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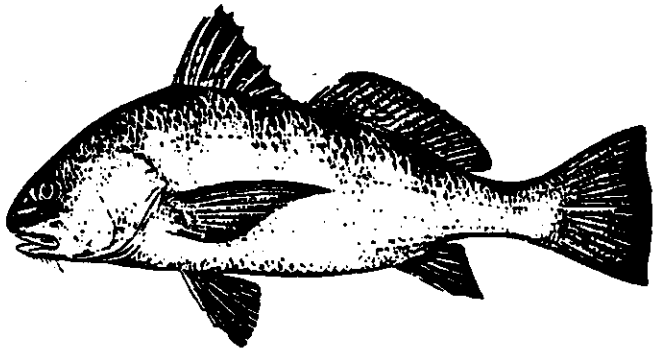
SEA GRANT PROGRAM



LAGNIAPPE

TRIP TICKET SYSTEM COMING

Beginning January 1, 1999 a new method of collecting commercial fisheries harvest data will go into effect. The new method, unofficially known as the "trip ticket system", will replace the state's current program of monthly dealer reports and should improve the ability of the Department of Wildlife and Fisheries (LDWF) to conduct fish stock assessments.

Under the new rule, a dealer will fill out a dealer report form at the time of purchase from a commercial fisherman. Included on the form will be the dealer's name and license number, the fisherman's name and license number, species purchased, size and condition of purchase, date, unit price of each species, permit numbers, and the fisherman's and dealer's signatures.

The fisherman will get one copy of the form, the dealer will get another which he must keep on file for 3 years, and the third copy must be mailed to LDWF by the 10th of each month.

All holders of wholesale/retail seafood dealers licenses must submit these reports, including commercial fishermen who hold the license only to make sales to the public.

Training meetings on the use of these new forms will be held at various places in the state this fall. Implementation of this new program was funded by the 1997 legislature.

SHRIMP NET MESH SIZES

I received a good many calls on the minimum mesh size on shrimp gear during white shrimp season. The minimum mesh size trawls, butterfly nets, and skimmers is 1¼ inches stretched year around, **with one exception.** During the fall inshore shrimp season, for the area from the Atchafalaya River westward to the western shore of Vermilion Bay and Southwest Pass at Marsh Island, the minimum mesh size is **1½ inches** stretched.

PROPaganda

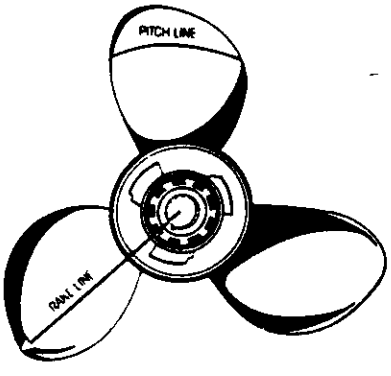
Boat propellers are one of the smallest but most important investments that a boater will make on his rig. Proper propeller selection is vital to top performance by a boat, yet few fishermen that use outboard motors are knowledgeable about propellers. Most boat buyers shop widely for the hull and motor, but assume that the dealer will just pop the right propeller on and let it go at that.

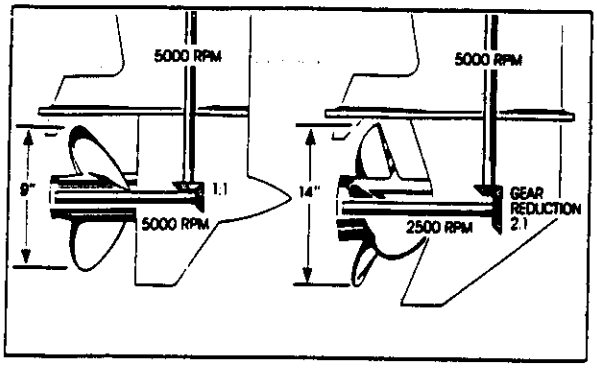
Most of the time, things work out OK, but being knowledgeable about propellers allows a boater to work with his dealer to produce the most satisfactory performance results. A small change can make a big difference.

For example, summer conditions of high temperature and humidity will reduce engine power. An engine propped out on a cool spring day may experience as much as a 14% loss of horsepower when operated on a hot muggy summer day. This means that the propeller, in effect, becomes too large for the engine, the engine "bogs" and can't reach its recommended RPM. In extreme cases the boat cannot even get on plane. Any error in judgement when propping the engine will be magnified under these conditions. The factors to consider in propeller selection are diameter, pitch, rake, number of blades, design, and material.

Diameter

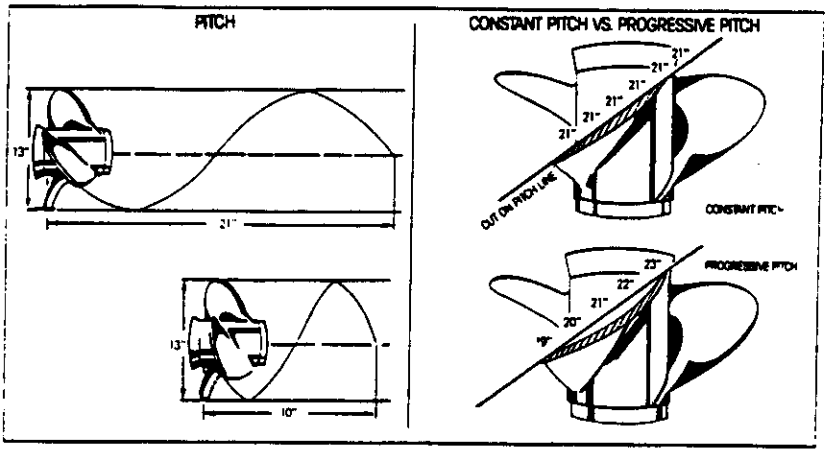
The diameter of a propeller is measured in inches. Measuring from the center of the hub out to the tip of a blade and multiplying by two will give the propeller diameter.





Limitations do exist on selecting diameter of a propeller. Obviously the propeller must fit under the antiventilation (anticavitation) plate of the motor. Larger engines have more options on diameter than smaller engines. Generally speaking, a slower-turning, larger-diameter propeller is more efficient than a faster-turning, smaller propeller. It has less slippage and takes a better "bite" of the water. Efficiency translates into fuel economy, an important consideration for most commercial and some recreational fishermen.

Pitch



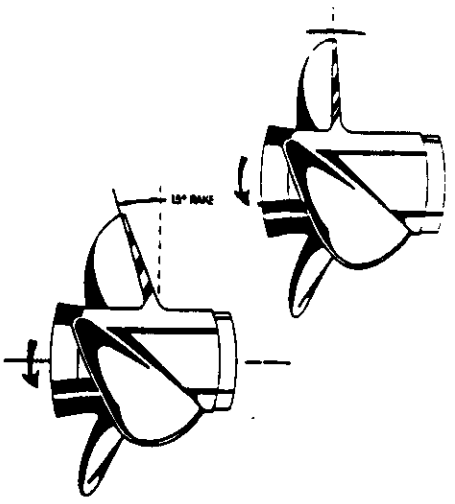
Pitch is a very important selection factor. It is simply a measurement of the distance in inches that a propeller would move in one full turn with no slip. When a propeller is identified as 13 x 21, it has a 13 inch diameter with 21 inches of pitch. With no slippage the propeller would move forward 21 inches in one revolution.

Propeller lines are normally designed so that a change of one inch in pitch will change engine RPM by 150 to 250. If engine RPM is too low on your first selection, try a lower pitched propeller to bring RPM up to the recommended range. Likewise, higher pitched props reduce engine RPM.

Pitch may be constant pitch, where the angle is the same across the blade, or progressive pitch where the angle changes. The average pitch on a progressive pitch prop is given as the pitch.

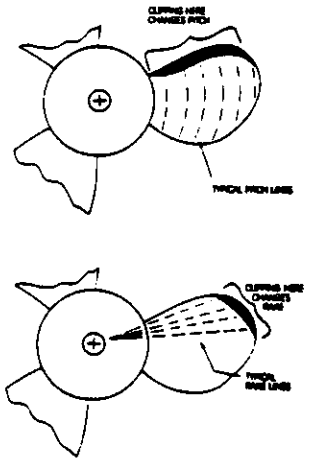
Rake

Rake is simply a measurement of the angle of the prop's blades in relation to its hub. The more the blades are angled toward the rear, the higher the rake is. A higher rake angle generally improves the ability of a propeller to work in a cavitating or ventilating situation.



Cavitation occurs when a performance problem causes the water around the blade to boil, producing a gas. Ventilation occurs when the prop's blades catch surface air or exhaust gases. Both situations affect performance, and cavitation can damage a prop by eroding the metal (cavitation burn).

Increasingly, riggers are mounting engines higher on transoms to improve topside speed, handling, and shallow water performance. As this type of mounting places the propeller nearer to the surface, the possibility of ventilation increases.



Cupping on a propeller can add to the rake or the pitch of a prop, depending where it is. Cupping is simply when the trailing edges of the propeller blades are built with curl towards the rear. Generally, cupped blades improve the planing performance of a boat. The cup helps the blades "hold" (not break loose when operating in a ventilating or cavitating situation.) This permits the engine to be further trimmed out or mounted higher on the transom, adding to top speed, particularly on faster boats.

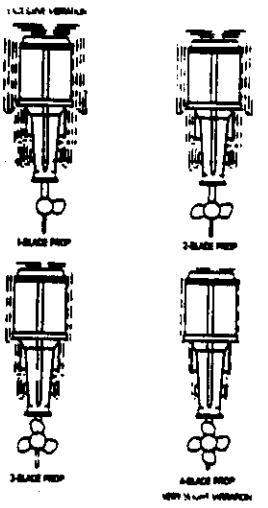
If cupping is on the rear edge of the prop it will effectively increase pitch and reduce full-throttle engine speed 150 to 300 RPM below the same pitch prop with no cup.

Adding cup to the ends of the blades effectively increases rake, which in turn can help solve cavitation or ventilation problems. Engine RPM can sometimes be reduced by as much as 1000 RPM if the uncupped propeller was running partially "blown out." This condition, also called "gear case blowout", is caused when the gear case housing in the lower unit (topedo) itself causes cavitation. A partially blown out propeller has a mushy or feel unresponsive and produces a lot of prop spray.

Cupping is of no value on props used in heavy duty or work conditions where the prop remains fully underwater.

Number of Blades

The less blades a propeller has the more efficient it is; the more blades it has the lower the engine vibration is. A single-blade propeller would be most efficient, if the vibration could be tolerated.



During the 1960's and 70's two-bladed propellers were standard on many outboards. These props produced a fast boat, but any damage to one blade would throw the propeller way out of balance, resulting in serious vibration.

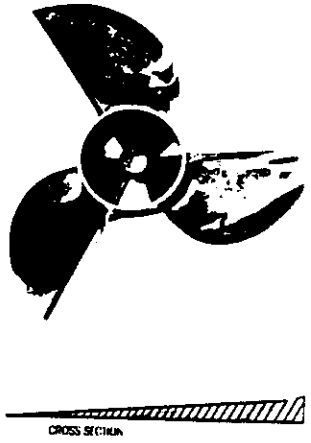
Most engines are now equipped with 3-bladed propellers, although increasing numbers of boaters are opting for 4-bladed props. The blades on a 4-blade prop are smaller and rev quicker but push less water. This produces better acceleration, getting the boat on plane quicker, but topside speed is reduced.

Propeller Design

Specialized propellers can be purchased by boaters with special needs. One type the **high-reverse** (high thrust) is used primarily for applications that don't involve planing, such as on a workboat/barge or an auxiliary engine on a sailboat. These props are larger in diameter, low in pitch, have greater blade area, and 0° rake. They provide maximum thrust in reverse by diverting exhaust gases away from the prop blades.

Another propeller used to manage exhaust gases is the **chopper** type prop. Exhaust gases pass over the hub instead of through the propeller hub. This frees the engine to wind up quickly during planing. It permits higher engine mounting on the transom for more speed, less steering torque, better handling and better shallow water operation. It also resists "breaking loose" when on plane. As it is a high performance propeller, its construction makes it easy to damage on underwater obstructions.

Weedless propellers generally are constructed with a high degree of sweepback on the leading edge of the blades. It should be kept in mind that the word "weedless" is a relative term. One can always find enough water weeds in Louisiana to cause a propeller to choke or cavitate.



Cleaver type propellers are odd looking critters that have their trailing edge cut in a straight line. A cross-section of the blade usually shows that it is shaped like a wedge with the leading edge being very thin and sharp and the trailing edge the thickest point. This style prop is best suited for high-transom engine installations which allow the propeller blades to break the water surface. It is a high performance propeller. Installing a cleaver type propeller under other circumstances, such as standard installations, can reduce performance, RPM, and boat speed.

Construction Material

Aluminum is standard and still the most popular material for propeller construction. It is relatively inexpensive, has good corrosion resistance, and is easily repaired. Its biggest drawback is that it is easily damaged on underwater obstructions, especially with more powerful engines.

Stainless steel props are strongest, most corrosion resistant propellers made, being about 5 times stronger than aluminum. They are also substantially more expensive than aluminum, but the up-front cost is eased by reduced trips to propeller repair shops. Contrary to popular belief, replacement of an aluminum propeller with a stainless steel one will not automatically produce a faster boat. However, since stainless steel is so much stronger than aluminum, high performance propellers with thin blades are always constructed of stainless steel.

Plastic propellers are not really plastic at all but rather are made of nylon. They are lightweight, corrosion free, and because they are not metal, will not cause galvanic corrosion (electrolysis) problems on nearby aluminum. Plastic propellers are used on electric trolling motors and low horsepower gasoline outboard motors.

Fiberglass props are also available. While not suitable for long-term heavy use they do make an excellent spare propeller as they are quite lightweight.

Selection of the best propeller for a boat can be challenging. While most people will probably continue to leave propping decisions to the dealer, the rigger must still know how the boat will be used in order to select the best propeller. At the very least a boat operator should give some thought to performance expectations with the probable uses of his boat.

A commercial fisherman will at times (hopefully) carry heavy loads. So may sport fishermen making multi-day trips to remote camps accessible only by water. Either must decide if he wants best prop performance with or without a load, or some compromise. Fuel economy may also be a consideration, especially for commercial fishermen.

A boat used mainly for water skiing may need to be under-propped with a lower pitch propeller. This develops added thrust to pop the skier out of the water.

On the other hand, a boat used for general cruising does not require top acceleration. Added fuel economy, less engine wear and lower noise levels can be gained by selecting a higher pitched prop to operate the engine at the lower end of the engine's recommended RPM.

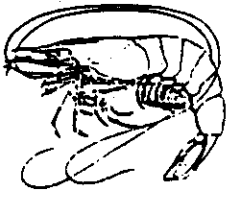
Fishing boats range from high performance bass boats to boats used primarily for low speed trolling. Propeller selection will, of course, also vary a great deal. Good communication between the boat owner and his dealer or rigger are essential to best performance.

Source: *Everything You Need to Know About Propellers. Third Edition.* Brunswick Corporation. 1987. Thanks to George Haydel of Metro Boating Inc. for assistance and review of this article.

MORE OFFSHORE SHRIMP REGULATIONS?

The Gulf of Mexico Fishery Management Council has received a request from Dr. Andy Kemmerer, Regional Administrator for the National Marine Fisheries Service (NMFS) to develop a new amendment to the Shrimp Management Plan for federal waters.

Discussions on the amendment will include provisions for federal shrimping permits for all shrimpers, and for vessel owners selected by NMFS the required use of logbooks, on-board observers and an electronic vessel monitoring system. The shrimp fishery is the last of the major Gulf fisheries without a permit requirement.



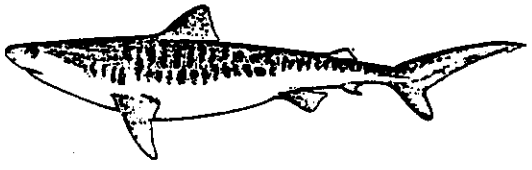
Something on this possible amendment should appear on paper this fall with possible movement on an amendment by spring, 1999. If approved, this would be Amendment 10 to the Shrimp Plan.

LUNCH WITH A TIGER SHARK

Tiger sharks are one of the more common large sharks on the Louisiana coast, being found from the beach out to the 50 fathom area. They can grow up to 14 feet long and weigh as much as 1400 lbs, and are found worldwide.

While the tiger shark's size is impressive, its diet is even more interesting. It is considered to be one of the world's most dangerous man-eaters (especially in the Caribbean) and also a swimming garbage disposal. The list of unexpected and unusual goodies found in tiger sharks' stomachs includes a rubber tire, a roll of tar paper, a roll of chicken wire, a bag of potatoes, a sack of coal, rags, bottles, shoes, dogs, a variety of land and sea birds, the head and front part of a crocodile, and parts of sheep, cattle and horses.

Usually, however, tiger sharks have a more typical shark-type diet. Work done by the National Marine Fisheries Service on the Atlantic Coast, shows that tiger sharks feed most heavily on bottom fish like flounders, lizard fish and sea robins. Also fed upon to a lesser degree, were schooling fishes such as mackeral, bluefish and butterfish. Interestingly, 23% of the sharks checked had fed on other sharks and rays and 24% had pieces of porpoises, dolphins or whales in their stomachs. Tiger sharks also feed on sea turtles where they are common.



Tiger sharks are very easy to recognize. Young ones are very heavily spotted. When they get older, the spots tend to blend together making the animal look like it has stripes. All tiger sharks have very rounded (not pointed) noses and (if you care to get close enough to check) sharply curved serrated teeth.

MERCURY IN FISH

Mercury is a natural element, not a manufactured pollutant. It is a very important metal, widely used by man in manufacturing or by itself in devices such as thermometers. Unfortunately, man's use of this important metal has released quantities of it into the earth's air and water.

At low levels it is not detectably harmful to people and animals. At high levels it may harm or even, in rare cases kill. Mercury first entered the news in the 1060's when over 100 people in Japan became ill or died as a result of eating mercury-contaminated fish almost daily over a long period of time.

In both Minimata and Nigata, Japan, industrial discharges of mercury were made directly into bays where fish were harvested heavily for human consumption. Average mercury concentrations in fish tissues.from both areas ranged from 9 to 24 parts per million (ppm), with some fish having levels up to 40 ppm.

By comparison, the highest average concentration found so far in Louisiana was 0.984 ppm for a sample of king mackerel collected off of Grand Isle. The highest concentration found in any single fish was 4.04 ppm in one largemouth bass from the Ouchita River. This means that the lowest average concentration of mercury found in

Japan was over 9 times higher than the highest reported average for Louisiana. For individual fish, the highest concentration in a single fish was over 10 times higher than the highest in any single fish in Louisiana.

The U. S. Food and Drug Administration uses a maximum allowable level of 1.0 ppm of mercury to protect consumers. This is 10 times lower than the lowest levels that cause any health impacts from mercury. The Louisiana Department of Health and Hospitals (LDHH) and the Louisiana Department of Environmental Quality (LDEQ) consider issuing a fish consumption advisory at half that level, 0.5ppm. Most advisories do not result in a recommendation to eat no fish from the affected area, but rather to limit one's meals of fish from the area over a period of time.

Louisiana's first fish advisory was issued in 1992 on the Ouachita River. This led to a mercury study in 12 north Louisiana lakes. No advisories were issued for these lakes. In 1994, LDEQ and the U. S. Geological Survey began a statewide mercury contaminants study to sample 33 new sites each year for 3 years. Since then, LDEQ has continued the study on its own. Currently, with over 100 water bodies sampled, 14 advisories have been issued.

Anyone interested in more information on mercury and other fish consumption advisories may call the LDHH hotline at 1-88-293-7020 or the LDEQ at (504) 765-0511.

Source: *Summary of Issues Related to Mercury Contamination of Fish.* December, 1997. Louisiana Department of Environmental Quality.

WHERE IS THE MERCURY COMING FROM?

Mercury, as a natural element, has always been present in low levels. Water leaches it out of naturally occurring deposits in bedrock, and small amounts of it vaporize into the air from the same source. Levels of mercury have increased significantly since the industrial revolution in this country. One study on Minnesota and Wisconsin lakes showed that levels rose 3.4 times from 1850 to modern times.

While listing all of the possible known sources of mercury is beyond the scope of this article, some sources are notable. Mercury is present in coal used as fuel at electrical power plants. Mercury is also used in many products such as thermometers, fluorescent and mercury vapor lights, and electrical switches which may eventually be burned or placed in landfills.

Mercury is released from these sources into the air by burning or direct vaporization. In a process similar to acid rain, the mercury is later deposited on the earth by rain, snow and sleet.

Other sources include chloralkali plants which use mercury to make chlorine and alkali with electricity, hazardous waste incinerators, and pulp and paper mills. Mercury

also comes from active and inactive mercury mines, metal processors, natural gas meters containing mercury, and past use of mercury in fungicides and pesticides.

In Louisiana, waste incinerators, paper mills, and chloralkali plants that are major mercury sources under the Air Toxics Rule are required to report mercury releases to LDEQ. Electrical power plants are currently exempt from the rule, but not other air quality regulations.

Source: *Summary of Issues Related to Mercury Contamination of Fish.* December 1997. Louisiana Department of Environmental Quality.

NUTRIA TALE

How things change! Recently while searching the Morgan City Archives for information to use in the Louisiana Marine Fisheries Museum, I came across a 1947 newspaper article that I'd like to share with you.

TINY FUR-BEARERS ARRIVE, WORTH $500 TO $1000 EACH

Expected to Start $1,000,000 Farm Industry

BY HAL N. YOCKEY

A group of tiny little animals which are almost worth their weight in greenbacks arrived in New Orleans Saturday, the vanguard of what their owners hope will be a million-dollar fur farm industry for Louisiana.

Coming off a Delta Line ship at Poydras wharf were 113 nutria, or South American otter, valued at $59,500 after a 20-day voyage from Argentina.

About 30 of the group will go directly to Houma, where the first nutria fur farm is being started by B. B. Heifner, a co-pilot on Chicago and Southern Air Lines, and Silas Martin of Houma, the ranch manager.

Organizer of the plan to set up the industry in Louisiana is Miss Mary E. Young, a 68 year-old fur farming pioneer who helped set up the first silver fox farm west of the Rockies back in 1919.

"We found the climate in Louisiana just about ideal for raising these animals," she explained Saturday. "Some nutria already live in a wild state in Louisiana and are trapped as part of the $9,000,000 fur industry here.

"We believe that with these pure-bred strains which we have brought in from a thoroughbred breeding ranch in Argentina we can produce the highest grade fur obtainable and get a good market price for it when it is sold."

The white-haired fur farmer of Bremerton, Wash., pointed to a group of six albino nutria among the shipment and said, "A fur coat made out of those recently sold for $65,000 out in Texas."

> She valued the brown furred animals at about $500 each, while the pure white strains were set at $1000 each. Prices for coats made of the pelts range from $2500 upward for the brown fur, she said.
>
> Like the otter, nutria skins are high in fur content, running about 98 percent fur.
>
> The nutria begin to produce at the age of seven to eight months and bear five litters of six to seven young over a two-year period. Strictly vegetarians, they are tame and easily domesticated, Miss Young said.
>
> With the rest of the shipment not destined for Louisiana, she left New Orleans Saturday night for Bremerton, where the animals will be sent to other farms throughout the United States.

Now nutria are seen as relatively useless, hardly worth trapping, and one of the causes of marsh destruction. We've considered bounties, and are now promoting them as human food (they do indeed taste pretty good) in order to control them. How things change.

Source: *New Orleans States Item Newspaper.* November 16, 1947.

DIDJA KNOW?

* That if your boat is lost, destroyed, abandoned, stolen or sold you must notify the Department of Wildlife and Fisheries within 15 days?

* That if your boat is 16 feet long or longer, that besides a wearable personal floatation device, (PFD) for each person, that you must carry one throwable PFD?

* That all motorboats, except outboards and diesels, must have a backfire flame arrestor on each carburetor? That includes gasoline mud boats.

* That, in Louisiana, every boat from 16 to 65 feet long must carry a whistle or sound-producing device?

* That, in Louisiana, every boat 26 to 65 feet long must have a bell? When anchored under reduced visibility caused by fog, mist, snow, or rain, you must ring the bell rapidly for 5 seconds at one minute intervals.

* That any boat used in the gulf and in any bay or sound emptying into the gulf, must carry 3 daytime and 3 nighttime (or 3 of the combination type) visual distress signals? The only exceptions are for recreational boats under 16 feet long, rowboats, canoes, kayaks, open sailboats under 26 feet with no motors, and boats in an organized marine event **used during daylight hours only.**

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THE GUMBO POT
Victor's Can't Miss Seafood Gumbo

Gumbos are a staple dish in south Louisiana diets. Anyone that has eaten gumbos knows that there is a big difference between their taste. This is an excellent basic seafood gumbo recipe. If you insist on using crabs in the shell rather than picked crabmeat, 7 to 10 average-sized crabs are the equivalent of a pound of meat. This recipe was supplied by Victor Adams of Gretna. Victor is an avid fisherman and cook.

1/3	cup cooking oil	2	bay leaves
1/3	cup flour		salt and pepper
3	onions, chopped	2	lbs peeled shrimp
1	bell pepper, chopped	1	lb crabmeat
4	stalks celery, chopped	1	pint oysters
3	cloves garlic, minced		file
2	quarts water		

Make a roux by adding flour to oil. Cook over a medium heat until dark brown. Stir constantly or flour will burn and you will have to start over. When flour is browned, add onions, bell pepper, celery, and garlic and simmer, stirring constantly. When vegetables are glossy, add water, bay leaves, and salt and pepper to taste. Cook on low heat for ½ hour. Add shrimp and cook 15 minutes. Add crabmeat and oysters and cook another 15 minutes. Turn off heat and set aside at least one hour before serving. Reheat if necessary. Serve with rice. Add file to individual bowls if desired. Serves 4-6.

Sincerely,

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