



Compact News

Volume 20, Number 1

October 2008

Director's Corner

It was long overdue, so here is the new and improved Compact News. We have not published one since at least 2001 or 2002 and with the storms of 2005, just haven't gotten back to it. I think the new format is an improvement over the abbreviated reports we used to provide. As I reflect on the time since the last newsletter, we've gained some new employees, added babies to our families, and lost a few as well. The Commission lost Mike Sestak in January 2006 in a motorcycle accident that took his life. Cindy Yocom has moved on to a totally different career path in business and Ron Lukens, the former Assistant Director retired and moved to Gainesville, Florida. Jason Keenum, our former Staff Accountant, left to go into the private sector as well. We've added Wendy Garner as our new Accountant, Teri Freitas as the IJF Staff Assistant, Bob Harris as the Oracle Manager, and Ralph Hode in the Emergency Disaster Program. We've hired Alex Miller as the Commission's Staff Economist involved with FIN activities. James Ballard was hired as our Sportfish Coordinator and Lloyd Kirk is the new SEAMAP database programmer. You will find a little bio on Alex, James, and Lloyd at the back of this issue.

Enjoy the newsletter and let us know what you think. We are always looking for interesting articles to include and may hit you up for a recipe or two. Welcome back.

Larry B. Simpson
Executive Director

New GSMFC Publications

No. 157 Sept 2008. Licenses and Fees for Alabama, Florida, Louisiana, Mississippi, and Texas in Their Marine Waters for the Year 2007. Teri L. Freitas, editor. Gulf States Marine Fisheries Commission.

No. 156 Aug 2008. SEAMAP Environmental and Biological Atlas of the Gulf of Mexico, 2002. Jeffrey K. Rester, Nathaniel Sanders, Jr., and Butch Pellegrin, editors. Gulf States Marine Fisheries Commission.

No. 155 May 2008. Law Summary 2007. A Summary of Marine Fishing Laws & Regulations for the Gulf States. Teri L. Freitas, editor.

No. 154 March 2008. Guidelines for Developing Derelict Trap Removal Programs in the Gulf of Mexico – 2008 Revision. Derelict Trap Task Force.

All Commission publications are available electronically at www.gsmfc.org or by request as paper copies until supplies run out.

FEDERAL CHANGES TO THE RED SNAPPER REGULATIONS IN THE GULF

Larry Simpson

While red snapper is a federal species not managed at the Commission level, the repercussions of the recent actions by the Gulf of Mexico Fishery Management Council and the Gulf states certainly are of interest to many of us.

On February 28, 2008, new red snapper regulations were implemented to reduce recreational red snapper harvest in the Gulf of Mexico. Recreational management measures approved by the Gulf Council in Amendment 27/14 to the Reef Fish and Shrimp Fishery Management Plans include:

- 2.45 mp recreational quota,
- Two fish bag limit;
- June 1-September 30 recreational fishing season; and,
- Prohibition on captain and crew retaining bag limits of red snapper while under charter.

These regulations are estimated to reduce recreational harvest by 45%.

During development of Amendment 27/14 it was assumed that the Gulf states would comply with the newly proposed recreational regulations. However, recently both the states of Texas and Florida have voted not to adopt recreational state water regulations that are consistent with federal water regulations. Texas state waters will continue to remain open year round and anglers will be allowed a bag limit of 4 fish. In Florida state waters, anglers will be allowed two fish, but the season length will be 78 days longer than the federal fishing season (April 15-October 31). The states of Louisiana, Mississippi and Alabama will pass compatible state regulations with the federal action. Few red snapper are caught in the state waters off Louisiana, Mississippi, and Alabama, because these states only have jurisdiction out to 3 nautical miles.

Given the inconsistencies in state and federal regulations, NMFS estimates that landings are likely to exceed the 2008 recreational quota, if an adjustment to the federal waters red snapper recreational fishing season length is not made.

Based on the results of the NMFS analysis, the maximum length of the federal waters recreational

red snapper fishing season in 2008 is estimated to be 85 days. This would allow a June 1 to August 24 fishing season in federal waters. However, without compatible state actions, the season would have to be shortened by 37 days (30%) to constrain the total Gulf landings to the 2.45 million pound quota. Shortening the federal season to 65 days (June 1 through August 4) would achieve a 25% probability that landings would equal or exceed the recreational quota and shortening to 51 days (June 1 through July 21) would result in a 5 percent probability that landings would equal or exceed the recreational red snapper quota. Because their analysis does not account for effort shifting to state waters and non-compliance with regulations in all the states, the length of the allowable federal water fishing season is likely overestimated. Shorter federal seasons will increase the probability that landings do not exceed the 2.45 million pound recreational quota.

For more information on the status of the red snapper population and fishing effort and any changes to the regulations, please check out the Gulf Council's website at www.gulfcouncil.org.



NEW INITIATIVES TO COLLECT RECREATIONAL FISHERIES DATA BEING IMPLEMENTED

Dave Donaldson

The Marine Recreational Information Program (MRIP), which is a joint state-federal-community initiative, is now underway to better answer the questions of who's fishing and how often, where and when anglers fish, and what they catch. New regulatory mandates have led to increasingly greater demands for more timely and accurate information on recreational fishing. A team of scientists, managers, and fishermen are working on new ways to get data collection in better sync with today's management needs. This program was established in response to the National Research Council (NRC) report "Review of Marine Recreational Fishing Survey Methods". The report recommended that the current surveys should be redesigned to improve the effectiveness, appropriateness of sampling procedures, applicability to various kinds of management decisions and usefulness for social and economic analyses. As a result of those recommendations and guided by the MRIP, NOAA Fisheries

provided \$2.5 million in new funding to support sixteen (16) projects that will enhance the nationwide saltwater recreational fishing data collection efforts. Two of these projects will be administered by the Gulf States Marine Fisheries Commission: *Florida Private Angler Telephone Survey* and *Electronic Reporting of Puerto Rico's For-Hire Catch and Effort Data Pilot Program*.



The Florida Private Angler Telephone Survey will utilize a targeted telephone survey of highly migratory species (HMS) private angler permit holders, to estimate and characterize the state's total private boat-directed fishery for highly migratory species. The data collected through this project will assist fishery managers in understanding the magnitude and characteristics of this fishery and will be used to develop HMS survey for the entire Gulf of Mexico.

The Electronic Reporting of Puerto Rico's For-Hire Catch and Effort Data Pilot Program will develop and test an electronic data collection program for the for-hire industry in Puerto Rico. The current system for collecting for-hire effort data utilizes a random-digit dialing telephone survey of Puerto Rican residents. This method is not very effective since a large portion of for-hire fishing trips are taken by non-residents. The success of this project will be evaluated for possible use in other regions. If you have questions about this program, please contact Dave Donaldson at the GSMFC office.

SEAMAP CHANGES FOR 2008

Jeff Rester

In Fiscal Year 2008, SEAMAP received its first significant increase in base funding during its 26 year history. Historically SEAMAP has been funded at approximately \$1.3 million each year. This amount is split between the Gulf of Mexico, South Atlantic and Caribbean SEAMAP components. In 2008, the SEAMAP appropriation was \$4.38 million. With the increased funding, several new surveys are planned for the Gulf of Mexico. A Winter Plankton Survey will assess the occurrence, abundance and geographical distribution of the early life stages of winter spawning fishes from mid continental shelf to deep Gulf waters. An Inshore Shark Survey will collect information on coastal shark abundance and distribution with longline gear off Louisiana, Mississippi, and Texas. A trawl survey will be conducted off of the west coast of Florida, and the Shrimp/Groundfish Survey will be conducted during winter. Also with increased funding, the Commission will be assuming SEAMAP data management responsibilities for the Gulf of Mexico.

BONNET CARRÉ SPILLWAY

Ralph Hode

Reuters News Service has abounded with reports concerning flooding in Illinois, Iowa and other states in America’s heartland, since the rains began this past spring. It has been reported that some midwestern cities and towns along the Mississippi River have seen their worst flooding in fifteen years and a few have seen century level floods.

The effects of such flooding are often seen all the way to New Orleans and the lower Louisiana Parishes; under normal circumstances cities and communities along the river are protected from seasonal rises in the river level by levees. However, when excessive rains occur, alternative relief in the form of diversion structures and relief valves, or spillways, must be placed in operation to protect against damage to the many miles of protection levees along the river and to prevent subsequent flooding.

The Bonnet Carré Spillway was completed in 1931, under the direction of the U.S. Corps of Engineers, it is located on the east side of the river, approximately 30 miles above New Orleans and serves to reduce pressure on existing levees, lowering the river stage and decreasing flow velocities to New Orleans and surrounding communities. The structure is a weir; nearly 7,000 feet long, and parallels the east bank of the River. The spillway contains 350 concrete bays which can be opened, when needed, to allow excess river waters to discharge into the western end of Lake Pontchartrain, through the Rigolets Pass and ultimately into the Gulf of Mexico. When fully operational, the spillway is capable of diverting approximately 14% of the river flow at flood stage, or as much as 250,000 cfs around the City of New Orleans.

The Bonnet Carré structure was state of the art in 1931 and is relatively simple in its design and operation. The spillways 350 bays are closed with the use of ‘pins’ which can be lifted to allow water flow and lowered to restrict flow when flooding is no longer occurring. The ‘pins’ are essentially a series of 20 creosote soaked 6x6 timbers in each bay, which can be lifted using the two cranes which move along tracks set on the top of the 7,000 foot long structure. The ‘pins’ are raised from their vertical position across the weir opening (where together they serve as a dam against the high water) when the upstream levels require action. A complete opening of all 350 bays takes about 36 hours to lift the 7,000 wooden timbers in the structure.

Operations of the spillway are overseen by the Mississippi River Commission President, Brigadier General Michael J. Walsh, Commander of the Corps of Engineers’ Mississippi

Reality Check

Fuel prices commercial fishing boats were paying in March of each year, and vessel prices for shrimp.

March	Fuel	Pinks	Browns	Whites
2000	.90	5.10	5.00	5.10
2001	.97	5.25	4.40	4.90
2002	.92	4.25	3.65	3.95
2003	1.27	3.65	3.00	3.30
2004	1.18	3.65	3.00	3.00
	+31.1 %	-28.4 %	-40.0 %	-41.1 %
2005	1.72	3.25	2.85	2.80
2006	2.05	3.15	2.80	2.80
2007	2.09	3.15	2.30	2.45
2008	3.25	3.35	2.50	2.70
	+361 %	-34 %	-50 %	-47 %

From base year 2000

* Source: National Marine Fisheries Service data



Valley Division in Vicksburg, Mississippi, who has authority to open the spillway when river flows threaten to exceed 1.25 million cubic feet per second, or an elevation of 15.35 feet at New Orleans. The Spillway Operations manual allows for opening of up to 174 bays as the river reaches this level; and the remaining 176 bays may be opened if the river stage reaches 17.22 feet.

The Bonnet Carré Spillway has been opened only 9 times since its original construction. These include openings in 1937, 1945, 1950, 1973, 1975, 1979, 1983, 1997, and most recently in 2008. However, not all openings have been complete, as evidenced in the 2008 opening, during which only 160 bays were opened. Even then, during the total 28 day period, from April 11 to May 9, the 160 bays were only opened for 11 days. The number of bays open during remaining 17 days averaged 98.37. By comparison, the average length of opening for the previous 8 openings is 42.75 days; and, the average maximum number of bays opened during those periods was 319.75 bays.

The primary effect of the opening in 2008 was a successful reduction in rivers flood stage. The river never did crest over the 17.22 foot level to require further opening. Short-term effects include the release of

high concentrations of nutrients, which come downstream in the spring floods from fertilizers used on farmlands in the Midwest. The higher than normal nutrient loads can cause algae blooms in Lake Pontchartrain and occasional small-scale hypoxic events. While these anoxic bottom conditions can be deleterious to benthic organisms and shrimp, most of the organisms are flushed out of the system by the increased flow. In addition, heavy metals and other toxins locked in the sediment under normal flow conditions can be released downstream. The extent of the water-borne sediments and the movement of freshwater resulting from an opening can be easily seen from the air and in satellite imagery.

The long-range effects of the spillway opening, however, are extremely favorable, because it simulates the natural flooding cycle of the river and provides a replenishment of valuable nutrients to the ecosystem. Spillway openings are strongly associated with increased oyster, crab and other fisheries production in lakes Pontchartrain and Borgne for several years after flood events. Oyster fishermen have reported, on a number of occasions, that when the spillway brought freshwater into Lake Pontchartrain, the salinity reduction had two benefits; increased oyster production in estuarine areas outside the inlet, and a reduction in parasitic oyster drills.



NOAA'S 2008 SUSTAINABLE FISHERIES LEADERSHIP AWARDS

Steve VanderKooy

In 2005, the Under Secretary of Commerce for Oceans and Atmosphere and the Assistant Administrator for Fisheries established the Sustainable Fisheries Leadership Awards to recognize outstanding performance, achievements and leadership to science and management for the sustained use of the nation's living marine resources. Six award categories were developed that recognized industry, individuals, and partnerships for promoting a public stewardship and assisting NOAA with fulfilling its stewardship mission. Winners for this year were announced in April 2007 and an awards ceremony was held in Washington, D.C. in June.



The Commission nominated the Kemp's Ridley Sea Turtle Population Restoration Program for the *Conservation Partnership Award*. The nomination included the USFWS, NMFS, Gladys Porter Zoo, Texas Parks and Wildlife, National Fishing Institute, and the Texas Shrimp Association. Patrick Burchfield accepted the award on behalf of the whole group at the ceremony on June 2.

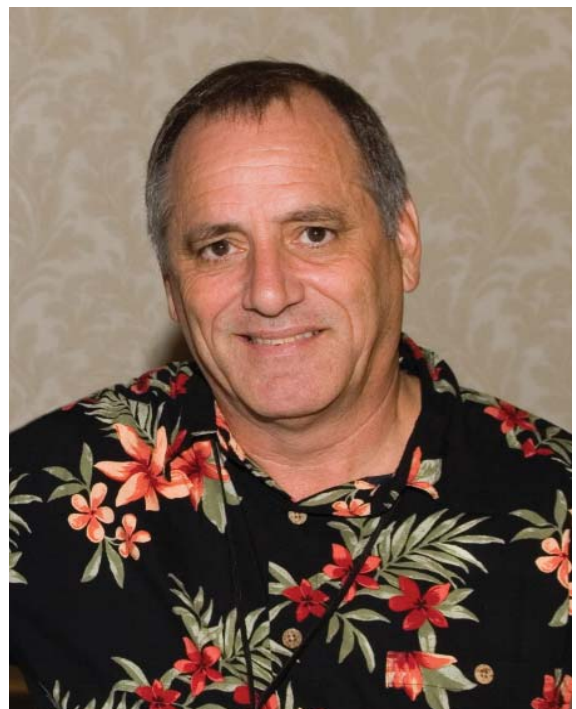
The Kemp's Ridley Program formally began in 1978 when 924 nests were identified and protected on the beaches around Rancho Nuevo, Tamaulipas, Mexico and in 2007, approximately 15,000 nests were protected. Animals that were released back into the Gulf in previous years are now returning to their natal beaches to nest themselves. Those



involved in the program have spent considerable effort and materials and provided numerous people to work with Mexican scientists associated with the bi-national program. Through a few individuals' dedication and efforts, Burchfield and his partners have led the way in protecting and recovering the Kemp's Ridley Sea Turtle in the Gulf of Mexico.

In addition to the Commission's nomination, another beloved family member of the Commission was awarded posthumously. Ralph Rayburn received the *Special Recognition Award* based on his long history of working with the industry and fisheries managers towards sustainability in the Gulf of Mexico.

Ralph had the unique experience of representing and working with the shrimp industry, then state and federal resource management agencies (via Texas Parks and Wildlife Department and as the Texas representative on the Gulf of Mexico Fisheries Management Council), and finally university research and extension. This gave him an enviable and highly diverse background. He used wisdom accumulated from all of these experiences and opportunities to mentor many people and add to their palettes of professional skills. Many of these are the very people who



today make important decisions regarding management of marine resources.

Certainly Ralph's efforts in the sea turtle conservation arena had a significant impact. Ralph used diplomacy and marshaled the resources from other supporting organizations (NMFS, Sea Grant, Gulf and South Atlantic Fisheries Foundation, etc.) to work cooperatively with fishermen to solve this conservation issue. Though initial solutions took time, the results were positive. As a result, responsible sea turtle conservation has been realized not only in the Western Gulf, but throughout the entire Southeast Region.

NORTH-CENTRAL GULF STATES PLACE HIGH PRIORITY ON OYSTER REEF RESTORATION

Ralph Hode

Federal grants approved in September 2006, for fishery resource recovery following hurricanes Katrina, Rita and Wilma in 2005 required that a minimum of \$38M to be spent on oyster resource recovery and rehabilitation in the Gulf of Mexico. In keeping with this, the Gulf States obligated nearly \$50M of the \$127M grant towards these efforts with the bulk of the obligations coming from Mississippi, Alabama, and Louisiana where the vast majority of oyster resource damage occurred.

Twenty months into the 60 month grant period the Gulf States Marine Fisheries Commission, which is the Fisheries Disaster Recovery coordinating agency along with the National Marine Fisheries Services, had distributed nearly \$17.5M to the Gulf States for oyster rehabilitation work under the grant. In Louisiana nearly 400 acres of state water bottoms have received new cultch to enhance public reef areas; but the majority of the state's nearly \$9M effort thus far was seen in its Private Oyster Lease Rehabilitation (POLR) program. The POLR program provides incentives to lease holders for the restoration of private reefs in the state's estimated 400 square miles of oyster habitat. According to the state's first quarter report for 2008, "...POLR participating leaseholders have rehabilitated 13 leases totaling 2,755 acres by relaying oysters from "closed" areas to the leases." The report further indicated that nearly 65,000 sacks of seed oysters were relocated in order to promote spat set, as a result of this effort.



In Mississippi, where initial reports indicated that Hurricane Katrina destroyed nearly 95% of the state's oyster reefs, similar efforts were seen. Approximately \$7M has been reimbursed to the state to date for rehabilitation and enhancement of approximately 1,200 acres of public oyster grounds. Almost half of these expenditures were in the form of incentives to local licensed fishermen who participated in oyster relay efforts. As a result, nearly 143,000 sacks of oysters were removed from closed areas and re-distributed in time for spring and fall spat sets in the re-furbished public oyster grounds of the state.

Additionally, both Mississippi and Louisiana utilized portions of the grant funds to update maps and ownership records regarding the location of active oyster reefs, both public and private.

In Alabama, the State Department of Conservation and Natural Resources began its oyster restoration effort with the distribution of some 7,300 cubic yards of cultch materials. It too utilized local oystermen to place the cultch in shallow water areas that are inaccessible by barge or larger dredge boats. Additionally, an estimated 21,000 sacks of oversized rocks were removed from portions of the state's public areas that were non-productive because oysters growing on the oversized rock were difficult to harvest. The state works closely with the Alabama



Oystermen's Association to facilitate this effort as it not only provides assistance to impacted fishermen but also promotes stakeholder involvement.

The Florida Department of Agriculture and Consumer Services, Division of Aquaculture, is also utilizing organized oyster fishing associations to facilitate its restoration effort, primarily in the Franklin County and Apalachicola Bay areas. To date, nearly 4,000 cubic yards of limestone and fossilized oyster shell have been placed in shallow water bays and estuaries by local fishermen to restore reefs damaged by the storms of 2005. Additionally, the Department has taken bids for the purchase of a deck barge that will be utilized in the distribution of additional cultch materials in deeper waters and to transport cultch materials to more accessible locations for further distribution in shallow water bays.

While the Texas Parks and Wildlife Department, Coastal Fisheries Division has yet to begin actual restoration of reefs impacted by Hurricanes Katrina and Rita, it has acquired equipment necessary to complete its assessment and is currently conducting water bottom studies necessary to determine the best locations to begin reef enhancement and restoration.

The challenge of restoring the Gulf oyster industry to its pre-storm level has not been an easy one. Issues such as finding suitable cultch materials, as well as equipment and contractors to deliver and distribute them, were paramount early in the process. Those contractors who had equipment after the storms were already committed in the repair and reconstruction of bridges over Pensacola Bay, Biloxi Bay and the Bay of St Louis. Additionally, administrative processes requiring advertisement and taking of bids for manpower, equipment and materials caused some states to not begin actual restoration and enhancement until the spring of 2007.

Still, the states are to be commended as an estimated 35% of planned restoration and enhancement work on Gulf oyster grounds has already been accomplished. Now that many of the challenges that stalled work start up early in the program have been met, significant additional work in the form of new cultch plants, oyster relays, cultivation and re-seeding of existing reefs, and possible enhancement of newly defined oyster habitat, is expected to follow over the next 18-24 months.

AQUATIC INVASIVE SPECIES

James Ballard

The GSMFC provides coordination and administration of the Gulf and South Atlantic Regional Panel on Aquatic Invasive Species (GSARP), under the National Aquatic Nuisance Species Task Force (ANSTF), in accordance with the Non-Indigenous Aquatic Nuisance Protection and Control Act of 1990.

One of the most economically and environmentally impacting groups of invasive species to date are the aquatic plants. In the Gulf and South Atlantic region there are several species of invasive aquatic plants that are causing problems; two of the most intrusive of these species are *Arundo donax* (giant reed, carrizo cane) and *Salvinia molesta* (giant salvinia).

Arundo donax is a clonal plant that was introduced to the U.S., most likely in the early 1800's. In the subsequent years, it became established in all of the subtropical and warm temperate regions of the world, primarily by intentional human introduction. Once established *A. donax* can spread by fragments of root or stem floating to new locations miles down stream, rooting and giving rise to a new infestation.

Along the main rivers and tributaries in the Rio Grande basin in Texas alone, 70,000 - 100,000 acres of land are infested. This is causing a reduction in native vegetation, damage to roads and bridges, decreased visibility for boarder patrol agents, and an estimated \$10 - \$70 M in water value loss.



To combat this growing problem, states are investigating the effectiveness of an array of control measures including chemical, mechanical and biological.

Salvinia molesta is an aquatic fern native to southern Brazil. It is a free-floating, rootless plant that forms dense mats and has an incredible rate of growth, doubling in size in one week, under good growing conditions. These mats



will completely cover a body of freshwater to a depth of 2 feet or more, leading to decreased diversity and abundance of native aquatic plants and animals. This decline can be attributed to a reduced amount of sunlight penetrating the water surface and diminished dissolved oxygen levels. In addition to the environmental impacts, *S. molesta* clogs water intakes, interfering with agricultural irrigation and hydro electric facilities, limits access to water bodies, and affects the value of lake front property.

The first account of *S. molesta* in the U.S., outside of cultivation, was in South Carolina in 1995. Since then, it has been reported in all of the states represented by the GSARP, as well as Arizona, California, Hawaii and Virginia and has been listed as a federal noxious weed.

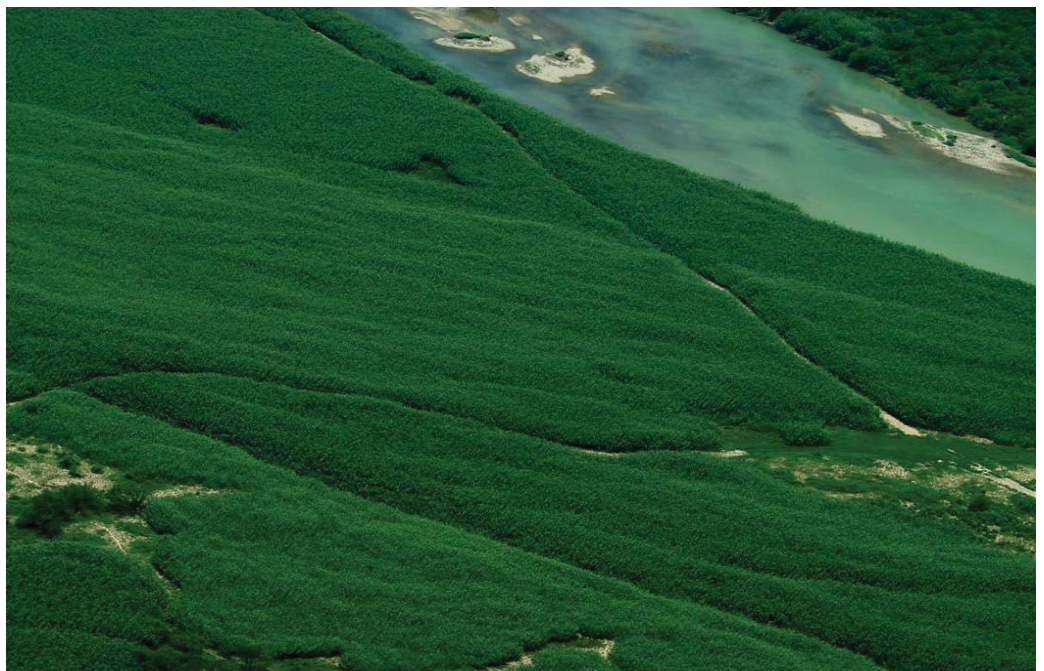
In the Gulf and South Atlantic region Louisiana and Texas are experiencing some of the greatest problems, with more than 35 bodies of water with known *S. molesta* infestations. On a single lake in Louisiana there is more than 4,500 acres of giant *S. molesta* accounting for over one fourth of the total water surface

and in places making the lake resemble a field. Louisiana partially attributes their current increase in *S. molesta* to the lack of cold winters in recent years, which is known to slow the growth of the plant and, in turn, allow the state to get the infestation under control.

To fight this very invasive aquatic plant, an array of control measures has been implemented. If an infestation is caught quickly enough, then mechanical removal is probably the best choice. However, once it has become established, mechanical removal is not feasible and herbicides are used to keep the infestation under control. In large water bodies or in areas with very limited access, like dense stands of cypress trees, it is very hard or impossible to treat all of the affected area with the herbicide. For this reason, there has been extensive research on different biological controls for *S. molesta*. In order to manage large infestations, multiple control methods will have to be used in conjunction with each other.

Although, as is the case with other invasive species, the best control method is preventing the plants from being introduced into new areas. Programs like “Stop Aquatic Hitchhikers” are aimed at educating the public using the natural resources, about how invasive species can impact those resources. These programs also teach the steps that resource users can take to help stop the spread to new areas.

Through continued cooperation between the ANSTF, the six regional panels and the states that make them up, we are learning more about these species, as well as others invasives. This effort is leading to new ways to control and in some instances eradicate certain aquatic nuisance species.



COMMISSION'S AQUACULTURE GRANT

Jeff Rester

In October 2007, work began on an aquaculture grant that the Commission received from NOAA Fisheries. Most of the work is being performed by the University of Southern Mississippi's Gulf Coast Research Laboratory. GCRL will be constructing a copepod culture system that will meet the immediate needs of a nascent red snapper culture system and facilitate the development that will meet the long-term needs of a large-scale production and/or red snapper stock enhancement program. A contractor under GCRL will be developing a planning exercise that will lead to the development of a full scale offshore aquaculture demonstration project in the northern Gulf of Mexico. The Commission will be developing a geographic information system (GIS) model for aquaculture site selection in the Gulf of Mexico.

The aquaculture site selection portion of the project sought to determine suitable areas for finfish culture in offshore waters of the Gulf of Mexico. A literature review was conducted to help determine siting criteria. The most important criteria for site selection were water depth, water currents, water quality, and bottom type. Excluded areas included seagrass areas, coral, hardbottom, marine protected areas, Gulf of Mexico Fishery Management Council designated Habitat Areas of Particular Concern, National Marine Sanctuaries, shipping fairways, vessel lightering zones, dredged material disposal areas, artificial reefs and artificial reef zones, and oil and gas platform safety zones. Other considerations were traditional highly fished areas and areas that frequently experience harmful algal blooms.

This site selection process only considered the use of fish cages in the offshore environment, so the literature suggested that a minimum depth of 25 m was required with a maximum depth of 100 m. In order to avoid the accumulation of wastes, a minimum average current speed of 10 cm/s was needed. Water quality parameters included dissolved oxygen, temperature, and salinity. An area of low bottom dissolved oxygen forms off the coast of Louisiana each year, due to the input of freshwater and nutrients from the Mississippi River. The historical footprint of this hypoxic area was a consideration in the site selection process. Only native species from the Gulf of Mexico have been proposed as culture species, so temperature ranges of 17 to 30 °C were considered along with salinity values between 20 and 36 ppt. Sand, mud, and silt were considered acceptable bottom types for aquaculture.

Buffer zones were placed around all excluded areas. Ecological buffer zones of 5 km were placed around

seagrass areas, coral, hardbottom, marine protected areas, Fishery Management Council designated Habitat Areas of Particular Concern, and National Marine Sanctuaries. Safety buffer zones of 3 km were placed around shipping fairways, vessel lightering zones, and dredged material disposal areas. A 1 km buffer zone was placed around all artificial reefs and artificial reef zones to mitigate potential user conflicts.

First, water depths in the 25 to 100 m depth were selected. Next, surface water current observations from physical oceanography studies in the Gulf of Mexico were compiled into 10x10 minute squares within the 25 to 100 m depth zone. Unfortunately, data coverage did not allow for monthly or seasonal averages to be used. All areas with current speeds less than 10 cm/s were excluded. All of the buffered excluded areas were next excluded. The hypoxic area (less than 2 mg/L of dissolved oxygen) was mapped from 1998 to 2004, and then the footprint of the hypoxic area was excluded. In 2002, the hypoxic zone was its largest ever, at approximately 22,000 square kilometers.

Temperature and salinity measurements did not exclude any areas that were not already excluded for other reasons. Harmful algal bloom cell counts from blooms observed from 1955 through 2008 were mapped, but not excluded from the suitable areas. The data were from recorded blooms only. Therefore, the data may only represent one or two blooms in a particular area over 50 years. Harmful algal blooms are something that aquaculture operations should be aware of when siting a facility, but should not automatically exclude the area from consideration. Starting location for commercial shrimp trawling from electronic logbooks was grouped by 10x10 minute squares, to give an indication of potential areas of high shrimping activity. Currently, areas of high shrimping activity were not excluded from available areas for aquaculture. A program using electronic logbooks to enable accurate measurement of the spatial patterns of fishing effort in the shrimp fishery began in 2004 on 50 vessels of the approximate 1,900 vessels with federal shrimp permits. The program has since expanded to include over 400 vessels in 2007. The 2007 data was the first full year of accurate spatial coverage of the entire Gulf of Mexico, so more years of data should be examined before aquaculture is excluded from areas of high shrimping activity. Average significant deepwater wave height and peak period are approximately 1 m and 5-6 s for the Gulf of Mexico, but were not considered as limiting factors. The entire Gulf of Mexico sees tropical activity on a regular basis and all offshore cages will need to be designed to withstand hurricane force waves. Work on the grant should be completed by October 2008.

Arrivals and Departures

James Ballard, Sportfish Restoration and Aquatic Invasives Coordinator

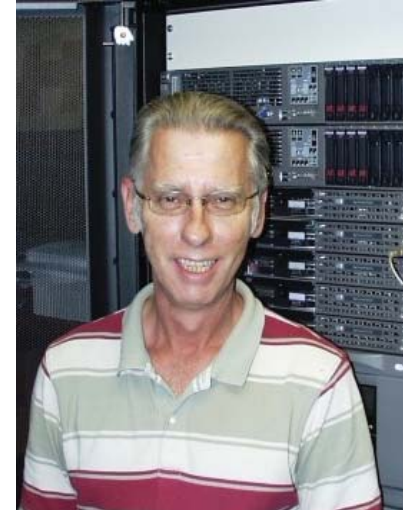
James Ballard, a native of Vermont and avid recreational fishermen, joined the Commission in March as the Sportfish Restoration and Aquatic Invasives Coordinator. James just received his Master's of Science degree from The University of Southern Mississippi at the Gulf Coast Research Laboratory where he was also a technician in the aquaculture division. James has spent many hours catching up on the invasive species and artificial reef issues in the Gulf. He is looking forward to meeting the rest of the Commission at the annual meeting in October and yes, he goes by James. He recently got engaged to long time girlfriend, Sarah Turner, who is employed by Anchor Environmental, Inc. and also just received her Master's from USM in marine biology. They reside in Ocean Springs.



economic surveys and activities that the Commission will be undertaking. Alex resides in Ocean Springs and enjoys sailing and other outdoor activities.

Lloyd Kirk, SEAMAP Database Manager

Lloyd Kirk is the Commission's newest employee and is the manager of the SEAMAP database. Lloyd attended the University of Oklahoma from 1977-1979 and joined the US Air Force in 1980 and retired in 2000. In 2000, he began working for GTE/Verizon in Tampa, as a Production Support Engineer and most recently worked for Global Business Solutions as a Navy Contractor at Saufley Field on the Navy Knowledge Online (NKO) system, as a System Administrator of their Oracle database systems on Redhat Linux and Solaris systems. Lloyd lives in Vancleave, Mississippi with his wife Sandi and three children.



Alex Miller, Staff Economist

Alex Miller is currently finishing up his Master's of Science degree in Applied Economics from Virginia Polytechnic Institute and State University in Blacksburg, Virginia where he was also a graduate research assistant. His work there included examining the economic feasibility of using nutrient assimilation credits from oyster aquaculture as a water quality management option for the Chesapeake Bay. He recently met many of the state representatives at the FIN meeting in June to discuss their roles in the upcoming



In the Kitchen

Crawfish Bisque **Joe and Diane Ferrer**

1 bunch of green onions
stick of butter
8 oz cream cheese
two cans whole kernel corn (with liquid) two
cans cream of potato soup one can cream of
mushroom soup
1 quart of half and half
2 teaspoons cajun seasoning
2 packages frozen crawfish tails (can also use
shrimp or crabmeat)

Saute green onion in butter. Add cream cheese.
Add crawfish and everything else. Simmer.

Upcoming Meetings

Annual Fall Meeting of the GSMFC
October 13-16, 2008
Key Largo, Florida

MRIP Wave Meeting
October 29, 2008
Silver Spring, Maryland

GSMFC & ASMFC Joint Artificial Reef Meeting
November 12-13, 2008
Jacksonville, Florida

Arenarius Technical Task Force
November 17-18, 2008
Ft. Myers, Florida

GSARP on Aquatic Invasive Species
December 9-10, 2008
Savannah, Georgia

You can always find us at
www.gsmfc.org



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