GUIDE TO MARINE INVADERS
IN RI COASTAL WATERS

Undaria pinnatifida

undaria kelp, wakame seaweed

Potential Invader

Photos: Steve Lonhart /Monterey Bay NMS

PHYSICAL DESCRIPTION

Brown kelp with wide, brown to yellow-tan blades

Mature plants have a divided blade (with pinnae) with conspicuous midrib, holdfast, stipe (stem), and spiral, folded sporophyll

Young plants have holdfast, stipe, undivided blade, and initially no midrib

Grows rapidly to 3-9 ft (1-3 m) long

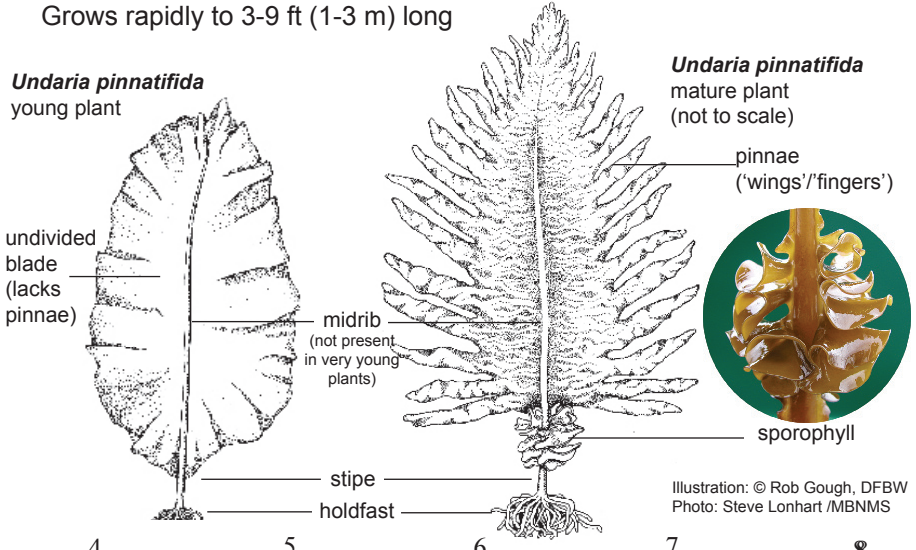

Illustration: © Rob Gough, DFBW
Photo: Steve Lonhart /MBNMS

HABITAT PREFERENCE

- Found from low intertidal to subtidal depths of approx. 15 ft (5 m)
- Grows on hard surfaces including rocks, ropes, docks, pilings, moorings, and other structures
- Can form dense 'kelp forests' in sheltered waters

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INVASION STATUS & ECOLOGICAL CONCERNS

Undaria pinnatifida is an invasive kelp native to Japan. Commonly known as 'wakame', an ingredient in miso soup, this alga is commercially grown throughout Asia for human consumption. It has invaded many of the world's ocean's, from European waters, to waters off New Zealand. In 2001, *U. pinnatifida* was discovered on North American shores in Monterey Bay, CA, where efforts to manually remove it continue today.

This alga is a very prolific and hardy species, with a growth rate measured at 1-2 cm per day, and a max. length of 9 ft (3 m). It can establish itself on a wide variety of surfaces. As a result of its amazing growth rate and wide blades, this seaweed quickly starves the natural understory algae of light. As these algae die, fish and invertebrates must move elsewhere to find food, thus creating extra feeding pressure on adjacent areas. *U. pinnatifida* has drastically affected the ecosystem of many waters that it has invaded. In addition to such ecological damages, it is a fouling species on ship hulls, nets, fishing gear, moorings, ropes, and other structures, and as such, increases labor and maintenance costs.

SIMILAR SPECIES

(left to right):
S. latissima blade, stipe and holdfast
S. latissima blade showing absence of midrib
Alaria sp. showing midrib

Saccharina latissima (sugar kelp)
Undaria pinnnatifida may be mistaken for our region's native brown kelps, particularly *Saccharina latissima*. However, *S. latissima* has ruffled edges along undivided blades with no midrib, vs. divided blades and conspicuous midrib of *U. pinnatifida*.

While several of the Gulf of Maine's native kelp species possess some of the features of *U. pinnatifida* (i.e. midrib in *Alaria* sp., divided blades of *Laminaria digitata*), none possess the folded, spiral sporophyll.


1.


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To report findings please email ***kcute@crmc.ri.gov or call (401) 783-7772 or (401) 783-3370.***

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