Louisiana State University
Agricultural Center
Louisiana Cooperative Extension Service

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December 1, 1997
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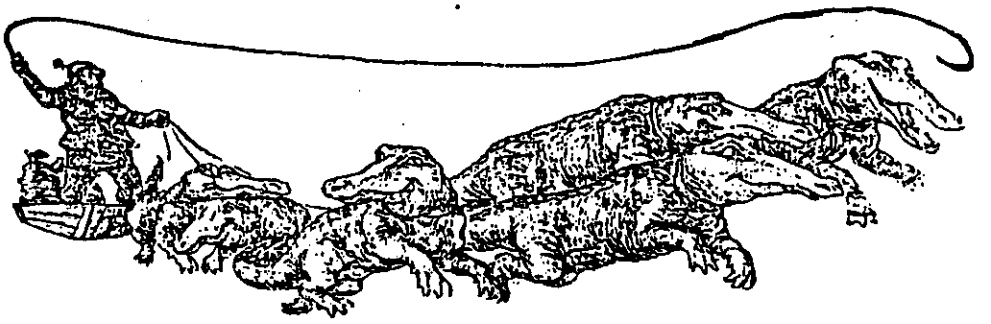
SEA GRANT PROGRAM



LAGNIAPPE

FRESHWATER DIVERSION FORUM

Given on the next page is the complete agenda for the "Public Forum on Freshwater Diversion". This program should be of special interest to commercial and recreational fishermen that fish in areas of current and planned freshwater diversion outfalls. Attendance is free.

PUBLIC FORUM ON FRESHWATER DIVERSION
Sponsored by
Jefferson Parish President Tim Coulon
and
The Jefferson Parish Marine Fisheries Advisory Board

Saturday
December 6, 1997
9 a.m. - 5:45 p.m.

Jefferson Parish School Board Media Room
501 Manhattan Blvd.
2nd Floor
Harvey, Louisiana 70072

9:00 - 9:10	Call to Order - Marnie Winter, Director, Jefferson Parish Environmental and Development Control Department
	Welcome - Jefferson Parish President Tim Coulon
	Moderator - Jerald Horst, Fisheries Agent, Louisiana Cooperative Extension Service
9:10 - 9:25	*People & the Coast* - Paul Corell, Wetlands Specialist, Louisiana Cooperative Extension Service
9:25 - 9:55	*Situation Overview* - Woody Gagliano, President, Coastal Environments, Inc.
9:55 - 19:20	*Comparison of Systems With and Without Freshwater Influence* - Denise Reed, Associate Professor, Louisiana Universities Marine Consortium
10:20 - 10:45	*Coastal Landowner Perspective* - Allan Ensminger, Wetlands Consultant, Wetlands and Wildlife Company
10:45 - 11:10	*Mississippi River Water Quality* - Emelise Cormier, Program Manager, Louisiana Department of Environmental Quality
11:10 - 11:35	*Sediment Availability in the Mississippi River* -Bob Meade, Hydrologist Emeritus, United States Geological Survey
11:35 - 12:00	*Effects of Nutrients in River Water* - Nancy Rabalais, Professor, Louisiana Universities Marine Consortium
12:00 - 1:00	LUNCH ON YOUR OWN
1:00 - 1:25	*Oyster Industry Concerns* - Buddy Pausina, Louisiana Oyster Growers & Dealers Association
1:25 - 1:50	*Salinity Tolerances of Fisheries Species* - Glenn Thomas, Habitat Program Manager, Louisiana Department of Wildlife and Fisheries
1:50 - 2:15	*Caernarvon Fisheries Data Monitoring Results* - Bill Good, Administrator, Coastal Restoration Division, Louisiana Department of Natural Resources
2:15 - 2:40	*Caernarvon - Impact on Fisheries - A Commercial Fisherman's Perspective* - George Barisish, President, United Commercial Fishermen's Association
2:40 - 3:05	*Caernarvon - Impact on Fisheries - A Sportsman's Perspective* - Nash Roberts, III, Fish Hunter Guide Service
3:05 - 3:30	*Other Marsh Restoration Options* - Ivor van Heerden, Associate Professor, Center for Coastal, Energy & Environmental Resources, Louisiana State University
3:30 - 3:55	*Comparing Restoration Approaches* - Gene Turner, Director, Coastal Ecology Institute, Louisiana State University

3:55 - 4:20	*Where Diversions Fit in Overall Restoration Picture* - Len Bahr, Executive Assistant, Governor's Office of Coastal Activities
4:20 - 4:45	*Current and Planned Diversions and Who Manages Operation of Each* - Katherine Vaughn, Assistant Secretary, Office of Coastal Restoration & Management, Louisiana Department of Natural Resources
4:45 - 5:10	*Coast 2050* - Steve Mathies, Deputy Secretary, Louisiana Department of Natural Resources
5:10 - 5:25	*Closing Remarks* - Mark Davis, Executive Director, Coalition to Restore Coastal Louisiana
5:25 - 5:45	Questions and Answers
5:45	SOCIAL

EXOTIC SHRIMP FOUND IN TEXAS AGAIN

Game wardens and biologists with the Texas Parks and Wildlife Department (TPWD) are monitoring commercial shrimp farms after tests confirmed the presence of the non-native Pacific white shrimp in Matagorda Bay. The Pacific white shrimp found are believed to have escaped from one or more of the four shrimp farms in the area, although the source has not been identified. The Pacific white shrimp is the only exotic species permitted for use by Texas shrimp farms.

A local seafood processing plant contacted TPWD after finding a strange looking shrimp. Department biologists obtained samples from the processor and local shrimp trawlers which were later positively identified as Pacific white shrimp.

Ongoing monitoring has indicated no more incidents of exotic shrimp escapement from farms. Both shrimp farms and bay shrimp boats are now working at the peak of their seasons to bring shrimp to market. About 50 shrimpers are trawling the affected bay system and hauling in thousands of pounds of shrimp daily, so it is considered unlikely that many of the exotic shrimp released are still in the bay.

Fewer shrimp are believed to have escaped than during the last significant incident in fall 1991, when hundreds of pounds of exotic shrimp were accidentally released from Hung Shrimp Farm into the Arroyo Colorado in South Texas. Exotic shrimp may leave the shrimp farms and enter public waters through wastewater discharge canals that empty into Texas bays or rivers.

This month, TPWD launched a coastwide monitoring effort to determine the presence or absence of viral diseases in shrimp populations native to Texas waters, including Taura virus, White Spot Syndrome Virus (WSSV), and Yellow Head Virus Syndrome (YHV). While these diseases are not a human health concern, the three exotic

shrimp viruses which have been identified from Texas shrimp farms could potentially affect the health of the wild shrimp populations if they were spread beyond aquaculture operations.

The Texas Commercial shrimp fishery generates about $600 million per year for the state economy and employs about 15,000 people.

Source: *Calhoun Currents.* Vol. 1, No 4. John P. O'Connell. Texas Sea Grant Marine Advisory Service.

SEISMOGRAPH EFFECTS ON FISH

Recent advances in technology have resulted in a large increase in seismograph work for the oil industry in coastal Louisiana. Seismograph crews are currently active from the freshwater marshes all the way out to waters several thousand feet deep offshore. Seismographers use explosive devices, usually air guns, to make sound waves that penetrate the earth in their search for oil.

Very little research has been done in the Gulf of Mexico on the affects of these explosive sound shots on fishes. Heather Warner-Finley of the Department of Wildlife and Fisheries Seismic Section was kind enough to send me two research papers that have been done in other parts of the world. Neither study showed that seismograph shooting killed any fish. Both studies did show, however, that fishes' behavior was changed by the activity.

In the first study, researchers in California captured 4 species of rockfish, put them in large cages and allowed them to get used to their environment. Their behavior, how and where they swam, was then studied before the test.

Then while the researchers were still watching them, a seismograph air gun was fired at various ranges from 3.6 miles away and closer. All species showed a strong response to air gun firing. Blue and black rockfish formed tight rapidly swimming circling schools and black rockfish schools collapsed to the bottom. Vermilion and olive rockfish either swam nearer to the surface and swam rapidly in eddies or moved close to the bottom and wouldn't move. These responses did not last long after shooting stopped. Fishing studies on rockfish showed that only 48% as many rockfish were caught out of a school after seismic shooting than before.

The second study took place with cod and haddock off of the coast of Norway. Researchers surveyed schools of these fish with echo-sounders and with trawls and longlines before and after seismic air gun shooting took place. They sampled the areas 7 days before, 5 days during, and 5 days after shooting activity.

Trawl catches of cod and haddock and longline catches of haddock were reduced an average of 50% after shooting started. Longline catches of cod were reduced 21%. Strong reductions were seen as for as 18 to 20 miles from the shooting area, but were highest near the shooting area. Shooting activity most severely reduced catches of larger fish, such as cod over 24 inches long and haddock over 16 inches. Fish catches and numbers did not recover by 5 days after the shooting ended and in some cases actually continued to decline.

It is important to note that these research projects did not include Gulf of Mexico fish species. They do indicate that at least some fish species' behavior are affected by seismic work.

Sources: *Effects of Sounds from a Geophysical Survey Device on Behavior of Captive Rockfish (Sebastes)* W. Pearson, J. Skalski, and C. Malme. Can. J. Fish. Aquat. Sci., Vol.49, 1992. *Effects of Seismic shooting on Local Abundance and Catch Rates of Cod (Gadus Morhua) and Haddock (Melanogrammos aeglefinus.* A. Engas, S. Lokkeborg, E. Ona, and A. Soldal. Can. J. Fish. Aquat. Sci., Vol 53.,1996

JEFFERSON PARISH SEISMIC ORDINANCE

Jefferson Parish has passed an ordinance requiring a local permit for all seismic exploration activity within its boundaries. Ordinance Number 20067, drafted with the aid of commercial fishermen, landowners, and seismic industry representatives, was introduced by Councilman Lloyd Giardina, and passed by the Parish Council on July 9, 1997.

The ordinance establishes the Jefferson Parish Environmental and Development Control Department as the local regulatory agency and provides for local notification to inform commercial fishermen and other outdoorsmen of planned seismic activity. It also requires the seismic operator to label all equipment, including cable, used at the work site and provides for a parish seismic inspector to insure environmental compliance. A conference after the work is required to insure that clean up has been completed at the work site and to determine the need for restoration or mitigation of any wetlands damage. Violators could face fines of up to five-hundred dollars ($500) per day per violation and, in cases of severe, ongoing violations, the permit may be revoked or suspended.

If fishermen encounter problems or observe damage to wetlands associated with seismic activity in Jefferson parish, or if your fishing or hunting organization would like to receive notice of seismic activity within the parish, contact Jason Smith, Coastal Program Supervisor with the Environmental and Development Control Department, at 838-4230.

MARSH GRASS RESEARCH

In Louisiana, the dominant marsh plants are wiregrass in brackish areas and oyster grass (smooth cordgrass) in salt marshes. The most obvious symptom of coastal erosion are when these grasses disappear and the areas turn into open water.

In the past, most efforts to reduce coastal land loss have involved the construction of water control structures and protection levees. While these may be somewhat effective, they are expensive to build and keep up.

Planting of marsh grasses, especially oyster grass *Spartina alterniflora,* is also a useful tool. However, hand transplanting is expensive and difficult to do. Seeding this grass would be much more effective, but unfortunately, the type of oyster grass (ecotype) adapted to much of Louisiana is a very poor seed-producer. Its seeds also don't sprout well. In Louisiana, oyster grass spreads by rhizomes (roots and runners).

Researchers with the U. S. Natural Resource Conservation Service tested 80 Atlantic Coast oyster grass ecotypes in Louisiana. These ecotypes were very good seed producers, but unfortunately they all died within 1 or 2 years after being transplanted here.

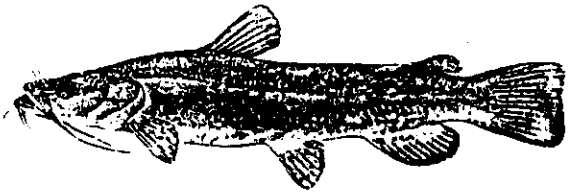
Research was then directed back to testing Louisiana oyster grass ecotypes. One type, from Vermilion Parish, was found to be an especially good grower, but also was found to be a poor seed producer. Work was under taken with the LSU Agricultural Center's Rice Research Station at Crowley to try to develop "artificial seeds" from this ecotype. They developed these seeds with cloning biotechnology that produced seedlike plantlets that substitute for normal seeds.

Researchers have grown oyster grass from these artificial seeds and are doing more testing to produce the best plants possible. This includes testing in the marsh itself. They hope to soon produce an artificial seed that will allow the planting of large areas of marsh by airplane.

Source: *Coastal Restoration Through Biotechnology - Derived Vegetation.* Timothy P. Croughan and Michael D. Matherne. Coastwise, Volume 6, Issue 2, 1996.

CATFISH MOVEMENT STUDY

Flathead catfish, known in Louisiana as goujon, yellow or opelousas catfish, are widely found in most lakes and rivers of the state. They can reach 100 pounds in size and are prized by both commercial and recreational fishermen.



Biologists working in two rivers in Mississippi, the Big Black and the Tallahatchie, tagged large flatheads with two kinds of tags to study how far they move. They tagged 14 fish with radio-tags and followed them for seven months. Over that period of time the average fish moved just over a half of a mile.

They also tagged 219 catfish with plastic tags. Eleven of these tagged fish were caught by fishermen and reported to biologists. The average time between tagging and recapture was 4½ months, with the longest being 12 months. These catfish didn't move much either, with 6 of them moving under a half mile and 4 of them under 1¼ miles. Only one fish went over 1½ miles. Movement was both upstream and downstream. It was noted that larger fish tended to travel further than smaller fish.

Previous research has also shown that flathead catfish don't move much and tend to stay near cover in an area they call home. They are loners and quick to attack other flatheads. Some of this work indicated that these fish move further in larger rivers than smaller ones.

Source: *Linear Ranges of Large Flathead Catfish in Two Mississippi Streams.* J. Skains and D. Jackson. Proceedings of the Forty-Seventh Annual Conference, Southeastern Association of Fish and Wildlife Agencies. 1993

MULLET STRIKE NET TAGGING RULES

Louisiana law requires that mullet strike nets be tagged. Unfortunately, the life of a tag is very short as they tend to tear off as the net is set. The Enforcement Division of the Department of Wildlife and Fisheries has announced that it will accept an orange buoy with the commercial fisherman's full name and mullet permit number (in English) on it at each end of the net instead of the tag. Mullet nets must still be tagged with the department-issued tag at any time other than when actually striking the net.

COBIA AND AMBERJACK BIOLOGY

Both cobia and greater amberjack are popular with offshore fishermen in Louisiana. Scientists at Louisiana state University have done some interesting biological research on both fish. Much attention has been given to amberjack lately, and recreational fishermen have had their limit reduced from three to one in 1997.

In the early 1990s, biologists obtained 760 cobia and 865 amberjack from commercial and recreational sources and from research trips. They aged the fish by

counting the layers of bone deposited in their otolith(ear bones) and also studied their reproductive biology.

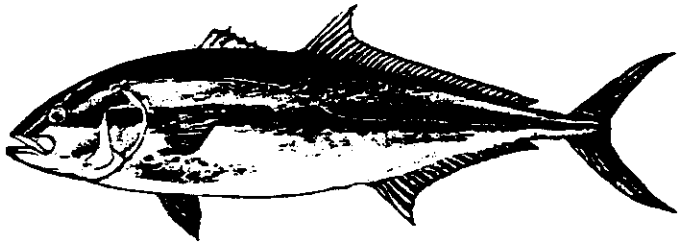
Cobia

Cobia ranged in age from 1 to 10 years old. They ranged in size from 2.2 pounds to 81.2 pounds, and 14 inches to 58 inches long. Two to four year old fish made up 75% of the sample. Male fish consistently out-numbered female fish by about 2 to 1 during each of the five years of the study.

Both male and female cobia grew to the minimum legal length of 22 inches (fork length) between 2 and 2½ years old. After that age, females grew much more rapidly than males and grew to a larger size.

No one year old fish were mature enough to spawn, but most males and some of the females were sexually mature at 2 years old. All males and females were mature by age 3. The spawning season off of Louisiana was from May to July, with the peak in June. Not enough data was collected to determine how often cobia spawn during this period. There was no evidence for a second spawning period later in the year, as some fishermen believe.

Greater Amberjack



Amberjack were a more difficult fish to age from their otoliths, and the researchers cautioned that their age work should be considered preliminary. Amberjack in the sample ranged from under 1 year old to 15 years. There was not as much of a size difference between male and female amberjacks as there was between cobia, however females did average slightly larger (35.2 inches) than males (34.2 inches). The largest fish was a 57.6 inch female.

There was a strong difference in how long they lived, however. Males only lived to 7 years old, compared to 15 years for females. Both sexes became old enough to spawn at 2 to 3 years old, between 32 and 38 inches in length, and 24.2 and 28.6 pounds. The minimum length on amberjack is 28 inches for recreational fishermen and 36 inches for commercial fishermen. Both lengths are fork lengths, which is the length of the fish from the tip of the nose to the fork in the tail.

Based on this research, amberjack spawn in May and June. One interesting finding was that in 8 to 10% of their samples, females had bacterial infections of their eggs. The researchers could not decide if the infections occurred in the living fish, or after the fish were caught but before being preserved. Because of this and the fact that they could not find a long-term pattern in the infection, they could not draw any conclusions about its impact on the fishery.

It is important for fishermen to note that the greater amberjack is one of four look-alike species in the Gulf of Mexico. The other three are the lesser amberjack, the almaco jack, and the banded rudderfish. These three fish do not fall under the recreational one-fish limit for greater amberjack. Instead, these fish have no minimum size and fall under the aggregate recreational limit of 20 fish (along with vermilion and lane snappers, porgies, grunts, tilefish and triggerfish).

For fishermen interested in determining which species of jacks they are catching, Louisiana Sea Grant has published a book of color photographs on waterproof paper. The title of the book is *A Fishermen's Guide to Common Coastal Fishes of Louisiana & Adjacent Offshore Waters.* It costs $20 and may be ordered from Louisiana Sea Grant Communications Office, LSU Baton Rouge, LA 70803.

Source: *Age, Growth, and Reproductive Biology of Greater Amberjack and Cobia From Louisiana Waters.* B. Thompson, C. Wilson, J. Render, M. Beasley, and C. Couthran. Coastal Fisheries Institute, CCEER, Louisiana State University. 1992

LONGLINE BYCATCH

Fisheries bycatch is presently the subject of a lot of discussion. One fishery that bycatch concerns have been mentioned with is the offshore tuna/swordfish longline fishery in the Gulf of Mexico. Recently, a scientist with the National Marine Fisheries Service published a study summarizing the catch and bycatch of this fishery from 1987 to 1995. The data for the paper was developed from data collected by federal observers on board the longline vessels. The information below is for 1995, the latest year in the study.

The study determined that 39,794 fish of all types were caught in the Gulf of Mexico longline fishery in 1995. Target commercial species made up the large majority

of the catch: tunas (mostly yellowfin) - 33%, swordfish - 24%, dolphin (mahi-mahi) - 19%, escolar or oilfish - 8%, sharks - 6%, and wahoo - 5%.

Saltwater gamefish made up a small percentage of the catch. Sailfish, blue marlin, and white marlin each made up one percent of the total catch. Of this amount, 62% were released alive at sea. A total of 17 sea turtles were also noted as bycatch, of which 14 were leatherbacks and one was a Kemp's ridley. One sea turtle was released dead or injured, and 16 were released alive.

Source: *Species Reported Caught in the U. S. Commercial Pelagic Longline, Gillnet and Pair Trawl Fisheries from 1987 to 1995.* Jean Cramer. National Marine Fisheries Service, Miami Laboratory Contribution MIA-95/96-38. 1996.

1997 LOUISIANA FISH STOCKING

The Louisiana Department of Wildlife and Fisheries new state-of-the-art fish hatchery, Booker Fowler, has completed its first year of trial operation. Production is expected to be at limited levels in 1998, but the hatchery should be in full-scale fingerling production by 1999. Other fish hatcheries operated by the department are Monroe, Beechwood, Lacombe, and the Toledo Bend Jar Hatchery. Florida largemouth bass were stocked in the waterbodies below during the July 1, 1996 to June 30, 1997 stocking year.

WATERBODY	NUMBER STOCKED
Sabine National Wildlife Refuge	176,706
False River	125,145
Lake Concordia	117,990
Caney Lake	111,238
Spanish Lake	70,296
Lake Vernon	68,440
Caernarvon	55,235
Toledo Bend	50,349
St. Bernard Parish	39,000
Grand Bayou	31,475
Lac Des Allemands	22,981
Ruddock I-55 Canal	20,238
Lake Chicot	19,178
Lake Rodemacher	16,587

Diversion Canal/Amite	16,250
Tickfaw, Natalbany & Blood Rivers	14,000
Lake Verret	10,000
Blind River	9,800
Bayou Francois/New River	7,500
City Park/University Lake	6,076
Tangipahoa River	5,300
Tensas National Wildlife Refuge	2,952
City Park/Waddill	1,250
TOTAL	**997,986**

In addition to Florida largemouth bass, Department of Wildlife and Fisheries hatcheries stocked 1,013,012 striped bass, 60,859 Gulf-strain striped bass, 165,352 native largemouth bass, 128,876 channel catfish, 38,583 blue catfish and 7,871 paddlefish during the 1996/97 stocking year.

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THE GUMBO POT
Darn Good Crab Bisque

1	stick butter	1½	qts. chicken stock
1	large onion, chopped	½	tsp powdered thyme
1	small red bell pepper, chopped	1	tsp salt
2	stalks celery, chopped	½	tsp black pepper
1	clove garlic, minced	½	tsp liquid crab boil
6	green onions, chopped	1½	lb crabmeat
¼	cup flour	1	pt half and half cream
2	bay leaves		

Melt butter and on low heat, saute onion, bell pepper, celery, garlic, and green onions until soft. Add flour, increase heat to medium and cook about 5 minutes, constantly stirring. Add rest of ingredients except half and half cream, and bring to a boil. Turn heat down and simmer for 20 minutes. Add half and half and simmer for 10 minutes or until smooth. Serves 4 to 6.

Sincerely,

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