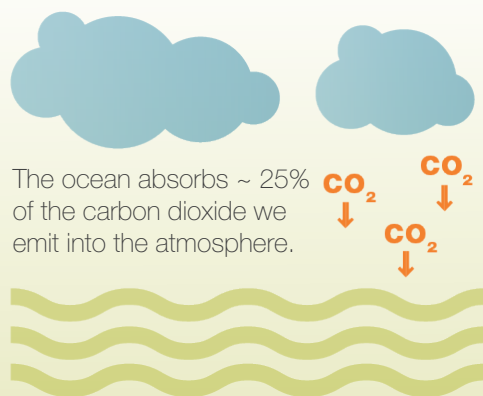


KELP AND OCEAN ACIDIFICATION

What is ocean acidification?



The ocean absorbs ~ 25% of the carbon dioxide we emit into the atmosphere.

Ocean acidification harms ocean life.

SHELLFISH

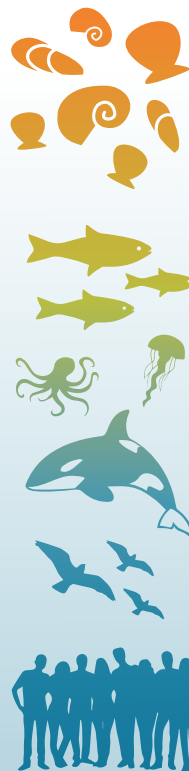
Ocean acidification directly impacts shellfish, by dissolving shells and interfering with new shell growth.

THE FOOD WEB

Ocean acidification also affects fish, whales, and sea birds who rely on shellfish and microscopic plankton for food and habitat.

HUMANS

Ocean acidification impacts fishermen and other communities that rely on healthy coastal habitats. If you enjoy eating local seafood, ocean acidification impacts you as well!



Kelp to the rescue!

Like plants on land, marine algae and seaweeds naturally take up carbon dioxide and nutrients. Sugar kelp, which is native to the Pacific Northwest, absorbs carbon as it grows.

Kelp beds are essential parts of coastal rocky reef habitats in temperate oceans throughout the world. Because of their fast growth rate and large stature, kelp contributes greatly to productivity of shallow coastal marine ecosystems and as habitat for a diversity of fishes and invertebrates.



Photo: John Mickett at UW-APL



CULTIVATING KELP

Sustainable farming practices and environmental benefits.

Kelp is one of the fastest growing organisms on earth; some species can grow as much as 2-3 feet per day. Unlike meat, fish and even vegetable farming practices, which use lots of resources, growing sugar kelp is low impact. Kelp farms require no fertilizers, pesticides, freshwater or arable land.

Ocean acidification is caused by:



FOSSIL FUEL COMBUSTION

Combustion releases CO₂ into the atmosphere.



LOSS OF FOREST

Eliminating trees and plants that take up CO₂ increases the atmospheric CO₂ concentration.



URBAN RUNOFF

Runoff contains nutrients and carbon that can further increase the level of CO₂ in seawater.

Sugar kelp growing season.



EARLY WINTER

Kelp spores are seeded onto spools of grow line and strung between buoys. This grid-shaped network of grow lines makes up the kelp farm.

LATE WINTER

Sugar kelp grows quickly — from seedling to 15 feet in just a few months.



EARLY SPRING

Kelp that will be eaten is harvested before it grows too large, thick and tough.

EARLY SUMMER

Kelp reaches its peak biomass. Once harvested, it can be processed into a variety of useful products, including organic fertilizer and biofuels.

REASONS WHY YOU SHOULD HAVE YOUR KELP AND EAT IT, TOO.

It's tasty.

Kelp and other seaweeds are a great source of umami flavoring, which is valued for making foods taste meatier.



It's nutritious.

Kelp is packed with iodine, potassium, magnesium, calcium and iron; contains more soluble fiber than most fruits or vegetables; and is an excellent source of antioxidants, folic acids, and vitamins A, B1, B12, C, D, E, riboflavin, and niacin.



It's sustainable.

Kelp is one of the fastest growing organisms on earth and can grow as much as 15 feet in one season. Farming it requires no fertilizers, pesticides, freshwater or arable land.



It's low on the marine food web.

Kelp is a nutritious food source that does not rely on other marine life for food, making it one of the most sustainable seafoods. It also provides habitat for other small edible species, like shellfish.

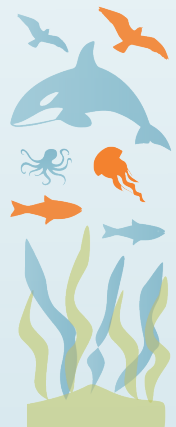


Photo: Washington Dept. of Ecology

KELP IN PUGET SOUND

Kelp is a type of seaweed. It belongs to the brown algae class and grows in nutrient-rich saltwater. The Pacific Northwest is home to hundreds of seaweed species including these nutritious and delicious varieties of kelp:

GIANT KELP

BULL KELP

SUGAR KELP

WINGED KELP

AKA ALARIA OR
PACIFIC WAKAME

FUCUS

AKA
BLADDERWRACK
OR ROCKWEED

Kelp and other seaweeds are an important part of the marine ecosystem. Not only do they provide habitat and a source of food for a wide variety of sea life, kelp beds also disperse wave energy to protect shorelines from erosion. Sustainable harvest practices are critical to preserving wild kelp beds. Recreational harvest: a state license is required and kelp may only be harvested for personal use; it may not be sold.

For comprehensive harvesting rules and regulations, visit www.dnr.wa.gov/seaweed.

Learn more

To learn more about the benefits of kelp and where you can find local Washington-grown kelp, visit:

www.oceanlinknw.com/kelp
wsg.washington.edu/kelp
<http://restorationfund.org/projects/ocean>

In partnership with:



Photos courtesy of Puget Sound Restoration Fund and SkyRoot Farm

THE POWER OF KELP



The next
superfood
and sustainable
aquaculture
commodity.

