

American Searocket, *Cakile edentula*

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After several years of high water levels on the Great Lakes, water levels have fallen recently, exposing wide sandy beaches in many areas. These barren beaches are prime places for pioneer plant species to take root—one of which is the American searocket.



A member of the Mustard family, American searocket grows as a short, upright or somewhat sprawling shrub, 6-20 inches tall, and about as wide as it is tall. It is a summer annual (sometimes biannual) with succulent fleshy leaves that grow on stout, multi-branched stems. The leaves are light green, alternate, and spoon-shaped, with a variety of teeth and lobe patterns along the margins.



The upper stems end in 2 to 10-inch-long racemes of flowers. Each flower is about a 1/4-inch across, with 4 petals, 4 sepals, and radially symmetrical. The flowers can vary in color from white to pink, red, or blue to purple. Blooming occurs from mid-summer into fall, lasting about 3 months. Only a few flowers bloom at a time.

The flowers are replaced by very unusual seedpods. These seedpods, which are about an inch long and elongated, have two segments: a lower segment (ovoid-shaped) and an upper segment (spindle-shaped and notably larger than the lower segment). Typically, each segment contains one seed. Between the two segments, the seedpod is slightly constricted.

At maturity, the upper segment of the seedpod becomes detached. It is buoyant and therefore easily carried off by waves to be deposited on and colonize another beach. Meanwhile, the lower segment is not buoyant. It remains attached to the plant until later, usually germinating on the same beach as the mother plant. (Amazing!)

Also noteworthy, researchers have found that if the roots of American searocket detect roots of a



competing plant nearby, an "allelopathic" action occurs. The searocket will release a substance into the root zone that deters the competitor from growing. It does not react this way if a nearby plant is another searocket.

American searocket is native to the sandy beaches, low dunes, and sometimes coastal wetlands of North America's east coast and Great Lakes. It grows most often midway up beaches, preferring well-drained, sandy soils, and full sun. It can also adapt to gravelly or rocky shorelines.

Because its succulent leaves store water, American searocket can withstand the desiccating effect of sun and sand that few other species can tolerate. Its root system helps bind and stabilize the sand; its decayed foliage adds nutrients to impoverished soil. Eventually, this enables other plants to grow on the beach. The process of ecological succession has begun.

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1. Wikipedia Commons
2. Chris Evans, University of Illinois, Bugwood.org
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