The sand lance has a slender body and pointed snout, silvery in colour. It lacks pelvic fins and swim bladder. Adults mature in their second year and typically spawn in November, laying their eggs at high tide in shallow water on a coarse sandy beach. The sticky eggs become coated with the sand grains and are almost invisible. The eggs incubate for about three weeks, then larval sand lance about a quarter inch in length emerge. The larval sand lance swim to the surface and range with the zooplankton for the next three to four months. By early spring the juvenile sand lance are about an inch in length and begin schooling. Juvenile sand lance rear in inshore waters during the summer months and may inhabit shallower areas than adults. As they grow they assume the diurnal activity of adults.

Calanoid copepods are the primary food source of juvenile and adult sand lance, although they also feed on euphausiids when they are available.

At age two to three years sand lance are typically four to six inches in length. Adults average about seven inches in length with a maximum length of about twelve inches. They do not die after spawning and can live to a maximum age of about eleven years. Adult sand lance are typically found in inshore waters at depths of 90 to 300 feet. They do not appear to make large scale seasonal migrations, instead they seem to stay near the sandy substrates which they use for both cover and spawning.
Burrowing takes place in specific areas of coarse loose sand (silt, fine sand, gravel, cobble and larger rocks are unsuitable for burrowing). Although most sand lance leave the sand at dawn, some remain during the daytime period and even through low tides. In some coastal areas it is possible to dig at sandy beaches at low tide for sand lance, to be used as live bait.

Since sand lance lack a swim bladder, they rest on the bottom when sleeping or dormant. From early fall to spring sand lance are dormant and remain burrowed in the sand, except during their spawning period. In spring and summer sand lance actively school and forage throughout the water column during the day and burrow in the sand at night.

Typical daytime behaviour during this period is to emerge from the sand at dawn and form small schools which become larger as the sand lance move to their feeding station. This is typically a location of strong tidal currents which concentrate plankton. Actively feeding sand lance are often found in mixed aggregations with Pacific herring. When tidal currents during the day are not suitable for feeding the sand lance are usually located in dense schools near the bottom, out of the current and often in an area of coarse loose sand suitable for burrowing, if protection should be needed. At dusk they make the return trip from the feeding station to their overnight burrowing location.

Sand lance form an important feed for juvenile coho and chinook salmon, and in some areas comprise roughly 60% of the diet of juvenile chinook. Sand lance can also be an important element in the diet of adult coho and chinook salmon.

Sand lance are a cold water fish, like herring, and do best during the cool phase of the Pacific Decadal Oscillation. There seems to be a large natural variation in sand lance populations from year to year, which has been noted in Japanese and eastern Atlantic commercial and experimental sand lance fisheries. This is likely to have a significant impact on juvenile salmon survival and growth rates.

Since sand lance do not have a swim bladder they make a weak echo on a depth sounder, except when they are in a mixed aggregation with juvenile Pacific herring.

Many good fishing spots are sand lance feeding locations and support a mixed population of sand lance, immature herring, and mature herring. However the mature herring are very mobile and often move to the offshore banks where they have better access to euphausiids. It is important to watch the depth sounder closely to determine the nature of the local feed, and also to examine the contents of salmon stomachs as they often have a preference.

Adult coho and chinook salmon which are keying on sand lance may refuse large baits such as cut plug herring and whole herring. When this occurs the best strategy is to use teaser head anchovy, a thinly cut herring strip or small spoons and hootchies.