LSU AgCenter
Research & Extension

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December 2, 2002 Volume 26, No. 12

PUBLIC FISHERIES SEMINARS

On December 5, the LSU AgCenter's Sea Grant Marine Extension Program, in cooperation with National Fisherman Magazine, are sponsoring a series of free commercial fishing seminars at the International WorkBoat Show at the Ernest M. Morial Convention Center in New Orleans. Sessions begin at 10:30 a.m. with the agenda below.
MARK YOUR CALENDAR.

10:30 a.m. – 12 noon. Fisheries Management Councils — Will Commercial Fishermen Have a Voice?
The eight fisheries management councils of the United States play a critical role in determining the future for commercial fishermen who work in federal waters. Under current law, representation between commercial and recreational interests should be balanced. However, on the Gulf of Mexico Fishery Management Council only 2 of 17 voting members are considered to come from commercial fishing interests. A Louisiana commercial fisherman has sued the U.S. Department of Commerce over the Gulf Council's make-up. Will representation change and if so, when?

1:00 p.m. – 2:30 p.m. Chloramphenicol and Other Residues in Seafood: Implications for American Seafood.
This spring, large shipments of shrimp from China were rejected by Europe because of the presence of trace amounts of chloramphenicol in the product. Most of these shrimp were redirected to the United States, which did not test for the banned antibiotic to as low of a level as in Europe. These shrimp, combined with a bumper crop of shrimp already directed to the U.S., played a critical role in the severe price declines felt by shrimpers this year. Will chloramphenicol likely reappear in shrimp shipments? Will other drug residues appear? Will residues destroy consumer demand? Learn the answers to those questions from Dan Herman of the National Fisheries Institute.

2:30 p.m. – 4:00 p.m. Dealing with Seafood Imports: Options and Obstacles.

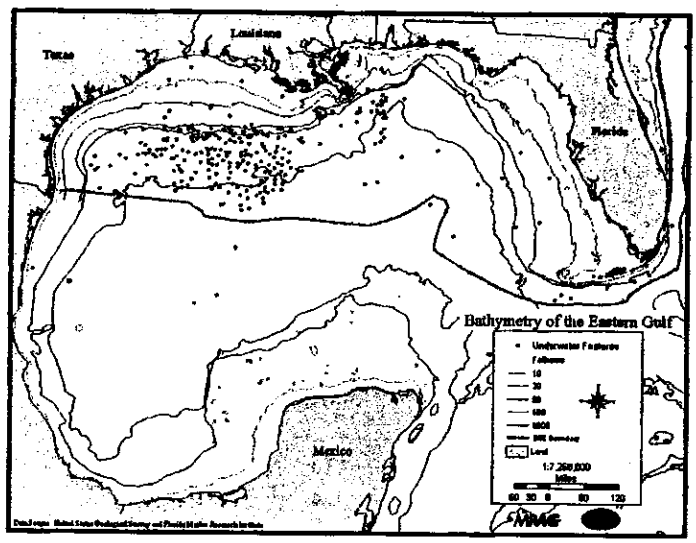
From 1979 to 1999 the world supply of shrimp has gone from 1.86 billion pounds to 4.31 billion pounds. The percent of shrimp that are produced by aquaculture went from 4.7% in 1979 to 36.5% in 1999. The share of shrimp eaten in the U.S. that are produced in this country dropped from 43% in 1980 to 12% in 2001. Shrimp have become available

year-round and worldwide with just a telephone call. The survival of the U.S. shrimp-producing industry depends on how it meets the challenge. Learn about the options and obstacles of imports from two experts, businessmen Matt Fass of Virginia and Kenny Goundas of Mississippi.

4:00 p.m. – 5:00 p.m. Using Your Fisheries Association to Your Best Advantage. Fishing trade associations are vital to the future of the fishing industry. Competition from imports, challenges from environmental interests, and management and allocation disputes make the role of trade associations more important than ever. Forming associations is much easier than making them work successfully without splintering into factions. Jerry Schill, president of the 50-year old North Carolina Fisheries Association will discuss his experiences in making fisheries associations work for the benefit of fishing families.

TAKE YOUR LUMPS

Until recent years, many anglers considered the offshore waterbottoms off of Louisiana to be fairly muddy or sandy, flat, and featureless. That is, until fishing the "Midnight Lump" burst upon the scene. The Midnight Lump, or as geologists know it, Sackett Bank, is like a small flat-topped rock mountain that arises from deep water southwest of the mouth of the Mississippi River. Few people that fish it know that it is only one of many such geological features that form a chain around the entire rim of the Gulf of Mexico.



East of the Mississippi River, lie hard-bottom features smaller than Sackett Bank that are called "pinnacles". They are found in depths of 330 to 590 feet, although most of them are in a band 330-370 feet deep. Pinnacles average 30 feet in height, although some are over 50 feet high. They are made up of the hard, heavily cemented-together, calcium-containing remains of animals and plants that formed reefs during much lower sea levels many years ago.

The larger pinnacles have coral-like animals and plants on them, often referred to as "live bottom". These pinnacles do not have nearly the fish populations associated with them that the larger banks west of the Mississippi River do. Generally, smaller

pinnacles and those closer to the Mississippi River's fresh and muddy waters have less bottom life and fish variety. Other features east of the Mississippi River include low, slabby rock patches, hard mounds and ridges, and shallow, rock-edged depressions.

West of the Mississippi River, off of Louisiana and northern Texas, bottom features can be divided into three categories: shallow-water hardbottoms, mid-shelf banks and shelf-edge banks. Shelf refers to the continental shelf, the waterbottoms that very gradually slope deeper, until they hit the "continental slope" where the bottom sharply slopes deeper into very deep waters. The width of the continental shelf off of Louisiana varies from only 12 miles wide off of the Mississippi River delta to 125 miles off of western Louisiana.

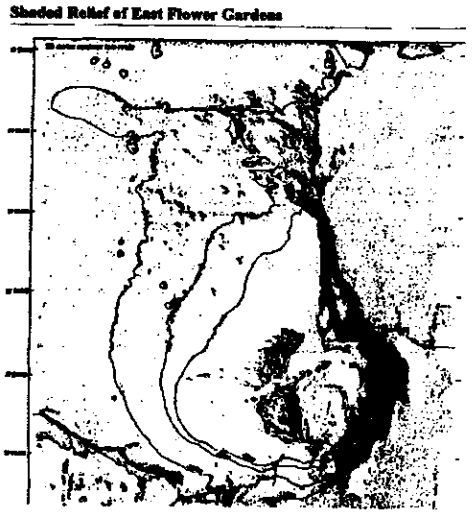
Shallow-water hardbottoms off of the Louisiana coast are typically rock outcroppings inside of 115 feet deep. Some are very small, the size of a room in an average house, and others are several hundred feet across. They are less than 10 feet high and encrusted in sponges and coral-like growths (live bottom), in spite of being under a layer of murky bottom water. The most common large fish on these areas include spadefish, triggerfish, red and vermilion snappers, sheepshead, blue runners (hard tails), tomtate, and several species of groupers. The continental shelf south of Matagorda Bay, Texas has an area of drowned reefs. These reefs were living reefs during the last ice age, but became submerged too deep to continue growing when sea levels rose, about 5,000 years ago, although they do have some growths of coralline algae. These reefs range in height up to nearly 75 feet high.

On the south Texas shelf, several shallow-water reefs do exist in waters 46-132 feet deep. These are East Bank, Sebree Bank, Steamer Bank, Little Mitch Bank, Four Leaf Clover, 9 Fathom Rock, and Seven and One-half Fathom Reef. These reefs are at best, 15-17 feet higher than the surrounding bottom.

Mid-shelf and shelf-edge banks are all diapirs. The Louisiana/Texas shelf consists of muddy or sandy sediments that lie over a 10,000-foot thick layer of rock salt. These sediments were deposited by the rivers that flow into the Gulf, particularly the Mississippi River. Nearly 9 miles of sediment cover the Louann salt deposit south of the Louisiana/Texas state line. This huge sediment load has caused the salt layer beneath it to flow like a slow-moving liquid, and in some spots force its way upward through the sediments and above the waterbottom. The resulting mountain-like peaks are referred to as diapirs by geologists, and lumps, rocks or banks by fishermen. All of them are capped with slabby limestones, sandstones, claystones, and siltstones. More than 130 such banks exist in the northwestern Gulf of Mexico.

Mid-shelf banks are considered to be those that rise from water depths of 260 feet or less and range from 50 to 165 feet in height. Some of the named mid-shelf

banks in the northern Gulf of Mexico are Sonnier Bank, Fishnet Bank, Claypile Bank, 32 Fathom Bank, Coffee Lump, Stetson Bank, Pheleger Bank and 29 Fathom Bank. On the south Texas shelf about 14 banks arise from 200-300 foot depths. The named ones are Big Dunn Bank, Small Dunn Bank, Blackfish Ridge, Mysterious Bank, Baker Bank, Aransas Bank, Southern Bank, Hospital Bank, North Hospital Bank, South Baker Bank, Sebree Bank, Big Adam Bank, Small Adam Bank, and Dream Bank. Mid-shelf banks extend above the murky bottom water layer and hold a wide variety of large fish. Studies have shown 47 to 76 species present. Schools of hundreds of vermilion snapper, amberjack, blue runner and tomtate have been observed above these banks. On the banks themselves are angelfishes, hogfish, creole-fish, yellowtail reef fish and several species of groupers. Schools of red snapper are common near the base of most of the mid-shelf banks. Coral-like live growths can be found on the tops and sides of the banks at depths less than 230 feet.



Finally, the largest banks of all are the shelf-edge banks, of which Midnight Lump is one. These arise from the deepest water, often 500-600 feet deep, and they are the tallest, ranging from 115 to 500 feet high. The illustration on the left shows the East Flower Gardens Bank, looking downward from directly overhead. From this view, it looks like a small mountain. Under good, clear, water conditions, the top of the Flower Gardens Banks can be seen from the surface. Named shelf-edge banks include East Flower Garden Bank, West Flower Garden Bank, Geyer Bank, Rankin Bank, Elvers Bank, MacNeil Bank, Applebaum Bank, Bright Bank, McGrail Bank, Alderdice Bank, Rezak Bank, Snider Bank, Ewing Bank, Jakkula Bank, Bouma Bank, Sackett Bank (Midnight Lump), Diaphus Bank, and Sweet Bank.

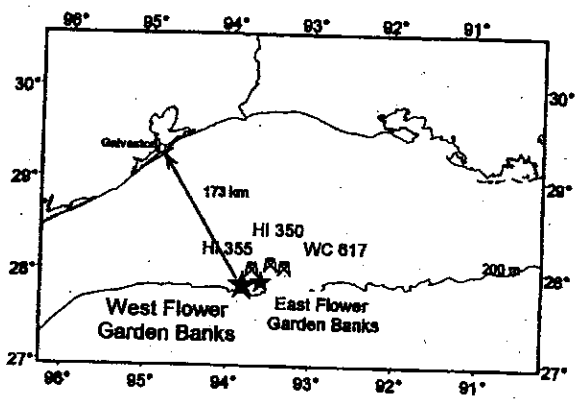
The coral, coral-like, and sponge growths on many of these banks are what would be expected from very clear water and year round tropical/subtropical conditions. All banks and pinnacles are in the path of the Loop Current that sweeps up from the Caribbean, bringing tropical species to more northerly waters. As a result, many species not usually found in the northern Gulf of Mexico will be found on banks and pinnacles. Research also indicates that the taller a bank is, the higher the number of fish species will be. Not even including the Flower Garden Banks, 95 species of large fish have been observed on shelf-edge banks. This includes many species of jacks, snappers and groupers.

Source: *Draft Environmental Impact Statement for the Generic Essential Fish Habitat Amendment to the following Fishery Management Plans for the Gulf of Mexico: Shrimp, Red Drum, Reef Fish, Stone Crab, Coral and Coral Reef, Spiny Lobster, and Coastal Migratory Pelagic Resources.* Gulf of Mexico Fishery Management Council. May, 2002.

REEFS AND RIGS: A COMPARISON

There are about 5,500 standing oil and gas platforms in the northern Gulf of Mexico. Additionally, over 150 retired platforms have been converted to "artificial reefs" in the area from Texas to Florida. The Louisiana Artificial Reef Program uses two approaches to converting a retired platform into an artificial reef. One involves laying the platform on its side by toppling it, either in place or after moving it to another location. The other approach is called partial removal, and simply involves removing the upper 100 feet of a platform and leaving the rest of it in place.

Even though oil and gas platforms are only 4% of the 1,120 square miles of naturally occurring hardbottom found in the otherwise silty environment of the northern Gulf, there is no doubt that they have an impact on fish and fishermen. Anglers fish heavily at platforms and strongly support the Louisiana Artificial Reef Program. The debate amongst scientists is whether platforms truly serve as productive reef habitat or whether they simply attract fish, making it easier for fishermen to harvest more fish.



In an attempt to answer some of these questions, scientists at Louisiana State University conducted fish surveys at artificial reefs, a standing platform, and the West Flower Garden Bank, a natural reef. The West Flower Garden Bank (WFGB) is located 173 kilometers (104 miles) southeast of Galveston Texas, and almost due south of the Louisiana/Texas state line. It is a diapir or marine salt dome that rises from very deep water to within 60 feet of the surface. It and its sister diapir, the East Flower Garden Bank, have the northernmost coral reefs off of North America, with living corals being found on them down to a depth of 120 feet. The WFGB covers an area of 55 square miles (35 thousand acres).

A nearby standing platform and two artificial reefs were chosen for study. The standing platform, HI A350, was in 297 feet of water and its base (footprint) was 225 ft x 100 ft. The toppled platform artificial reef, WC 617A, was in 323 feet of water and its footprint was 277 ft x 200 ft. It rose 102 feet from the bottom. The partially removed platform artificial reef, HI A355, was in 297 feet of water. Its footprint was 200 ft x 132 ft. It was 223 feet high. Half of the removed upper section was placed on the bottom, south of the platform. Its footprint was 80 ft x 60 ft, and its height was 106 ft.

The fish surveys were done in 1999 and 2000 by sonar and by ROV (remotely operated vehicle) submarine equipped with a video camera. The sonar was used to count the fish, and from the strength of its ping, the sizes of the fish could be estimated. The ROV was used to identify the species of fish present. Four sonar transducers were

mounted on the standing platform. For the toppled and partially removed platform and the West Flower Garden Bank surveys, the sonar transducer was towed in a grid pattern over the entire area to be surveyed.

For the purpose of analysis, the researchers divided the WFGB into three depth zones or terraces—upper (60-165 ft), middle (166-264 ft), and lower (265-330 ft). Depths more than 330 feet were classified as open water. The survey showed that in both numbers and total fish weight, many more fish were in shallow areas than deeper ones. In fact, they calculated that there were 35 to 100 times more fish over the upper terrace than over the middle and lower terraces. The fish also averaged larger in size over the upper terrace and near the surface.

The ROV survey showed that a large number of species were present at WFGB, typical of a coral reef. The most common species were Bermuda chub, creole-fish (a small, bright red grouper with a forked tail), followed by great barracuda, and black durgon. Total fish abundance was estimated at 2.5 million fish, of which the four species above made up 60%. They did caution that many more fish species were likely to be present, as the ROV survey missed shy or secretive species. Other surveys of the Flower Garden Banks have found high numbers of red snapper, groupers, and jacks, as well as very high numbers of angelfishes.

The survey of HI A350, the standing platform, was done in 1999. The number of fish was highest at the surface and lowest near the bottom. It was also highest at dusk and lowest at midnight. The average size of the fish was largest near the surface and smallest near the bottom. The fish averaged much larger in the morning than at noon, dusk or midnight.

Open water (pelagic) plankton-eaters such as blue runner and Bermuda chub were, by far, the most common surface fish and made up more than 50% of all fish observed on the ROV video. Creole-fish, scamp, and red snapper were also fairly abundant. Total fish abundance within the area of influence (66 feet) of HI A350 was estimated to be 7,100. Of these, 500 were estimated to be scamp and 400 to be red snapper.

Two surveys of the toppled platform, WC 617A were conducted, one in 1999 and another in 2000. Two-and-a-half times as many fish were found in 1999 as in 2000. More fish were found over the platform reef than at the sides. Of the fish found at the sides, more were found near the bottom than further up the 102-foot height of the toppled platform. Numbers of fish were highest at midnight and lowest in the morning. Average size of the fish present was largest at dawn and smallest at noon.

A total of 2,700 fish were estimated to be within the 66-foot area of influence of WC 617A. Seven species of fish made up 90% of the total fish present. Red snapper were most abundant (1,220), at 45% of all fish, followed by greater amberjack (405), Spanish hogfish (270), gray triggerfish (216), almaco jack (200), scamp (173), and creole-fish (130).

HI A355, the partially removed platform, was also surveyed in 1999 and 2000, with 30% more fish being present in the first year, compared to the second. Like with the toppled platform, many fish were found above the 223-foot high reef, however a slightly greater number of fish were located on the sides, between 30 and 60 feet from the bottom. Of the fish on the sides, more were found on the south side, the side where half of the removed upper platform section had been placed. The largest numbers of fish occurred at dusk and was lowest at midnight, although the differences were slight. Average size was largest in the morning and smallest at noon.

Total fish abundance within the 66 - foot area of influence was estimated to be 2,850. The most abundant species in 1999 were greater amberjack at 59% of all fish, followed by red snapper and almaco jack, each at 13%, and then blue angelfish (5%). In 2000, greater amberjack were most abundant at 30%, followed by red snapper (27%), Spanish hogfish (11%), and creole-fish (10%).

The researchers found more fish at the standing platform than at the toppled or partially removed platform reefs. However, most of the fish species lost by converting a standing platform to an artificial reef are pelagic species such as blue runner and Bermuda chub. The biologists found little difference in species between the toppled and the partially removed platform.

Overall, they concluded that converting a standing platform to an artificial reef will cause a loss of 50-80% of the fish population, but that virtually all of the commercially and recreationally important snappers and jacks are retained. They also concluded that on a fish-per-square-foot basis, standing platforms and platform artificial reefs hold more fish than natural reefs like the West Flower Garden Bank. Fish populations at platforms and platform reefs are 10 to over 1,000 times higher than on nearby sand and mud bottoms.

Source: *A Hydroacoustic Assessment of Fish Density at the Flower Garden Banks with Emphasis on the West Flower Garden Bank.* C.A. Wilson and M.Miller and *Rigs and Reefs: A Comparison of the Fish Communities at Two Artificial Reefs and a Production Platform.* C.A. Wilson, M. Miller, R. Kasprzak, and D. Stanley, in Appendix 1 of Louisiana's Artificial Reef Program: Determination of Geotechnical and Biological Properties in the Louisiana Artificial Reef Program's Reef Planning Areas: South Timbalier. Final Report to the Louisiana Artificial Reef Program, Louisiana Department of Wildlife and Fisheries. C.A. Wilson, Y. Allen, M. Miller, and H. Roberts. 2001

SHRIMP VESSEL PERMIT DEADLINE

The December 6 deadline for federal water shrimp vessel permits is now upon the shrimp industry. Owners whose vessels are not permitted should apply immediately. To apply for a permit, the owner or operator of a vessel should contact:

Permits Office, NMFS Southeast Region
9721 Executive Center Drive N.
St. Petersburg, FL 33702
Phone: 727/570-5326

Completed applications must be submitted at least 30 days before the date that the applicant wants the permit to be effective. After December 6, shrimping will not be allowed in federal waters unless the vessel has the permit, so applicants should not delay. The fee is $50 and all permits will be mailed to the vessel owner, even if the applicant is the operator. Permits will not be issued if any unpaid violation penalties exist.

The permit is a one-year permit, unless it is revoked or suspended, or the vessel is sold. However, application for renewal is only required every 2 years, with automatic renewal taking place in the off years. Vessel owners whose permit is expiring will be mailed a notification about 2 months before expiration.

RECORD BOOKS AND TAX EXEMPT FORMS

Over the years, many of you have used the LSU AgCenter's *Commercial Fisherman's and Trapper's Record Book* to keep a record of your expenses and earnings. With the new year upon us, now is a good time to get your new record book. Also available, are sales tax exemption applications for commercial fishermen. If you would like a record book or sales tax exemption application, call, write, or drop by your local extension marine agent's office.

Agent	Location	Telephone Numbers
David Bourgeois	Houma & Cut Off	985/873-6495 or 504/632-6852
Sandy Corkern	Franklin	337/828-4100, ext. 300
Rusty Gaudé	Belle Chasse	504/392-6690, ext. 1241
Thomas Hymel	Jeanerette	337/276-5527
Brian LeBlanc	Covington	985/893-4449
Kevin Savoie	Lake Charles	337/491-2065
Mark Schexnayder	Metairie	504/838-1170
Mark Shirley	Abbeville	337/898-4335

Applications for commercial fisherman's sales tax exemptions may also be obtained by calling Louisiana Department of Revenue offices in New Orleans 504/568-5226 or Baton Rouge 225/219-7356. The application must be filled out, signed and

notarized before being sent back to the Department of Revenue. A copy of the person's last federal income tax return must be included to prove that the applicant made at least 50% of his income from commercial fishing. Also included must be copies of the Department of Wildlife and Fisheries vessel license and either the state vessel registration or Coast Guard vessel documentation papers. It takes the Department of Revenue about two weeks to process the paperwork after they receive it.

An individual can get his exemption immediately by going in person to the Louisiana Department of Revenue offices at either 1550 Poydras St, Suite 900, in New Orleans or 617 North Third St, Second Floor, in Baton Rouge. Applicants should have proof of personal identification, their latest federal income tax return, their vessel license, and their vessel registration or documentation papers.

Possession of a sales tax exemption exempts a commercial fishermen from paying state sales tax on purchases for their fishing business. In some parishes, holders of commercial fisherman's certificates of exemption, also are exempted from parish sales taxes.

GOOD NEWS ON KING MACKEREL

It seems that it is much easier to get a fish stock declared as "overfished" than it is to declare that it has recovered from overfishing. However, a recent report indicates that Gulf of Mexico king mackerel stocks are indeed in good shape. In a report to the Gulf of Mexico Fishery Management Council, biologist Will Patterson presented the Mackerel Stock Assessment Panel report.

In it, it says that Gulf of Mexico king mackerel stocks are no longer overfished, nor being overfished. Patterson also reviewed king mackerel catches, noting that recreational fishermen had not harvested their quota for the last 3 years. Recreational catches are highest off of Texas, followed by Florida. Commercial catches in the Gulf are highest off of Louisiana, followed by Florida.

TEXAS CHANGES BORDER WATER RULES

The state of Texas has announced rules changes for the border waters, including Caddo and Sabine Lakes, that it shares with Louisiana. In the past, fishermen in these waters obeyed the size and creel limits for the state in which they caught the fish, no matter where the fishermen launched their boat or traveled during the day's fishing.

Since Louisiana has more liberal limits than Texas, this was viewed as a loop-hole. Under the new rule, fish possessed in Texas must meet Texas regulations. It says that "it is unlawful to transport by boat or person any fish taken from public water

within a protected length limit, or in excess of the daily bag limit or possession limit established for those fish in Texas, regardless of the state or country in which they were caught."

Louisiana anglers must be careful not to cross into Texas waters with fish that meet Louisiana regulations, but not Texas regulations. Louisiana anglers also cannot launch from launches on the Texas side of the lake and return to that launch with Louisiana limits. Anyone unsure of Texas fishing regulations may contact Texas Parks and Wildlife Department Law Enforcement at 1-800-792-1112.

UNDERWATER OBSTRUCTION LOCATIONS

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

Loran Sites

26696	46991	CAMERON
27380	46967	VERMILLION
28233	46871	TERREBONNE
29105	46983	ST BERNARD

Lat. & Long. Sites

29 04.588	90 53.786	LAFOURCHE
29 13.568	90 25.320	LAFOURCHE
29 14.363	90 18.900	LAFOURCHE
29 14.472	91 07.550	TERREBONNE
29 15.670	90 03.740	JEFFERSON
29 17.595	90 42.569	TERREBONNE
29 18.963	90 48.880	TERREBONNE
29 52.150	93 20.793	CAMERON
30 00.083	89 33.826	ST BERNARD
30 00.311	93 19.939	CAMERON

GULF OF MEXICO OFFSHORE AQUACULTURE RESEARCH

A team of researchers, private companies and government agencies, including the Sea Grant programs from the five Gulf states, have formed the Gulf of Mexico Offshore Aquaculture Consortium. Their goal is the creation of a profitable, environmentally friendly, open-ocean aquaculture system.

The system they are testing will be located 25 miles offshore of Pascagoula, Mississippi and will consist of a large cage moored to one spot, but allowed to swing and move with tides and currents. This single-point mooring system has many advantages over a grid systems which keep the cages in one place. It requires less space than the grid and more importantly, its ability to move makes it less likely to be damaged by storms. It also decreases the environmental impacts from fish feeds and wastes because they are spread out over the whole area that the cage moves over, rather than being concentrated in one spot.

Another feature of the Gulf aquaculture cage is a remote camera or "cage cam" which monitors the cage around the clock from a nearby gas platform. Other automatic features include a satellite tracking system that notifies researchers if the cage moves

outside of its watch area and automatic fish feeding system called "robo feeder". This fall, researchers will monitor stocked cobia and/or redfish in the system, which they expect to reach market size in one year.

THE GUMBO POT

Shrimp and Eggplant Casserole

In our search for interesting recipes, we occasionally bump into one that is hard to describe. Seafood/eggplant dishes are common, but this one is a little different. The rice in the recipe pleasantly dominates the eggplant. Be sure to use fresh, ripe tomatoes, not the canned product. They add a distinct, but not dominating taste. Finally, while this is not a spicy dish, the ingredients are so well balanced that even a "pepperhead" is not tempted to sauce it at the table. It is important not to tinker too much with the ingredients. The fluids in them are necessary to perfectly cook the rice.

1	large eggplant, peeled and cut into 1-inch cubes.
1	medium onion, finely chopped
2	cloves garlic, minced
½	cup olive oil
2	tomatoes, peeled and seeded and chopped
¾	cup raw rice
1	lb small shrimp, peeled
¼	cup water
1	tsp. salt
¼	tsp. basil
¼	tsp. pepper
1	cup grated Mozzarella cheese

Place eggplant in a large bowl with water and 2 tablespoons salt. Cover with a heavy bowl or plate to keep the eggplant immersed. Soak for 20 minutes. Drain thoroughly. Sauté onion and garlic in olive oil. Add eggplant and sauté until outside edges of cubes are transparent. Add tomatoes, rice, water and seasonings. Cover and simmer for 10 minutes, or until shrimp are just pink. Pour into a greased 2-quart casserole and top with Mozzarella if desired. Cover and bake at 350 degrees for 30 minutes. Serves 4.

Sincerely,

Jerald Horst
Associate Professor, Fisheries