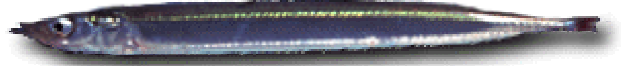


# Marine Life in Whatcom County

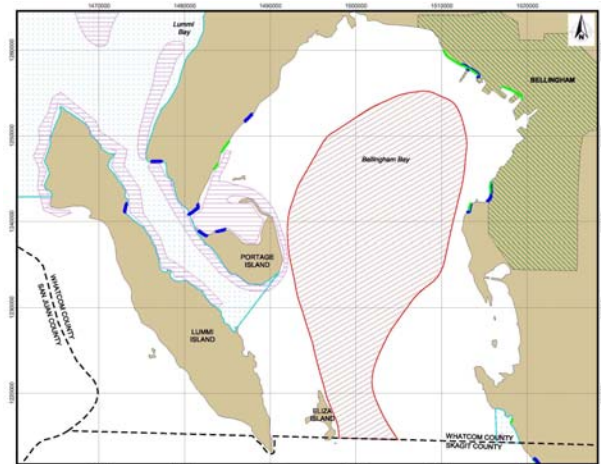
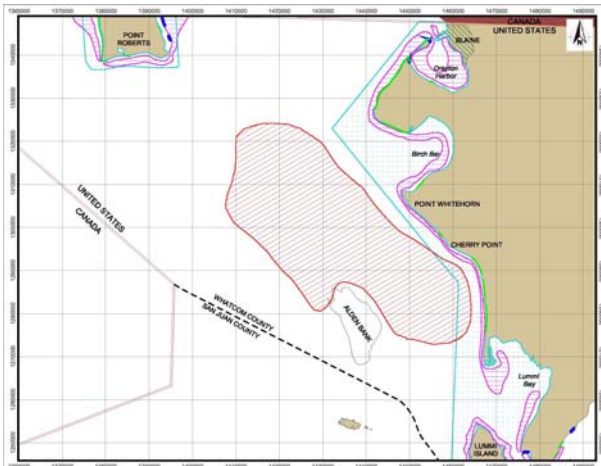
## ∞ Fish Series ∞

### Pacific Sand Lance (*Ammodytes hexapterus*)

**Description:** One of Whatcom County's schooling forage fish, the Pacific sand lance, as its name suggests, is distinguished by its slender sword-shaped body, 5-8 inches in length. These fish feature a needle-like nose, a thin dorsal fin along the length of the back, and silvery sides with gray-green above. Known to some in the Puget Sound region as "candlefish", elsewhere this name refers to another forage fish, the eulachon.



*Sand Lance, USGS*



These Whatcom County maps were created by Anchor environmental using data provided by WDFW. The blue areas indicate sand lance spawning beaches and the nearshore areas where planktonic larvae drift.

**Distribution:** The general range of the Pacific sand lance includes coastal areas of the northern Pacific Rim from Baja California and the Sea of Japan, north to Alaska and Arctic Canada. Schools of sand lance are localized but widespread in the Puget Sound and the Strait of Juan de Fuca. Efforts to locate spawning areas are ongoing, but locations have been identified in the northern and southern reaches of Whatcom County, including beaches at Point Roberts, Semiahmoo Spit, Lummi Peninsula, Squalicum Harbor and Post Point.

**Reproduction:** Each fall, adult sand lance migrate to sandy-gravel beaches to spawn. On high tides between early



*Sand Lance eggs. By WDFW*

November and mid-February, eggs are deposited in the upper intertidal areas. This was largely unknown until 1989 when Washington Department of Fisheries and Wildlife (WDFW) biologists discovered eggs disguised by sand grains adhering to their surface. This sandy coating may also serve as vital protection from disturbance and drying out at low tide during the four-week incubation. Upon hatching, the larvae can be found drifting with the plankton in many nearshore areas of Whatcom County.



Schooling sand lance.  
Photo: Randy Shuman, King County DNRP

**Ecology:** At every stage in its life cycle, the sand lance feeds on zooplankton and, in turn, becomes valuable prey for salmon, sea birds, seals and other marine animals, hence its classification as a "forage fish." In the nearshore areas where planktonic larvae drift in spring, juvenile sand lance school up in summer and continue to feed on plankton, primarily copepods. Adult populations travel to more open waters in large schools, but their movements and age structures remain largely unknown.

As juveniles and adults, sand lance take on the peculiar habit of burrowing in bottom sands at night for protection from predators. Their long, flattened shape facilitates this burrowing behavior, which is also an important part of their spawning ritual.

**Economic Value:** Historically thought of as little more than baitfish, the sand lance is now receiving special attention for its value as an important forage fish. Studies have shown that sand lance amount to 35% of the juvenile salmon diet - up to 60% for juvenile sockeye!

Sand lance are especially rich in high-energy fats, particularly in the spring as they bulk up on plankton blooms. For people that have eaten these small fish, they are reportedly delicious.

**Sources:**

WDFW Sand Lance website  
<http://www.wa.gov/wdfw/fish/forage/lance.htm>

WDOE, Puget Sound Shorelines, Sand Lance website <http://www.ecy.wa.gov/programs/sea/pugetsound/species/sandlance.html>

King County DNRP Water & Land Resources website. <http://dnr.metrokc.gov/wlr/>

"Seabirds, Forage Fish, and Marine Ecosystems in Alaska." USGS website  
[http://www.absc.usgs.gov/research/seabird\\_for\\_agefish/index.html](http://www.absc.usgs.gov/research/seabird_for_agefish/index.html)

**For More Information:**

Whatcom County  
Marine Resources Committee  
(360) 676-6876  
<http://whatcom-mrc.wsu.edu/MRC/index.htm>

**Current Status**

Growing concern over the importance of forage fish to endangered salmon and marine ecosystems has led to increased research into the previously little-known life cycles of the Pacific sand lance.

Since 1989, over 130 miles of Puget Sound shoreline has been documented as known spawning beaches for sand lance with many more miles of potential habitat to be surveyed. Sand Lance habitat is being inventoried in Whatcom County in 2002-2004 through a joint effort of the Marine Resources Committees and Washington State Department of Fish and Wildlife (WDFW).

Continued human development on shorelines raises particular concerns as forage fish spawning habitat is altered:

- Construction of bulkheads and other such shoreline armoring buries spawning habitat.
- Bulkheads and armored structures can also change erosion and sedimentation patterns to damage spawning habitat.
- Removal of shoreline vegetation reduces the shading of the beach or intertidal zone, heating and drying out sand lance eggs.

Washington Administrative Code Hydraulic Code Rules now include consideration of sand lance habitat in the permitting of in-water construction activities. More shoreline owners are learning the importance of shoreline vegetation to forage fish and marine ecosystems.



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NORTHWEST STRAITS  
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