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Lagniappe Sea Grant

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

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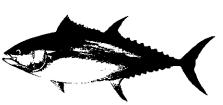
DON'T MISS THE BOAT

This month, our <u>paper</u> newsletter subscribers came very close to not getting a newsletter. With both printing and mailing costs rising and our budget either staying the same or shrinking, we will likely have to face some hard choices in the near future. One likelihood is that paper-subscribers will only get every other newsletter, while e-mail subscribers will continue to get every one. If what nearly happened this month is any indicator, it will happen very quickly — without notice. Paper subscribers will just begin getting every second edition.

Converting your paper subscription to e-mail will avoid any interruption in service. In fact, you will get each newsletter earlier. Simply send a message requesting the change to jhorst@agctr.lsu.edu. IT IS VERY IMPORTANT TO INCLUDE THE FULL NAME AND MAILING ADDRESS FROM YOUR CURRENT PAPER SUBSCRIPTION IN YOUR MESSAGE. New electronic subscribers are also welcome and should also contact us at the e-mail address above and must include their parish or residence.

2004 LOUISIANA FISH OF THE YEAR

Each year, the Louisiana Outdoor Writers Association, the organization responsible for the Louisiana Fish Records Program, annually recognizes two outstanding recreational catches as Fish of the Year. This year, in the rod-and-reel division, a 1,152pound bluefin tuna caught by angler Ron Roland won.



The tuna not only replaces the previous Louisiana bluefin record, it is the largest fish ever caught on a rod-and-reel in the Gulf of Mexico.

The fly-fishing category Fish of the Year was a 130-pound tarpon, which also is the number one record in Louisiana. The lucky angler was Robert T. "Bobo" Cunningham, who landed the fish on a 20-pound tippet after 2 hours and 20 minutes. Cunningham is not new to records, as his name has appeared 56 times in the International Game Fish Association World Record Book.

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.

SHRIMP SOCIOECONOMIC SURVEY

The National Marine Fisheries Service (NMFS) has contracted with MRAG Americas, Inc to survey offshore shrimp fishermen for economic information. Fisheries regulations almost always affect the finances of commercial fishermen. The last time that NMFS collected data on the costs and earnings in the Gulf shrimp fishery was in 1992, so a huge gap in good information exists.

Individual offshore shrimp fishermen will be randomly selected to interview. For the information to be valid, it is important for each selected fishermen to participate. Selected fishermen will get a letter and then a telephone call from the person who will conduct the interview.

DERELICT CRAB TRAP CLEAN-UP REPORT

The Pilot Derelict Crab Trap Removal Program in Louisiana can only be called a strong success, with 6,115 derelict traps removed. The area targeted was in upper Terrebonne/Lafourche Parishes. The results are shown below.



First Volunteer Day (Feb 28)

- Pointe aux Chenes: 22 boats with 47 volunteers 2112 traps
- Cozy Campers: 14 boats with 35 volunteers 665 traps
- Seabreeze: 9 boats with 25 volunteers 478 traps
- Josh's: 8 boats with 16 volunteers 155 traps
- Total: 53 boats with 123 volunteers 3410 traps

<u>Feb 29 – Mar 5</u>

- Pointe aux Chenes: 863 traps
- Cozy Campers: 40 traps
- Seabreeze: 0 traps
- Josh's: 90 traps
- Total: 993 traps

Second Volunteer Day (Mar 6)

- Pointe aux Chenes: 13 boats with 27 volunteers 740 traps
- Cozy Campers: 7 boats with 23 volunteers 215 traps
- Seabreeze: 7 boats with 17 volunteers 557 traps
- Josh's: 5 boats with 8 volunteers 200 traps
- Total: 32 boats with 198 volunteers 1712 traps

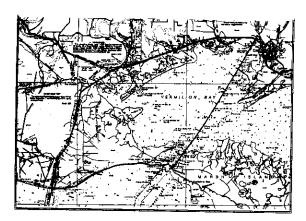
Cumulative Total

- Pointe aux Chenes: 3715 traps
- Cozy Campers: 920 traps
- Seabreeze: 1035 traps
- Josh's: 445 traps
- Total: 6115 traps

While many organizations and agencies participated in planning and executing the effort, including the LSU AgCenter's Sea Grant Program, most of the credit should go to the Louisiana Crab Task Force and the Louisiana Department of Wildlife and Fisheries (LDWF). The project would never have gotten off the ground without the Crab Task Force, which is made up of representatives of the commercial blue crab fishery and chaired by crabber Mike Comardelle. The first volunteer was a commercial crabber (not a member of the task force). LDWF made a major commitment of personnel and resources, led by biologist Vince Guillory. The entire effort showed cooperation between recreational and commercial fishermen.

DERELICT CRAB TRAP CLEAN-UP—PHASE II

Building on the success of the first part of the Pilot Derelict Crab Trap Program, the second phase will take place in May in the waters of Vermilion Bay. The clean-up in Terrebonne and Lafourche Parishes, termed a "shallow-water" clean-up, focused on traps that could be seen or at least had floats on them



The Vermilion Bay clean-up is a "deep water" effort focusing on crab traps, most often without floats, that are lost or abandoned in deeper waters. Shrimpers will play a very important role in retrieving these derelict traps with their trawls. The inshore shrimp season will be set by the Louisiana Wildlife and Fisheries Commission on May 6, 2004. If a five-day minimum notice can be given to crab trap fishermen, the trap closure will be for a 14day period beginning at 6:00 a.m. five days prior to the opening of the 2004 spring inshore shrimp season in Vermilion Bay and ending at

6:00 a.m. nine days following the opening of the shrimp season. In the event that a fiveday minimum notice cannot be provided, then the trap closure will be for a nine-day period beginning at 6:00 a.m. on the opening day of the 2004 spring inshore shrimp season in Vermilion Bay and ending at 6:00 a.m. nine days following the opening of the shrimp season.

The boundaries of the closure area are as follows:

- From a point originating at the intersection of the Acadiana Navigational Channel and the Gulf Intracoastal Waterway
- Thence southwest along the Acadiana Navigational Channel red buoy into the red navigational marker number 12 on the Marsh Island shoreline near Southwest Pass,
- Thence south along the eastern shore of Southwest Pass to a position which intersects the inside/outside shrimp line as defined in R.S. 56:495,
- Thence west along the inside/outside shrimp line to the western shore of Freshwater Bayou,

- Thence north along the western shore of Freshwater Bayou to its intersection with the Gulf Intracoastal Waterway,
- Thence east along the northern shore of the Gulf Intracoastal Waterway to the intersection of the Gulf Intracoastal Waterway and the eastern shore of the Acadiana Navigational Channel.

Any crab traps within the closed area during the closure will be considered abandoned. These traps may be disposed of at two sites and may not be possessed outside the closure area.

- Barge at State Wildlife Refuge (on the western shore of Vermilion Bay near Redfish Point)
- Intracoastal City Public Boat Launch (near the end of LA Hwy 333 at the old Maxie Pierce landing)

The current law does allow shrimpers outside of the closed area to dispose of <u>unserviceable</u> crab traps. <u>Serviceable</u> crab traps are defined as any crab trap of legal construction and capable of harvesting blue crabs. Serviceable crab traps caught incidentally in shrimp gear must be returned to the water with a "common float" (one-gallon or larger bleach bottle) attached. Unserviceable traps caught by shrimp fishermen in or out of the crab trap closure area may also be disposed of at these tentative disposal sites:

- Quintana Canal Public Boat Launch (approximately 2.5 miles before the end of LA Hwy 319 at Cypremort Point)
- Delcambre Public Boat Launch (on the Delcambre Canal south of LA Hwy 14 in Delcambre).

Volunteers with boats are needed to participate in this clean-up. To volunteer or for more information, contact Paul Cook of the Louisiana Department of Wildlife and Fisheries at 337/373-0032 or <u>Cook_ep@wlf.state.la.us</u>. This project, like the first one, is a result of a Louisiana Crab Task Force effort.

"FREEDOM TO FISH" LEGISLATION INTRODUCED AGAIN

U.S. Senators John Breaux of Louisiana and Kay Bailey Hutchinson of Texas have again introduced into the 108th Congress what has been called the "Freedom to Fish Act." The bill (S. 2244) would establish criteria for the use of marine protected areas (MPAs), also called marine reserves and no-fishing zones. The legislation is similar to what was introduced last year.

The use of MPAs, both to manage fishes and to preserve pieces of ecosystems, like national parks do on land, has received support from many scientists and very strong support from environmental organizations. The ultimate goal is to set aside 20% of all habitat types from any exploitation, including fishing.

The creation of MPAs off of the Florida Gulf Coast and in the California Channel Islands since 2000 has made recreational fishing interests see red. The Freedom to Fish Act was drafted in cooperation with the Coastal Conservation Association (CCA) and the American Sportsfishing Association (ASA). Supporting it are the Recreational Fishing Alliance, the National Marine Manufacturers Association, the International Game Fish Association, and the Jersey Coast Fishermens Association.

The bill claims that sportsfishing infuses \$116 billion into the U.S. economy annually and that one percent of all civilian jobs in the U.S. rely on recreational fishing. It would set policy that federal regulations should promote access to fishing areas by recreational fishermen and that recreational fishermen must be actively involved in setting any regulations that may restrict access to fishing areas. It would require that limitations on access by recreational fishermen cannot be put in place unless they are scientifically necessary.

The bill would also amend the Magnusun-Stevens Fishery Act to provide that areas where recreational fishing is prohibited shall not be created unless clear indications exist that recreational fishing is the cause of the specific problem and that no other conservation measures such as recreational gear restrictions, quotas, or closed seasons will be effective. The bill goes on to require that if MPAs are created, that they must be reassessed at least every 3 years to see if they are needed and if not, the areas should be reopened to fishing.

Frederic L. Miller, Chairman of CCA's Governmental Relations Committee says "This legislation does not prohibit the use of marine protected areas, but rather lays the ground rules for their use without arbitrarily and unnecessarily excluding the public. MPAs are a management tool in the box available to fishery managers. They are not a tool to circumvent the entire fishery management process."

"Over the last several years, many different groups, including the sportsfishing community, have been pushing for stronger ocean conservation policies," said ASA President Mike Nussman. "But better conservation does not need to come at the expense of sportsfishing."

A House of Representatives companion bill, H.R. 2890, has been introduced by Jim Saxton of New Jersey.

2004 FEDERAL PERMITS AVAILABLE

Three special federal permits are required of certain fishermen. An Atlantic Tunas Permit is required to commercially fish for tunas (except for blackfin); recreational fishermen are required to have an Atlantic Highly Migratory Species (HMS) Angling Permit for Atlantic tunas, sharks, swordfish, or billfish; and charter boat operators need an HMS Charter/Headboat Permit to charter for tunas, sharks, swordfish, or billfish.

The permits issued for 2004 fishing year will be valid from the date of issuance through May 31, 2005. The permit fee is \$22.00, payable by credit card (Visa, Master Card, Discover, or American Express) or money order only.

Renew by:	How:	Receive permit by:		
Internet	Go to www.nmfspermits.com	Print your permit off the website,		
		fax, priority mail, or regular mail		
Telephone	Dial (888) 872-8862 (toll-free)	fax, priority mail, or regular mail		
Mail	Request renewal package by calling (888) 872-8862 <u>or</u> print the forms available at www.nmfspermits.com	fax, priority mail, or regular mail		

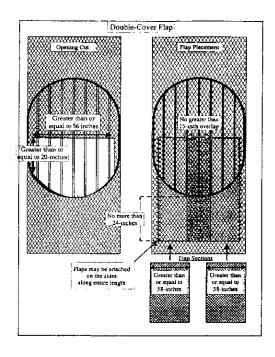
You will need your Atlantic tunas or your Atlantic HMS permit number to renew your permit for the upcoming season. You may check your current permit information prior to renewing your permit via the automated permit system (phone or website, as indicated above). Changes in the permit category must be made prior to the start of the fishing year or when you renew the permit for that fishing year. But, permit applicants are allowed to correct any potential errors in their permits within 100 calendar days of the date of issuance of their permits.

If you have questions regarding the permit process, National Marine Fisheries Service Customer Service Representatives are available at (888) 872-8862, Monday through Friday, from 8 a.m. to 5 p.m. eastern time.

FEDS PROPOSING T.E.D. RULE CHANGE

The National Marine Fisheries Service is proposing a rule change that would allow shrimpers to use a flap that can be as long as 24 inches past the back edge of the TED frame.

The exact wording of the proposed change is, "Specifically, the proposed rule would allow a single-grid hard TED with the escape opening cut of at least 56 inches wide, and 20 inches forward and aft, covered with a split flap composed of two equal size rectangular panels. Each panel must be no less than 58 inches wide and may overlap each other no more than 15 inches. The panels may only be sewn together along the leading edge of the cut. The edge of the panels may extend no more than 24 inches past the posterior edge of grid, and may be sewn down the entire length of the outside edge of each flap panel. To better preserve the shape of the webbing panels over time, edge lines can



be used around the edges of the unattached portion of the flap panels to help maintain the shape of the flap. Edge lines can only be used if the flap panels are sewn down the entire length of the outside edge of each flap panel."

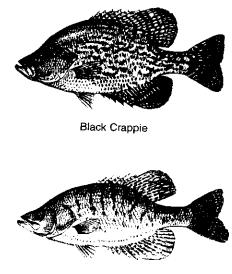
The reference to the edge lines, "Optional edge lines can be used in conjunction with this flap. The line must be made of polyethylene with a maximum diameter of $\frac{3}{8}$

inches. A single length of line must be used for each flap panel. The line must be sewn evenly to the unattached, inside edges and trailing edges, of each flap panel. When edge lines are installed, the outside edge of each flap panel must be attached along the entire length of the flap panel."

MANAGING CRAPPIE HIGHS AND LOWS

Crappie are very important game fish in the United States. The two species, black and white combined, ranked as the fourth most popular freshwater fish in the country. Crappie are wellknown to have "boom-and-bust" population cycles in lakes and reservoirs. Research indicates that crappie will produce a highly successful spawn (year class) once every 3 to 5 years. The year classes in between are weak and contribute few fish to the harvestable population. Many things seem to influence year class size, most of them beyond to ability of biologists to influence.

In some lakes, biologists have attempted to even out the effects of these population swings by putting regulations in place to stretch out the harvest of crappie from the big year classes. One such lake was Kentucky Lake, a 160 thousand-acre reservoir on the Kentucky/Tennessee border.



White Crappie

Before 1988, crappie were managed in the lake with a 60-fish limit and no size restrictions. In 1988, the daily limit for crappie was reduced to 30 statewide, and in 1991, a 10-inch minimum size was put in place for the lake. It was determined that Kentucky Lake crappie reached 10 inches long by the end of their third growing season. The average size for crappie harvested in previous years was 10.6 inches long.

Crappie populations in the lake were monitored before and after the minimum size regulations were put into effect. Kentucky Department of Fish and Wildlife Resources biologists used trap nets from 1985 to 2000 to sample the population. In 1998, a total of 998 crappie were tagged with \$5 reward tags and released. Finally, anglers were interviewed by biologists in 1984-87, 1991, and 1998.

The biologists found that even though strong year classes cycled through the population from 1993 through 2000, the number of 10-inch and larger fish collected in the trap nets stayed fairly high and didn't cycle as much. Survival of crappie from age 1 to age 2 and from age 3 to age 4 increased significantly. Survival from age 2 to age 3 increased, but by a lesser amount. After the minimum size limit was put in place, the crappie population contained a higher percentage of older fish.

Growth rates for both species sampled with trap nets showed a sight decline after the 10-inch size was put in place. The regulation changes did not affect the swings in year class success, which are most probably related to environmental conditions. However, in Kentucky Lake the minimum length limit did increase the number of adult crappie in the population and did smooth out the harvest differences due to year class success. Minimum size regulations may not work for crappie in many other areas. This is especially the case for crappie populations with slow growth rates or high death rates.

Source: Response of the Crappie Population to Regulatory Changes in Kentucky Lake, Kentucky: A Case History. Paul W. Rister. Proceedings of the Fiftyfifth Annual Conference, Southeastern Association of Fish and Wildlife Agencies. 2001.

FLORIDA PROPOSES BIG CHANGES IN CRAB MANAGEMENT

If anything like the proposals that were heard at recent public hearings in Florida go into effect, blue crab management there will make a dramatic change. In 1998, the Florida Legislature, concerned about rapid growth and other problems in the blue crab fishery, established a moratorium on the issuance of new blue crab endorsements (licenses). After the moratorium expired in 2000, the Florida Fish and Wildlife Conservation Commission (FWC) extended it until July 1, 2005. Problems in the fishery included the seasonal crowding of traps in confined water bodies, lost traps and bycatch, so many fishermen and traps that fishermen were forced into part-time participation, licenses that were being issued but not being used, conflict between local and outside crabbers, conflict between soft crab and hard crab producers, and regional concerns about declining crab abundance.

In April 2002, FWC contracted the University of Florida Sea Grant College Program to conduct a series of workshops to get fishermen's comments regarding the important needs of the fishery The final report, received on March 25, 2003, provided information about blue crab regulations in ten other Southeastern states and summaries of the 16 workshops held in Florida between July 2002 and January 2003.

In summer 2003, FWC put together an ad hoc Blue Crab Advisory Board consisting of 15 crab harvesters and wholesale dealers and one voting member of FWC. The 15 crab industry members were chosen from 43 applications that came in as a result of letters sent to all license holders. With help from FWC staff and the Florida State University Conflict Resolution Consortium, the Board's job was to develop a fishery strategic plan which would manage fishing effort. Over the course of 4 meetings (three of which lasted 2 days), the Blue Crab Advisory Board came up with two plans.

The **preferred** plan would divide the fishery into two parts, hard crab and soft crab. It would cap the number of permitted hard crab fishermen to those who qualified by landing at least 500 pounds of hard crabs in any one year of last 3 license years. Soft crabbers would qualify by landing at least 750 crabs in any one year during the 3 years. The license fee for hard crabs would be \$125, and for soft crabs it would be \$250. Each license includes \$25 to use for derelict crab trap clean-up. Hard crabbers would be limited to 600 traps and soft crabbers to 400, with each getting an extra 50

traps for rotation. Each trap would have to be tagged. After the moratorium ends, the licenses would be transferable. In order to get into either fishery, a person would have to buy a license and trap tags from someone leaving the fishery.

The **alternative** plan would create a trap certificate program. Both hard and soft crab fishermen would have to qualify under the same rules as in the preferred plan. License fees and limits would also be the same. All traps would have individual tags/certificates. The number of fishermen under this plan would not be capped, but the overall number of trap tags/certificates would be capped at those numbers that exist after first qualification. After the moratorium ends, commercial fishermen could buy certificates freely from those who wish to sell them, and fish the traps for one year to qualify. In each sale outside of those made to immediate family members, 10% of the certificates sold would be retired.

Several recommendations apply to both plans, including:

- 1) A first year trap tag fee of \$1.00 per trap, and \$.50 per tag every year after.
- 2) Establishing an apprenticeship program for persons wanting to enter the blue crab fishery. Such a person would have to work on an existing blue crab vessel for two weeks to gualify them to buy into the fishery.
- 3) Federal offshore waters would be a crab sanctuary.
- 4) Short regional rotating closures would be made for trap clean-up projects.
- 5) A 150-peeler bycatch in hard crab traps would be a allowed and no soft shell license would be required for shedding operations with 1-3 tanks.
- 6) A permanent Blue Crab Advisory Board would be established.

These recommendations are a first draft and likely will change, at least partly, as a result of public input at workshops held in April, further analysis of trip ticket data and FWC input.

RED SNAPPER FISHING QUOTA PROGRAM APPROVED

Eligible commercial fishermen have voted to approve the development of an individual fishing quota (IFQ) system for the management of red snappers in the Gulf of Mexico. The National Marine Fisheries Service mailed out ballots to 157 eligible voters. Of these, 145 were returned and 104 (92%)



voted in approval. The ballots were "weighted" based on historical levels of participation. The 104 ballots provided 8,194,024 "yes" votes (81%) and 1,962,433 "no" votes.

An IFQ system is a form of limited entry in which a total commercial fish quota is divided into individual shares, usually based on historical landings by the fishermen. With their IFQs, fishermen can fish and land their catch at the time of the year that

works out best for them. IFQs are designed to replace the "derby system" produced by the creation of an overall quota for a fishery and allowing anyone with a license to fish. That system forces fishermen to race with other fishermen to catch the fish before the overall quota is met. Because of the mad rush, fishermen must often fish in dangerous weather conditions, the quality of the fish landed may suffer because the emphasis is on catching large quantities of fish quickly, and market prices decline because of gluts of fish in the marketplace.

Based on the results of the vote, the Gulf of Mexico Fishery Management Council has the authority to develop an IFQ plan as an amendment to the Reef Fish Plan. After development, the plan must then again go back before the eligible voters for approval. If it passes this vote, it will be submitted to the Secretary of the U.S. Department of Commerce for review, and approval or disapproval. The secretary is not forced to enact the IFQ plan, even if both votes approved it.

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 two months. The coordinates are list below.

Lat. <u>& Long. Sites</u>		Lat. & Lo	ong. Sites		
29 16.305	90 59.304	TERREBONNE	29.22.513	90 01.286	JEFFERSON
29 24.460	91 30.500	ST MARY	29 22.539	90 43.799	TERREBONNE
29 36.061	89 25.366	ST BERNARD	29 43.301	89 48.001	PLAQUEMINES
29 44.147	89 27.767	ST BERNARD	29 45.273	89 42.611	ST BERNARD
30 01.351	89 31.304	ST BERNARD	20 50.151	89 33.312	ST BERNARD
20 01.964	90 57.605	LAFOURCHE	29 51.456	89 41.055	ST BERNARD
29 10.788	91 04.228	TERREBONNE	29 58.233	89 27.512	ST BERNARD
29 12.314	90 26.971	TERREBONNE	30 09.008	89 56.452	ORLEANS
29 13.147	90 26.479	TERREBONNE	29 25.060	91 35.560	ST MARY
29 18.970	89 50.460	JEFFERSON	29 25.391	90 32.018	TERREBONNE
29 21.135	90 00.425	JEFFERSON	29 25.422	90 33.233	TERREBONNE
29 21.478	90 15.072	LAFOURCHE	29 30.055	90 02.747	JEFFERSON
29 06.895	91 26.861	JEFFERSON	29 31.060	91 38.393	ST MARY
29 08.190	90 07.200	LAFOURCHE	29 36.180	89 33.450	PLAQUEMINES
29 08.903	90 06.214	JEFFERSON	29 37.437	90 06.990	JEFFERSON
29 11.969	90 20.497	LAFOURCHE	29 37.502	91 39.809	IBERIA
29 11.990	90 20.460	LAFOURCHE	29 37.514	90 07.184	JEFFERSON
29 13.180	90 03.100	JEFFERSON	29 39.283	91 47.390	ST MARY
29 14.654	89 42.608	PLAQUEMINES	29 40.030	90 06.790	JEFFERSON
29 15.025	90 35.273	TERREBONNE	29 42.801	89 33.090	ST BERNARD
29 16.590	91 22.760	ST MARY	29 48.559	89 36.007	ST BERNARD
29 17.048	89 53.700	JEFFERSON	29 83.875	89 16.324	ST BERNARD
2 9 17.550	89 50.640	JEFFERSON	30 03.516	89 41.316	ST BERNARD
29 18.710	91 24.418	ST BERNARD	30 04.808	90 04.246	ORLEANS
29 22.016	89 35.984	PLAQUEMINES	29 41.702	90 03.497	JEFFERSON
29 23.251	90 02.430	JEFFERSON			
29 23.559	89 58.149	JEFFERSON	<u>Loran_Sites</u>		
29 24.350	91 48.300	IBERIA		ST TAMMAN	
	28645 46869 JEFFERSON				

THE GUMBO POT

Mama's Crawfish Bisque

Crawfish bisques are a lot of work. That is why my heart fell when Ms. Lucy told me it was a must-try recipe from her cookbook *Classic Cajun Culture & Cooking*. Ms. Lucy's cookbook is now in its eight printing since 1994. I met Lucy Henry Zaunbrecher when she was dishing out wonderful Louisiana seafood gumbo from the Louisiana Seafood Promotion and Marketing Board booth at the Boston Seafood Show. I did end up trying the bisque and it was worth the work, so I want to share it with you. To cut down on the work all at one time, I saved the crawfish heads for stuffing from a boil, cleaned them, and froze them until I was ready to cook the bisque. Be sure to remove the eyes with the rest of the stuff from inside the shell.

- 40 cleaned crawfish shells
 1 lb peeled crawfish meat, chopped
 ½ medium head of garlic, minced
 ½ cup bell pepper, chopped
 ½ cup onion, chopped
 5 slices of bread, ground
 Salt and pepper to taste
- 1 cup flour
- 1 cup cooking oil
- 1 quart water
- 1 lb peeled crawfish meat
- 1/2 cup green onions, chopped
- 1½ tsp Louisiana hot sauce
- 2 cups rice

To prepare stuffing, grind 1 pound of chopped crawfish meat with onions, bell peppers, and garlic. Salt and pepper to taste, add ground bread to crawfish mixture and mix thoroughly until firm in consistency (forms small balls in palm of hand). To stuff the shells, take 1½ teaspoons of stuffing and pack firmly into body shells until all the stuffing has been used. Set aside and allow to set in refrigerator overnight, if possible.

To prepare the gravy, mix oil and flour in a heavy saucepan. Cook over a medium high heat, stirring constantly until dark brown. Add 1 pint water slowly and allow to slow boil for 30 minutes, until pretty thick. You can add more water if necessary to make the gravy lighter, do not exceed one pint.

To prepare the finished product, add the stuffed crawfish bodies to the roux gravy which is slowly boiling. Then add whole crawfish tails. Add the green onion tops and season to taste with salt, pepper, and hot sauce. Allow to cook on a medium heat for thirty minutes. Boil or steam rice while bisque is cooking. Serve in gumbo bowls over rice. Serves 4-5.

Sincerely. Jerald Horst Associate Professor, Fisheries