



KEY INFORMATION

Area(s) of Concern
Eastern North Pacific

Year Identified as "Species of Concern"
2010

Factors for Decline

- Interaction with vessels and fisheries
- Low reproductive rates, and hence a low intrinsic rate of recovery

Conservation Designations

IUCN: Endangered, North Pacific population.

CITES: Appendix II. Vulnerable globally and endangered in North Pacific.

Canada: Endangered in the North Pacific; protected under the Species at Risk Act.

USA: Prohibited species in the Pacific under the Highly Migratory Species Fishery Management Plan.

Convention on Migratory Species: Appendix I and II.

Current Status:

Demographic and Diversity Concerns:

There are three primary reasons for concern about the long-term viability of the basking shark population in the eastern North Pacific, which is hypothesized to include the populations observed off both California and Canada. First, observations and fisheries data suggest dramatic declines from the early and mid 1900's. Where schools in the hundreds and thousands used to occur off California, no more than 3 individual basking sharks have been observed at any one time since 1993 (Phillips 1948, Squire 1967, 1990, McFarlane *et al.* 2009). Similarly, in the bays and inlets of British Columbia, where thousands were reported in the early 1900s, only 6 sharks have been documented since 1996 (McFarlane *et al.* 2009). The current eastern North Pacific population size is estimated at 300 to 500 animals, or about 10% of pre-harvest levels (McFarlane *et al.* 2009). Basking shark fisheries off California and a shark eradication program in Canada, which ended in the 1950s and 1970s respectively, likely contributed to the population decline. Second, despite decades with no directed fishing pressure, the population has apparently not rebounded. Recovery is likely hindered by their low intrinsic recovery rate, as well as vessel strikes, fisheries bycatch, and illegal shark finning. Third, very little data exists on basking sharks basic demography and life history parameters, habitat use, and population structure. This lack of data limits our understanding of their biological status and our ability to assess threats and develop a recovery plan.

Existing Protections and Conservation Actions:

In the United States, basking sharks are a prohibited species in the Pacific Ocean in Federal waters. Animals incidentally caught cannot be retained and must be released immediately. Retention of basking sharks has also been banned in California state waters. In Canada, the Pacific population of basking sharks has recently (in March 2010) been protected under the Species at Risk Act (SARA) and has been designated as Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC 2007).

The North Pacific population of basking sharks has also been listed as endangered under the International Union for Conservation of Nature (IUCN) Red List, the Convention on the Conservation of Migratory Species (CMS), and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Under CITES, trade is not prohibited, but export permits are required and any trade cannot be detrimental to the species' survival.



Species of Concern

NOAA National Marine Fisheries Service

Factors for Decline:

As described above, historical fishing and shark eradication programs likely contributed to the declines in the eastern North Pacific population of basking sharks. Their low intrinsic recovery rate and impacts from human activities such as vessel strikes, fisheries bycatch, and illegal shark finning are likely hindering recovery. Additional information on life history and population structure and range is needed to assess the current status of this population and the potential effects of human activities and changing environmental conditions.

Data Deficiencies:

The key data needs for recovery include: (1) life history parameters, such as age at first reproduction, gestation period, litter size, mating periodicity, nursery ground locations, and the dynamics of sexual segregation; (2) population parameters, including information on population dynamics, size, geographic range, and population genetics; and (3) specific habitat use and needs in the North Pacific Ocean.

Brief Species Description:

Basking sharks are one of the largest shark species, second only to whale sharks. Like the whale shark, basking sharks are filter-feeders, primarily feeding on zooplankton at the surface. Basking sharks are characterized by large gill slits that nearly encircle the head, a pointed snout, and mottled dark gray to brown coloration (Ebert 2003). This species has been reported globally from tropical to arctic waters, but are most commonly observed in coastal temperate waters where flow patterns set up convergence zones that concentrate forage (Sims and Quayle 1998, Sims 1999, Ebert 2003).

Seasonal changes in the distribution of basking sharks are noted globally, with abundance shifting between higher latitudes in the spring and summer, and lower latitudes in the fall and winter months. In the eastern North Pacific, basking sharks are thought to originate from a single population that shifts north to south seasonally from Canada to central California (Compagno 2001, Ebert 2003, McFarlane *et al.* 2009). The full geographic range of this population and potential links to the central, western, or southern Pacific are unknown. Basking sharks are observed across the North Pacific from North America to the Hawaiian Islands, to Japan and China, including Taiwan.

Basking sharks appear to have very low reproductive rates and may be more vulnerable to overfishing than any other shark species (Compagno 1984, 2001). Pupping frequency has not been determined, but has been estimated at 18 months to 3 years, with litter sizes of about 1 to 6 pups. While some estimates are available, in reality, most aspects of their reproductive biology and age and growth are unknown or poorly understood (Ebert 2003).

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