

Trachinotus falcatus (Permit)

Family: Carangidae (Jacks and Pompanos)

Order: Perciformes (Perch and Allied Fish)

Class: Actinopterygii (Ray-finned Fish)



Fig. 1. Permit, *Trachinotus falcatus*.

[[http://en.wikipedia.org/wiki/Permit_\(fish\)](http://en.wikipedia.org/wiki/Permit_(fish)), downloaded 15 March 2015]

TRAITS. The permit's tail is deeply forked with the anterior dorsal fin being elongated; the long sickle-like fins give the species its name *falcatus*. The body of the fish appears to be thin and tall due to its lateral compression (Fig. 1). The body is also compact with a compressed, short and deep shape which ends with the head sloping into a blunt snout. The mouth is short and contains small, backwards curved conical teeth (Fig. 2). The permit has 16-19 soft anal rays and 17-21 soft dorsal rays. The dorsal fin is in place directly above the anal fin. The general coloration of the permit is silver grey with a ventrodorsal darkening of colour, some permits are known to have an orange marking under the gill flap. The maximum size of the permit is a length of 122cm and a mass of 36kg.

DISTRIBUTION. The permit generally inhabits the western Atlantic; a few have been reported

in the eastern Atlantic but rarely. Permits occur in offshore waters from Massachusetts, southern Florida, the Bahamas and Caribbean Sea to Brazil (Fig. 3).

HABITAT AND ACTIVITY. Permits occupy sandy beaches and flats, they can mostly be found inshore, and are also found in holes, channels and cuts adjacent to these areas. These flats may contain sand, mud, marl, or sea grass in the substrate. Due to the large body depth of the permit (large specimens) they cannot occupy shallow very waters as other species of fish, juveniles however could be found in shallow flats less than 0.6m deep (Fig. 4). In offshore areas and deeper waters up to 30m, permit are seen in large schools, near jetties, shipwrecks and structures. This usually occurs when it is spawning time for the fish. Permits become solitary with age and size and the largest specimens may be seen alone or in pairs.

FOOD AND FEEDING. Permits usually forage for crustaceans such as shrimp and crabs and molluscs such as limpets. These hard food items are crushed by the permit's granular teeth and pharyngeal bony plates. These fish are opportunistic predators and may prey on other animals such as copepods, polychaetes, amphipods and smaller fish. Juvenile permits feed on larval shrimps, mysids and amphipods; as the juveniles get larger they start to feed on larger benthic prey such as clams, mole crabs, and sea urchins. Permits develop small, conical teeth as they grow bigger which aids in crushing the hard shells of the organisms they consume.

POPULATION ECOLOGY. Schools of permits larger than ten individuals have been encountered, however as permits mature and grow larger the size of the school decreases. Specimens at the top of the growth range are solitary and often travel and feed alone or in pairs.

REPRODUCTION. Permits may spawn all year but reproduction peaks from May to June, warmer water temperatures are favoured by the species as they spawn more in summer months than winter. Permits may spawn over artificial or manmade reefs and/or natural reefs or in near-shore waters during these months. Males are sexually mature at 2.3 years and at a size of 50cm, females however attain sexual maturity at 3.1 years and at a size of 55cm. In some areas adults move offshore to spawn. This offshore meeting of permits can contain 250-500 individuals. Spawning is at sunset, the week after a full moon (Graham and Castellanos, 2005). Fertilization occurs in the water where the permits congregate; the tiny larvae are then transported towards the coast where they develop into juveniles in sheltered areas such as estuaries and coastal habitats.

BEHAVIOUR. Permits are mostly seen in large schools during spawning as they usually live solitary lives or are found in very small schools. These large schools occur in deep water near the ocean currents which aids in the transportation of the fertilized eggs to nursery areas. During feeding large adults are generally solitary and have been seen travelling and foraging in intertidal flats (Adams et al., 2006; Graham and Castellanos, 2005).

APPLIED ECOLOGY. The permit is not listed by the IUCN on the red list as a threatened species. The permit is a highly prized game fish (Fig. 5) and is harvested by sport fishermen for catch and release and it is sometimes consumed by people. It is also commercially harvested in Florida. The minimum size limit for capture of the permit was increased by one inch to 11 inches (27cm) for both recreational and commercial purposes; the bag limit was also decreased by 4, allowing a person to catch 6 permits per day.

REFERENCES

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<http://www.flmnh.ufl.edu/fish/gallery/Descript/permit/permit.html>
- Graham, RT & DW Castellanos. 2005. Courtship and spawning behaviors of carangid species in Belize. *Fish. Bull.* 103: 426-432.
- Randall, JE. 1967. Food habits of reef fishes of the West Indies. *Stud. Trop. Oceanogr.* 5: 665-847.

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Fig. 2. Close-up of a permit's head, showing blunt nose.

[<http://www.flmnh.ufl.edu/fish/gallery/Descript/permit/headshot.jpg>, downloaded 15 March 2015]

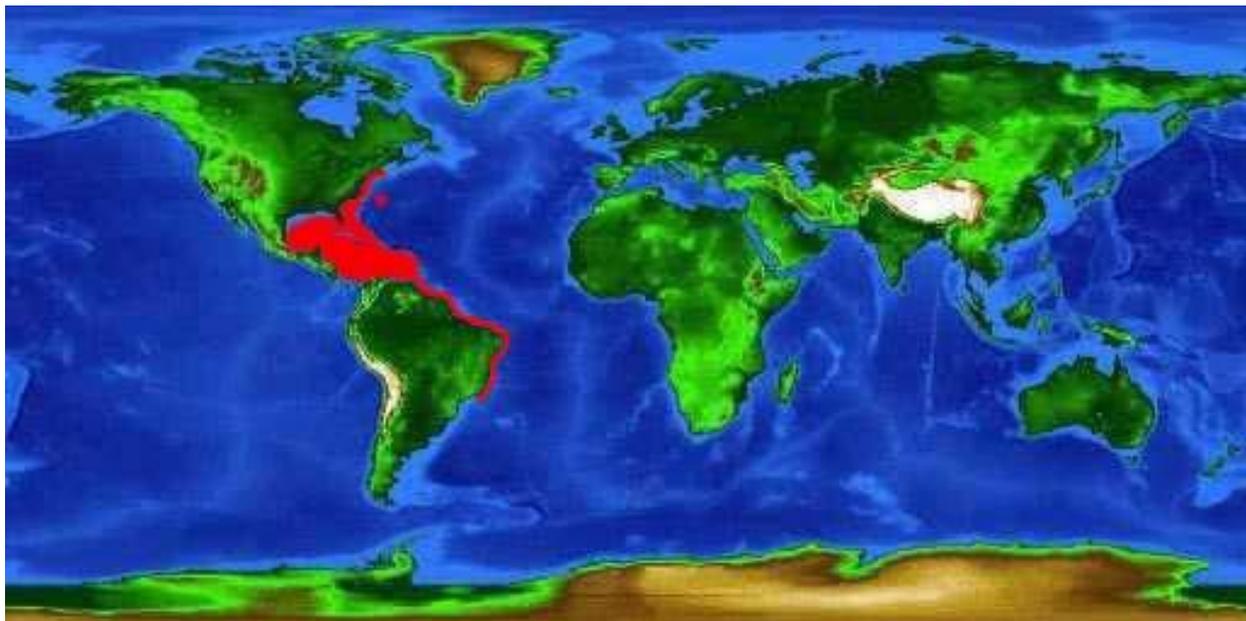


Fig. 3. Global distribution of *Trachinotus falcatus* (permit).

[<http://www.flmnh.ufl.edu/fish/gallery/Descript/permit/map.jpg>, downloaded 15 March 2015]

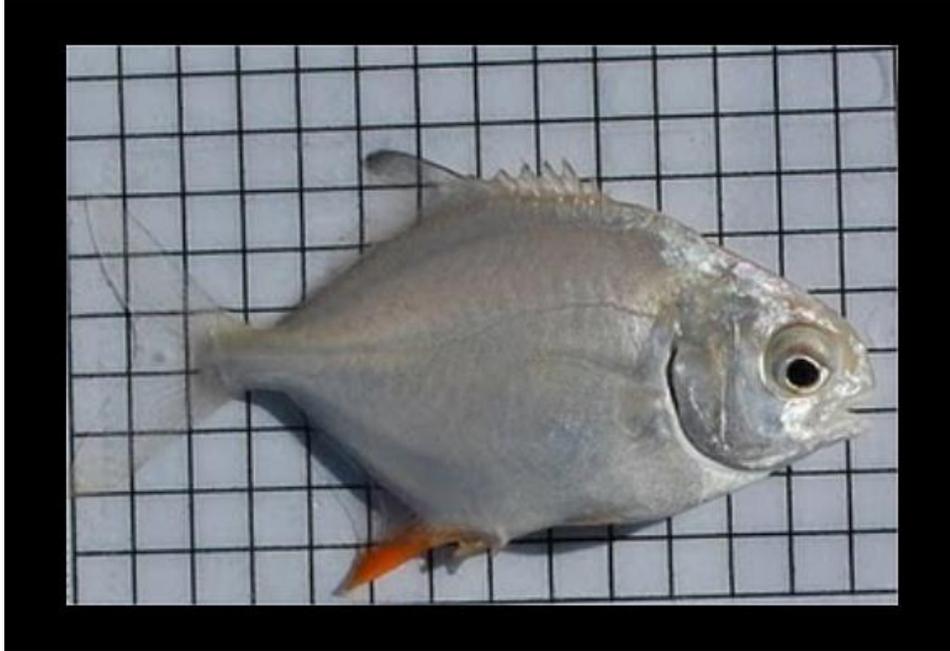


Fig. 4. Juvenile permit.

[http://flseagrant.ifas.ufl.edu/newsletter/wp-content/uploads/2012/10/permit_fluech1.jpg, downloaded 15 March 2015]



Fig. 5. An angler with an adult permit.

[http://ghosthunterfishing.com/permit/portfolio_images/permit-fish-image-01_0.jpg, downloaded 15 March 2015]

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