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Kanagawa, Japan in 2019

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ABSTRACT

A juvenile male gray whale was found stranded in Manazuru, Kanagawa Prefecture Sagami Bay. The carcass was found in a highly decomposed condition and the cause of death was not determined. The complete skeleton was collected.

KEYWORDS: Western gray whale, *Eschrichtius robustus*, genetics, conservation

1. INTRODUCTION

Western Pacific population of gray whale is listed on the IUCN Red List as Critically Endangered. Sighting information of the gray whales traveling along Japanese coasts seems to be increasing. In February 2019 sightings of possibly a single individual of the gray whale along the western coasts of central Japan (Ishikawa and Fukui Prefectures) were reported by several newspapers and Facebook pages. On April 20 video footages of a gray whale were taken off Miyake island. Present paper describes result of the investigation on a stranded young male found in Sagami Bay (Manazuru) on 11 April 2019 and discussion on two young female gray whales from 2005 and 2016 (Kato *et al.* 2005, Kato *et al.* 2016, Yamada *et al.* 2016).

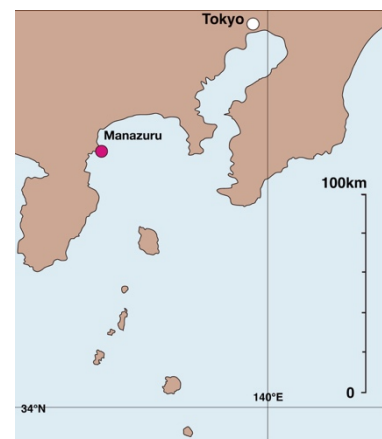


Fig. 1. A map showing the localities of discovery and stranding of the whales described.

2. DISCOVERY AND BRIEF DESCRIPTION OF THE CARCASS

On the morning of 11 April 2019, a dead whale was found stranded on a rocky bed of Manazuru Town coast, Kanagawa Prefecture 35.1421N, 139.1610E (Fig. 1 and 2). The whale was identified as a male Gray whale (*Eschrichtius robustus*). External measurements were made, but only those accessible on the belly-up posture (Table 1). Because of the extreme decomposition surface observation gave us no significant information of the whale. Any trace of a strong impact such as a ship strike was not detected. The surface skin was remaining only at the center of the right flunk about 100cm long and 50 cm high. There were

many circular to ovoid scars mostly suggestive of healed cookie-cutter shark bites but some of them could be traces of dropped barnacles (possibly *Cryptolepas rhachianecti*). No cyamids and copepods were confirmed. Baleen plates were already missing due to the decomposition of the specimen. There were numerous shark bites, probably post mortem, while the carcass was drifting, especially along the peduncle both dorsal and ventral margins, remaining bites were 20 to 50 cm in diameter (chord) (Fig. 3). Organs found were the lungs, the stomach, the liver, and the kidneys but all were extremely decomposing and we could record no significant findings.

The left flipper with the scapula was collected by Kanagawa Prefectural Museum of Natural History, and the rest of the skeleton was collected by National Museum of Nature and Science. The cleaning process is really ongoing and we have to wait to describe osteological characters of this individual.

3. DISCUSSIONS

1. Cause of death

Because the carcass was severely decomposed, no evidence of lethal pathological condition was confirmed and the cause of death is unknown. As far as we could observe, the body surface did not have any serious injuries. No solid object was found in the stomach (Fig. 4).

2. Age of the individual

Because the beach was rocky and no heavy machine could be used, we could not get the exact body length, but we did our best in getting better body length, which is 877 cm. According to Sumich (1986) and Sumich *et al.* (2013) young gray whales are 8m by the end of the first year and reach 9m in the second year or the body length at one year as 8.7 m and 9 m by the second summer. We suspect this animal of Manazuru, which was found in April was a little bit older than 1 year.

As were observed two young female gray whales in 2005 and 2016, and both of these individuals suffered from severe discospondylosis (Yamada *et al.*, 2016). In the present case, no severe hyperostosis was found. The cleaning process is still going and detailed observation on the vertebrae or any skeletal elements were made. We will confirm the condition of the skeletal elements to see if there would be any pathological symptoms.

4. CONSERVATION CONCERN

Stranding, incidental catch and sighting of the gray whales from the waters around Japan were reported at a rate of a few per year. Among the dead individuals two of the female juvenile individuals from probably the same genetically close population had serious pathological problems in their caudal vertebrae and suggestive of a serious concern for conservation (Yamada, et al. 2016). In the present case, however, in our only male individual experienced, the vertebral column did not seem to have similar osteopathology (at least for the present). Further in-depth investigations on the dead individuals are necessary for the conservation of the population.



Fig. 2. A highly decomposed male gray whale of 8.77m was found on the rocky bed of Manazuru, Kanagawa prefecture on Apr. 11, 2019.



Fig. 3. Ventral margin of the peduncle. Note numerous shark bites. Most of them were about 20cm diameter. Those on the dorsal margin were much larger and most of them were of 50 cm diameter.



Fig. 4. No solid material was found in the stomach.

Further investigation on the genetics of the population might provide some insight to this problem.

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Measurement item	Length (cm)
Tip of rostrum to median notch of flukes	877
Tip of rostrum to angle of gape	154
Tip of rostrum to center of eye	155
Tip of rostrum to center of ear	189
Tip of rostrum to the insertion of flipper	231
Tip of rostrum to center of umbilicus	442
Tip of rostrum to center of genital slit	517
Tip of rostrum to center of anus	599
Greatest width of flukes	183
Basal length of right fluke	64
Anterior length of flipper (Right)	158
Posterior length of flipper (Right)	143
Greatest breadth of flipper (Right)	50
Distance between throat grooves (Anterior)	15
Distance between throat grooves (Posterior)	33
Length of throat groove (Left)	141
Length of throat groove (Right)	136

Table 1. External measurements.