Makaira nigricans (Atlantic Blue Marlin)

Family: Istiophoridae (Billfish)
Order: Perciformes (Perch and Allied Fish)
Class: Actinopterygii (Ray-finned Fish)

Fig. 1. Atlantic blue marlin, *Makaira nigricans*.

[https://www.flmnh.ufl.edu/fish/discover/species-profiles/makaira-nigricans/, downloaded 29 September 2016]

TRAITS. Sometimes referred to as maman-balatre in Trinidad (ICCAT, 2004), Atlantic blue marlins can be up to 4.3m long and weigh up to 900kg (National Geographic, 2016). They are the largest of the istiophorid fish; male marlins are smaller than females (IGFA, 2016). The largest blue marlin on record in Trinidad and Tobago was about 456kg (Fishingtnt, 2016). The top of an Atlantic blue marlin's body is a dark blue colour whereas the underside is a silver-white colour. On its side there are 15 rows of blue spots (Flmnh, 2016). Marlins have two dorsal fins and two anal fins and a long sword-shaped upper jaw (Fig. 1). The blue marlin also has a specialized blood vessel structure called a countercurrent exchanger that allows it to warm the brain and eyes. This is advantageous to the marlin because it provides heightened senses for hunting; they are able to see, think and react more efficiently and quicker than other fish (Oceana, 2016).

DISTRIBUTION. Atlantic blue marlin are widely distributed in the Atlantic Ocean (Fig. 2), ranging from approximately 44°N to 30°S (Flmnh, 2016). In Trinidad and Tobago they are present all year round but the population peaks between February and June (Fishingtnt, 2016). Marlin fish are a highly migratory species, they will swim for miles following the warm currents of the ocean. This means they are often spotted in open waters far away from coastlines (National Geographic, 2016). One individual was tagged in the western Atlantic Ocean and then recaptured in the Indian Ocean (Oceana, 2016).

HABITAT AND ECOLOGY. Atlantic blue marlin are found in temperate tropical waters. They usually stay near the surface of the water above the thermocline (Flmnh, 2016), the transition layer between the ocean's warm surface water and cooler deep water (National Ocean Service, 2016). They prey on other fish that live near the surface such as mackerel, dolphinfish and tuna but sometimes will swim deeper to feed on squid (National Geographic, 2016; Flmnh, 2016). Female life expectancy is calculated as around 27 years maximum while males have an estimated 18 years maximum. However the oldest Atlantic blue marlin recorded was 11 years old (ICCAT, 2004).

REPRODUCTION. Fertilization occurs externally, females spawn a few million eggs at a time. Both male and female marlins release their gametes into the ocean and fertilization occurs when the sperm meets the egg. The egg usually hatches within a week, but this is dependent on the temperature (Oceana, 2016; Flmnh, 2016).

BEHAVIOUR. Blue marlins are more often than not found individually rather than in schools. Little is known about the behaviour of marlins because long term tracking technology is lacking and keeping these big fish in captivity is hard (ICCAT, 2004). Younger marlin feed on zooplankton while adults feed on pelagic fish and squid. As eggs they are eaten by fish that feed on plankton (Oceana, 2016). Marlins are aggressive predators. They hunt using their lethal sword-shaped bill to slice through schools of fish, then feed on the injured fish (Fishingtnt, 2016).

APPLIED BIOLOGY. Atlantic blue marlin's presence in the Atlantic Ocean provides the region with some economic benefit due to their popularity as a game fish (Animal Diversity Web, 2016). Most fishermen catch and release marlins (Oceana, 2016). Also its meat is a delicacy and is a popular fish for sushi (National Geographic, 2016). The IUCN red list has listed Atlantic blue marlins as a Vulnerable species (IUCN, 2016).

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Author: Ashley Wright
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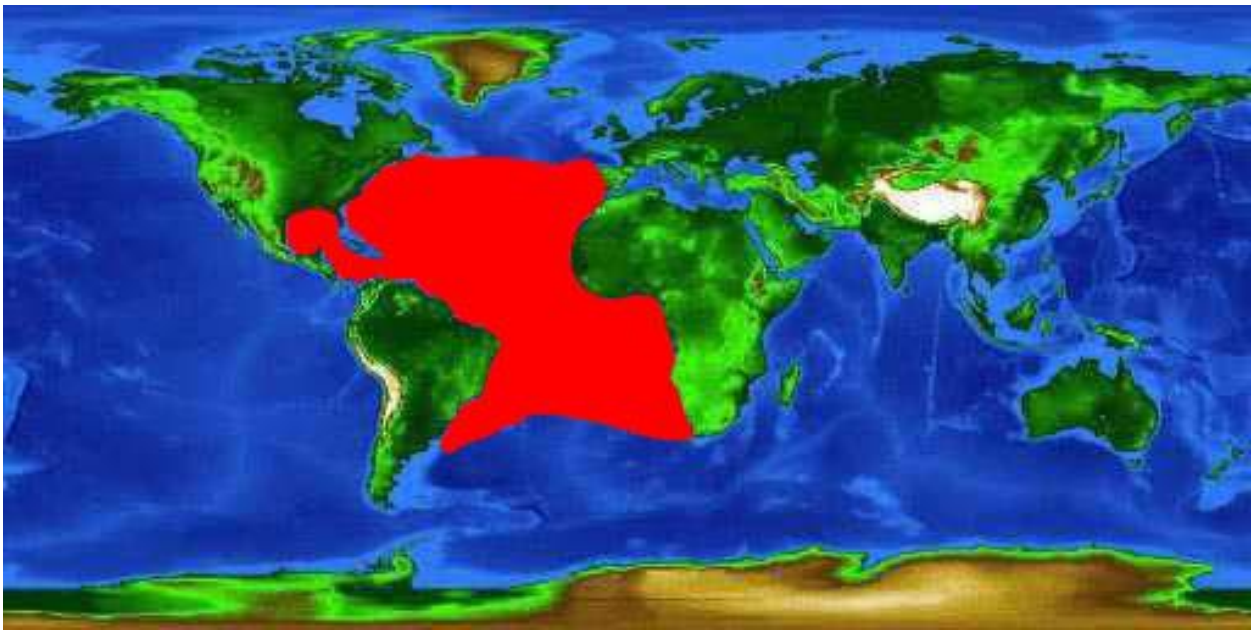

Fig. 2. Distribution of Atlantic blue marlin.

[https://www.flmnh.ufl.edu/fish/discover/species-profiles/makaira-nigricans/ downloaded 29 September 2016]