3.3.5 Combtooth Blennies Hypsoblennius spp.

Distribution map for combtooth blennies

Adult Range: **Bay blenny**: from Gulf of California (not present at Cape San Lucas) to Monterey (see text for possible range extension); *Rockpool blenny*: from Magdalena Bay to Point Conception (see text for possible range extension); and **Mussel blenny**; from Puerto Marquis, Mexico, including Gulf of California to Coal Oil Point, Santa Barbara County.

Life History: **Bay blenny** Size: to 148 mm (5.8 in.); Age at maturity: No information available; Fecundity: No information available; Life span: No information available. **Rockpool blenny** Size: to 141mm (5.5 in.); Age at maturity: some at end of first year; Fecundity: spawn three to four times over a period of several weeks; 600 to 3,200 eggs per spawn; Life span: up to nine years. **Mussel blenny** Size: to 112 mm (4.4 in.); Age at maturity: estimated at two years; Fecundity: estimated at 1,180 eggs; Life span: up to seven years.

Adult Habitat: **Bay blenny**: subtidal to 24 m (80 ft), common in bays and estuaries and in *Mytilis* beds on mooring buoys; **Rockpool blenny**: hard substratum within intertidal to 10 m (33 ft); **Mussel blenny**: subtidal to 21m (70 ft), found in crevices and burrows.

Fishery: No commercial or recreational fishery.

Combtooth blennies are represented along the California coast by three members of the genus *Hypsoblennius*; bay blenny *Hypsoblennius gentilis*, rockpool blenny *Hypsoblennius gilberti*, and mussel blenny *Hypsoblennius jenkinsi*. These species co-occur throughout much of their range. The bay blenny is found along both coasts of Baja California and up the California coast as far north as Monterey Bay (Stephens et al. 1970). The distribution of the rockpool blenny extends from Magdalena Bay, Baja California to Pt. Conception, California (Miller and Lea 1972, Stephens et al. 1970). The reported range of the mussel blenny occurs from Puerta Marquis, Mexico to Coal Oil Point in Santa Barbara County (Miller and Lea 1972, Stephens et al. 1970).

We have observed possible range extensions for two of the combtooth blennies described above. It has been reported that the northern range of the bay blenny extends to Monterey Bay, while the ranges of adult rockpool and mussel blenny do not extend north

of Point Conception, Santa Barbara County (Miller and Lea 1972). However, adult mussel and rockpool blennies were collected (and the identifications subsequently verified by CDFG) in the 1999-2000 MBPP impingement study; one rockpool blenny was collected in 1999 at CDFG otter trawl Station 3 located between our source water stations 2 and 3 (CDFG unpubl. otter trawl data).

The spawning season of the three California *Hypsoblennius* species begins in the spring and may extend into September (Stephens et al. 1970). Blennies are oviparous and lay demersal eggs that are attached to the nest substratum by adhesive pads or filaments (Moser 1996). Females spawn three to four times over a period of several weeks and the number of eggs a female produces varies proportionately with her size (Stephens et al. 1970). The smaller and shorter-lived mussel blenny carries relatively more eggs per body length than the rockpool blenny (Stephens et al. 1970). A female mussel blenny may carry 1,500 eggs (Stephens et al. 1970). Female rockpool blenny may produce from 600 to 3,200 eggs per spawn (Love 1996). Incubation time is temperature-dependent and eggs typically hatch in four to 18 days (Love 1996).

Larval blennies can be distinguished from other larval fishes through a combination of myomere counts, pigmentation patterns, and their elongated form (Moser 1996). However, larval combtooth blennies are not easily distinguished from each other. Therefore, these larvae were identified to just the generic level (i.e., *Hypsoblennius*). All combtooth blenny larvae were combined into a single combtooth blenny category for analyses.

3.3.5.1 Combtooth Blenny Results

Despite the extended spawning period suggested by Stephens et al. (1970), *Hypsoblennius* spp. in the vicinity of the MBPP appeared to undergo a single spawning period annually (Figure 3-24). Samples were not collected between August and December of 1999 so it cannot be determined if spawning continued into fall 1999 for this taxon. Larval combtooth blennies were more abundant during June and July 1999 than in the same months in 2000.

The length frequency distribution for a representative sample of combtooth blenny larvae showed a relatively narrow size range of 2.0 to 3.2 mm (0.08 to 0.13 in.) with an average size of 2.5 mm (0.1 in.) (Figure 3-25). These results indicate that the larvae are close to hatch size and subject to entrainment for a relatively short period of time.

Combtooth blennies did not occur in January, November, or December in paired surveys (Figure 3-26). Peak larval abundance occurred from May through October. Initial occurrence of combtooth blenny larvae in plankton samples during February – April were limited to waters inside of Morro Bay. This reflects their adult distribution inside of bays, near pier pilings, and in jetty rocks (Stephens et al. 1970, Moyle and Cech 1988).

The concentration (#/m^3) of larval combtooth blennies was compared among stations for samples collected at ebb and flood tides (Figure 3-27). Results were variable among surveys. This may occur if the source of the larvae is relatively close to the sampling stations and tidal currents are only moving larvae within a narrow portion of the bay.

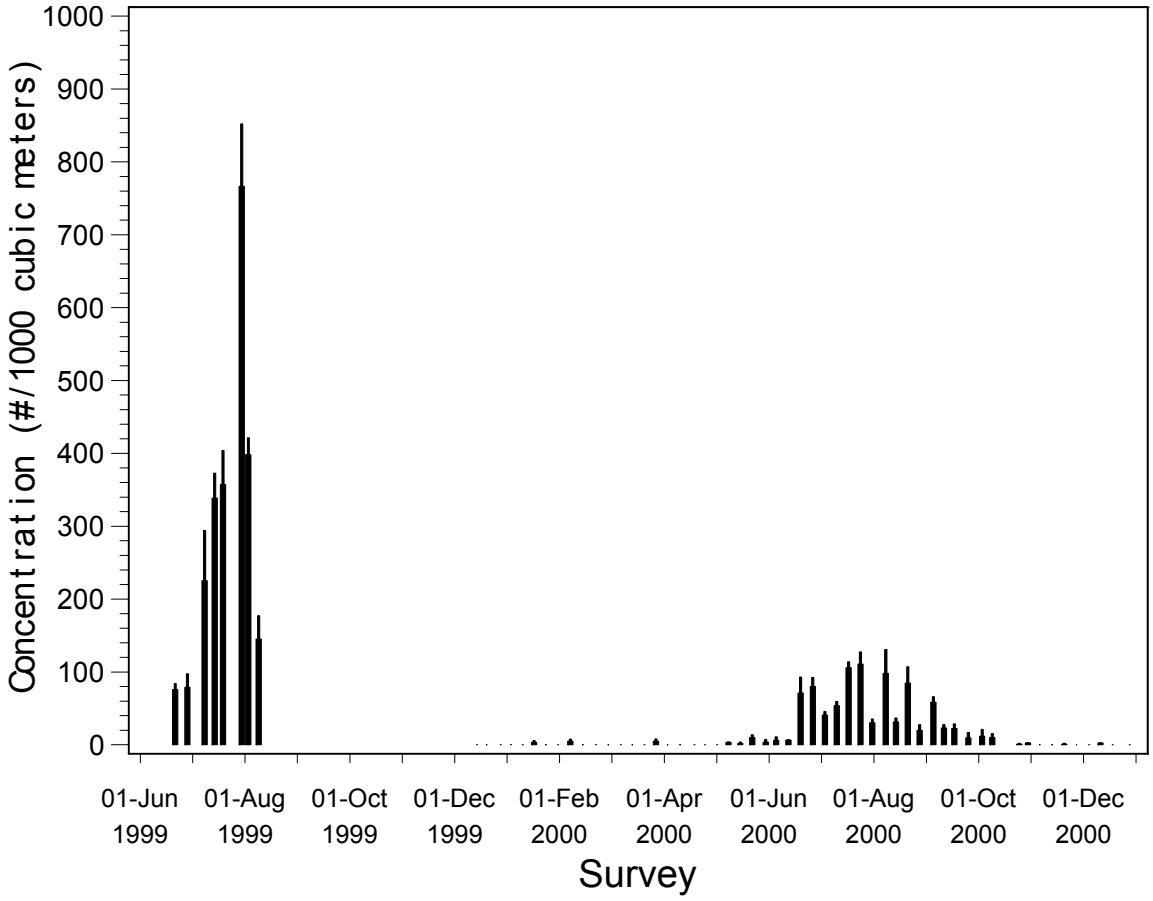

Figure 3-24. Weekly survey mean concentrations of larval combtooth blennies collected at the MBPP intake station with standard error indicated (+1 SE). Weekly surveys were collected from June 21 through August 10, 1999 and from December 14, 1999 through December 29, 2000.

Note: The October 16, 2000 survey was cancelled due to the unavailability of a boat.

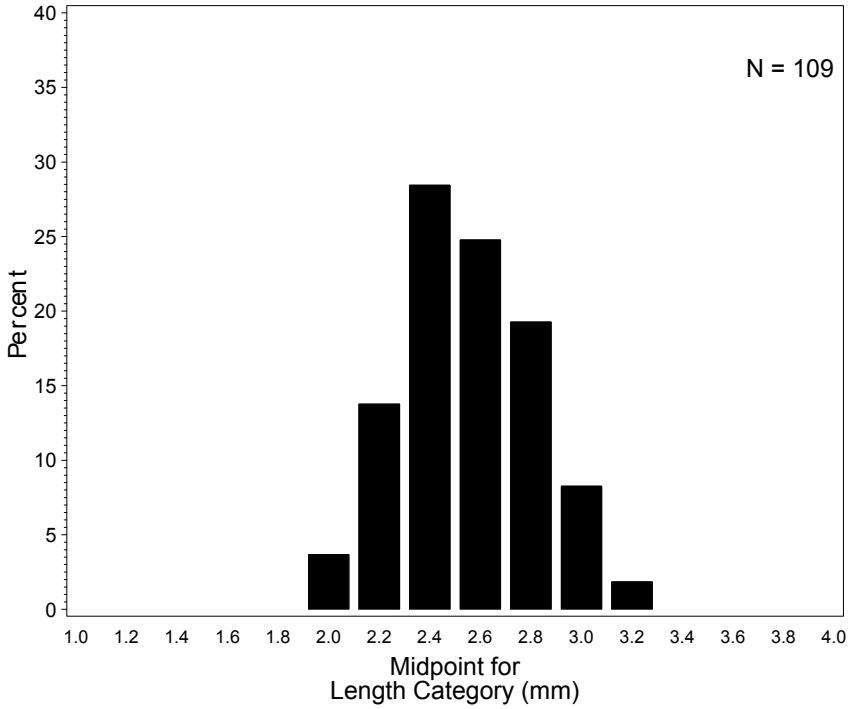

Figure 3-25. Length frequency distribution (mm) for larval combtooth blennies collected at the MBPP intake station from January – December 2000. The frequency distribution is based on the lengths of a representative sample of approximately 100 larvae.

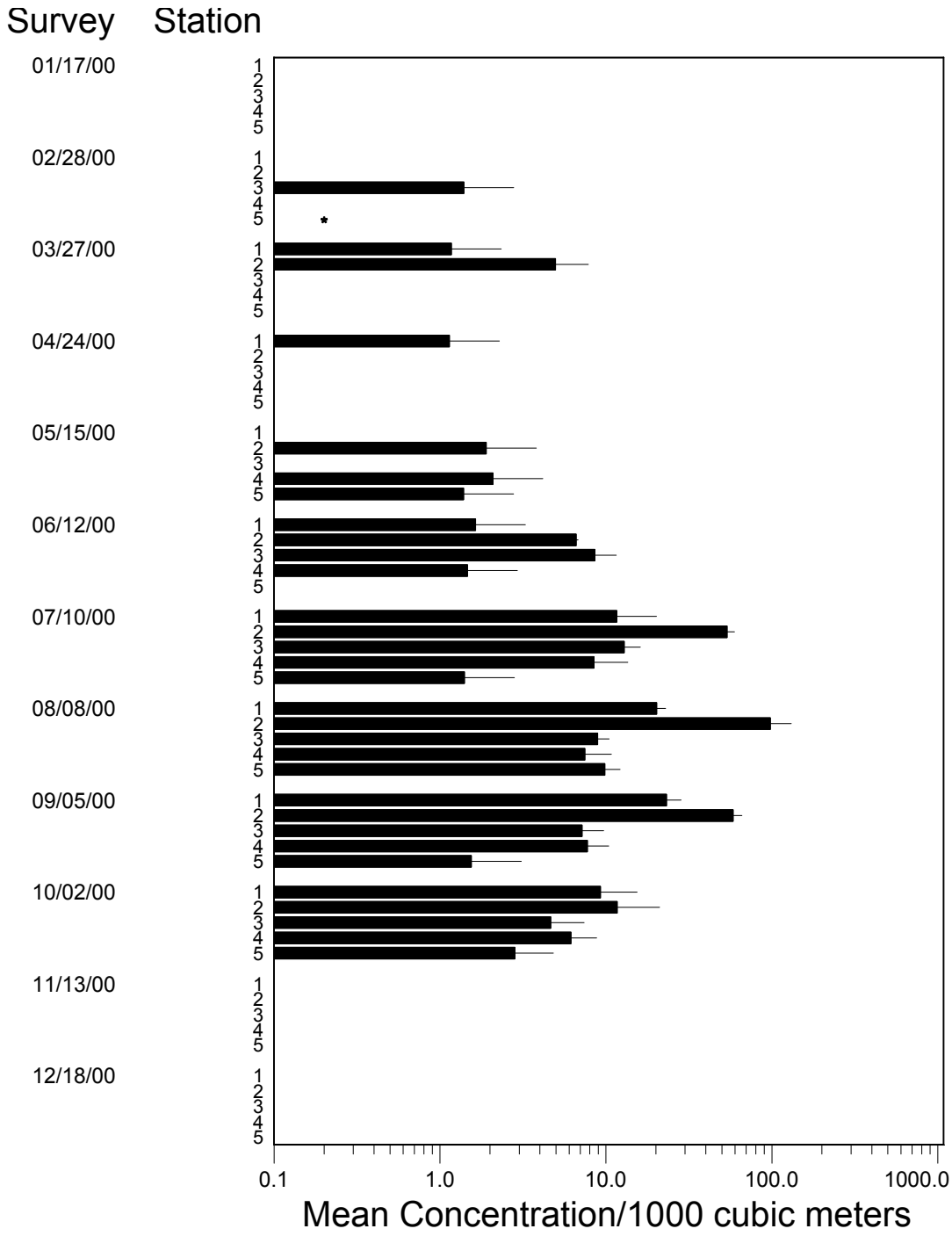

Figure 3-26. Mean larval combtooth blenny concentration in monthly paired surveys at the MBPP intake (Station 2), Morro Bay source water (Stations 1, 3, and 4), and Estero Bay (Station 5) from January – December 2000 with standard error indicated (+1 SE).

Note: During the January 17, 2000 survey, source water stations 1, 3, 4, and 5 were sampled only in daylight hours. Beginning in February 2000 the sampling frequency was increased to cover a 24-hour period.

* Estero Bay Station 5 could not be sampled in February 2000 due to unsafe sea conditions.

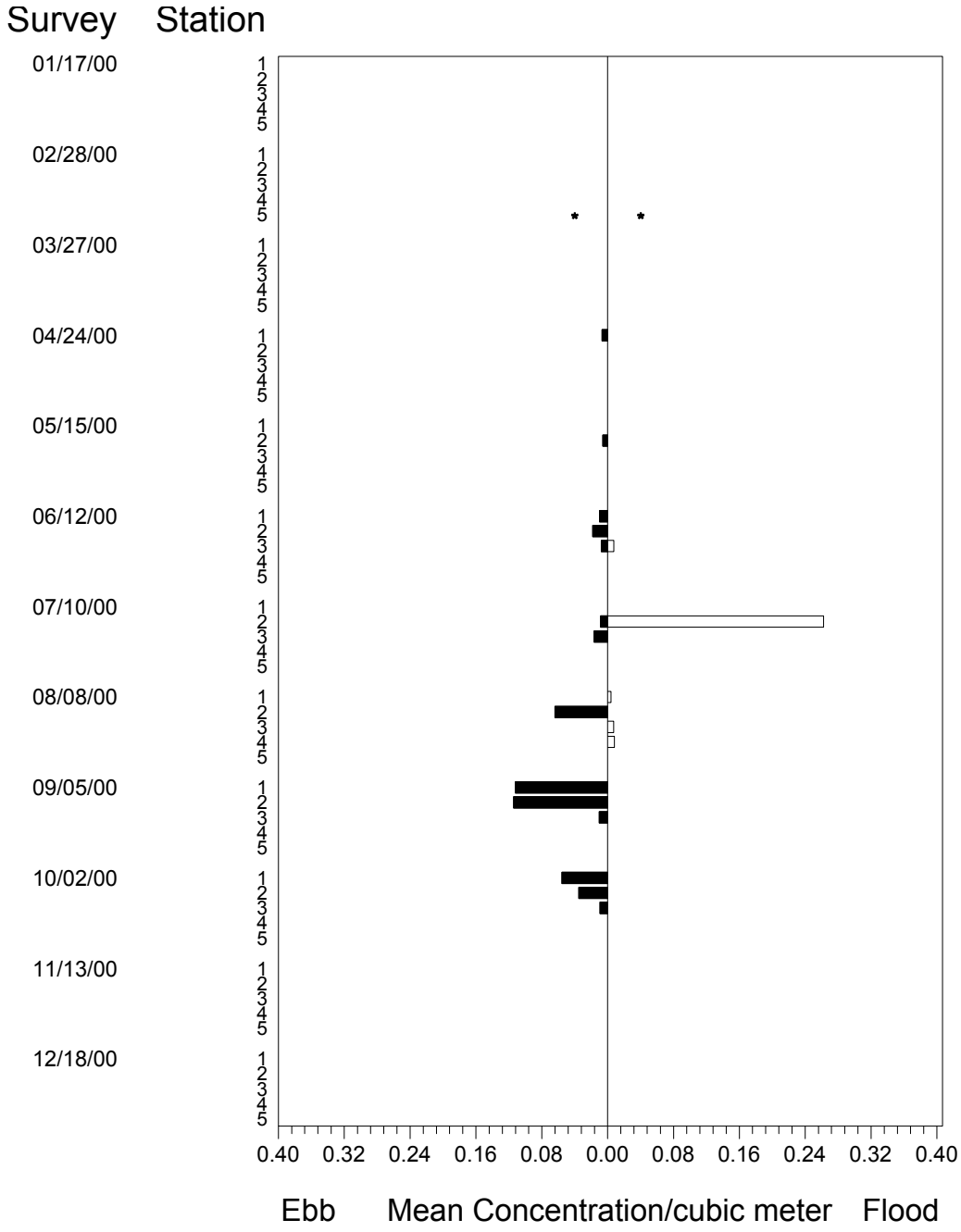

Figure 3-27. Mean concentration of larval combtooth blennies from monthly paired surveys by tidal current (ebb – solid bars; flood – clear bars) and sampling station (Morro Bay stations 1–4 and Estero Bay Station 5) from January – December 2000.

Note: During the January 17, 2000 survey, source water stations 1, 3, 4, and 5 were sampled only in daylight hours. Beginning in February 2000 the sampling frequency was increased to cover a 24-hour period.

*Estero Bay Station 5 could not be sampled in February 2000 due to unsafe sea conditions.