

by Alan R. Everson

Valid name *Etelis carbunculus* Cuvier 1828 (Fig. 61)
Synonymy *Eteliscus marshi* Jenkins 1903
Etelis marshi Jordan and Evermann 1905

Common and vernacular names Red snapper; Marsh's snapper; squirrelfish snapper; ulaula; ehu

Distribution

Found around every major island and bank in the Hawaiian Islands and in the NWHI from Nihoa to Kure Atoll at depths ranging from 102 to 271 m.

Distinguishing characteristics

D. X, 11; A. III, 8; P1. 16; Gr. 6 + 12 (Jordan and Evermann 1905). Interorbital region flattened; maxilla with scales; dorsal fin continuous, but spinous portion of fin incised at its junction with soft portion; dorsal and anal fins without scales; ultimate dorsal and anal soft rays longer than penultimate soft rays (Anderson 1981).

Mouth rather large, somewhat oblique. Teeth on vomer and palatine. Teeth on the jaws in villiform bands; outer series of enlarged, widely spaced canines in each jaw; longest in front on each side; thicker in the upper jaw than lower. Body color uniform rose red in life (Jordan and Evermann 1905).

Ehu is sometimes confused with its congener, *E. coruscans*. It can be separated by the following features: horizontal yellow band along the middle of sides on ehu, absent on onaga; red coloration on inside of mouth lacking in ehu; long caudal rays on onaga; ehu is more robust and has fewer gill rakers than onaga (Jordan and Evermann 1905).

Life history

Ehu attains sexual maturity at about 29.8 cm FL. A fish, 50.8 cm FL, releases over 1.3 million eggs per batch and may release 2 or more batches of eggs per spawning season which extends from May through October (Everson 1984).

Because ehu are caught at considerable depths, the ascent causes the gas bladder to expand, thus forcing the stomach to evert. Therefore only a small number of stomach content samples was collected. Based on the number of small fishes and crustaceans found in stomachs, ehu is a carnivorous bottom feeder.¹⁷

Daily rings on the sagittae of ehu were used to estimate age and growth rate. The von Bertalanffy growth model for this species is:

$$L_t = 63.9 (1 - e^{-0.36(t-0.60)}),$$

where L = fork length (cm) expressed as a function of time t in years (see footnote 10). From this equation, ehu is estimated to be 28.4 cm at 1 year, 39.2 cm at 2 years, and 46.8 cm at 3 years.

The functional length-weight relationship of 754 ehu 26.8 to 63.5 cm long is:

$$W = 1.13 \times 10^{-8} L^{3.0740},$$

where W = weight (kg) and L = fork length (mm) (Uchiyama et al. 1984).

The NMFS catch data showed that ehu is the dominant species at banks west of Lisianski; ehu represents 22.7 to 86.5% of the catch (Uchiyama and Tagami 1984). In comparing mean lengths of ehu among banks of the NWHI, fish is larger west of Lisianski Island (Uchiyama et al. 1984). The relative apparent abundance of ehu is higher west of Lisianski Island; the catch rate was 4.1 fish per line hour at Nero Seamount (Uchiyama and Tagami 1984). Similar trends were also noted by Moffitt (1980). The sex ratio of ehu from the NMFS data is 67:33 (N = 926) in favor of females. The mean weight of females (2.13 kg) is somewhat greater than that of males (1.56 kg); however, the difference is not statistically significant (Uchiyama et al. 1984).

Gear and catch

Ehu is traditionally caught with deep-sea handlines, but it can also be trapped. In Hawaii, it is an important commercial species (Uchida et al. 1979). From 1961 through 1971, the annual catch fluctuated between 5,800 and 12,700 kg; however, during 1972-79 landings increased, ranging from 9,900 to 16,200 kg per year. The average annual landing during 1961-79 was 10,900 kg.

¹⁷Seki, M. P., Fishery biologist, Southwest Fish. Cent. Honolulu Lab., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96822-2396, pers. commun. March 1983.



Figure 61.—*Etelis carbunculus*.