RESENT STATUS ON REARING AND RELEASING STUDIES OF SEA TURTLES IN JAPAN SEA-FARMING ASSOCIATION

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ABSTRACT

Hatchlings of loggerhead turtle *Caretta caretta* in 46.7mm on average (range: 41.0-49.0mm) of standard straight carapace length (SCL) and 22.6g on average (range: 17.4-24.5g) of body weight (BW) were transported from Nagoya Port Aquarium to Yaeyama station in July 1999. The hatchlings grew up to be 756.5mm on average (range: 708-855mm) SCL and 58.2kg on average (range: 46.3-71.2) BW for three years after hatchlings. The growth performance of these species are 0.3kg/month (in the 1st year), 1.2kg/month (in the 2nd year), and 3.3kg/month (in the 3rd year), respectively.

A two and half years old loggerhead turtle in 649mm SCL and 43.1kg BW tagged with satellite tracking device on the carapace was released at Yaeyama station (24°N, 124°E) in January 2002. The data of the present position was collected through the Argos system. The turtle was at 36°N, 152°E in the end of December, 2002.

Keywords: growth performance, satellite tracking

INTRODUCTION

The Japan Sea-Farming Association (JASFA) is entrusted by the Fisheries Agency of the Ministry of Agriculture, Forestry and Fisheries to promote Sea ranching. The aim of Sea ranching is to stabilize and increase fishery resources of high important species and ensure stable fishery production by controlling both the natural and released resources in the water.

JASFA has 16 stations ranging from Hokkaido in the north to southern Okinawa in Japan and has been developing brood stock, seed production, live food, and stock enhancement techniques in 35 different fishes, 14 crustaceans and 2 mollusks since 1963 (Fig.1).

Yaeyama station of JASFA located at the most southern part of Japan has been researching the technical development of seed production for mud crab *Scylla serrata*, coral trout *Plectropomus leopardus,* and giant cuttlefish *Sepia latimanus*.

The study of sea turtles such as hawksbill turtle *Eretmochelys imbricata*, green turtle *Chelonia mydas*, and loggerhead turtle *Caretta caretta* to establish the seed production and releasing techniques for stock propagation has been also conducting since 1999. These turtles are listed as endangered and vulnerable species on the International Union for Conservation of Nature and Natural Resource (IUCN) Red List.

SECTION 1: TURTLE REARING

A total of 130 hatchlings of the loggerhead turtle in

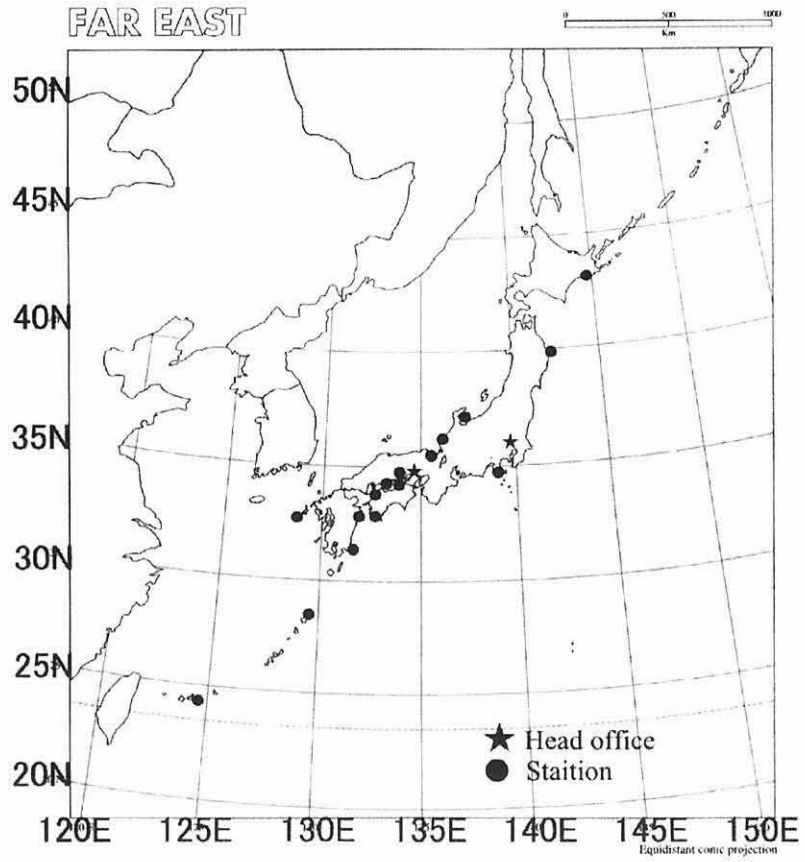


Fig. 1. Location map of the stations in Japan Sea Farming Association.

46.7mm on average (range: 41.0-49.0mm) of standard straight carapace length (SCL) and 22.6g on average (range: 17.4-24.5g) of body weight (BW) were transported from Nagoya Port Aquarium to Yaeyama station in July 1999. The hatchlings and the juveniles were fed minced, chopped, whole fish and/or squid with vitamins mixed powder to grow up at feeding rate of 3-15 % in body weight. The hatchlings grew up to be 756.5mm on average (range: 708-855mm) SCL and 58.2kg on average (range: 46.3-71.2) BW three years after hatching in September 2002 (Figs. 2 and 3). A total of 113 turtles were released during 2000 to 2002 and 6 turtle are reared still in the station. The growth performance of the species was 0.3kg/month (in the 1st year), 1.2kg/month (in the 2nd year), and 3.3kg/month (in the 3rd year), respectively. Based on the previous knowledge (Uchida 1982), this size was considered to be the adult size. However, they still had some characteristics of juvenile, such as short tail and sharp keels on the carapace, and showed no mating behavior. These mean that the relationship between maturity and body size of the species under the rearing condition is different from that under the natural one.

SECTION 2: TURTLE RELEASING

A total of 251 loggerhead turtles consisting of 1-3 years old with inner-tags (transponder, TROVAN Ltd.) and plastic tags (Roto tag, Dalton Supplies Ltd.) were released to the ocean to investigate the migration patterns after releasing since 2000. Some turtles were recaptured in the Sea of Japan 2,000km away from the releasing site.

A two and half years old loggerhead turtle (sex was unknown) in 649mm SCL and 43.1kg BW tagged with Platform Transmitter Terminals (PTTs) on the carapace was released to off Yaeyama station in January 2002. The data of the turtle position was collected through the Argos system. First, the turtle made a direction to the south from the station (Fig. 4).

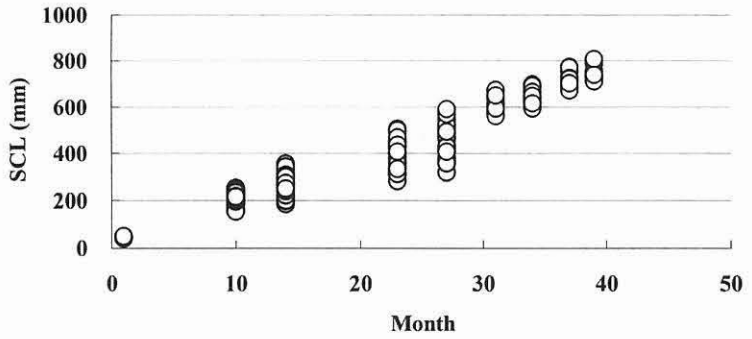


Fig. 2 Growth of standard straight carapace length (SCL) in loggerhead turtle Caretta caretta.

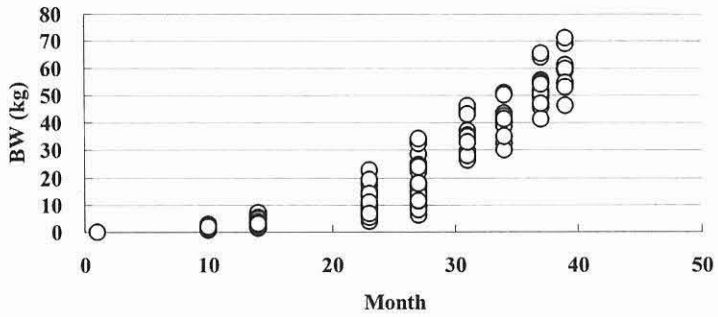
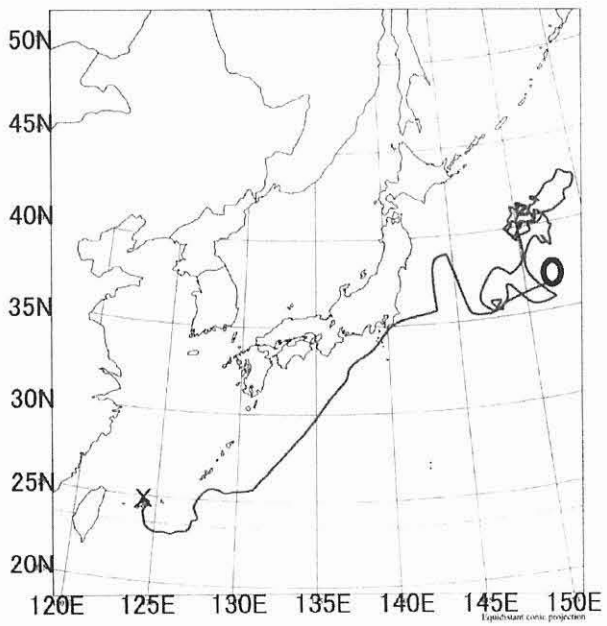


Fig. 3 Growth of body weight (BW) in loggerhead turtle Caretta caretta.



After the turtle reached to 22°N and 124°E on 31 January, and it changed the direction to the east then northeast. The turtle migrated to off Omaezaki (33°N, 138°E) in March 2002. In April, the turtle reached to off shore of Fukushima prefecture, northern part of Honshu. The turtle was at 36°N, 152°E in December 2002. According to the Japan Coast Guard's report, the warm eddy was occurring along the Kuroshio and the Oyashio moved to the south. It seems that a current condition affected on migration of the turtle, and further researches still continue.

Fig. 4 Track route of the loggerhead turtle by the satellite tracking from January to December 2002.
O : the release point ;
X : the position of December 2002.

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