

by James H. Uchiyama

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| <b>Valid name</b> | <i>Katsuwonus pelamis</i> (Linnaeus 1758) (Fig. 73)  |
| <b>Synonymy</b>   | <i>Scomber pelamis</i> Linnaeus 1758<br><i>Scomber pelamys</i> Bloch and Schneider 1801<br><i>Scomber pelamides</i> Lacepède 1802<br><i>Thynnus pelamis</i> Risso 1826<br><i>Thynnus vagans</i> Lesson 1828<br><i>Thynnus pelamys</i> Cuvier and Valenciennes 1831<br><i>Pelamys pelamys</i> Bleeker 1862<br><i>Orcynnus pelamys</i> Poey 1868<br><i>Euthynnus pelamys</i> Jordan and Gilbert 1882<br><i>Gymnosarda pelamis</i> Dresslar and Fesler 1889<br><i>Euthynnus pelamis</i> Smitt 1893<br><i>Katsuwonus pelamys</i> Kishinouye 1915<br><i>Gymnosarda pelamys</i> Thompson 1918<br><i>Katsuwonus pelamis</i> Kishinouye 1923<br><i>Katsuwonus vagans</i> Jordan, Evermann, and Clark 1930<br><i>Katsuwonus pelamis</i> Herre 1933<br><i>Euthynnus (Katsuwonus) pelamis</i> Fraser-Brunner 1950<br>(from Matsumoto et al. 1984) |

**Common and vernacular names** Skipjack tuna; aku

### Distribution

Distributed throughout the Hawaiian Archipelago. Usually occurs in surface schools associated with bird flocks.

### Distinguishing characteristics

D. XIV-XV, I. 13-14; A. II, 12-13; P1. 26-27; 7-9 dorsal and 7-8 anal finlets (Waldron 1963). Body elongate, robust, rounded in cross section, fusiform; two dorsal fins separated by a small interspace not larger than eye diameter; tail lunate; anal fin under second dorsal pectoral fins short, triangular; two flaps between pelvic fins. Head conical, mouth terminal, large; maxillary extends to about vertical axis through eye; body naked except for corselet and lateral line. Strong keel present on both sides of caudal peduncle with two smaller keels at caudal end.

In life dark purplish blue dorsally with occasional flashes of irregular line patterns of bright phosphorescent blue. Lower sides and belly silvery with four to six dark longitudinal bands.

### Life history

Spawning occurs in late February-September in Hawaiian waters (Brock 1954). Skipjack tuna reaches sexual maturity at about 40-45 cm FL (about 1 year old) (Brock 1954). Fecundity estimates range from 290,000 to 1,880,000 eggs per spawning for fish 43.8 to 86.7 cm long (Morris 1966). Skipjack tuna are believed to be multiple spawners (Brock 1954; Morris 1966).

Fertilization is external (Waldron 1963). Fertilized eggs hatch in 30-31 h at 25°-26°C (Kaya et al. 1982). The larvae average 2.94 mm at hatching.<sup>26</sup> Growth is rapid; the fish reaches 44 cm in 1 year, 68 cm in 2 years, and 82 cm in 3 years (Uchiyama and Struhsaker 1981). The species attains 90 cm in Hawaiian waters.

Skipjack tuna feeds on a wide variety of organisms. Stomach contents of central Pacific fish consist primarily of fish; molluscs rank second, and crustaceans third (Yuen 1959; Waldron and King 1963). During summer, large skipjack tuna (>60 cm) feeds primarily on fish (90%); whereas among smaller fish (<60 cm) crustaceans and molluscs are predominant (Yuen 1959).

Skipjack tuna is known to migrate long distances. Fish tagged in the eastern and western Pacific have been recovered in Hawaiian waters (Josse et al. 1979).

Short-term local movement of skipjack tuna has been studied using sonic tags. A school of small skipjack tuna spent the day on the bank and off the bank at night (Yuen 1970). Small skipjack tuna also appears to keep its association with a school for a long time and remains in the same area for almost 3 months (Yamashita and Waldron 1959). Large skipjack tuna (ca. 70 cm) apparently behaves differently (Dizon et al. 1978). It is independent of bank and remains in waters above 20°C 85% of the time, occasionally making excursions into cold water.

The length-weight relationship of central Pacific skipjack is:

$$W = 4.546 \times 10^{-9} L^{3.36836},$$

where W = weight (lb) and L = fork length (mm) (Nakamura and Uchiyama 1966).

<sup>26</sup>Hendrix, S. B. 1982. Factors affecting the growth and survival of skipjack tuna, *Katsuwonus pelamis*, larvae reared in the laboratory. Southwest Fish. Cent. Honolulu Lab., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96822-2396, Admin. Rep. H-82-23C, 15 p.



Figure 73.—*Katsuwonus pelamis*.

#### Gear and catch

In Hawaiian waters, the species is caught almost exclusively by pole and line and live bait; small quantities are also landed by trolling. Descriptions of the fishery and trends in catches are found in June (1951) and Uchida (1966, 1967, 1976).

Annual landings of skipjack tuna in 1961-79 from water around the main islands fluctuated widely from 2,292 to 7,329 MT and averaged 4,073 MT. Currently, there is no Hawaiian fishery for the species in the NWHI. A pole-and-line, live bait fishery, however, was known to operate in the NWHI during the 1970's as an outgrowth of the Japanese albacore fishery. In the summer of 1977, the Japanese harvested an estimated 4,375 MT within the FCZ of the NWHI (Yong and Wetherall 1980).