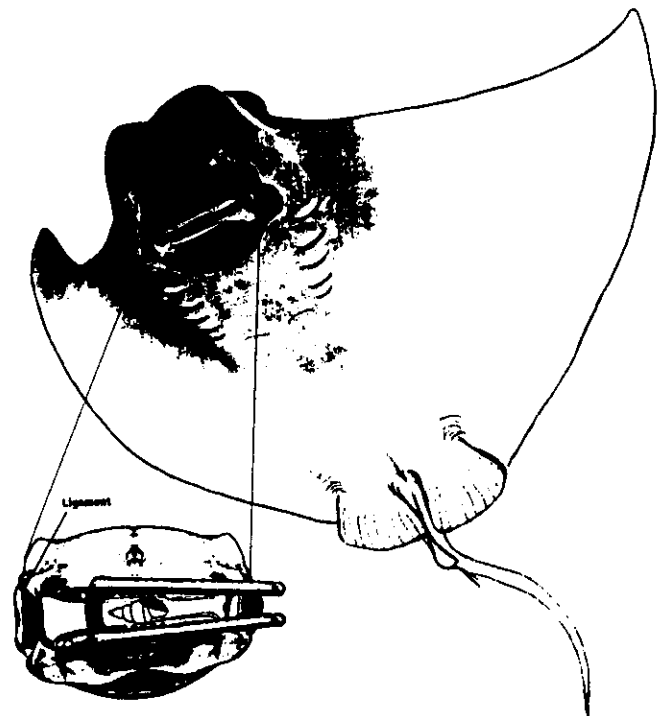
November 1, 2000

Volume 24, No. 11

NUTCRACKER

Louisiana has fourteen species of skates and rays in its marine waters, seven of which pack at least one spine or "sting" on their tails. One of the largest of these is the cownose ray, which can grow to 100 pounds. It is easy to recognize, being the only ray with its snout indented to form two rounded lobes.

All rays, as well as sharks, are members of a group of fishes known as elasmobranchs, fish with a cartilage skeleton rather than bone. Cartilage is what makes humans' noses and ears stiff. Obviously, cartilage is not as strong as bone. How then, does a cownose ray crush and eat the hard-shelled mollusks such as oysters, snails, and clams that are a large part of their diet?



Adam Summers, a biologist at the University of California, Berkeley has discovered with X-rays that the jaws of cownose rays are reinforced with mineral-rich struts to make the jaws stronger. He also proposes that these rays have a unique jaw design that allows them to work like a nutcracker to break hard mollusk shells.

The theory is that the ligaments attaching each side of jaws together are used independently. When the ray grabs a shellfish, the ligaments on only one side are contracted. The ligaments on the other side have very little stretch and act like the fulcrum

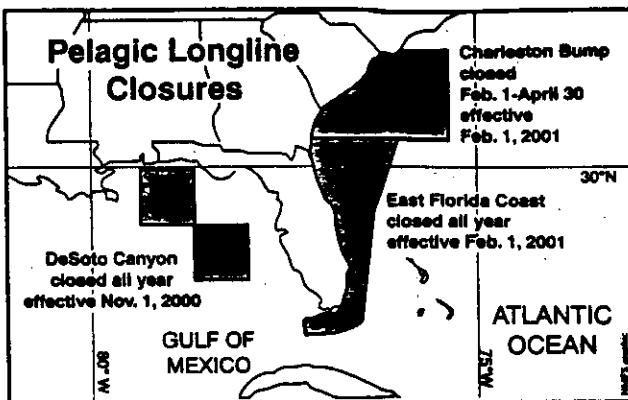
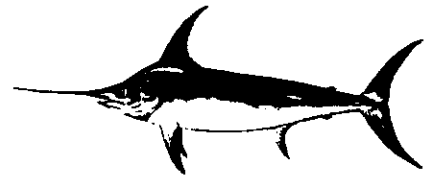
at the hinged end of a nutcracker. This action doubles the force of a bite over what it would be if both sides of the jaw contracted.

Summer plans to test this nutcracker model by recording jaw muscle activity in live cownose rays as they feast on shellfish.

Source: *Jaws of Death*. Carl Zimmer. Natural History. September, 2000

SWORDFISH LONGLINE WOES

Louisiana is not thought of as a swordfish-producing state. Swordfish longline vessels are supposed to work in the north Atlantic, like the vessel *Andrea Gail* in the movie and book "Perfect Storm." But Louisiana does have respectable commercial swordfish landings, averaging more than \$1.5 million per year. This makes the swordfish the fourth to sixth most valuable finfish species landed in Louisiana, not counting menhaden.



Under rules put in place by the National Marine Fisheries Service (NMFS), the DeSoto Canyon in the Gulf of Mexico has been permanently closed to all pelagic (off-bottom) longlining effective November 1. Another permanent closure off of east Florida begins on February 1, as does a seasonal closure off of Georgia and South Carolina. In an attempt to further reduce the bycatch of billfish, the NMFS rule also outlaws Gulf of Mexico pelagic longliners from using live bait.

The NMFS rule is projected to reduce discards of undersized swordfishes by 31%, sailfish discards by 29%, white marlin discards by 7%, and blue marlin discards by 3%. It is also expected to reduce the catch of "keeper" swordfish by 13% and dolphin by 18%, and to increase the catch of bigeye, albacore and yellowfin tuna by nearly 10%. Finally, the rule is also expected to slightly increase the take of endangered sea turtles, a sore point for longliners.

Swordfish longliners prefer Senator John Breaux's S 1911, the Atlantic Highly Migratory Species Conservation Act over the NMFS regulations. This bill is slowly working its way through Congress and would supercede NMFS rules if passed.

That's not the only problem longliners face. In September, NMFS released a revised biological opinion (BO) stating that "the continued operation the pelagic longline fishery was likely to jeopardize the continued existence of loggerhead sea turtles and leatherback sea turtles." This contradicts a BO issued in April by NMFS which stated that "operation of the Atlantic pelagic longline fishery may adversely impact, but is not likely to jeopardize the continued existence of any endangered or threatened species under NMFS's jurisdiction." NMFS plans to do more study and issue another BO on the subject in early 2001.

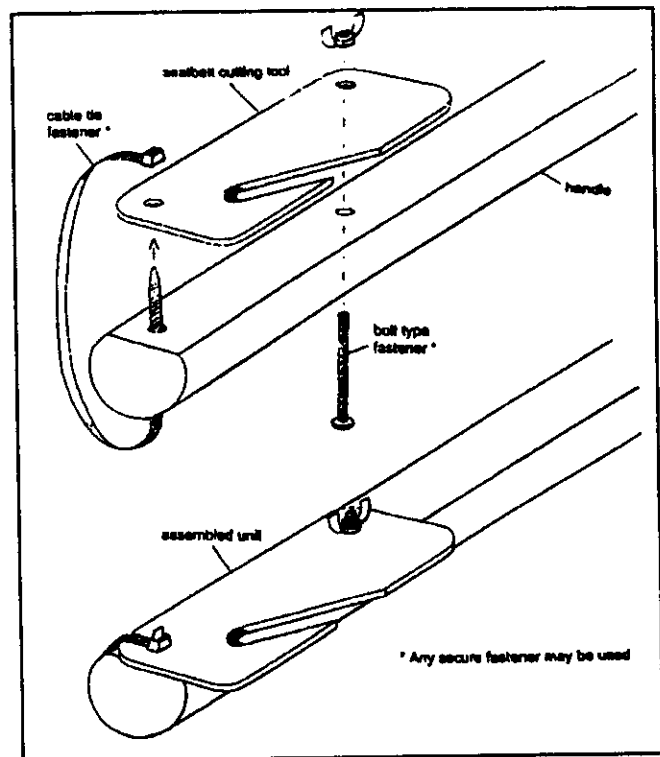
In the meantime, two environmental groups, SeaWeb and the Natural Resources Defense Council are claiming victory on the whole issue. They stated that the steps taken toward recovery of swordfish stocks would not have occurred without their "Give a Swordfish a Break" campaign. The campaign targeted restaurant chefs, urging them to pull the fish off of their menus.

Source: Commercial Fisheries News. Volume 28, Number 1. September, 2000.

MORE PELAGIC LONGLINE REGULATIONS

The National Marine Fisheries Service (NMFS) has issued notice of two new regulations on pelagic longliners to protect loggerhead and leatherback sea turtles. The first is a 180 day closure, through April 9, 2001, of an area in the North Atlantic to pelagic longlining by federal permit holders.

The second measure directly affects pelagic longliners in the Gulf of Mexico. Beginning November 24, all vessels holding permits for pelagic longlining must have on board a line clipper and dip net. The line clipper must have a protected cutting blade to prevent accidental contact with a turtle and must have at least a 6 foot handle. The blade must be capable of cutting 2.0 to 2.1 mm monofilament line and nylon or poly braided mainline. The dip net must be at least 31 inches in diameter, at least 38 inches deep, have a mesh size no larger than 3 inches, and be mounted on at least a



6 foot handle. The dip net must be able to support at least 100 pounds without bending or breaking.

If an accidentally hooked sea turtle is small enough, it should be brought on board the vessel with the dip net, all line removed with the line clipper and all external hooks removed. If the turtle is large, it should be left in the water and all line removed with the line clipper.

LONGLINE V.M.S. REQUIREMENTS

The National Marine Fisheries Service (NMFS) has announced delay until further notice, of its requirement that all pelagic longline vessels have aboard a vessel monitoring system (VMS). A VMS system electronically broadcasts the vessel's position at all times. The action was taken because the U.S. District Court for the District of Columbia directed NMFS to "undertake further consideration of the scope of the VMS requirements in light of any attendant relevant conservation benefits."

ARTIFICIAL REEFS — THE DEBATE

The disagreement over whether artificial reefs add to fish populations or simply add to overfishing for overfished species goes on. A recent article in the *Christian Science Monitor* illustrates both sides of the debate.

Artificial reefs often attract more fish than natural reefs for a variety of reasons. However, some experts say that artificial reefs are less a solution to the problem of overfished waters and more of a contributing factor. According to James Bohnsack, a National Marine Fisheries Service biologist, many people think that because they are catching more fish, that artificial reefs have added to overfished fish stocks. Instead, he explains, that they may be making the problem worse. The man-made reef attracts fish that had previously been spread out over a large area. The fishermen catch them, the reef attracts new fish, then the fishermen catch those too. Bohnsack calls artificial reefs "a solution that's obvious, simple, and wrong."

Other scientists disagree. David Parker, a senior biologist with the California Department of Fish and Game, says that artificial reefs may actually help spread out fishing effort over a larger area, because a lot of the natural reefs are well known and being fished day after day.

While some species of fish do use reefs for spawning, many species that commercial and recreational fishermen are interested in, such as snappers, jacks, and some groupers, are simply migrating from natural reefs to artificial reefs. These populations are being reshuffled not increased.

Jon Dodrill, an environmental administrator with the Florida Fish and Wildlife Conservation Commission said that although man-made reefs do attract more fish than natural hard bottoms, they are such a small part of the total amount of hard bottom that he doesn't believe they do any harm. But he added that he didn't think they acted to conserve fish stocks either.

Dodrill added that he thought that while artificial reefs could and did sometimes provide superior fish habitats, that advantage is neutralized by heavy fishing. Dodrill further stated that now the focus needs to be on restoring natural ecosystems.

Another scientist with mixed views, William Hernkind, is a biology professor at Florida State University. As a fisherman, he says, "I enjoy them, but I view them as fish-attracting devices. As a scientist, however, I'd like to be sure that they're not doing any harm, and in some places I'm not all that sure."

Another scientist at Florida State University, Felicia Coleman is more negative. She notes that in some places like Alabama, a state with 38 miles of coastline, so many artificial reefs have been put in place that the marine fish community has been completely changed. While some people feel that the artificial reefs have changed an unproductive community for a more productive one, Coleman asks, "Productive for whom?" She adds that for some species like gag grouper that use reefs for spawning, migratory behavior may be affected in unknown ways.

Regardless of what scientist say, many fishermen still believe that artificial reefs are producing fish. For example, the executive director for a large Alabama sportsmen's group states "If you give them a place to hang out, you give them a place to reproduce."

Source: *The Double-edged Lure of Man-made Reefs*. Lauren Gravitz. Christian Science Monitor. August 3, 2000.

UNDERWATER OBSTRUCTIONS PROGRAM NEWS

Bruce Ballard, Administrator of the Louisiana Underwater Obstruction Removal Program, has announced that the program has completed four surveys identifying 244 additional obstructions for removal from four areas as follows: nearshore Cameron Parish waters and Lake Calcasieu, 65 obstructions; nearshore waters from Freshwater Bayou to Marsh Island, 13 obstructions, Venice to Pass a Loutre, 30 obstructions; and east Plaquemines/Breton Sound, 136 obstructions. The three largest categories of obstructions were pilings (86), sunken boats (78) and pipes (64). Removal of these obstructions is planned to be done before the end of November.

In the 2½ years of this program's existence it has removed almost two million pounds of debris and obstructions from Louisiana's coastal waters. This very successful program is set to end June 30, 2001 unless the state legislature extends its life and a new source of funding is found.

WORLD RECORD TACKLE

The International Game fish Association (IGFA) is the keeper of world record catches for fresh and saltwater fishes. On record applications, fishermen are asked to list their line brand as well as the brand of rod and reel used. IGFA does not make brand recommendations (and neither do we), but the listings below of the top 10 lines, rods and reels used for world records should answer some questions that often come our way.

LINES

<u>Saltwater</u>		<u>Freshwater</u>	
Ande	79	Ande	602
Berkley	34	Berkley	31
Maxima	27	Stren	25
Rio	27	Maxima	9
Stren	26	Orvis	9
Platypus	16	Spiderwire	4
Suffix	11	Umpqua	4
Momoi	10	Varivas	4
Izorline	7	Eagle Claw	3
Varivas	7	Rio	3

RODS

<u>Saltwater</u>		<u>Freshwater</u>	
Penn	29	Daiwa	23
G. Loomis	26	Shakespeare	20
Shimano	18	G. Loomis	14
Daiwa	17	Berkley	12
Kennedy Fischer	14	Orvis	9
Shakespeare	13	Zebco	8
Fenwick	10	Fenwick	8
Biscayne	8	Penn	6
Star	8	Eagle Claw	6
Tycoon Fin Nor	7	Mitchell	4

REELS

<u>Saltwater</u>		<u>Freshwater</u>	
Penn	107	Shimano	40
Shimano	91	Daiwa	39
Daiwa	33	Abu Garcia	19
Abu Garcia	20	Orvis	18
Fin Nor	14	Penn	14
Newell	5	Zebco	14
Duel	5	Shakespeare	9
Mitchell	3	Pfluger	5
Ryobi	2	Mitchell	4
Alvey	2	Fin Nor	2

FLY REELS**Fresh & Saltwater**

Pate/Tibor	66
Abel	39
Orvis	27
Scientific Angler	17
Penn	14
Fin Nor	10
Lamson	8
Cortland	8
Ross	7
STH	7

Source: *Computer Rankings: Top 10 Anglers, Lines, Tackle*. Mike Leech. 2000 World Record Game Fishes. International Game Fish Association.

UNDERWATER OBSTRUCTION LOCATIONS

The Louisiana Fisherman's Gear Compensation Fund has asked that we print the coordinates of sites for which damage has been claimed in the last month. The LORAN coordinates are as listed below:

<u>LORAN Sites</u>	<u>Lat. & Long. Sites</u>	
26828 46974 Vermilion	29 40.490	091 59.100 Iberia
	29 46.888	089 33.314 St. Bernard
	29 27.940	091 57.610 Vermillion
	29 24.430	089 54.630 Jefferson
	29 16.936	089 57.242 Jefferson

INSHORE ARTIFICIAL REEF PROJECT

The concept of building artificial fishing reefs to improve fishing success is well established in waters offshore of Louisiana. There, the Louisiana Department of Wildlife and Fisheries has coordinated the use of decommissioned oil and gas platforms for use in Louisiana's Artificial Reef Program, often called "Rigs to Reefs."



The development of artificial fishing reefs in inshore waters has now received another boost with the granting of \$15,000 from the Fish America Foundation for reef development in Lake Pontchartrain. This funding is expected to be used in the development of an innovatively-designed reef using concrete pyramids, explains LSU AgCenter Marine Advisory Agent Mark Schexnayder. This would be the second artificial reef coordinated by the Lake Pontchar-

train Artificial Reef Working Group, co-chaired by John Lopez of the Lake Pontchartrain Basin Foundation and Woody Crews of the Jefferson Parish Marine Fisheries Advisory Board.

Funding for the first reef is coming together well according to Lopez. Amoco Oil Company has donated \$5000 towards the reef. In May, BP-Amoco committed another \$50,000. The plan is to construct this first reef from concrete rubble or limestone aggregate.

Lake Pontchartrain is shaped like a large bowl with very little "structure" making it a difficult place to fish. Interest in improving recreational fishing opportunities was spurred by several well-publicized catches of record-book speckled trout in the lake. The working group was developed by the Jefferson Parish Marine Fisheries Advisory Board and the Lake Pontchartrain Basin Foundation at the request of the Louisiana Wildlife Federation.

Support for the Fish America Foundation grant was provided by the NOAA Restoration Center. For more information, John Lopez may be reached at 504/847-1889 and Woody Crews at 888-7790.

CHARTERBOAT LIMITED ENTRY

The Gulf of Mexico Fishery Management Council has delayed action until this month on its proposal to place a moratorium of the issuing of any new charter vessel permits to fish in federal waters. All 10 public hearings on the matter scheduled for October were canceled. At its November 13-17 meeting in Biloxi, Mississippi, the Council will decide whether to reschedule the hearings or to end all further action on the proposal.

FISHING GEAR AND E.F.H.

The Sustainable Fisheries Act of 1999 requires the National Marine Fisheries Service (NMFS) to determine the effects of harvesting gear on essential fish habitat (EFH). Essential fish habitat is defined as the waters and bottoms necessary to a species' spawning, breeding, feeding, or growth to maturity—its full life cycle. Some people feel that the EFH provisions passed by congress could become as important as the passage of the original legislation creating the 200 mile Fishery Conservation Zone.

Determining the effects of fishing gear on EFH is very complex and requires scientists to know virtually everything about the biology of a managed species, have detailed knowledge of the ecosystem and fishing gear, and also knowledge of the impact of natural events such as hurricanes on habitat.

As a step in the direction towards meeting the requirement that they assess the effects of fishing gear on EFH, NMFS held a workshop with 18 scientists in December, 1999. The workshop attendees agreed that enormous research needs existed. They also agreed that no-take marine reserves (marine protected areas) were needed. These areas where no fishing gear was allowed could be used to compare to areas where fishing occurred. Reports were also made on several types of fishing gear.

Recreational Gear

While the impacts of hook and line were considered low, recreational fishing was identified as a major concern because of the cumulative impacts of the huge number of fishermen in certain habitats. Anchor damage was a major concern, as was lost or discarded recreational gear such as line and leaders. Trolling downriggers may damage bottoms and lost lead sinkers can cause chemical impacts.

Shrimp Trawling Gear

Shrimp trawls were considered to be the leading cause of damage of all natural and man-made factors, to bottoms in the Gulf of Mexico. They were accused of reducing bottom diversity (and therefore animal diversity) by smoothing bottoms, crushing structures, stripping corals and seagrasses, and crushing, burying or uncovering bottom-living animals. While the report states that trawls can disturb habitat faster than nature can restore it, it did note that in some areas, especially shallow waters, that events such as hurricanes have created ecosystems that are adapted to disturbance. Other indirect impacts of trawls listed were reduction of water clarity, changing of sediment types, removal of predator or prey species which changes ecosystem balance, and marine debris creation from lost gear.

Trap and Pot Gear

Traps and pots were listed as damaging to habitat when they are set and recovered. According to the report, traps and pots can smother aquatic plants and can damage both corals and plants when storms cause trap movement.

Bottom Longline Gear

Bottom longlines were reported as having low impact on habitats since they are usually used on mud or sand bottoms. They did note that when used on hard bottoms, movement of the mainline on the bottom caused by the vessel or by hooked fish could result in habitat damage.

Dredging Gear

The report on dredging gear was not very detailed, only listing oyster and hydraulic clam dredges as gear that could impact essential fish habitat. Mention was made of the need to develop innovative gear that does the least possible damage to fish habitat.

Source: *Gear Impacts on Essential Fish Habitat in the Southeastern Region*. Alonzo N. Hamilton, Jr. National Marine Fisheries Service, Southeast Fisheries Science Center, Pascagoula Laboratories. March 30, 2000.

OYSTER MYSTERY SOLVED?

If any place is more famous for its oysters than Louisiana, it is the Chesapeake Bay. However, Chesapeake oyster production has declined. Maybe "crashed" is a better word. Maryland's production alone dropped from 15 million bushels in the late 1800s to virtually nothing by the 1990s.



Many things contributed to the decline—overfishing, pollution and oyster diseases such as dermo and MSX. Scientists feel that they have finally solved the 40-year-old mystery of where MSX came from. A genetic analysis of the microscopic MSX organism matched it up to MSX from Pacific oysters, a different species than the Atlantic oyster.

Scientists suspect that MSX was accidentally released when Atlantic Coast scientists and businessmen were experimenting with the Pacific oyster in the 1930s and 1940s. Incidences such as this are why many scientists are extremely cautious about the importation of non-native (exotic) plants and animals.

Source: *Waterman's Gazette*. Vol. 27, No. 9. September, 2000. Maryland Waterman's Association. From *Aquatic Animal Health*. April, 2000.

THE GUMBO POT

Crab Cakes and Dill Cream Sauce

Crab cakes may be the hottest seafood preparation going. Crab cakes have their origin in the Chesapeake Bay region, but restaurants across the country are adding them to their menus, even in inland areas far from the sea. Crab cakes are now even found in New Orleans Creole restaurants. The recipe below is lightly spiced to allow the crabmeat to shine, and it is set off with a four-star cream sauce.

Crab Cakes

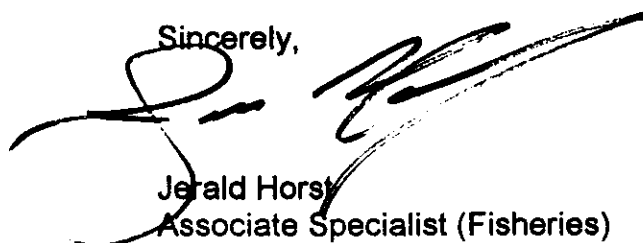
¾ cup margarine	1 tbsp Worcestershire sauce
½ cup onion (chopped)	1 lb crabmeat
4 tbsp flour	1½ cups dry bread crumbs
1½ cups milk	1 egg (beaten)
1 tsp salt	½ cup water

Dill Cream Sauce

½ cup mayonnaise	2 tsp dill weed
¼ cup sour cream	½ tsp salt
1 tbsp lemon sauce <i>zest</i>	½ tsp white pepper
1 tbsp milk	½ tsp sugar

Make the crab cakes by sauteing the onion in ¼ cup margarine until tender. Stir in flour until thoroughly blended. Gradually add milk, salt and Worcestershire sauce. Stir until thickened. Add crab meat and ½ cup bread crumbs. Chill mixture one hour. While mixture is chilling, make sauce by combining all ingredients and whisking well. Set aside in refrigerator. Make crab cake mixture into small patties. Combine egg and water. Dip crab cakes in mixture and dredge in remaining bread crumbs. Pan fry in ½ cup margarine, turning only once.

Sincerely,



Jerald Horst
 Associate Specialist (Fisheries)