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LOUISIANA

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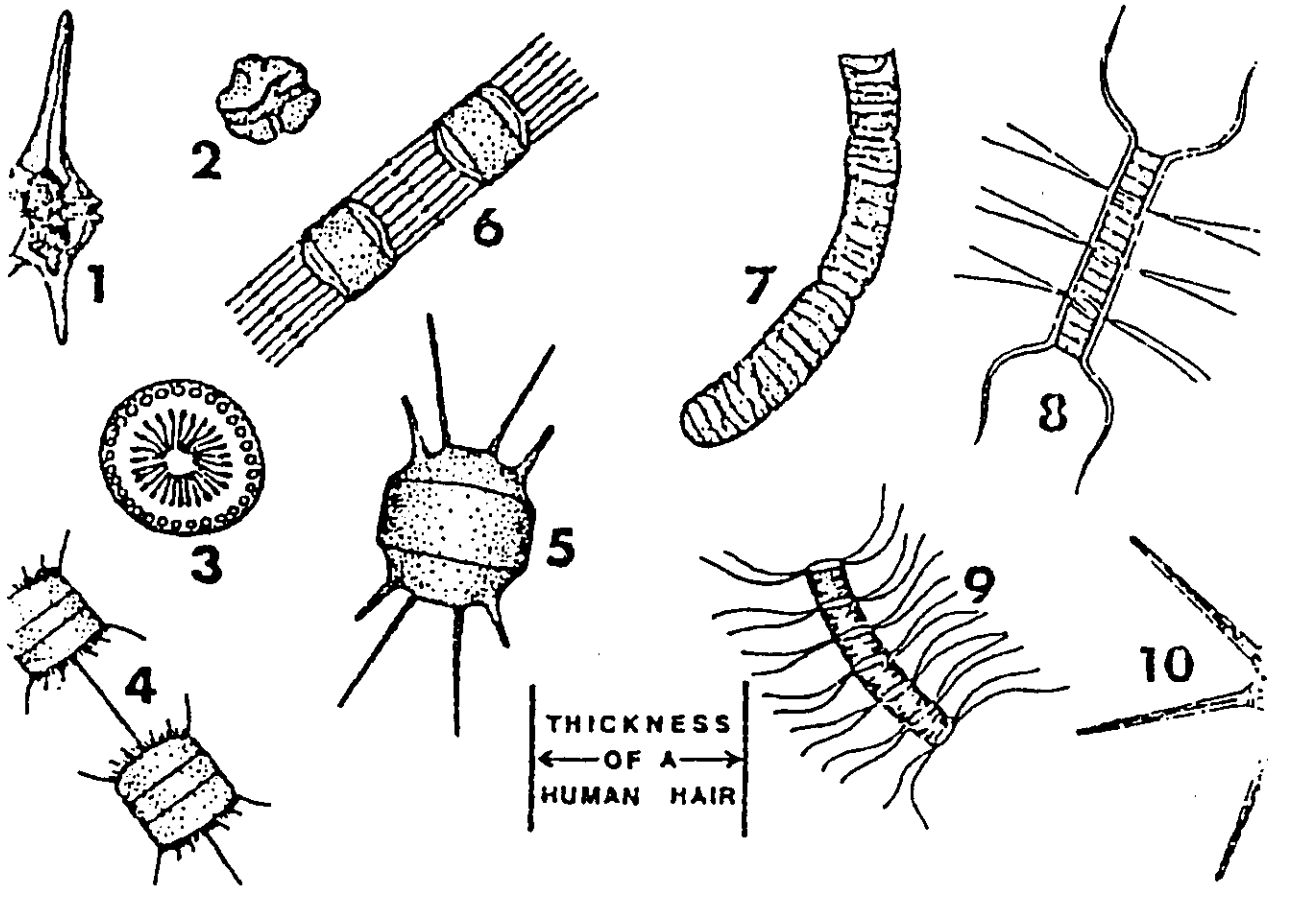
GRASS OF THE SEA

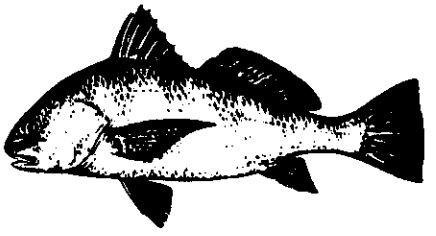
That's what phytoplankton is called. Phytoplankton is a word that takes in all of the microscopic one-celled plants that float in the water. Just as on land where plant eaters eat plants and meat eaters eat the plant eaters, so it goes in the water, whether fresh or saltwater. The only difference is that almost all of the plants are microscopic. The picture below shows how large some of them are compared to human hair.



All of the plants shown are in a group called diatoms except for numbers 1 and 2. These two are dinoflagellates. Number 2 is the one that sometimes becomes so numerous that it causes red tides, which may poison tons of fish. Phytoplankton is very sensitive to pollution by pesticides, herbicides and oil. For example, DDT interferes with the food and oxygen producing abilities of some phytoplankton at a concentration of less than one part DDT per billion parts of water. Needless to say, without phytoplankton there would be very few fish, just as without plants on land, there would be very few animals.

Source: *Phytoplankton, Grass of the Sea.* Hebert Curl, Jr. SG Bulletin No. 9. Oregon State University Extension Service.

LOUISIANA FINFISH STOCK ASSESSMENTS



Act 1316 of the 1995 Louisiana Legislature requires that the Louisiana Wildlife and Fisheries Commission shall deliver to the legislature each year, a peer-reviewed report on the biological condition of mullet, black drum, sheepshead, and flounder stocks.

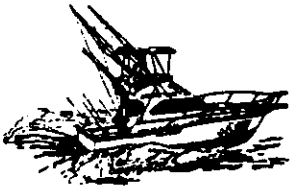
The act further requires that if the spawning potential ratio (SPR) of any of these fish is below 30%, that the Department of Wildlife and Fisheries must close the season for that fish for one year. SPR is the ratio of the egg-producing ability of all the mature fish in a fished stock as compared to the egg producing ability that would exist if the stock was unfished. SPRs are often used as targets for managing stocks of fish. Listed below are the year 2000 assessment results.

Striped Mullet	31% - 68% SPR
Black Drum	42% - 67% SPR
Sheepshead	54% - 93% SPR
Flounder	28% - 54% SPR

Black drum numbers stayed the same, largely because the species has not needed an in-depth reassessment. Harvest of this fish has remained well below safe quotas established some years ago. A future detailed analysis may show SPR numbers higher than those above.

SPR numbers for the other three species showed small changes, not because of changes in the fish populations, but because of better assessment methods. Although the conservative SPR estimates for flounder are below the target 30% figure and the conservative estimate for striped mullet is near that figure, all three fisheries are considered healthy.

THE CHARTER FISHING INDUSTRY



The charter fishing industry is neither truly recreational nor commercial. Charter operators fish under recreational quotas and with recreational gear. On the other hand, like commercial fishermen, they fish for a living. They have to be able to make trips and catch fish to make money.

What is not disputed is the importance of the growing charterboat industry to coastal economies. Visitors from other areas that come to a coastal community for a charterboat trip spend money on food, lodging, automobile fuel, and other retail purchases.

The growth of the charter fishing industry in federal waters in recent years has caused concern for fisheries resources in federal waters of the Gulf of Mexico. According to data presented by the Gulf of Mexico Fisheries Management Council, the number of offshore charter/headboats in the Gulf of Mexico increased from **610** in 1981 to **1073** in 1988, to **1367** in 1998. The state-by-state breakdown in 1998 was Florida, 914; Texas, 203; Alabama, 114; Mississippi, 85; and Louisiana, 50. In 2001, 1650 charter/headboats hold permits, of which 112 have only reef fish charter permits, 135 have only coastal migratory pelagic charter permits and 1403 have both permits. Reef fish charter permits are required for harvest of snappers, groupers, amberjack, triggerfish, tilefish, and rudderfish. Coastal migratory pelagic permits are required for king and Spanish mackerel, cero, cobia, little tunny, dolphin, and bluefish.

Council figures also show a 51% increase in the number of people making charter trips between the 1982-1992 period and the 1993-1998 period. More importantly, say government scientists, is that the percentage of the total recreational catch that is taken by charter/headboats has increased substantially. The table below illustrates that point.

Species	Percent of Recreational Catch Taken by Charter/headboats		
Red Snapper	1981/82 - - 34.3%	1988/89 - - 61.7%	1996/97 - - 70.7%
King Mackerel	1983 - - 17.4%	1988 - - 31.8%	1997 - - 61.5%
Gag Grouper	1981/82 - - 14.5%	1988/89 - - 21.4%	1995/96 - - 32.7%
Vermilion Snapper	1981/82 - - 82.2%	1988/89 - - 80.1%	1995/96 - - 90.1%
Greater Amberjack	1982/83 - - 66.5%	1988/89 - - 54.5%	1995/96 - - 63.2%
Red Grouper	1981/82 - - 19.4%	1988/89 - - 18.7%	1996/97 - - 39.8%

Red snapper and king mackerel are classified as overfished. Increasing catches will result in shorter seasons for red snapper and more restrictions on bag and size limits

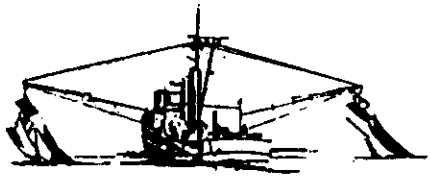
for king mackerel. Gag and vermilion snapper are classified as approaching an overfished condition and appears likely that red grouper will soon be classified as overfished.

As a result, the Gulf Council has proposed creating a new charter vessel/headboat permit, limiting who can get such a transferable permit to people who had a reef fish or coastal migratory pelagic permit before November 18, 1998, and placing a moratorium on issuing any new permits.

This has placed Louisiana's charter fleet in a "catch-22" position. Without the permit moratorium action, the recreational/charter fishing season for red snapper will very likely become even shorter than its current 6 months. If the permit and moratorium are put in place with the November 18, 1998 qualifying date, a quite large percentage of Louisiana's charter fleet operators will not qualify for a transferable permit. The decision on the issue is expected to be made at the end of this month when the council meets in Mobile, Alabama.

Source: *Draft Amendment for a Charter Vessel/Headboat Permit Moratorium Amending the: Reef Fish Fishery Management Plan and Coastal Migratory Pelagic Fishery Management Plan.* Gulf of Mexico Fishery Management Council. January 2001.

COUNCIL TAKES FINAL ACTION ON SHRIMP PERMITS



The Gulf of Mexico Fishery Management Council has taken final action approving a provision that would require shrimpers working in federal waters off the Gulf of Mexico to have permits. The action will be submitted to the National Marine Fisheries Service(NMFS) for final approval. Typically, this takes at least 6 months, so it is likely that the requirement will not be in effect until early next year. The council action requires vessel permits, but not operator permits, which simplifies the process of finding captains for vessels. The permit will fit in the normal fee structure, which is $50 for the first permit and $20 for any others held by an individual. Like other NMFS permits, this one can be temporarily suspended or permanently revoked for severe or multiple offenses.

TAX CREDIT FOR SAFETY EQUIPMENT

Beginning in 1989, the U.S. Coast Guard began enforcing strict new laws on commercial fishing vessel safety. Many of the new requirements put in place since then require the purchase of safety equipment, some of it being quite expensive.

Now Senator Susan Collins of Maine has introduced a bill, S. 162, into the U.S. Congress that would provide a tax credit for the purchase of safety equipment. Under the bill's provisions, commercial fisherman would get an income tax credit for 75% of the cost of purchase and maintenance of any safety equipment purchased under the requirements section 4502 of title 46 of the United States Code.

The limit is $1500 worth of credit. Income tax credits are not a deduction, but rather come directly off of the tax bill.

The U.S. Coast Guard Office of Compliance in Washington D.C. is urging commercial fishermen to voice their opinion to their senators. Louisiana's senators are John Breaux and Mary Landrieu.

BUGS IN YOUR TANK

Many commercial fishing vessels and an increasing number of larger recreational boats use diesel engines. Diesel engines have many advantages over gasoline engines, but they can have one problem—fuel contamination.

The result of contamination is murky fuel, filters plugged with brown slime, and poor engine performance or shut down. Diesel fuel contamination is caused by microscopic bacteria, yeasts and fungi (but not algae as some people believe, as algae needs sunlight to grow). We'll call them "bugs" for short. While these bugs are too small to see, their waste products combined with a sludge of degraded fuel residue, can be seen as it accumulates on the bottom of a fuel tank.

Probably none of these bugs survive the fuel refining process, but by the time the fuel reaches the vessel's tank it has been contaminated. While these bugs can survive in pure diesel fuel, they can't grow, reproduce and become a problem until they get water.

Water in a fuel tank can come from several sources; it may be pumped in with bad fuel or it may condense out of the air space in the tank as the air cools in the evening. Since water is heavier that diesel fuel, it layers at the bottom of the tank. At the thin layer between water and fuel, bugs find everything they need: darkness, water, food (fuel), and a little heat from the fuel returning from the injector bypass. Often the boat operator doesn't know he has a problem until things get stirred up by bouncing around during rough weather, the worst time to find a problem.

Obviously, the best treatment is prevention by keeping the water out. This may be easier said than done. Many tanks are built without drains or clean-out hatches. Chemical emulsiers can remove small amounts of water, but don't help much on an inch or more of water.

A bigger problem is getting rid of the bugs once they get a start. Large seaports have companies that provide "fuel polishing", where the fuel, water and bugs are pumped from the tanks and filtered. An on-board fuel polishing system can also be purchased for a vessel.

Two other ways of tackling a bug problem are biocides (bug killers) and magnetic decontamination. Most fuel dealers sell biocides, fuel additives that kill the bugs in the tank. Biocides do work, but they are hazardous chemicals, and filter clogging can be worse for a time after application to a heavy bug load.

Magnetic devices are designed to work by passing the fuel and bugs through a magnetic system which is supposed to damage or kill the bugs. Little scientific research has been done on the effectiveness of magnetic decontamination.

There are no magic solutions. A system approach is most effective.

1) Keep the water out.

2) Get the water out when it gets in.

3) Kill the bugs with a chemical biocides, or if you believe in them, a magnetic device.

4) Monitor fuel filters and change them frequently when needed. A vacuum gauge between filter and engine lift pump will show when a filter is starting to plug. Carry enough spare filters.

5) If all else fails, consider a fuel polishing service or on-board fuel polishing unit.

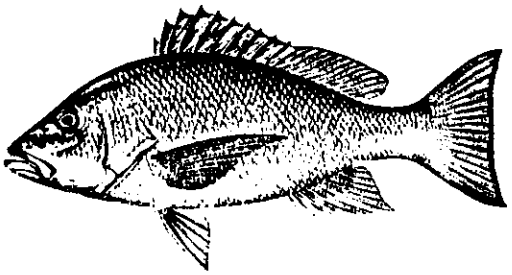
Source: *Boatkeeper: Coping With Fuel Contamination.* Terry Johnson. Pacific Fishing. January, 1998.

RED SNAPPER RESEARCH

Red snappers are one of the glamour fish in the Gulf of Mexico, and certainly the most controversial. Recreational and commercial fishermen maintain that red snapper populations are very high, based on what they see. Scientists say that based on their best available data, red snapper populations are very low.

Part of the problem may be that scientists rely mostly on fishery dependent data for their analysis. Fishery dependent data comes from information taken from fish caught by recreational and commercial fishermen. Fishery independent data, on the other hand,

comes from fish caught by the scientists themselves. Very few fisheries independent research projects on red snappers have been done, probably because these projects very expensive and funding is tight. Scientists are not good at catching the large quantities of fish that the commercial and recreational fisheries can.



However, because fishermen deliberately target certain size fish, data taken from their catch may paint a picture much different from what actually exists. The fishery dependent data for the red snapper fishery shows two peaks in abundance of certain age categories and a shortage of younger and middle-aged fish. In 1999, two biologists from Auburn University conducted a fisheries independent study. They suspected that the two peaks in abundances at different ages were possibly due to commercial fishermen targeting the highest-priced smaller fish (just over 16 inches long) and sports fishermen targeting the big trophy "sow" snapper.

The two scientists sampled 28 artificial reefs off of the Alabama coast between the depths of 65 and 117 feet. They used bandit rigs (commercial snapper reels), fish traps, hook and line, SCUBA counts, and video taping to estimate the number of red snappers on the reefs. They came up with an average of slightly over 86 red snapper per reef. Based on the fact that a total of 14,531 public reefs, gas platforms and permitted private reefs exist off of Alabama, they estimated a total red snapper population of 1.3 million off of Alabama.

The researchers also weighed and measured and took egg samples and otoliths (ear bones used for aging) from most of the 1147 red snapper captured in the study. The data showed signs of a "stressed" fish population: early maturing fish, few fish over 18 inches (the minimum size in 1999) and fast growth rates. The scientists felt that much of this was due to the fact that they sampled heavily fished public reefs.

A comparison of their population estimate with catch records off of Alabama, indicates that 66% of all red snapper off of Alabama are caught each year. Since the researchers considered this highly unlikely, they concluded that either the population estimate was too low or that past recreational catch estimates are too high.

Another part of the study involved the construction of sixty 6 foot by 6 foot shell reefs to study smaller snappers. Half of the shell reefs were made of plain shell and half had concrete blocks added to the shell. These shell habitats, surveyed by SCUBA divers, were found to be heavily used by red snappers in their first and second years of life. First year fish turned up on the habitats in August. Second year fish showed a preference for the reefs with the concrete blocks. The researchers suggested that artificial shell reefs

may attract young red snappers away from areas of intensive trawling, which should increase survival.

Source: *Estimation of Abundance, Mortality, Fecundity, Age Frequency, and Growth Rates of Red Snapper, Lutjanus campechanus, from a Fishery Independent, Stratified Random Survey.* Steve T. Szedlmayer and Carol Furman. Project # 70-01-126091/21165. Gulf and South Atlantic Fisheries Development Foundation, Inc. 2000.

GLOWING REPORTS

Since 1989, the U.S. Food and Drug Administration (FDA) has received and investigated a number of complaints made to them about seafood that "glows" in the dark. Reports have come from Alaska, Arizona, California, Florida, Georgia, Illinois, Kansas, Maine, Maryland, Minnesota, New Hampshire, Ohio, Oklahoma, Oregon, Washington, and Wisconsin.

Most such glowing, or luminescence as it is more properly known, was noticed when consumers had burnt refrigerator bulbs, had late-night snacks or candlelight meals, or it was noticed on leftovers and discarded containers. The most common seafoods to show luminescence were imitation crab and lobster meats although shrimp, red snapper and other finfish were involved. In one case, an Indian tribe in Oregon sent 10 king salmon weighing 20-35 pounds each that they planned to use in a ceremony in to FDA because they were luminescent. In Maine, the manager of a sardine cannery noticed that raw herring left on a conveyor belt during a powered failure glowed so brightly that he could read a newspaper.

FDA notes that seafood products can glow because of the presence of certain bacteria capable of creating a chemical reaction similar to fireflies. Luminescent bacteria are free living in the ocean as well as on and in fish and shellfish. Nine species of luminescent marine bacteria are known, one of which can cause illness in humans. Two non-marine luminescent bacteria are known, one that lives inside of tiny roundworms and another that is closely related to cholera bacteria and is considered to be able to cause illness in humans.

Most reports to FDA did not involve any ill people and in most of those that did, the illness was suspected to be due not to the luminescent bacteria, but to other bacteria present in addition to the ones that glowed. FDA notes that luminescent bacteria should only be present on raw seafood, if present at all, since cooking kills bacteria. Their investigations of luminescent cooked products showed frequent cross-contamination between cooked and raw products, including the use of hands, counters and containers unwashed between use on raw and cooked products. Also noted were instances where raw and cooked seafood were stored side by side in display cases, providing an

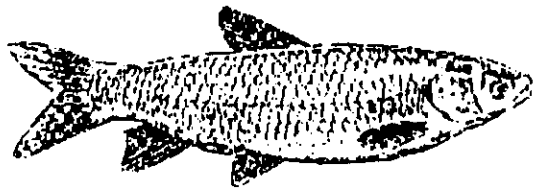
opportunity for drips from raw products to contaminate cooked ready-to-eat products. FDA requests that anyone noting seafood products that glow in the dark to contact:

Patricia Sado
United States Food and Drug Administration
P O Box 3012
Bothell, WA 98041-3012
425/486-8788
psado@ora.fda.gov

GALLOPING GRASS EATERS

Probably the biggest problem occurring in fresh waters of the southern United States is the spread on non-native (exotic) aquatic plants, including water hyacinth (lilies), hydrilla and two species of salvinia. Freed from the natural controls in their native environment, the plants' growth has exploded, covering vast areas of water bodies once open to boating and fishing.

Control of these plants is difficult. Spraying with herbicides is expensive and usually results in only temporary control. Mechanical removal is even more difficult and costly. As a result, many water managers see biological controls, such as plant-eating animals and insects, as offering the best possibility of exotic plant control. Unfortunately, the exotic insects and animals introduced to control the plants can cause ecological problems themselves if they attack native or agricultural plants. Their populations can also grow huge, because they themselves no longer have native biological controls on them.



One of the more controversial biological control agents is the grass carp, *Ctenophryngodon idella*. This large, silver, torpedo-shaped fish has proven to be very effective at controlling many aquatic plants by feeding on them. The ability of the fish to impact habitat causes many fisheries managers to fear the establishment of a large breeding population of grass carp in the U.S. that can impact native aquatic plants used by fish and wildlife. In Louisiana, scientists have documented that grass carp have become established and are spawning in the state's rivers.

Scientists have solved part of the problem by developing a process to produce sterile triploid grass carp that can't reproduce even if they escape from the area they are stocked in. However, concern still exists over the tendency of grass carp to move. If they leave the area they are stocked in, they won't control the plants that they were stocked to control and they may also impact other areas. In an attempt to get some idea of grass carp movement, Texas biologists tagged 125 triploid grass carp with radio tags and

stocked them in 5 small reservoirs on the Guadalupe River. Twenty five fish were stocked in each lake and biologists tracked their radio signals for two years.

During the first 18 month of the study, very little rainfall occurred, the Guadalupe River remained low, and reservoir discharges remained low. Even during this low flow time, grass carp escaped from the lakes. A total of 13 grass carp moved past one to six dams, covering a maximum distance of a little over 42 miles.

During the last 6 months of the study, rain caused high river flows, resulting in many dam gate drawdowns and water spills. The result was that 57 grass carp moved past one to ten dams, covering a maximum distance of 130 miles. All movement during both periods was downstream.

Only larger fish, those over 26 inches long, moved during the 18-month low flow period. However, grass carp of all sizes, large and small, moved during the 6-month high flow period. Interestingly, fish under 26 inches moved further average distances than larger fish. Movement did not seem to be influenced by vegetation. Grass carp moved away from plant beds as much as toward them.

The researchers concluded that water flow was a major factor affecting grass carp movement. Because significant numbers of grass carp left the reservoirs even during low flow conditions, they recommended that grass carp not be used for aquatic plant control in river reservoir systems.

Source: *Movement of Triploid Grass Carp Among Small Hydropower Impoundments of the Guadalupe River, Texas.* J. A. Prentice, W. J. Dean, Jr., M.S. Reed, & E. W. Chilton II. Proceedings of the 52nd Annual Conference of Southeast Fish and Wildlife Agencies. 1998.

UNDERWATER OBSTRUCTION LOCATIONS

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

LORAN sites			Lat. & Long. Sites		
27837	46865	Terrebonne	2937.058	8933.624	St. Bernard
28569	46893	Jefferson	2938.512	9010.036	Jefferson
29023	46912	Plaquemines	2938.867	9005.358	Jefferson
29037	46914	Plaquemines			

THE GUMBO POT

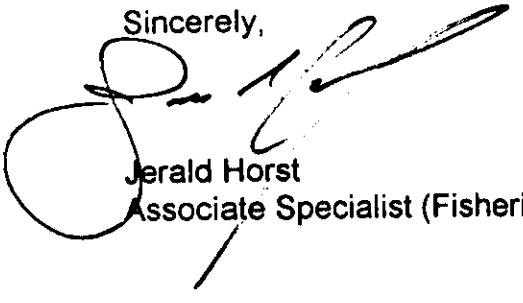
Oyster and Artichoke Soup

Soups made with oysters and artichokes have grown to become a Creole cooking tradition. This recipe is excellent, but I think that I got carried away with quantities. It makes a big pot of soup. Be sure to allow enough preparation time to chop all of the ingredients. Finally, the oyster liquor is a must. If you shuck your own oysters, you can get the required amount from a sack. If you are buying your oysters, it is going to be more difficult to get the quart required for this recipe, but I promise that it is worth the effort..

2	sticks butter
1 ½	cup onion, finely chopped
1	cup celery, finely chopped
6	cup bell pepper, finely chopped
¼	cup garlic, minced
1	can artichoke bottoms, chopped
1	cup flour
1 ½	quarts chicken stock
1	quart oyster liquor
1	can artichoke hearts, chopped
1	quart oyster meats
1	cup parsley, chopped
1	cup green onions chopped
1	pint heavy cream
	salt and white pepper to taste

In a large pot, melt butter over a medium heat. Add onions, celery, bell pepper, garlic and artichoke bottoms. Saute until vegetables are soft and clear. Add flour gradually, stirring constantly until thoroughly blended. Add chicken stock and then oyster liquor gradually while constantly stirring to blend. Add artichoke hearts. Bring soup to a simmer and cook for 30 minutes. Add oysters, parsley, green onions and heavy cream. Cook until oysters firm up and the edges begin to curl. Season to taste with salt and pepper. Serves 10 to 12.

Sincerely,



Jerald Horst
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