

Records of the White Shark *Carcharodon carcharias* from Hokkaido, Japan

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The white shark (*Carcharodon carcharias*) ranges through tropical and subtropical oceans. The capture of white shark is often reported on television and in newspapers of Japan. There are some published records of the white shark around Japan, but its distribution is poorly known. This paper reports the catch of two white sharks from Hokkaido, northern Japan, and summarizes its occurrence in the waters around Japan.

Two adult female white sharks were caught by set nets near the shore at Todohokke (41°56'N, 141°06'E) on the Pacific coast of southern Hokkaido and at Furubira (43°23'N, 140°42'E) on the Shakotan Peninsula in the Japan Sea, on 30th and 31st of May, 1985 (Fig. 1), respectively. By the time we knew of the capture of the Todohokke specimen, the majority of the body had been taken away. Only the head, pectoral fin, first dorsal fin and caudal fin were brought back to the laboratory for examination. For the Todohokke specimen, total length was estimated to be 520–540 cm and body weight 1200–1400 kg, from measurements of the head and fins (Fig. 2). We could not also get the body of the Furubira specimen except for one tooth and some photographs. The specimen was reported to be 580

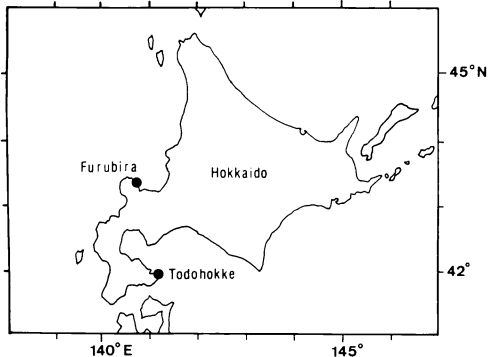


Fig. 1. Map showing the locations of white shark caught in Hokkaido.

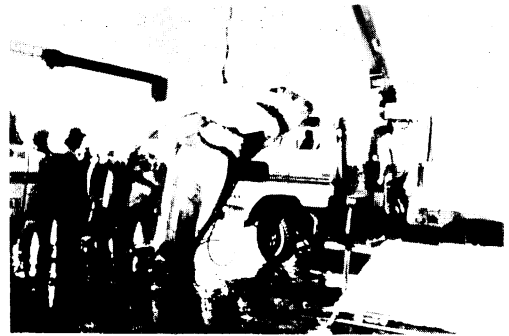


Fig. 2. Todohokke specimen caught by set net on May 30, 1985.

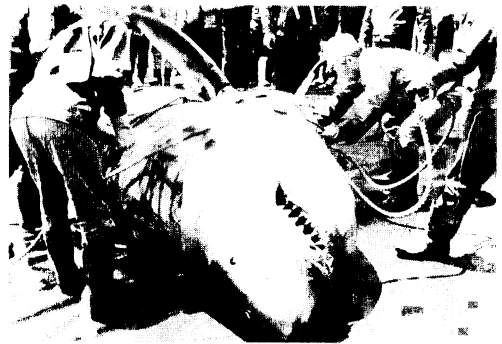


Fig. 3. Furubira specimen caught by set net on May 31, 1985 (by courtesy of Hokkaido Shinbunsha).

cm in total length and 3000 kg in weight by the fisherman (Fig. 3). However, this body weight is probably too heavy. Using the equation of Casey and Partt (1985), estimated weight was 1700 kg (Table 1). The white shark becomes mature between 390 and 420 cm in total length (Bigelow and Schroeder, 1948). Thus, these two individuals were certainly adults.

Far Eastern occurrences of the white shark were recorded from the Bonin Islands (Kittiz, 1858), off Tokyo (Jordan and Snyder, 1901), near Misaki (Jordan and Fowler, 1903), off Ise (Jordan and Hubbs, 1925), the Philippines (Fowler, 1941), Pusan (Mori, 1952), Kasumi (Mori, 1956), Usa (Kamohara, 1958), Keelung (Teng, 1962), Choshi (Tamura *et al.*, 1962), Fukaura (Uchida *et al.*, 1971), and Yawatahama and Motobu (Uyeno and Matsushima, 1979) (Fig. 4). Fowler (1941) noted the occurrence of the white shark from Kamchatka by reference of Soldatov and Lindberg (1930), who denied its occurrence and insisted on the necessity

Table 1. Measurements of white shark caught in Hokkaido, 1985.

Location	Todohokke	Furubira
Catch date	May 30, 1985	May 31, 1985
Fishing gear	set net	set net
Sex	female	female
Total length (mm)	5200–5400*	5800
Body weight (kg)	1200–1400*	3000 (1700**)
Snout to:		
posterior nostril (mm)	225	—
mouth	346	—
eye	327	—
Eye diameter (horizontal)	52	—
Mouth breadth	465	—
Internostril width	181	—
Interorbital width	375	—
First dorsal fin:		
vertical height	516	—
Pectoral fin:		
outer margin	1036	—
inner margin	216	—
distal margin	845	—

* Back calculated from measurements of the head and fins.

** Calculated from Casey and Pratt (1985).

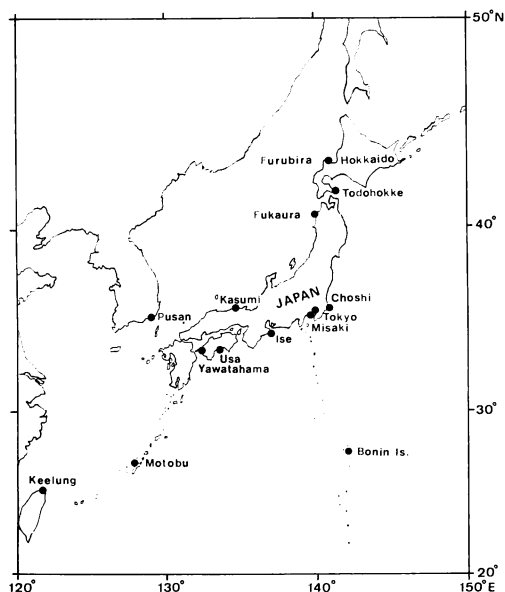


Fig. 4. Map showing the locations of white shark catches in the Far East.

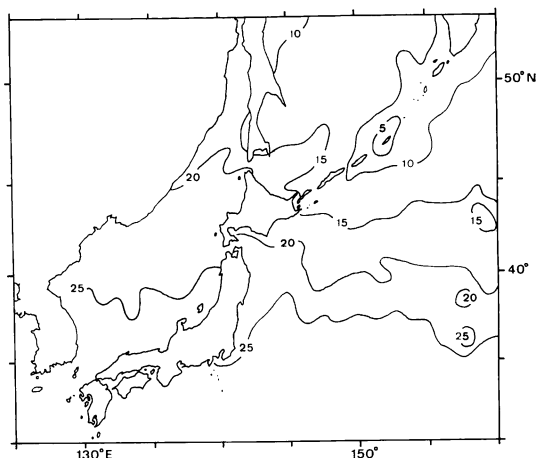


Fig. 5. Mean sea-surface temperature (°C) in early September, 1985. This figure was redrawn from Ten-Day Marine Report by Japan Meteorological Agency.

of reexamination. Therefore, we interpret that record as doubtful. In these thirteen records, Fukaura was the most northern occurrence. The distribution of the white shark in the Far East has now been extended northward to Hokkaido by the present two specimens.

Water temperatures near Todohokke and Furubira averaged 7.2°C and 10.7°C, respectively, in late May, 1985. The white shark mainly occurs in waters ranging from 11–24°C (Casey and Pratt, 1985). Perhaps the catch in Hokkaido occurred during a northward migration. In early September 1985, the surface water temperature around Hokkaido rose to above 15°C and the 10°C surface isotherm was positioned near the northern part of the Okhotsk Sea and the Krill Islands (Fig. 5). Therefore, the distribution of the white shark may extend farther north in the Far East area.

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北海道で初記録のホホジロザメ *Carcharodon carcharias* 中野秀樹・仲谷一宏

1985年5月30・31日に北海道南部の樞法華および積丹半島の古平の沿岸定置網で各一頭ずつのホホジロザメ雌成魚、推定体長5m、が漁獲された。これは日本周辺海域では最北端の記録であり、北海道での初記録である。

ホホジロザメは表面水温が11°C-24°Cの海域に生息しており、北海道周辺海域の水温は夏にかけてさらに上昇することから本種の分布域は北方へと拡大されるものと考えられる。

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