



RED SNAPPER FACTS

by Kevin Savoie

The red snapper, *Lutjanus campechanus*, is one of the most sought-after fish in the Gulf of Mexico, prized by both commercial and recreational fishermen. Red snapper makes excellent table fare and is featured in many fine restaurants. Most red snappers landed in Louisiana are caught in federal waters or beyond three miles of shore. Other members of the snapper family (*Lutjanidae*) found in the northern Gulf of Mexico include vermilion snapper or B-liner, gray or black snapper, lane snapper, and occasionally cubera snapper. Snappers are often the most abundant fishes around oil platforms, shipwrecks, and artificial reefs.

Red snappers spawn in late spring and summer, with peaks in July and August. It is uncertain at what depth or location red snappers spawn, but some scientists believe that fish move away from reef structures to spawn. Once spawned, the eggs are buoyant and float to the surface where they hatch in about 24 hours. At this stage the larvae are about 1/16 inch and extremely vulnerable to predation. They grow rapidly in the warm surface waters for about 20 days, after which time they begin to settle to the bottom. At six months to one year, juvenile snappers begin to migrate to reefs and become structure-oriented. Red snappers grow about four inches per year for the first six years, then growth slows. Average lengths per age would be eight inches at two years, 16 inches at four years, 24 inches at six years, and 28 inches at eight years. Since it takes three to four years for a fish to reach a spawning size of 15 to 16 inches, it's easy to realize how increasing size limits increases the potential for reproduction.

The history of red snapper management has undergone many changes by the Gulf of Mexico Fisheries Management Council under the reef fish management plan. Modifications to the management plan are recommended by the council based on biological and socioeconomic data. Any changes must be approved by the National Marine Fisheries Service (NMFS).

The Sustainable Fisheries Act of 1996 requires the regional councils and NMFS to define maximum sustainable yield (MSY) and adopt new and generally more conservative definitions of overfishing and optimum yield. The overfishing threshold for red snapper is 26% SPR and the optimum yield is 10% above that, or 36%. In 1984, the stock was estimated to be about 0.6% SPR, at which time development of a recovery program began. The forecast is for the overfishing threshold to be attained by the year 2033. Progress toward the goal will depend on better fisheries data, wise decision making, and compliance with regulations.

Currently, red snapper stocks are considered to be in an overfished state. Overfishing, in this case, means fishermen were removing fish before they had a chance to spawn or enter the

"spawning stock." The condition of the red snapper stock is measured as spawning potential ratio (SPR) which is a measure of the stock's reproductive capability. Spawning potential ratio is the number of eggs that could be reproduced by an average recruit (mature fish) over its lifetime when the stock is "fished," divided by the number of eggs that could be produced by an average recruit over its lifetime when the stock is unfished. Thus, SPR compares the spawning ability of a stock in the fished condition to the stock's spawning ability in the unfished condition.

EXAMPLE:

- 10 fish survive the first two years of life and are now large enough to get caught (recruited) in the fishery.

FISHED POPULATION:

- 4 are caught before spawning (no eggs produced).
- 3 are caught after 1 spawning (some eggs produced).
- 3 live to spawn 3 times (many eggs produced).

During their lifetime, the 10 fish produced 1 million eggs and the average recruit produced 100,000 eggs (1 million divided by 10).

UNFISHED POPULATION:

- 3 die of natural causes after spawning (some eggs produced).
- 7 spawn 3 times (many eggs produced).

During their lifetime, the 10 fish produced 5 million eggs and the average recruit produced 500,000 eggs (5 million divided by 10).

The spawning potential ratio (SPR) is then:

$$\text{SPR} = \frac{\text{fished}}{\text{unfished}} = \frac{100,000}{500,000} = .20 \text{ or } 20\%$$

Another tool used in the recovery of the red snapper stock has been the requirement of offshore shrimping vessels to use bycatch reduction devices (BRD). These devices are designed to allow finfish to swim out of trawls while retaining shrimp. BRDs were made mandatory in 1998. A certified BRD was required to reduce bycatch of juvenile red snappers by 44%.

The recovery plan established the total allowable catch (TAC) to allow for harvest and population growth. In 2001, the TAC was set at 9.12 million pounds, 4.65 million pounds commercial and 4.47 million pounds recreational quota.

Under the plan, the commercial season begins February 1 at noon and closes February 10 at noon. The season runs for the first 10 days of each month until two-thirds (3.1 million pounds) of the commercial quota is reached. The remaining one-third (1.5 million pounds) is harvested in the fall. The recreational season runs from April 21 through October 31. The recreational bag limit is four fish with a 16-inch minimum size limit. Increased effort and increased poundage (larger fish harvested) remain a problem for management of the red snapper recreational fishery.