

# A RECORD OF THE BEARDED SEAL WANDERING WITH SPECIAL REFERENCE TO THE WANDERING SPEED

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The south and north bound wandering around the Boso Peninsula of the bearded seal (*Erignathus barbatus*) was recorded in 1977. Many examples of the seal wandering had been reported in many places where so far apart from normal habitat (Richardson, 1975; King, 1975; Naito, 1976; etc.), and the wandering of seal itself is not so much worth of special mention. However, this record might be of some interest to report here due to the most far south record in the western North Pacific and its consequent observation made possible an estimation of wandering speed.

One seal was first observed by fishermen in the Amatsu fisheries harbor at 4:00 PM, 6 September 1977 (Table 1). At this time I could fortunately observe the seal at 20 meters distance. It was easily identified as the bearded seal from its outer looking such as characteristic profusion of moustachial whiskers, and anterior insertion of the foreflippers. The sex was also identified as male from existence of opening of male genital organ. The seal was roughly estimated to be as large as 1.5 m and its age was supposed as a young animal. The body color was muddy on dorsal side and brownish yellow on ventral side. The seal disappeared after about one hour stray in the harbor. On the next morning a fisherman found the seal occurred in the Chikura harbor at nine in the morning. I visited Chikura harbor as quickly as possible, however, the seal was already out of the harbor before my arrival. According to the fisherman's information on the body size and color, it was supposed that this seal was the same as I saw the day before. Following informations on the seal were brought from Kisarazu and then from Funabashi in a few days. Therefore, the wandering way of this seal was recorded as shown in Fig. 1 and in Table 1. However, after sighting at Funabashi, the seal was missed and no information was received.

According to Naito (1976), 16 examples of seal wandering were recorded along the coast of Japan (except Hokkaido) since 1949, and only two out of 16 examples were the bearded seals. One was recorded at Tennou-cho Akita Prefecture (39°53'N, 139°57'E) and the other was at Niigata City (38°13'N, 139°24'E). Both were recorded at Japan Sea coast. Therefore, this is the first time for the record of the bearded seal wandering along the Pacific coast of Japan. Furthermore, this observation (Chikura; 34°37'N, 139°58'E) seems to be confirmed as the most far south record in the western North Pacific. However, according to Wang ZheMao (personal communication), one specimen of this species was collected in China. Therefore, being still uncertain where it was collected in China, this collection may be the most far south record. Since the seal was observed at four locations during its wandering as mentioned above, the wandering speed was roughly es-

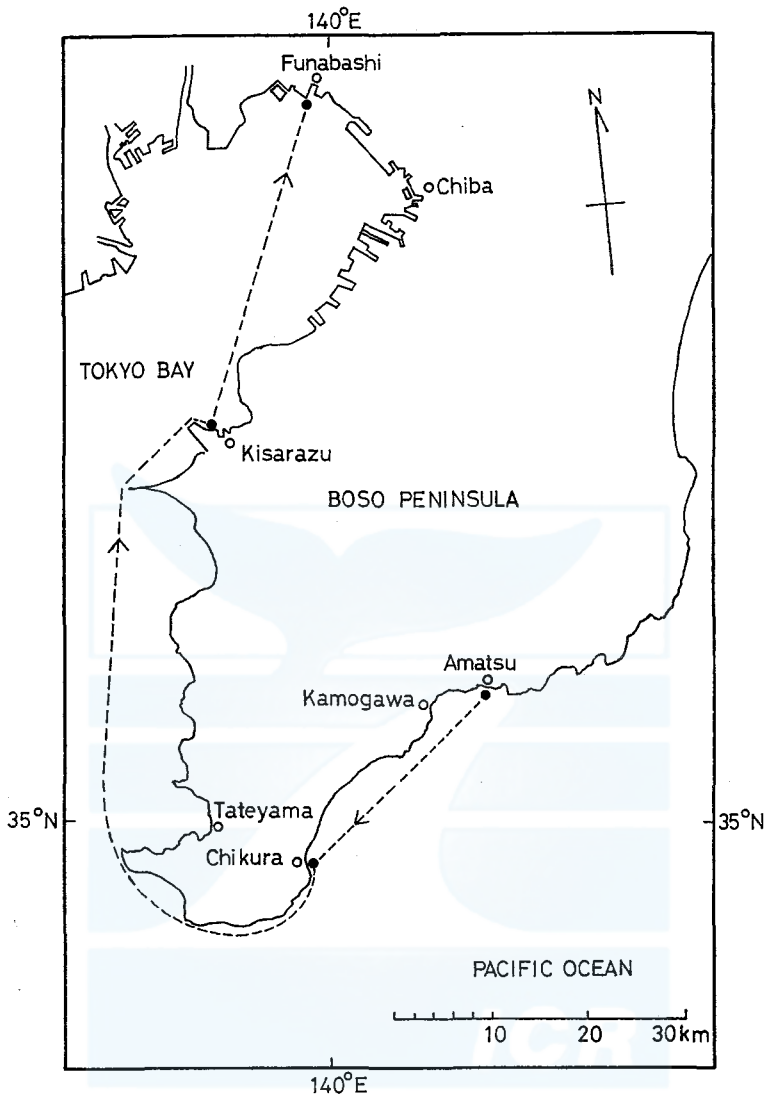


Fig. 1. The bearded seal first appeared at Amatsu and was successfully tracked at Chikura, Kisarazu and Funabashi.

timated. The minimum distance between each location, time lag of occurrences in each location, and the calculated wandering speed are shown in Table 2. The wandering speed between Amatsu and Chikura, and between Chikura and Kisarazu are almost the same, however, between Kisarazu and Funabashi it took about three times longer than that of the former. This difference in the wandering speed may be resulted from the undesirable environmental condition that may caused the unsmooth wandering between Kisarazu and Funabashi e.g. the artificially complicated channels, dirty waters, numerous numbers of ships and a lot of piers.

TABLE 1. THE OBSERVED LOCALITY AND TIME OF APPEARANCE AND DISAPPEARANCE WHILE THE BEARDED SEAL WONDERED AROUND THE BOSO PENINSULA IN 1977

Locality	Date	Time
Amatsu	6 September	16:00-18:00
Chikura	7 September	9:00-11:00
Kisarazu	9 September	16:00-18:00
Funabashi	13 September	13:00

TABLE 2. MINIMUM DISTANCE BETWEEN EACH LOCATION AND TIME SPENT TO REACH EACH LOCATION WERE CALCULATED TO INDUCE THE WONDERING SPEED

Location	Minimum distance	Wandering hours	Wandering speed
Amatsu-Chikura	26.1 km	16 hours	1.63 km/hr
Chikura-Kisarazu	79.1	53	1.49
Kisarazu-Funabashi	36.9	91	0.41
Amatsu-Funabashi (total)	142.1	160	0.88

On the other hand, the areas between Amatsu and Chikura, and between Chikura and Kisarazu are all or partly facing to the Pacific Ocean, and it seems to be clean enough for the seal to make smooth wandering. Therefore, it may be possible to presume that the minimum distance was followed between Amatsu and Kisarazu which is 105.2 km, and the average speed was 1.52 km per hour. This average speed is comparable to neither the swimming speed nor the migration speed, but as a whole it means the minimum moving speed during wandering. The seal may not swim directly on the minimum distance route but may stray here and there during locomotion from location to location. Furthermore the seal may take rest occasionally. Therefore, it is likely that normal swimming speed itself may be several times faster than the wandering speed.

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