Common Name: NORTH ATLANTIC RIGHT WHALE

Scientific Name: *Eubalaena glacialis* Müeller

Other Commonly Used Names: Northern right whale, right whale

Previously Used Names: *Balaena glacialis*

Family: Balaenidae

Rarity Ranks: G1/S1

State Legal Status: Endangered

Federal Legal Status: Endangered

Description: North Atlantic right whales are robust baleen whales weighing as much as 63 metric tons (70 U.S. tons) and growing upwards of 15 meters (50 feet) in length. Newborn calves are approximately 4 meters (13 feet) long at birth. Distinctive characteristics include a strongly arched lower jaw, no dorsal fin, a V-shaped blow when the whale surfaces to breathe, large white patches on the head (callosities), paddle-shaped flippers, and a large head that may exceed one fourth of total body length. Most right whales are uniformly black, but some individuals have areas of white pigmentation on the belly. Two rows of black baleen plates up to 2.5 meters (8 feet) in length grow from the roof of the mouth . Each baleen plate is fringed with fine hair-like structures that enable the whales to filter plankton from the surrounding water. Right whale callosities are areas of raised, jagged skin located near the whale's blowhole, eyes, rostrum, lip-line, and chin. The callosities are black in color but appear white because they are colonized by populations of white amphipod crustaceans called cyamids or "whale lice." Each right whale has a unique callosity pattern, enabling scientists to distinguish individuals.

Similar Species: Three species of right whales inhabit the world's temperate oceans: the North Atlantic right whale, the North Pacific right whale (*Eubalaena japonica*), and the southern right whale (*E. australis*). The three species are virtually identical in appearance, but genetic studies indicate that the three populations have been reproductively isolated for several million years. Bowhead whales (*Balaena mysticetus*) are similar in appearance to right whales, but lack callosities and inhabit cold waters adjacent to the Arctic Ocean ice cap. Right whales and bowhead whales were often placed in the same genus *Balaeana* in the past, but genetic evidence supports the existence of two distinct genera.

Range and Habitat: North Atlantic right whales formerly inhabited temperate, coastal shelf waters along the coasts of Europe and North America, but the European subpopulation was extirpated by commercial whaling in the 19th century. The current range is centered along the Canadian and U.S. Atlantic coasts from Nova Scotia to Florida, although sightings in the Gulf of Mexico and off Greenland and Scandinavia are reported rarely. Each summer, right whales aggregate at foraging grounds off New England and Atlantic Canada. Known foraging locations include Cape Cod Bay, the Great South Channel (east of Cape Cod), the Bay of Fundy, the Scotian Shelf, and the Gulf of St. Lawrence. Arrival of right whales at foraging locations is strongly correlated to abundance of *Calanus* copepods. Such areas tend to be 100 - 200 meters (330 - 660 feet) deep with relatively flat bottom topography adjacent to areas of steeply sloping topography. Each winter, calving females and some non-breeding whales migrate to the calving grounds located off Georgia and northeast Florida. Right whales are usually sighted 8 - 40 km (5 - 25 miles) off the Georgia coast from December through March. However, they are occasionally seen from the shore in Florida where deeper water comes closer to the coastline. Waters in the calving grounds are relatively shallow (9 - 15 meters, [30 - 50 feet] deep) and the temperature is stable and cool (11 - 17ºC, [52 - 63ºF]). Scientists speculate that the shallow, sheltered, cool waters off Georgia and Florida present habitat characteristics that are particularly conducive to right whale calving and nursing. At any given time, the whereabouts of ¼ - ½ of the right whale population is unknown, which has fueled speculation that alternate foraging and calving grounds may exist.

Diet: Despite their large size, right whales feed on some of the smallest prey of any whale species. Their preferred prey is a species of copepod crustacean called *Calanus finmarchicus* that is the size of a small grain of rice. For reasons that scientists do not completely understand,

Calanus copepods aggregate in dense, discrete layers at certain times and locations in the North Atlantic. At some locations, *Calanus* float at the surface, while in other areas they are located near the bottom. Right whales are able to locate these *Calanus* layers and filter the organisms from the surrounding water by swimming through the layers with their mouths agape. Other prey species include *Pseudocalanus* and *Centropages* copepods, barnacle larvae and krill. Right whales do not appear to forage when they are present off the coast of Georgia and Florida.

Life History: Right whales can be found alone, in small groups, or in large social groups with 30 or more whales. Large social groups tend to be temporary and the membership varies. Courtship tends to involve a focal female and multiple males. Right whale mating has been observed year-round and in various locations throughout their range. Gestation period is presumed to be similar to the southern right whale, which is 12 - 13 months. Pregnant females arrive on the calving grounds during December and January. Each cow gives birth to a single calf, nurses her calf for 2 - 3 months, then migrates north with the calf in March and April. Most calves are weaned within one year. Right whale females give birth to their first calf at an average of nine years of age. The calving interval averages 3 - 4 years. Presumably, calves and sick individuals are preyed upon by various species of large sharks and killer whales (*Orcinus orca*), but no attacks have ever been observed. Healthy adult right whales probably have no natural predators.

Threats: Mortality from human-related causes accounts for over ⅓ of all North Atlantic right whale mortalities. Collisions with ships and entanglement in commercial fishing gear are the primary human-related causes of mortality. An average of 1 - 2 ship strike mortalities are documented per year in U.S. and Canadian waters. Given the low frequency of ship strike scars on living right whales, it appears that most ship collisions are acutely fatal. Conversely, more than 50% of right whales bear scars from previous fishery gear entanglement, indicating that most entanglements are short-lived and result in minor injury. However, some entanglements may last for months or years, leading to serious injuries, chronic disease, and death. An average of 1.4 right whales were seriously injured or killed by entanglements per year between 2001 and 2005. Many more ship strike and entanglement mortalities likely occur, but go undetected.

Georgia Conservation Status: Right whales are listed as Endangered under the Georgia Endangered Wildlife Act of 1973. Although precise estimates of the North Atlantic right whale population size are not available, photo-identification, calving, and mortality data indicate that approximately 400 individuals exist. The waters offshore of Georgia and northeast Florida are the only known calving grounds for the species. In 1994, the National Marine Fisheries Service (NMFS) designated coastal waters from Little St. Simons Island, Georgia, to Cape Canaveral, Florida, as Critical Habitat for the species. The North Atlantic right whale is also the official State Marine Mammal of Georgia.

Conservation and Management Recommendations: The North Atlantic right whale population was decimated by commercial whaling in the 18th and 19th centuries. Commercial harvest was banned internationally in 1935. Right whales received additional protections in the United States following passage of the Marine Mammal Protection Act and the Endangered Species Act in 1972 and 1973, respectively. The North Atlantic right whale population appears to be growing very slowly. Estimates of the population growth rate have varied from -2.4% to

5.3%. In contrast, the Southern right whale population is increasing at rates of 7 to 8%. Hypotheses to explain the slow growth rate include habitat degradation (such as pollution and reduced food resources), poor genetic health, competition with other species for prey, and high rates of human-related mortality. Most conservation measures have focused on reducing human-related mortality, specifically reducing ship strike and commercial fishing gear entanglements. The Atlantic Large Whale Take Reduction Team (ALWTRT) was established by NMFS in 1996 to reduce the sources of fishing entanglements. The Atlantic Large Whale Disentanglement Network (ALWDN) is a network of 18 first response teams from Florida to Canada that document entangled whales and disentangle whales when possible. In 1997, NMFS established a federal rule prohibiting boats and ships from knowingly approaching within 500 yards of right whales. In 1999, NMFS began developing a comprehensive ship strike reduction strategy focusing on mariner education and voluntary vessel operation measures, but the numbers of whales dying from ship collisions did not decrease. In 2008 a federal rule was enacted that requires ships greater than 65 feet in length to travel at speeds of 10 knots or less in certain times and locations where right whales are present. It is hoped that this requirement will reduce the number of right whale/ship collisions. NMFS coordinates right whale conservation efforts in the U.S. with cooperation from many other governmental and non-governmental organizations. NMFS established the Southeast and Northeast Implementation Teams in the 1990s to help implement right whale conservation efforts. The North Atlantic Right Whale Consortium is a team of over 30 governmental and non-governmental organizations from the U.S. and Canada that coordinates right whale data management and furthers right whale conservation efforts. The Georgia Department of Natural Resources participates in the Southeast Implementation Team, the North Atlantic Right Whale Consortium, the ALWTRT, and the ALWDN.

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Date Compiled or Updated:
C. George, Dec. 2008: original account
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A North Atlantic right whale killed by a ship collision