

## *Scomberomorus regalis* (Cero)

Family: Scombridae (Mackerel, Tunas and Bonitos)

Order: Perciformes (Perch and Allied Fish)

Class: Actinopterygii (Ray-finned Fish)



**Fig. 1.** Cero, *Scomberomorus regalis*.

[<https://www.flmnh.ufl.edu/fish/discover/species-profiles/scomberomorus-regalis/>, downloaded 24 February 2017]

**TRAITS.** *Scomberomorus regalis* is a large torpedo-shaped sea fish whose body is covered entirely in scales and grows to a maximum length of 183cm. Males are usually mature at 32-34cm and females at approximately 38cm in length (Bester and Perrotta, 2017). Its dorsal side is usually dark blue to blue green and its ventral side is silver as shown in Fig. 1. The sides of *Scomberomorus regalis* are also silver and are adorned with oval yellow spots. A yellow-brown mid-lateral stripe also extends along the sides of this fish from the pectoral fin straight to the base of deeply forked caudal fin. It has 8-9 finlets behind the second dorsal fin (McEachran and Fechhelm, 2005). Its bluish black coloration on the anterior third of its first dorsal fin and the presence of scales on its pectoral fins are just two characteristics that help to distinguish it from other closely related species. The head of this fish slopes slightly to a pointed snout. Its big mouth contains triangular teeth (Bester and Perrotta, 2017). The slender region of the fish's body to which the tail is attached is the peduncle; the cero has three keels on each side of its peduncle and it has no swim bladder.

**DISTRIBUTION.** Within the Scombridae family, *Scomberomorus regalis* is the most characteristic of the West Indies region and is native to Trinidad and Tobago and the islands of the Greater and Lesser Antilles (Fig. 2). It is also found in the western Atlantic extending from Cape Cod to northern South America (McEachran and Fechhelm, 2005).

**HABITAT AND ACTIVITY.** *Scomberomorus regalis* is found mainly in midwater or near the water's surface and is widespread in clear waters. It usually lives around coral reefs (Fig. 3),

wrecks and along ledges at depths spanning 1-20m (Collette and Russo, 1984). This fish is active during the day and is therefore described as a diurnal species.

**FOOD AND FEEDING.** *Scomberomorus regalis* feed on other animals and live in midwater and are therefore described as pelagic carnivores. Their diet consists mainly of smaller ray-finned fish including clupeids, anchovies, and atherinids. They also feed on cephalopods such as squid, crustaceans such as shrimp, and other invertebrates. They are also known for feeding on the larval stages of these animals. Cero are constantly in motion (Fig. 4) and can travel at a speed of 50 km per hour (Bester and Perrotta, 2017). They use this feature as well as their powerful jaws decked with razor sharp teeth to their advantage to capture their prey. Sometimes to scare its prey, it makes an exit through the surface in a long low leap into the air and returns to water with a little splash (Randall, 1967). In so doing it disrupts a school of fish and captures its meal. A bar jack of 15cm fork length is the largest intact fish to be ever removed from the stomach of the cero.

**POPULATION ECOLOGY.** Very little information is available about their global landings as they are usually underreported. These species are mistaken for other species such as the king mackerel and as a result their landings are combined with those of these species. *Scomberomorus regalis* is widespread especially over the Caribbean region and increases in its population have been observed over generations. The cero is a commercial and recreational fish that is usually captured by using gillnets. In November 1994, Florida banned the use of gillnet fishing within their waters and as a result interaction between fishermen and this species is minimal. This may have helped to contribute to the overall stable cero population observed in US waters. They spawn all year round allowing them to continually produce offspring to maintain or increase their population sizes. This species seems to be affected by the environmental cycle as fluctuations in the number of captured fish are seen based on the existing environmental conditions (Safina Center, 2012). This species usually travels alone or in relatively small groups (Ristori, 2012).

**REPRODUCTION.** Reproduction in cero occurs year round in most countries such as Venezuela, Florida and Puerto Rico. Reproductive activity of *Scomberomorus regalis* in these countries is at its maximum mainly from April to September (McEachran and Fechhelm, 2005). Spawning in Jamaica however, does not take place all year round but has been noted to occur between April and October. Males attain reproductive maturity at smaller sizes than females. Studies conducted in Puerto Rico have shown that at 50% maturity females are 41cm fork length while the males are only 35cm fork length (Figuerola-Fernández et al., 2007). Females are reproductively mature at 38-79cm and lay approximately 160,000 to 2.23 million eggs which are 1.16-1.22mm in diameter. These eggs are pelagic and develop into planktonic larvae (Bester and Perrotta, 2017).

**BEHAVIOUR.** The cero is most often used as a sport fish as is usually captured by trolling with cut bait. *Scomberomorus regalis* are able to evade predation by diving sea birds because their blue-green coloured backs camouflage perfectly with the water and therefore prevent them from being detected. However, escaping predation beneath them is difficult; some of these predators include wahoo, sharks and dolphins (Bester and Perrotta, 2017).

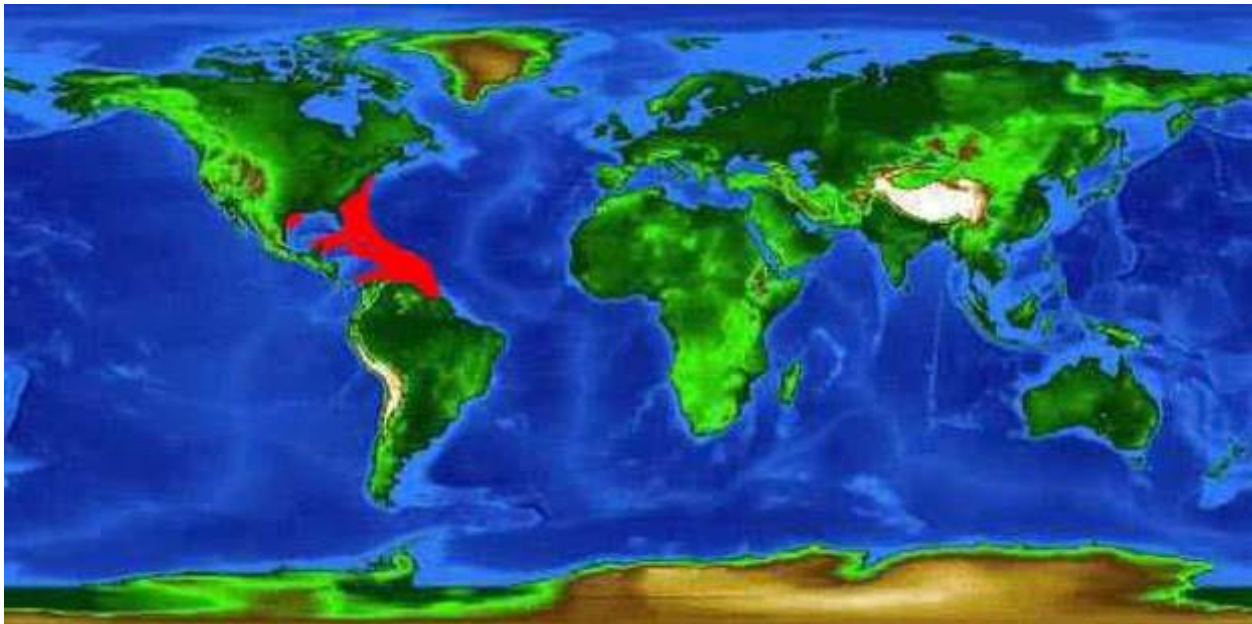
**APPLIED ECOLOGY.** The IUCN red list lists *Scomberomorus regalis* as of Least Concern as no major threats are targeted towards this species. As a result, there is no need for protective measures to be implemented. It is mainly captured during recreation and on some occasions for commercial use. Additionally this species is not identified as one that is overfished (Collette and Russo, 1984).

#### REFERENCES

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**Fig. 2.** *Scomberomorus regalis* geographic distribution.

[<http://flylifemagazine.com/wp-content/uploads/2014/07/cerobasemap.jpg>, downloaded 24 February 2017]



**Fig. 3.** *Scomberomorus regalis* amongst coral reefs.

[<http://biogeodb.stri.si.edu/caribbean/en/pages/random/4390>, downloaded 24 February 2017]



**Fig. 4.** *Scomberomorus regalis* in motion.

[<http://www.snorkelstj.com/cero-mackerel.html>, downloaded 24 February 2017]