

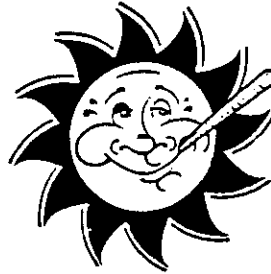


Louisiana State University  
**Agricultural Center**  
Louisiana Cooperative Extension Service

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## SEA GRANT PROGRAM



### LAGNIAPPE

#### HOW'S THE WEATHER?

**HOT!** — At least according to NASA and NOAA's National Climate Data Center. Reports released by both agencies in January showed last year's average temperature worldwide as the hottest year on record, with an average temperature 1.2 degrees above the long-term average.

This was the 20<sup>th</sup> straight year with the average world temperature being above the long-term average, further supporting the theory of global warming. Higher world temperatures are projected to increase melting of glaciers and polar ice caps, which will raise sea level. Rising sea levels are a concern to coastal Louisianans, many of whom live very near sea level.

Source: *River Crossings*. Volume 8, Number 1. Jan/Feb., 1999. Mississippi Interstate Cooperative Resource Association.

#### GLOBAL SEA-LEVEL RISE

The issue of world sea-level rise has attracted increasing concern in recent years. According to a model produced by the Intergovernmental Panel on Climate Change, the "best estimate" is that sea levels will rise about 20 inches between now and the year 2100. All of this projected rise is due to predicted global warming, which will both expand the volume of waters in the seas, and melt glaciers and polar ice sheets.

If such a rise in sea level were to occur, it would have a dramatic impact on Louisiana, which is currently spending millions of dollars to stabilize and restore its coastal

wetlands. Fisheries, as we know them today, would likely change in ways hard to forecast. More predictable would be habitat changes. It is not likely that our coastal marshes could keep from becoming more submerged. Aquatic plants, especially submerged species, would be impacted by both changed salinities and increased carbon dioxide levels that are projected with global warming.

Forested wetlands such as cypress-tupelo gum swamps would be stressed or damaged by both increased water levels and salinity. Oaks now growing on low coastal and swamp ridges just a few inches above water level would also be similarly impacted.

While many uncertainties still exist, both in the predictive models and in how local and regional ecosystems will respond to climate change, enough is known to provide "food for thought". Further research will provide a better understanding of the issue.

Source: *Coastal Wetlands and Global Change: Overview*. USGS FS-089-97. 1997. U. S. Geological Survey, National Wetlands Research Center.

## **OYSTER DISEASES LINKED TO GLOBAL WARMING**

At the 1998 annual meeting of the American Association for the Advancement of Science, researchers from Old Dominion and Rutgers Universities linked the increasing problems of oyster-killing diseases on the Atlantic Coast to global warming. Oyster populations in the Chesapeake Bay and mid Atlantic waters have, in recent years, been increasingly battered by the diseases MSX and Dermo. The researchers looked at the historical record of monitoring for oyster diseases and found direct evidence that increased winter water temperatures have been important in disease outbreaks. Both oyster diseases have spread northward in the 1990's.

Source: *Watermans Gazette* Vol. 26, No. 2. February 1999. Maryland Watermen's Association.

## **DISAGREEMENT!**

While it seems that most scientists agree with the projection of global warming due to human activities, there is indeed some disagreement. Two of America's best-known weather experts have sharply criticized the theory that people are causing harmful global climate change.

William Gray, a professor at Colorado State University who is well-known for his hurricane predictions, stated at the 1998 National Hurricane Conference, that "the changes in climate that the world is experiencing are natural." He said that most of global climate change can be explained by shifts in ocean currents and temperatures. Neil Frank, former director of the National Hurricane Center, said that climate change "has nothing to do with

carbon dioxide," the gas most often blamed for global warming. He said the "atmosphere is too complex and the computers are too slow" to make long-term climate forecasts.

Frederick Seitz, a past-president of the National Academy of Science (NAS) has circulated a petition and an article that stated that there is "no convincing scientific evidence" that global warming is occurring or will occur, and described the growing levels of greenhouse gases in the atmosphere as a benefit that would increase plant growth. The article concluded that global warming is no threat.

Needless to say, their comments upset scientists who believe that global warming is a serious threat. NAS went so far as to issue a statement that they had "nothing to do" with the effort and that the article "does not reflect the conclusion of expert reports of the academy."

Confused?

Source: *Climate Change*. River Crossings. Volume 7, Number 3, May/June 1998. Mississippi Interstate Cooperative Resource Association.

## POND MANAGEMENT SEMINARS

The LSU Agriculture Center's Cooperative Extension Service and Sea Grant will conduct several recreational fish pond management seminars in Louisiana during April and May. The seminars, conducted by Greg Lutz and Brian LeBlanc, will cover a variety of topics related to the successful construction and management of recreational fish ponds. **Topics include: pond design and construction, fish habitat development, water quality maintenance, fish stocking, fish kills, population management, and aquatic weed control.**

Seminars will be held at several locations and dates. Pre-registration is not required. Phone numbers are provided for those needing additional directions to meeting sites. All meetings are free and open to the public. The time, date and place of the New Orleans area meeting is shown below. **MARK YOUR CALENDER.**

May 5, 1999, 6:30 pm  
 East Bank Regional Library  
 4747 W. Napoleon Ave., Metairie, LA  
 (504) 349-5644

## FISH ON TRAWL BOATS

The laws regulating finfish are very complex. I am frequently asked by shrimp trawlers what species and what number of finfish they may have on board their vessels.

Shrimp trawlers may have on board unlimited numbers, for sale or personal use, fish species such as kingfish (channel mullet), white trout, pompano (except in Breton and Chandeleur Sounds where pompano may only be commercially taken with a pompano strike net), croaker, sheepshead, and black drum. The minimum commercial size for sheepshead is 10 inches, and for black drum the minimum commercial size is 16 inches and the maximum is 27 inches. Black drum larger than 27 inches may be kept for sale, but only with a bull drum permit. Information on how to get this permit may be obtained by calling (504) 765-2384.

Southern flounder may also be possessed for sale or personal use by shrimp trawlers. The limit on this fish is 100 pounds per vessel per trip.

A commercial fish species which may not be possessed on board a shrimp trawler is the striped (popeye) mullet. The only legal commercial method of harvesting this fish is with a mullet strike net under the appropriate gear license and permit. Speckled trout, while not often caught in shrimp trawls, also cannot be kept for sale. The only legal means of commercially harvesting speckled trout is with a commercial rod and reel license and a speckled trout permit.

Another commercial species with a special restriction is menhaden (pogies). Trawlers can bring menhaden catch in, but no more than 5% of the total weight of all finfish on board can be species other than menhaden (or herring-like species) if menhaden are possessed. This law was passed many years ago to prevent possible targeting of other species of fish with menhaden purse seines.

Sport fish may be possessed on board shrimp trawling vessels. A one day limit of speckled trout and redfish taken by hook and line, may be possessed for each recreationally licensed fishermen on the vessel. If the vessel is out over 25 hours, a two day limit of these fish may be possessed by each licensed fisherman on the vessel. These may not be sold.

Speckled trout have a daily recreational limit of 25 fish and the minimum size is 12 inches. Redfish have a daily recreational limit of 5 fish, all of which must be at least 16 inches long and only one of which may be over 27 inches in length.

It is important to note the possession of redfish on board any vessel, commercial or recreational, in **federal** waters is strictly against the law. Redfish may only be possessed in state waters!

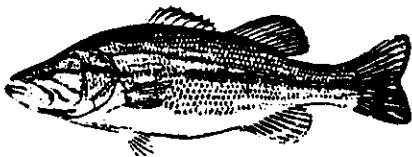
Shrimp trawlers may also keep a recreational one day limit of offshore fish species. The minimum sizes and bag limits per person for some of the more common species are listed on the next page. While a recreational license is not required in federal waters, recreational licenses are required to possess fish once the vessel enters state waters.

<u>Species</u>	<u>Minimum size</u>	<u>Bag limit</u>
Red snapper	15 inches total length	4
Lane snapper	8 inches total length	20 (aggregate)
Cobia (ling)	33 inches fork length (federal) or 37 inches total length (state)	2
Greater amberjack	28 inches fork length	1
Groupers	20 inches total length	5

Fork length is the length of the fish from the tip of its nose to the fork in its tail. Note that cobia are measured in fork length in federal waters and total length in state waters. Lane snappers are small pink snappers with yellow stripes that are commonly caught in trawls. The aggregate bag limit that they fall into includes vermillion snappers (b-liners), gray and queen triggerfish, lesser amberjacks, almaco jacks, banded rudderfish, hogfish, and tilefish.

### **BASS STOCKING RESEARCH**

Bass stocking programs are popular wherever largemouth bass occur. Bass may be stocked at tiny sizes (fry) or slightly larger sizes (fingerlings). Bass may also be raised to an even larger intermediate size in nursery ponds before they are stocked. These nursery pond programs are particularly popular with freshwater recreational fishermen who are interested in increasing the number of catchable size bass available.



Unfortunately very little research has been done to determine how effective these nursery pond programs have been at contributing to larger bass populations. In an attempt to answer some of these questions, biologists with the Texas Parks and Wildlife Department (TPWD) studied two on-going nursery pond programs in eastern Texas. Lake Conroe (21,210 acres) was being stocked by the Lake Conroe Restocking Association, and Lake Gladewater (808 acres) by the Gladewater Lake Advisory Board. Both groups were stocking nursery-pond produced bass primarily to increase year-class strength (the number of survivors from each year's spawning season). Both lakes had experienced low survivorship of spawns, most likely because of very low amounts of underwater plants.

TPWD biologists used Florida-strain largemouth bass in the nursery ponds that could be genetically analyzed to separate them from bass already in the lakes before stocking. Five 1-acre ponds were used for Lake Conroe and two half-acre ponds were used for Lake Gladewater. The largemouth bass were raised to about 5 inches long in the ponds before they were released in the lakes. An average of 2.8 bass per acre for Lake Conroe, and 8.8 bass per acre for Lake Gladewater, were stocked from the nursery ponds.

The biologists then used shocking machines 3 times over an 18 month period after stocking to get a sample of the bass in each lake. These fish were aged and analyzed to determine whether they came from nursery ponds or not.

The results from the 3 samples showed that in Lake Conroe, 0.0%, 5.0%, and 0.0% of the bass of that year-class came from nursery ponds. For Lake Gladewater, nursery pond fish made up 4.5%, 6.7%, and 0.0% of the 3 samples.

Because of the low percentages of nursery pond bass in the samples, TPWD recommended that the nursery pond programs be ended if the reason for their use was to boost year-class strength. If, on the other hand, the purpose of the stocking effort was to increase Florida bass genes in the population, TPWD recommended that it would be more effective to stock fry or fingerlings than intermediate-sized nursery pond bass.

Source: *Contribution of Largemouth Bass Reared in Nursery Ponds to Year Classes in Two Texas Reservoirs*. Michael J. Ryan, Mark A. Webb and Loraine T. Fries. Proceedings of the Fiftieth Annual Conference Southeastern Associations of Fish and Wildlife Agencies. 1996.

## DEFINING OVERFISHING

Everyone knows what the definition of overfishing is—Its when you don't catch fish like in the good ole days—right? Not any more, at least not as far as the Feds are concerned. The Sustainable Fisheries Act of 1996, as passed by the U. S. Congress, requires for each species under management, a definition of overfishing.

These newly proposed definitions use minimum spawning potential ratios (SPRs) to define what overfishing is. SPR can be defined as the ratio of the egg-producing ability of all the mature fish in a fished stock compared to the egg-producing ability that would exist if the stock were unfished. The newly proposed overfishing thresholds for Gulf finfish by the National Marine Fisheries Service are:

- 30% SPR for king mackerel
- 30% SPR for Spanish mackerel
- 30% SPR for cobia
- 30% SPR for cero
- 30% SPR for dolphin
- 30% SPR for bluefish
- 30% SPR for little tunny (bonita)
- 30% SPR for red drum
- 26% SPR for red snapper
- 50% SPR for jewfish
- 50% SPR for Nassau grouper
- 30% SPR for for all other reef fish

For the above species, an "optimal yield" has also been proposed to be 10 percentage points higher than the overfishing threshold. Optimum yield is the target stock level for species that are not overfished.

A point of importance under the proposed new definitions is that several species that are now considered not overfished will be reclassified as overfished and require rebuilding plans (and more harvest restrictions):

- king mackerel, currently at 23% SPR
- vermilion snapper (b-liner), currently at 20-25% SPR
- gag grouper, currently at 21% SPR

Other species may also fall into this category.

## **COAST GUARD WANTS SAFETY ADVICE**

Recently several commercial fishing vessels have sunk in the Atlantic with substantial loss of lives. In order to come up with some solutions to prevent another rash of accidents like these, the U. S. Coast Guard has established a Fishing Vessel Casualty Task Force.

David Johnson, Regional Coast Guard Fishing Vessel Safety Coordinator, is asking commercial and recreational fishermen, vessel owners, and maritime professionals to make suggestions that could reduce vessel losses and human deaths. Johnson asks respondents to state their top three recommendations followed by any other recommendations that they consider important.

He also asks that each person provide whether they are commercial or recreational fishermen or what their profession is, their address, and their telephone number in case more information is needed. These recommendations will be directly used by the task force in their work.

Recommendations can be made in writing to Commanding Officer, Coast Guard Safety Office, 1615 Poydras Street, New Orleans, LA 70112-1254, Attn. David Johnson, by telephone, 1-800-891-1197, or by E-mail, [dmjohnson@msoneworleans.uscg.mil](mailto:dmjohnson@msoneworleans.uscg.mil).

## **COAST GUARD INFORMATION BOOTHS**

U. S. Coast Guard Commercial Fishing Vessel Safety Coordinator, David Johnson, will be sponsoring a series of safety information booths during the month of April.

This has been a successful effort in previous years and Johnson will again be present to answer questions concerning commercial fishing vessel safety regulations.

Also available at the booth will be the Commercial Fishing Vessel Safety Guidebook in English and Vietnamese. Several informative videos will also be available for viewing, including tapes on controlling engine room fires, handling medical emergencies at sea, and vessel stability.

Listed below are the dates and locations of the booths. The hours at each location will be 10:00 am to 2:00 pm.

s.tr. April 8-9. Alario Bros Hardware & Marine Supplies, 894 Avenue A, Westwego.

s.tr. April 12-13. Chalmette Marine, 5145 Paris Rd., Chalmette

s.tr. April 15-16. Fishermens Net & Supply, 4540 Downman Rd., New Orleans.

For more information, Johnson may be reached at 589-4234 in New Orleans.

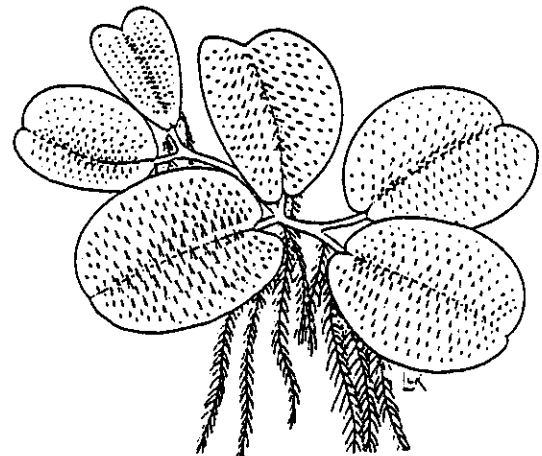
## GREEN MONSTER

Another alien water plant is on the loose in Louisiana and this one, giant salvinia (*Salvinia molesta*), has the potential to be a real problem. For the last six or so years, freshwater fishermen and waterfowl hunters in southeast Louisiana, have witnessed the spread of common salvinia, a pint-sized cousin of giant salvinia. Now giant salvinia has invaded western Louisiana, and biologists fear its potential to invade the rest of the state.

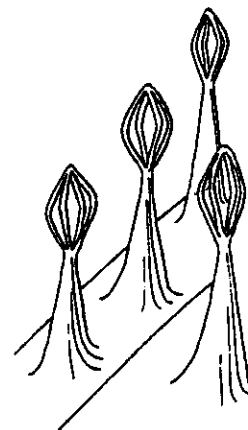
Both species of plants float on the surface of the water, forming dense mats that shade and smother out native plants and prevent oxygenation of the water. Giant salvinia mats can reach 3 feet in thickness.

Giant salvinia is thought to be native to Brazil. From there it was introduced to Australia and New Guinea, then Africa and India, with disastrous results. It may have been brought into the southeastern United States as a aquarium or water garden plant.

Authorities are asking that the public be alert and report any sightings of giant salvinia. Reports may be made by calling the Nonindigenous Aquatic Species Toll



Life size  
Giant Salvinia



Surface Hairs



Free Hotline, 1-877-786-7267 or by calling Carl Mapes with the Louisiana Department of Wildlife and Fisheries in Baton Rouge at 1-225-765-2335.

Both species of salvinia can be identified by the small hairs or bristles on the upper surface of their leaves. Giant salvinia is quite a bit larger than common salvinia (see life-size illustration on previous page), with leaves ½ to 1½ inches long.

This plant is also easily spread by boaters. A fragment of the plant picked up on a boat trailer will be spread to new waters the next time the boat is launched. Boaters should check their trailer, hull and lower unit for pieces of plants after picking up their boat and remove them.

## BUYOUTS

In 1996, the U. S. Congress amended the Magnuson-Stevens Act to create voluntary government-backed buy-outs of commercial fishing vessels and permits in fisheries managed under limited entry provisions. The National Marine Fisheries Service (NMFS) has now prepared proposed guidelines for such buyouts.

According to Terry Garcia, U. S. Assistant Secretary for Commerce, "As is the case around the world, many U. S. fisheries have too many fishing vessels chasing too few fish. Reducing extra fishing capacity increases earnings, simplifies management, and improves conservation efforts."

Under the provisions proposed by NMFS, fishermen could design their own buyout program and borrow money from NMFS to pay for it. Before such a buyout could take place, two-thirds of the vessel or permit holders in the affected fishery would have to approve it and agree to pay back the loan through landings fees.

Once a buyout program is approved for a fishery, the individual fisherman's decision on whether to participate is voluntary. Most buyouts are carried out under a reverse auction, where the fishermen who have the most fishing power and are willing to sell out for the least price, will be the first to be able to sell out.

## WAHOO

The wahoo is the Ferrari of the tunamackerel family of fish. Beauty, speed, and power describe this fish and it is also superb on the dinner table.



The South Atlantic Fishery Management Council is now considering whether management measures such as size limits, recreational bag limits, commercial trip limits,

closed seasons, and/or gear restrictions should be used to manage this fish. Unfortunately, wahoo are one of the least-researched large fish in the Gulf of Mexico.

Wahoo are found worldwide in warm ocean waters. Although in much of its range the fish is found seasonally, it is a year-round resident in the Gulf. Wahoo reach over 7 feet long and grow quickly, especially in their first year after hatching. What little research is available suggests that their life span is at least 5 years, and they become large enough to spawn between 34 to 41 inches long. A total of 45 million eggs were counted from an 87-pound female.

Wahoo are almost totally fish-eaters. Research done in North Carolina showed that fish accounted for over 97% of their diet and that invertebrates such as squid made up the rest of their total food. These fish included mackerels, butterfishes, porcupine fishes, round herrings, scads, jacks, pompanos, and flying fish.

It is expected that the Gulf of Mexico Fishery Management Council will review the South Atlantic Management Council's recommendations and adopt those that they feel apply to the Gulf fishery.

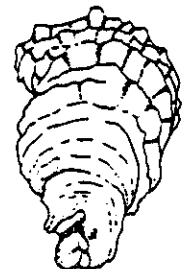
Source: *SAFMC Dolphin/Wahoo Workshop Proceedings*. South Atlantic Fishery Management Council. 1998.

## OYSTER TREATMENT PROCESS

In recent years, negative publicity about oysters has caused some people to back away from eating raw oysters. Even though the risk of death from eating a raw Louisiana oyster is only about one in 140 million raw oysters and 100 percent of the deaths have occurred in people with compromised immune systems who shouldn't have been eating any raw protein product anyway, some fear exists.

This has created some interest in ways to treat oysters that remove the bacterium *Vibrio vulnificus*, without changing the oyster's raw texture or taste. The first such "post-harvest treatment process" was developed several years ago and used a temperature process.

A second process has now been developed by a Houma firm, Motivaitit Seafood Inc. With this process, loosely termed "Hydrostatic High Pressure Seafood Processing", the oysters are placed in a steel cylinder filled with water, and high pressures are applied with pumps. Interestingly, the process not only reduces *Vibrio vulnificus* and other *Vibrio* bacteria to undetectable levels, it also causes the oyster to self-shuck without changing its taste or texture.



This part of the process alone is valuable, as trained oyster-shuckers are becoming scarce and labor costs are increasing. Plans are for oysters treated by this method to be on the market by summer, 1999. The process was developed with the assistance of Marilyn B. Kilgen, head of the Department of Biological Sciences at Nicholls State University.

*NOTE: People who are not "at risk" should feel comfortable in continuing to eat traditional untreated raw oysters. "At risk" individuals are considered to be persons with any of the following conditions: Liver disease (including cirrhosis), alcoholism, cancer (especially during treatment), diabetes, kidney disease, chronic intestinal disease, steroid dependency (as used for conditions such as emphysema, etc.), achlorhyria (a condition of no or reduced stomach acid), AIDS, or abnormal iron metabolism.*

## **MARINE RESERVES**

A marine reserve is an area of the marine environment set aside where special restrictions apply. These restrictions may include "no-take" regulations where all harvest of fisheries species is illegal or they be less restrictive, with protection only extended to some species or with prohibitions on use of certain fishing equipment. Marine reserves are often called by other names, including marine protected areas, sanctuaries, parks, fishery reserves, or no-take zones.

Marine reserves have been established in over 30 countries for a variety of purposes, but have not previously been used off of Louisiana. Presently, the Gulf of Mexico Fishery Management Council is considering them as a management tool.

Their use has attracted more interest because of federal laws requiring protection of essential fish habit (EFH) and ecosystem management, rather than management by individual species. The Sustainable Fisheries Act of 1996 required the Regional Fishery Management Councils to identify EFH, negative impacts on that habitat, and actions that should be taken for the conservation of EFH. In October 1998, the Gulf Council submitted its amendment for EFH requirements. Among these recommendations, the amendment recommended closing areas to all fishing or regulating specific equipment types during spawning, migration, feeding, and nursery activities, and designating zones for use as marine protected areas to limit damaging effects of fishing practices in some areas.

Another reason for consideration of marine reserves is that traditional management practices such as seasons, gear restrictions, size and trip limits, and quotas are weakened by more fishermen entering the fishery, better gear and technology, and enforcement difficulties.

Both benefits and problems/costs can be expected with the creation of marine reserves.

### Benefits

- Better commercial and recreational fisheries. Marine reserves may serve as areas that produce large spawner fish, whose eggs, larvae and young are carried to areas open to fishing. Additionally, some large fish may wander off of the reserve to fished areas.
- Simplified enforcement. In theory, violations should be easy to detect with surveillance by boat or airplane.
- Improved fairness. All groups of fishermen are treated equally, because no harvest is allowed by anyone.
- Preservation of biodiversity. A more natural habitat and fisheries population which is not affected by fishing would be created.
- Reduced fishing mortality (deaths). This would be especially useful if marine reserves are located where concentrations of young fish occur.
- Creation of wilderness areas for study. After over 100 years of fishing in the Gulf of Mexico, scientists have no idea of what natural ecosystems were like.
- Growth in the diving industry and tourism. Tourist divers travel long distances to see underwater attractions.

### Problems/Costs

- Lost fishing opportunities. No-take or no-fishing zones mean what they say.
- Higher costs. Fishermen may have to travel further to fish or to go around marine reserves. Also, marine reserve boundaries will need to be marked on the water and on maps and charts.
- Fishing benefits may be hard to predict. Increased fishing pressure may occur near marine reserves. Also, they may not be useful for some migratory species such as tuna and mackerel. Finally, if more fishermen enter the fishery, the benefits produced by a marine reserve may disappear.
- Difficult to site. Proper placement is important to get the most benefits. Also, the idea may produce a "not in my backyard" reaction from the public.
- Enforcement difficulties. This is a contrast to one of the benefits, which was "simplified enforcement." At-sea enforcement is expensive and the more and larger

fish in a marine reserve will likely create an incentive to poach. Other questions arise—Can fish taken outside the reserve be in a fisherman's possession inside the reserve? Can a boat have fishing gear aboard on the reserve? Can fishing vessels travel across the reserve?

There are basically 3 types of reserves, a single small area, a single large area, or a network of small or large areas. A small area might be chosen to protect a unique habitat (like the Flower Gardens just west of the Louisiana-Texas border) or a specific biological event, such as the mutton snapper spawning concentration on Riley's Hump off of Florida.

A single large area may be selected to protect habitat or nursery grounds from either fishing pressure or habitat destruction. A network of reserves may be developed to protect a variety of life stages (including migration corridors) for important fisheries stocks. Some scientists consider a network of small reserves to be more effective than a single large reserve in maintaining stable fisheries populations and habitats.

The Gulf of Mexico Fishery Management Council is currently evaluating a scoping document on marine reserves.

## **VOLUNTEERS NEEDED FOR WETLANDS PROJECT**

Volunteers and boats are once again needed for the Jefferson Parish Christmas Tree/Marsh Restoration Project. This innovative project, now in its ninth year, uses donated Christmas trees to build sediment-trapping fences to protect and restore wetlands in the Barataria Basin.

Volunteers and shallow-draft boats are needed for the second phase of the project. In this phase, loose trees will be taken from barges to small boats and transported to shoreline cribs. The scheduled day for placing trees in the marsh is April 10, 1999. In case of bad weather, April 11, 1999 will serve as the alternate date.

Volunteers will meet at 8:00 a.m. at Joe's Landing, which is located off LA Hwy. 301 in Barataria, Louisiana. Long sleeves and pants are strongly recommended. This activity does require some strength and is open to individuals 17 years of age or older. Food and refreshments will be provided.

For more information, call the Jefferson Parish Environmental Department at 736-6440.

## **MARYLAND COMMERCIAL FISHING APPRENTICESHIP**

Beginning on June 1, 1998, a person in the state of Maryland can no longer plunk down his license fees and become just any commercial fishermen. Under the state's new

and unique apprenticeship program, a Tidal Fish License applicant now has to show proof with a monthly log, that he has 150 to 180 days of practical work experience over at least a two year period with a current commercial Tidal Fish License holder.

Additionally, the applicant must complete an 8 hour commercial fishing program approved by the Maryland Department of Natural Resources and also must provide copies of income tax returns.

Source: *DNR Fisheries News Waterman's Gazette*. Vol. 26, No. 2. February, 1999.

### **LITTERBUGS BEWARE!**

Discarding debris, whether a single gum wrapper or a garbage bag of camp or boat waste is not just an eyesore for everyone else—its illegal. According to Department of Wildlife and Fisheries District 8 Enforcement Captain Sandy Dares, his office has been receiving an increasing number of litter complaints from boaters.

Dares states that the penalties for littering are quite stiff: \$250-500 for first offense, \$300-1,500 and 8 hours of community service on second offense, and on third and subsequent offenses a fine of \$500-3,000, suspension of driver's license for one year, up to 6 months in jail and/or 24 hours of community service.

In addition to the above penalties, a person convicted of litter must restore the property or pay damages for dumping litter and pay all investigative costs. These penalties apply on the water as well as on land.

Under Section 2531 of Title 30 of Louisiana Revised Statues, game wardens as well as all other law enforcement officers have the duty to enforce litter laws.

### **SEA TURTLE RESUSCITATION**

In spite of the required use of TEDs, an occasional sea turtle becomes entangled in fishing gear. Usually they are frisky and can be released immediately, but sometimes one comes up that is unconscious (comatose).

Federal law states that it is not illegal to possess a sea turtle on the deck of a vessel and in fact, requires that comatose turtles be revived before release. Two methods of revival are recommended.

- 1) The sea turtle should be placed on its back and the breast plate pumped with a person's hand or foot.

- 2) The turtle may be placed belly down in a shaded area for up to 24 hours. It is important to elevate the rear end of the turtle several inches. The larger the turtle the more elevation is needed. It should also be kept wet.

Sea turtles that become active should be released over the stern of the vessel when its gears are in neutral and no nets are in the water. Sea turtles that don't revive and are dead must be returned to the water the same way.

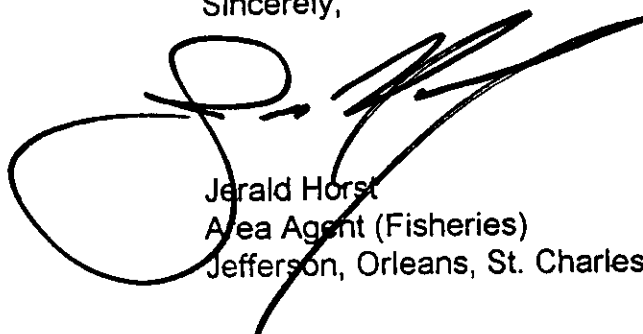
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**THE GUMBO POT**  
**Cajun Cioppino**

On a recent visit to San Francisco, I had the pleasure of eating cioppino, a California specialty. A cioppino (pronounced cha' pee no) is basically a fish stew, with its origin in Italy, that was perfected in California. A Pacific Coast cioppino is usually made with dungeness crabs, mussels and clams. I used blue crabs and oysters. For the finfish, I used mangrove snapper, but any firm white-fleshed fish will do fine. While this dish has a lot of ingredients, it is simple to cook and doesn't take much time.

½	cup olive oil	½	cup fresh parsley, chopped
1	large onion, chopped	2	tsp salt
1	bell pepper, chopped	1	tsp black pepper
3	cloves garlic, minced	1	lb crabmeat
1	28-oz can tomatoes, chopped	1	lb peeled medium shrimp
2	tbsp tomato paste	1½	lb fish, cut into 1½ inch cubes
2	cups dry white wine	3	doz small shucked oysters

In a medium-sized saucepan, saute onion, green pepper and garlic in olive oil until soft. Add tomatoes, tomato paste, wine, half of the parsley, salt, and pepper. Bring to a boil, lower heat, cover and simmer for 15 minutes. In a large saucepan, arrange crabmeat, shrimp, fish and oysters. After simmering sauce, pour over seafood. If the sauce doesn't cover the seafood, add a cup or so of water. Bring to a boil, cover and simmer 10-12 minutes until fish is white and flaky and shrimp are pink. Serve in large bowls with French bread. Serves 6.

Sincerely,



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