



Hurricanes Gustav and Ike Ravage Louisiana Fisheries

For lots of people in south Louisiana, dealing with hurricanes has been a part of their daily lives in recent years. While people are cleaning up and rebuilding, others are tasked with assessing the extent of the hurricane damages so that restoration can be matched with needs. Unfortunately (and fortunately), resource economists here are becoming experts at rapid damage assessments of natural disasters. Fisheries extension experts affiliated with Louisiana Sea Grant, the LSU AgCenter, the LSU Center for Natural Resource Economics and Policy and Louisiana Department of Wildlife and Fisheries (LDWF) have all found themselves working up damage evaluations for disasters even before they've repaired their own properties.

Hurricane damages are typically assessed in two categories: revenue losses, and infrastructure damages. Revenue losses are the actual lost incomes, while infrastructure losses are the actual damages to equipment and facilities that are necessary to conduct business. While it must be noted that the following data are very preliminary, they were produced from the best possible information compiled through extended efforts. It should also be noted that these estimates are only for direct losses; no "multipliers" have been applied. While it is a fact that every loss extends beyond the direct impact into different aspects of the economy, the extent of that expansion is debatable and unnecessary for this analysis.

Revenue Losses

Fisheries and aquaculture revenue loss projections (Table 1) were developed through the consideration of several factors, including: 1) 2007 commodity values obtained from the LSU AgCenter and NOAA Fisheries; 2) season- and species-specific aspects of production and harvesting; 3) the economic geography of commodity production; 4) post-storm field observations, 5) meteorological data and 6) industry-level revenue changes following Hurricanes Katrina and Rita. It is important to note that the estimates listed below are weighted averages. These state-level losses are an aggregation of the losses estimated for each parish impacted, and take into consideration the contribution of a given parish to state-level production of a given commodity. Thus, individual parishes or producers might have much higher or lower losses. These preliminary estimates will be refined in the coming weeks as additional information becomes available.

Table 1. Estimated Revenue Losses from Hurricanes Gustav and Ike for Louisiana Fisheries and Aquaculture Sectors ^A

Sector	2007 Revenue	Estimated Revenue Loss (Lower bound)	Estimated Revenue Loss (Upper bound)	Average Revenue Loss (\$)	Average Revenue Loss (%)
Farmed Crawfish ^B	\$84,602,973	\$12,883,252	\$25,562,331	\$19,222,791	22.7%
Farmed Catfish	\$16,817,817	\$1,547,710	\$3,095,420	\$2,321,565	13.8%
Farmed Alligators	\$30,138,982	\$7,083,242	\$10,515,993	\$8,799,617	29.2%
Farmed Turtles ^B	\$6,270,000			\$2,134,500	34.0%
Wild Alligators	\$5,823,750	\$1,891,002	\$2,279,591	\$2,085,297	35.8%
Wild Crawfish	\$9,010,878	\$1,124,146	\$2,249,717	\$1,686,932	18.7%
Freshwater Fisheries	\$4,171,146	\$1,480,322	\$2,076,539	\$1,778,431	42.6%
Shrimp	\$146,941,227	\$20,182,144	\$40,924,229	\$30,553,186	20.8%
Crabs	\$31,647,722	\$4,799,068	\$7,391,411	\$6,095,240	19.3%
Oysters	\$30,481,465	\$4,472,665	\$8,116,656	\$6,294,661	20.7%
Marine Fisheries	\$48,052,056	\$8,021,023	\$14,191,671	\$11,106,347	23.1%
Charter Fishing ^C	*	\$6,527,623	\$10,286,781	\$8,407,202	*
Totals	\$413,958,016	\$70,012,197	\$126,690,340	\$98,351,268	23.8%

A These loss estimates were developed with input from the coastal specialists and agents of the Marine Extension Project of the LSU AgCenter and Louisiana Sea Grant College Program.

B Loss estimates for farmed crawfish and pet turtles were developed by Dr. Greg Lutz, LSU AgCenter, Aquaculture Research Station.

C Estimated from LDWF license data and reports of charter revenue.

Infrastructure Losses

Fisheries and aquaculture infrastructure loss projections (Table 2) were developed using a three-stage process. In the first stage, business infrastructure, was appraised using revenue-based and attribute-based valuation methods. These values were imported by location into a GIS analysis and integrated with biophysical data on maximum wind speed and storm surge heights. Finally, wind-and storm surge-based damage functions were applied to generate estimates of infrastructure losses at the firm-level to parish-level, depending on data availability.

The economic data for this analysis were obtained from the trip ticket reporting system of the LDWF and from revenue records of NOAA Fisheries. Biophysical data were generated from simulations of the ADCIRC Coastal Circulation and Storm Surge Model provided by the LSU Coastal Emergency Risk Assessment Team. Damage functions were obtained from published reports and models developed by the LSU Center for Natural Resource Economics & Policy in the wake of Hurricanes Katrina and Rita. These preliminary estimates will be refined in the coming weeks as additional information becomes available.

Table 2. Estimated Infrastructure Losses from Hurricanes Gustav and Ike for Louisiana Fisheries and Aquaculture Sectors

	Estimated Infrastructure Loss (Lower Bound)	Estimated Infrastructure Loss (Upper Bound)	Average Infrastructure Loss
Seafood Processors ^A	\$38,620,900	\$52,251,806	\$45,436,353
Seafood Docks/Dealers ^A	\$33,834,234	\$45,775,729	\$39,804,982
Commercial Vessels – Federal ^B	\$15,485,267	\$20,950,655	\$18,217,961
Commercial Vessels – State ^B	\$12,814,561	\$17,337,347	\$15,075,954
Recreational Vessels ^C	\$10,849,030	\$14,464,460	\$12,656,745
Marinas ^D	\$9,375,000	\$18,750,000	\$14,062,500
Aquaculture ^E	\$6,022,554	\$8,148,162	\$7,085,358
Totals	\$127,001,547	\$177,678,159	\$152,339,853

- A Seafood processor and dealer losses were derived from a combination of LDWF and NMFS records of dealer and processor revenues, income capitalization procedures, and nested damage functions (wind and surge) applied by location.
- B Commercial vessel losses were derived from a combination of LDWF license records, a hedonic value function for state and federal commercial vessels, and a wind damage function applied by location.
- C Recreational vessel losses were extrapolated from, Caffey et al (2007). Economic Damages to Infrastructure Incurred by Louisiana Fisheries Industries due to Hurricanes Katrina and Rita in 2005, Report to U.S. Department of Commerce, National Oceanic and Atmospheric Administration, July 20, 2007.
- D Marina losses were derived from LDWF location records and a wind-based damage function. It is important to note that these losses were crudely estimated using very limited descriptive information. Additional information is greatly needed for this category.
- E Aquaculture losses were derived using LSU AgCenter revenue records, income capitalization procedures, and a wind damage function applied by location. Turtle infrastructure losses provided by Dr. Greg Lutz, LSU AgCenter, Aquaculture Research Station.

- Rex H. Caffey

Anatomy of a Fish Kill

Hurricanes Gustav and Ike left an unfortunate legacy in freshwater systems across south and middle Louisiana: extensive fish kills. Many of the systems that had just about recovered from the 2005 hurricanes are again devoid of most fish. These hurricane fish kills are usually freshwater phenomena – only rarely does a hurricane cause a salt-water kill and then mostly in upper estuaries with considerable fresh-water inflows. The primary culprit is the organic muck that characterizes the substrates of most of Louisiana's inland waters, and the dissolved oxygen depletion that follows when violent weather stirs it up.

Lagniappe Fisheries Newsletter

Editor: Glenn Thomas

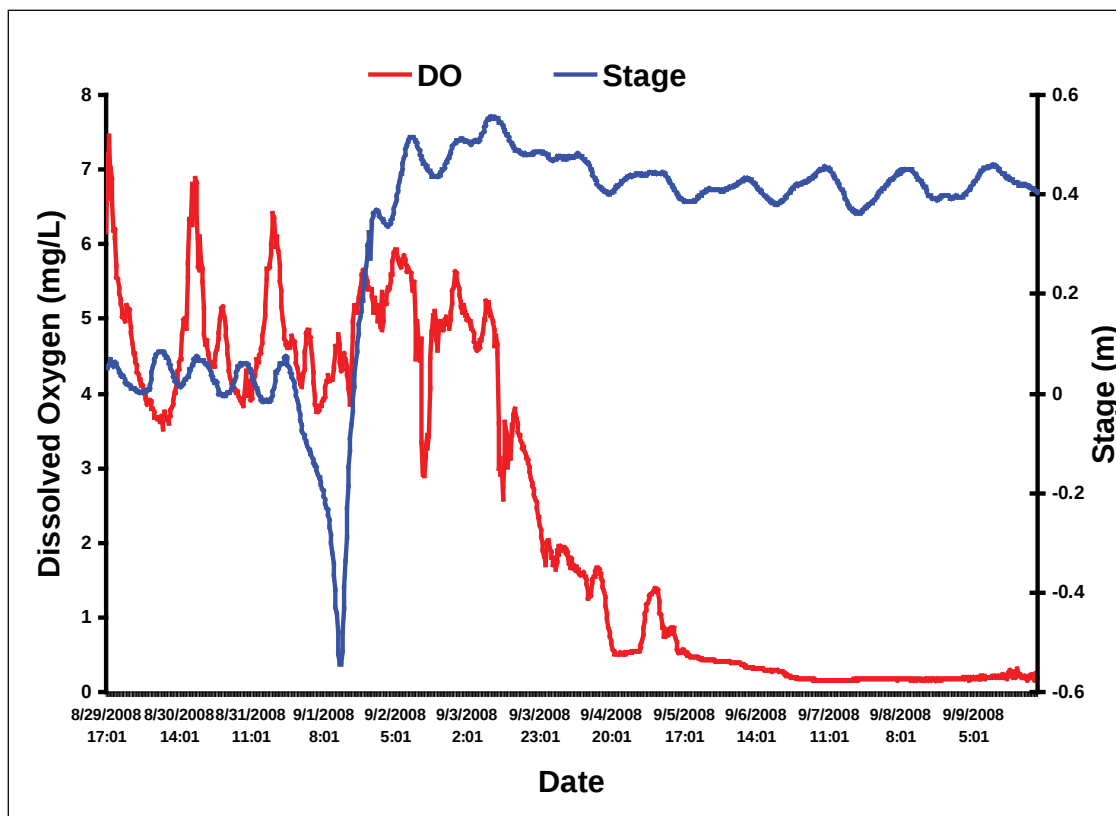
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Nearest the coast, freshwater fish kills can occur from storm-pushed saltwater intrusion. Most freshwater fish can handle a little salt water, but when a storm pushes open-Gulf salinities into freshwater systems, kills can occur. However, this is a relatively minor occurrence when compared to the massive kills that stem from post-storm oxygen depletion in waters as far as 100 miles inland. During Gustav, an exceptional opportunity to observe storm effects was afforded by some LSU research. Chris Bonvillain and Jonathan West are graduate students in the School of Renewable Natural Resources. In their work in the Atchafalaya Basin, they were able to leave a continuously-recording instrument in a bayou near Flat Lake in the southern basin. The instrument recorded the dissolved oxygen (D.O.) concentrations and water levels (stage) as Gustav passed almost directly over it. In the chart below you can see the normal daily D.O. cycle (red line) in the days before the storm: Highest D.O. is late afternoon, when algae have produced oxygen, and lowest is pre-dawn, when D.O. supply is depleted by (mostly bacterial) respiration. The general downward trend

is probably due to increasing cloudiness.



The blue line describes the stage, or water level. The sudden drop of 0.6-m (2 feet) during the morning of Sept. 1 is likely associated with the arrival of 100+ mph north winds. Later in the day, as the wind shifted to the south, the water returned forcefully to higher-than-normal levels.

D.O. began a downward

trend after the storm, with a precipitous drop two days after the storm. A number of factors were undoubtedly at work: cloudy weather and murky water will reduce D.O. Tons of leaves and debris were also blown into the water and began to decompose. But the biggest factor is probably the breakdown of the organic substrates that had been thoroughly suspended throughout the water. This is what produces the foul sewage/swamp smell from these waters after a hurricane. D.O. reached critical concentrations late on Sept. 3, when concentrations fell below 2 mg/l. By Sept. 6, D.O. readings were so low that the instrument was essentially reading "zero" for several days. D.O. that low, for that long, requires overwhelming conditions. Some species of fish, such as shad, will start dying at around 2 mg/l D.O. Larger specimens of many species will succumb next, as their metabolic demands are high and respiratory efficiency tends to be reduced. After several days of 0 mg/l, even the toughest species (like gar, which can supplement oxygen intake by gulping air) are in trouble.

- Glenn Thomas

Refurbishing Storm Damaged Fish Ponds

Storm surge damaged fish ponds have once again become an issue only three short years after recovery from Hurricanes Rita and Katrina. Depending on the location of the pond, damages range from being completely filled with debris carried by Ike's and Gustav's massive storm surges to tree and leaf litter causing dissolved oxygen problems. For ponds with debris, the obvious recommendation is to remove it.

Another hurricane-related pond issue is saltwater inundation. Most ponds flooded by storm surge experienced an entire population loss of freshwater fish. Ponds with salinities over 10 parts per thousand certainly experienced losses. For reference purposes, full strength Gulf water is 35 parts per thousand.

Many freshwater fish commonly stocked in ponds can survive in brackish water; however reproduction is limited when salinities go above 5 parts per thousand. What killed most ponds in southwest Louisiana was the quick change from freshwater to very salty, silt and debris laden surge water.

If at all possible, pump out all pond water. This is the most efficient way of removing dissolved salt. If the pond is gravity drained or evaporation is allowed, the salt will concentrate and may become bound in the soil. It also may be necessary to excavate some of the clay layer deposited by the surge water. This may also be an opportunity to make changes to the pond shape, bottom contours, add artificial structure, aeration features like fountains, diffused air, etc.

Many of the ponds inundated by surge were also stocked by the storm with a large population of estuarine dependent species, such as crabs, shrimp and many saltwater finfish species. If the pond cannot be pumped completely, these remaining organisms will need to be removed or killed so they don't begin feeding on fingerling fish upon restocking.

Once the pond is dewatered, this may also be an opportune time to add agricultural or dolomitic lime to the pond bottom. To determine the exact amount of lime needed, a soil sample can be taken to your parish agent's office and sent off for a small fee. Most soils in Southwest Louisiana require lime. It is easier to make lime applications to a bare pond bottom than when filled. It also helps suppress small clay particles from suspending when water begins refilling the pond. Refill and stock fish once water reaches fill level and water clears up.

- Kevin A. Savoie

For more information on ponds, visit the LSU aquaculture Web site www.lsuagcenter.com/en/crops_livestock/aquaculture/, or the Louisiana Sea Grant aquaculture site www.seagrantfish.lsu.edu/aquaculture/index.html, or you can request publication #2573: "Management of Recreational and Farm Ponds in Louisiana" from your parish AgCenter office. Kevin's regular column Chenier Ecology is archived at www.seagrantfish.lsu.edu/resources/index.html.

Governor's Request for Federal Fisheries Disaster Relief Granted

On Sept. 17, Gov. Bobby Jindal received confirmation from U.S. Commerce Secretary M. Carlos Gutierrez that a formal fishery resource disaster in the Gulf of Mexico had been declared due to the devastation of Hurricanes Gustav and Ike. The declaration, prompted by the governor's Sept. 5 letter that began the Hurricane Gustav recovery effort, sets in motion provisions of the Interjurisdictional Fisheries Act that authorize assistance to fishermen affected by natural disasters. This action also makes small fishing businesses eligible for certain Small Business Administration loans.

"Our fishing industry has sustained another set back, that may well be as formidable as the impact of Hurricanes Katrina and Rita, and this action begins the early response initiatives," said Jindal. "The Department of Wildlife and Fisheries will coordinate the use of recovery funds provided through this process. We know more help will be needed, but this is a necessary first step."

Commercial fishing in the affected areas consists mostly of finfish, shrimp and oysters. NOAA will work with the states to further assess damage to the major fishing ports and the seafood processing facilities in Louisiana and Texas. The initial affected areas under the declaration are Texas and Louisiana. DOC/NOAA will continue to work with the region to assess the impacts of the storm in other areas of the Gulf.

"The economic impacts of Hurricanes Gustav and Ike on fishing communities in the Gulf of Mexico will hurt these communities," Gutierrez said. "We have a lot of work to do, but this disaster determination is an important step in the recovery process." The fishery resource disaster determination was made pursuant to NOAA's Fisheries Service will work with the states to distribute any funds appropriated in response to this determination.

Gulf Community Resiliency Program Announced

The Mississippi-Alabama Sea Grant Consortium (MASGC) is announced a special request for proposals for the Coastal Storms Program, Community Risk and Resiliency. MASGC, in cooperation with the National Oceanic and Atmospheric Administration (NOAA) Coastal Storms Program (CSP), is seeking proposals to fund community resiliency related projects. Local governments, non-profits, homeowner associations, business organizations, and community/university partnerships are eligible.

The priority funding areas, funding levels, eligibility and proposal instructions can be found at: www.masgc.org/pdf/coastalstorms/csprfp08.pdf. The deadline for Letters of Intent is 4:30pm (Central Time), Oct. 20, 2008.

For additional information contact: Tracie Sempier, CSP Outreach Coordinator (tracie.sempier@usm.edu), Loretta Leist, Research Coordinator (loretta.leist@usm.edu) on proposal and competition requirements, Devaney Cheramie, Fiscal Officer (devaney.cheramie@usm.edu) on fiscal matters.

Red Snapper IFQ Program to Allow Paper Forms

Power outages and loss of homes, businesses, and other infrastructure from hurricanes Gustav and Ike have justified temporary changes in snapper Individual Fishing Quota requirements. Regulations implementing the red snapper IFQ program provide for use of paper-based forms in the event that catastrophic conditions exist and IFQ participants cannot submit information electronically. These regulations require NOAA Fisheries Service to determine when catastrophic conditions exist, the duration of catastrophic conditions, and which participants or geographic areas are affected by the catastrophic conditions.

NOAA Fisheries Service has determined that catastrophic conditions exist in the states of Louisiana and Texas from the mouth of the Mississippi River west to Freeport, Texas. NOAA Fisheries Service is authorizing red snapper IFQ participants in the affected area to use paper-based forms for reporting through Oct. 24, 2008. NOAA Fisheries Service has previously provided each IFQ dealer the necessary paper forms (sequentially coded) and instructions for reporting during catastrophic conditions. Paper forms are also available upon request by writing: NOAA Fisheries Service, Southeast Regional Office, Sustainable Fisheries Division 263 13th Avenue South, St. Petersburg, FL 33701-5505

The electronic system for submitting information to NOAA Fisheries Service will continue to be available to all IFQ participants. Participants are encouraged to continue using the electronic system during catastrophic conditions if it is accessible. The IFQ program functions available to participants in the geographic area affected by catastrophic conditions will be limited for those using the paper-based system. There will be no mechanism for transfers of IFQ shares or allocation for those using the paper-based system during catastrophic conditions.

Assistance in complying with the requirements of the paper-based system will be available via IFQ Customer Service 1-866-425-7627 Monday through Friday between 8 a.m. and 4:30 p.m. (Eastern Time).

Species Profile: Cubera Snapper (*Lutjanus cyanopterus*)

Cubera snapper are rarely caught in Louisiana, but can make a fishing trip particularly memorable when one is boated. The largest of the snappers, Cubera weigh in commonly at 40 pounds but have the potential to double or triple that weight.

Cubera snapper have stout bodies that vary in color from gray to brown and usually have a reddish tint to them. The word "cubera" is literally translated as "blue-fin;" however, the dorsal fin has only a blue tint to it at best. Prominent features include canine teeth that protrude from the mouth even when it is shut, as well as large dark red eyes. Juveniles look similar to adults, but tend to have white spots on their backs. Cubera look similar to gray snapper, but can be distinguished by their vomerine teeth (the tooth patch in the roof of the mouth). Gray snapper have an arrow-shaped tooth patch while the cubera have a semi-circular shape patch without the middle "shaft."

Ranging from the Atlantic to the Gulf, and as far south as Brazil, cubera prefer deep water (upwards of 200 feet) and hold to available cover such as oil rigs, shipwrecks, reefs or steep ledges. They use their teeth and powerful jaws to eat crabs, fish and even lobster.

Cubera snapper are a part of one of the largest snapper families, *Lutjanidae*, in the genus *Lutjanus*. Other popular snapper included in this genus include the red, mangrove, mutton, schoolmaster and lane snappers.



Marion Rose with his 124.5 Cubera snapper

The largest Louisiana specimen recorded to date is a recent world and the state record. Marion Rose landed the 124.5 pound fish on June 23, 2007, while fishing at the Garden Banks. Rose's catch earned him the Fish of the Year award, to be presented by LOWA, the Louisiana Outdoors Writers Association. The catch was made on board Capt. Mickey Foret's boat the "Reel Pursuit," out of Pecan Island. A Penn Slammer rod, equipped with a Shimano Spheros DS 14000 reel, spooled with Berkley Power Pro 80# test line, was utilized as tackle, and Spanish sardine was the bait. The record eclipses the Louisiana state record that stood for 25 years: A 121.5 pound cubera caught by Mike Hebert in July of 1982.

- Will Sheftall

Commercial Grouper/Tilefish Referendum Announced

NOAA Fisheries Service is seeking public comment on a proposed rule for the Gulf of Mexico commercial grouper/tilefish individual fishing quota (IFQ) program referendum. The public comment period ends on Oct. 6, 2008.

The Gulf of Mexico Fishery Management Council has requested NOAA Fisheries Service hold a referendum for an IFQ program for the Gulf of Mexico commercial grouper and tilefish fisheries. The proposed rule would inform the public of voter eligibility requirements and the referendum procedures NOAA Fisheries Service would use in conducting the referendum. The referendum is being conducted to determine if commercial grouper and tilefish fishers approve of the Grouper/Tilefish IFQ program developed by the council and NOAA Fisheries Service. IFQ program components are evaluated in Amendment 29 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico, including: Initial eligibility, transferability, ownership caps, appeals, a cost recovery plan, and enforcement measures. Amendment 29 can be found at <http://sero.nmfs.noaa.gov> or <http://gulfcouncil.org>.

The referendum rule proposes that to be eligible to vote in the IFQ referendum, an individual must possess an active or renewable commercial reef fish permit with combined average annual grouper and tilefish landings of at least 8,000 pounds during 1999-2004 (with the allowance of dropping one year). These individuals are considered to have substantially fished the commercial grouper and tilefish fisheries.

NOAA Fisheries Service would calculate combined average annual grouper and tilefish landings for each currently active or renewable permit using the highest five years from 1999-2004. Those individuals holding a permit with an average of at least 8,000 pounds would be designated as eligible

voters. About Dec. 1, 2008, NOAA Fisheries Service would mail eligible voters a ballot for each permit held. Individuals would have 30 days from the postmark date to complete their ballots and mail them to NOAA Fisheries Service. Approval or disapproval of the referendum would be determined by a majority of the votes cast.

Written comments on this proposed rule must be received no later than 5 p.m. (Eastern Time) on Oct. 6, 2008, to be considered by NOAA Fisheries Service. NOAA Fisheries Service is requesting comments only on the referendum guidelines in the proposed rule and not on the establishment of an IFQ program or any of its potential components.

Electronic copies of the rule may be obtained from the NOAA Fisheries Service Web site at <http://sero.nmfs.noaa.gov>, or for a paper copy contact: Sustainable Fisheries Division, Southeast Regional Office, NOAA Fisheries Service, 263 13th Avenue South, St. Petersburg, FL 33701-5505. You may submit written comments, identified by 0648-AW85, by any of the following methods: electronic submissions -rederal e-rulemaking portal: www.regulations.gov , fax - (727) 824-5308 or mail - Susan Gerhart, at address above.

Red Snapper Allocation Transfer Rules, IFQ Report Available

NOAA Fisheries Service is reminding red snapper IFQ participants of the regulations regarding the use and transfer of IFQ allocation. Regulations state that IFQ red snapper “can only be possessed or landed by a vessel with a Gulf red snapper IFQ vessel endorsement.... The person landing the red snapper must hold or be assigned IFQ allocation at least equal to the pounds of red snapper landed.” The original intent of both the Gulf of Mexico Fishery Management Council and NOAA Fisheries Service was to allow only the vessel associated with the IFQ account to land the allocation held in that account. Shareholders may not use a different vessel to land the IFQ allocation in that shareholder’s IFQ account. If a shareholder intends to use a different vessel, the allocation must be transferred into that vessel’s associated IFQ account. Allocation transfers can occur before the vessel has landed but all transactions must be complete before the vessel has made landfall. The vessel landing IFQ red snapper must possess sufficient allocation before landing. Vessels cannot land red snapper with too little, or no allocation, and then transfer needed allocation into the account after landing.

For more details regarding any of the information presented in this bulletin, please visit the IFQ Web site, <https://ifq.sero.nmfs.noaa.gov>, or contact IFQ Customer Support at 1-866-425-7627 or e-mail SER-IFQ.Support@noaa.gov.

The 2007 Annual Red Snapper IFQ Program Report is also now available on the Web site <http://sero.nmfs.noaa.gov/sf/pdfs/2007%20Annual%20Red%20Snapper%20IFQ%20Report.pdf>.

NOAA Fisheries Seeks Comments on Offshore Aquaculture in the Gulf

NOAA Fisheries Service requests comments from the public on the DPEIS developed to analyze the impacts of proposed offshore marine aquaculture regulations in federal waters of the Gulf of Mexico. The Environmental Protection Agency announced the availability of the DPEIS on Sept. 2008. The primary purpose of the DPEIS developed by NOAA Fisheries Service, in cooperation with the Gulf of Mexico Fishery Management Council, is to evaluate the effects of a range of alternatives for regulating offshore marine aquaculture in the Gulf of Mexico. The council initiated this action to provide a programmatic approach to evaluating the impacts of aquaculture proposals in the Gulf of Mexico and a comprehensive framework for regulating such activities. Actions in the DPEIS include: 1) Aquaculture permit requirements, eligibility and transferability; 2) aquaculture permit application requirements, operational requirements and restrictions; 3) duration an aquaculture permit is effective; 4) species allowed for offshore marine aquaculture; 5) allowable systems for growing cultured organisms; 6) marine aquaculture siting requirements and conditions; 7) restricted access zones surrounding marine aquaculture facilities; 8) record keeping and reporting requirements; 9) status determination criteria and biological reference points; and 10) framework procedures for reviewing the aquaculture program and modifying regulations.

Frequently asked questions about the council's Aquaculture Fishery Management Plan, including the DPEIS, can be found at: www.gulfcouncil.org.

Written comments on this DPEIS must be received no later than 5 p.m. (Eastern Time) on Oct. 27, 2008, to be considered by NOAA Fisheries Service. Copies of the DPEIS are available on the Council's Web site at: www.gulfcouncil.org and at the NOAA Fisheries Service's Southeast Regional Office Web site at: <http://sero.nmfs.noaa.gov>. Copies of the DPEIS are also available at the e-Rulemaking Portal www.regulations.gov, enter "NOAA-NMFS-2008-0233-0002 in the keyword search) or in printed form by contacting Andy Strelcheck, Sustainable Fisheries Division Southeast Regional Office, NOAA Fisheries Service, 263 13th Avenue South, St. Petersburg, FL 33701-5505. You may submit written comments, identified by 0648-AS65, by any of the following methods:

Electronic submissions: Go to the federal e-rulemaking portal: www.regulations.gov and enter "NOAA-NMFS-2008-0233-0001" in the keyword search, then select "Send a Comment or Submission." All comments received are part of the public record and will be posted to www.regulations.gov without change. All personal identifying information (e.g., name, address, etc.) voluntarily submitted by the commenter may be publicly accessible. Do not submit confidential business information or otherwise sensitive or protected information. NOAA Fisheries Service will accept anonymous comments (enter N/A in the required fields, if you wish to remain anonymous). Attachments to electronic comments will be accepted in Microsoft Word, Excel, WordPerfect or Adobe PDF file formats only.

Mail: Andy Strelcheck at mailing address above. Comments submitted via fax or e-mail will not be accepted.

THE GUMBO POT

Sarah's Shrimp and Grits

My daughter has been making this for guests, with positive reviews. The basil, mozzarella and Romano cheeses give it an Italian character. For a milder flavor, replace the Romano with a less pungent cheese - GT

1 cup uncooked regular grits
1 ¼ cups milk
1 (14-oz.) can chicken broth
1 (10 ¾- oz.) can cream of shrimp soup
¾ cup grated Mozzarella cheese
¼ cup grated Romano cheese
3 Tbsp. butter
5 Tbsp. chopped fresh basil (substitute dried if needed)
2 lbs peeled shrimp
3 cloves chopped garlic
Red pepper, salt

Bring grits, milk, and broth to a boil in medium saucepan over medium- high heat; simmer until slightly thickened, stirring frequently.

Add butter, cream of shrimp, 2 Tbsp basil, and cheeses. Mix well and bake at 400 for ½ hour.

Saute shrimp in a bit of butter with garlic, the rest of the basil, and pepper and salt to taste. Retain any broth.

Plate servings of grits and top with shrimp and broth.

Makes: 6 or 7 Servings



For more information, contact your local extension agent:



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For questions or comments about a story, contact Lagniappe editor Glenn Thomas at gthomas@agctr.lsu.edu.

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