

# Seaweed

*Seaweeds are an important food and medicine to humans everywhere that they grow. They have been harvested by Salish People off the Pacific coast for countless generations and are used for thickening soups, seasoning foods, and for baking foods in cooking pits. Seaweeds are exceptionally high in minerals, trace elements and protein. They can be preserved through careful drying in the sun or near a fire.*



**Where they grow:** In salt water at middle to low tidal zones. Each type of seaweed has a tidal zone habitat – from sea lettuce and bladder wrack that grow on rocks in upper tidal zones to bull whip kelp, which grows in deep waters.

**Season:** Like other edible plant greens, seaweeds are harvested in spring and early summer when they are most vital. In late summer and fall they get tougher and begin to deteriorate.

**How to Harvest:** It is very important to harvest seaweeds from clean waters because they can absorb environmental toxins. The safest places are open waters of the Pacific with strong current flow away from cities, towns or industrial runoff. Washington State allows us to harvest 10 pounds wet weight per day on public beaches and you need a shellfish/seaweed license to harvest.

The bottom of the seaweed or “hold-fast” anchors on to rocks while leaves grow upward toward the light like an undersea forest. Make sure you leave the holdfast and at least a quarter of the seaweed plant so it can grow back. Do not clear-cut any area so that the seaweed can continue to thrive. As wild foods forager Jennifer Hahn says, approach seaweed harvest as if you were trimming hair.

Harvest seaweed with blunt scissors and then rinse in seawater before placing in plastic bags. If you are harvesting on a warm day, bring a cooler to keep seaweed cold during transport, as they will quickly decompose. Once you get home, rinse seaweeds in fresh water, being careful to remove any sand. Delicate seaweeds can be stored for use in a refrigerator for up to three days, while thicker brown seaweeds will last up to 7 days. Seaweeds can also be frozen.

After gathering seaweed, most people dry it for long-term use. This can be a tricky because seaweeds have a great affinity for water. You can dry seaweeds outside in the full sun for

4-10 hours all in one day. Hanging them with close pins works best. If the seaweed is not dry by the time the sun goes down, it should be brought inside to prevent rehydration from dew. Seaweeds can also be dried inside at 80-100 degrees using small fans for air circulation. You can use a food dehydrator or an oven on the lowest setting. Place the seaweed in loose clumps on a cookie sheet covered with parchment paper. You may need to crack your oven door to release moisture.



When completely dry, seaweed will be crunchy and should be placed in airtight bags or containers. It readily reabsorbs water from the air and may need to be re-dried occasionally. Store in a dark place at a temperature below 70 degrees.

**Eating Seaweed:** Amazingly, there are no poisonous seaweeds in the Pacific Northwest. That does not mean that all are palatable. Some, like nori or kelp are delicious toasted or incorporated into dishes while others like acid kelp are so vile tasting that you would not want to put them in your mouth.

Seaweeds are exceptionally high in minerals and have over 100 trace elements. Many seaweeds including kelp are higher in calcium, magnesium, copper, zinc, iron, boron, postassium and other nutrients than red meat, milk or eggs. Nori is especially high in Vitamins A and C, more in fact, than oranges. Seaweeds contain 10-35% protein and some have high quantities of essential fatty acids.

Seaweeds can be incorporated into the diet in a multitude of ways including soups, pies, seasoning, "chips", etc. You may need to consume seaweeds on a regular basis initially to build up sea vegetable digestive enzymes. Most people adapt in 4-6 weeks. Heavy antibiotic use can decrease a person's ability to digest seaweeds.

**Seaweed Medicine:** Slipping seaweeds in to your diet is a great way to improve health. Seaweeds balance minerals in your body and facilitate detoxification from heavy metal exposure. They support important glands including the thyroid, which regulates metabolism and energy levels. The most important nutrient in sea vegetables is probably iodine. Seaweeds are up to 10 times higher in this trace mineral than any land plant. Iodine is an essential building block in the production of thyroid hormones. China has used seaweed therapeutically to treat goiters (a low iodine condition) for over 5,000 years.

**Ecological Relationships:** All seaweeds create habitat for sea creatures to hide and make their homes. They are food for many species. Kelp is an integral part in the web of sea life. Giant kelp and bull kelp create underwater forests that provide a home and food to fish, sea otters, crabs, sea urchins and snails. When waves break apart bits of these seaweeds, they become food to tiny zooplankton, which become food for bigger zooplankton and fish including salmon and whales. The Omega-3 fatty acid in salmon is from kelp! Because sea otters are declining, they have eaten fewer sea urchins, one of their major food sources. This had led to an explosion in sea urchin populations along the Pacific coast. Sea urchins heavily graze on kelp and have deteriorated the kelp forests, which are essential habitat for many sea creatures.

**Other uses:** Seaweeds are a useful garden amendment. They were traditionally used to replenish depleted soils. Clemons University in South Carolina experimented with sprays of seaweed extract diluted 1 to 100 in water.

They found that the treatment promoted vigorous plant growth, gave better insect and disease resistance, increased frost hardiness, extended the storage life of harvest crops and promoted better seed germination. Alginic acids in seaweed can bind to trace elements and increase their absorption by plants.



## Bladderwrack

Bladderwrack (*Fucus sp.*, rockweed) is a brown algae that grows on rocks in the middle tidal zone. It is the most common seaweed in northern hemisphere cold waters. Children love to pop the “bladders” because they make a satisfying explosive sound.

As a food, bladderwrack can be eaten raw, stir-fried fresh, simmered in soup, sauces, quiche or omelets. Janice Schofield recommends cooking it with clams, mussels or other seafood to will improve their flavor. She also favors it as a tea and as a soup base. (1989, p. 253-254) Bladderwrack can be laid on fire coals to barbecue fish.



Bladderwrack is used medicinally to increase the function of the thyroid and to elevate metabolism. Iodine in bladderwrack is in the form of di-iodotyrosine, an immediate precursor to the thyroid hormones T3 and T4. In *The Destruction of Women's Health: Thyroid Disease in Industrialized Countries*, Ryan Drum shares how he uses it as a substitute for thyroid hormones. Currently, a startling 11-25% of adult women have under-active thyroids. This may be a result of stress, dietary and environmental factors. Symptoms include fatigue, weight gain, mental fogginess, poor connective tissue growth and healing and low bone density. (1998, p. 9-10) Bladderwrack may help alleviate these symptoms. Not surprisingly, its most popular use is for weight loss.

Bladderwrack can be made into a tea and used to soak sore feet and ankles. I have heard it is relaxing to the muscles. The smell is reminiscent of the sea, which can also be relaxing. For men's health, bladderwrack is the first seaweed that has been used to treat prostate inflammation. The dose is 5 grams per day or 2 "00" capsules 2-3 times a day for 2-3 months.

## Bull kelp

Bullwhip kelp (*Nereocystis luetkeana*) is a brown seaweed with a distinctive large ball and a long hollow tail. Kelp grows in beds in semi-deep seawater. It is the fastest growing plant in the sea and can grow 12 inches a day, reaching a length of 60-90 feet!

The bullwhip kelp stipe, bulb and leaves can be eaten in many ways. Slice thinly as a vegetable add it to soups. The leaves can be blanched in boiling water and then sliced into noodles for seaweed salad. You can also use it as a wrap for baking fish. You can cut the stipe into o's and the bulb into slices and make kelp pickles. They are cooked in vinegar and water with pickling spices. Once dried, kelp leaves can also be dried and eaten like chips - a salty snack that is incredibly high in minerals. The crumbled dried leaves can be added to food like a spice.



Bull kelp has many fascinating traditional uses in the Pacific Northwest. In *Earth's Blanket*, ethnobotanist Nancy Turner describes how the Kwakwaka'wakw buried long hallow stalks of bull kelp in the dirt floor of the dance house at the time of winter ceremonials. One end of the stalk resurfaced in the center of the fire pit in the middle of the house, while the other end was exposed outside. Someone would crouch outside during spiritual dances and sing or shout into the long stalk, giving the impression that a spirit voice was coming from the fire. Rudy Ryser

from the Center for World Indigenous Studies teaches that bull kelp was a perfect receptacle for storing eulachon grease. It could hold a large volume of oil and prevented spoilage because so little of the oil was exposed to air. In later years it was used to store molasses.

## Sugar Kelp - Kombu

Sugar kelp (*Laminaria latissima*, sugar wrack) is a thick leaved giant seaweed that grows at low tidal zones. Leaves are palmate shaped, as wide as 3 feet and as long as 6 feet. Sugar kelp is high in glutamic acid – a food tenderizer and flavor-enhancer. It is cooked with beans to soften them and make them more digestible. After cooking them for about an hour and a half, the kelp disappears, but gives the beans a nice thick texture. It is also used added to stews to sweeten and soften root vegetables so they melt in your mouth. You can add a few large pieces when the stew is cooking, and remove them and cut them into julienne strips just before serving.

## Nori

Nori (*Porphyra sp.*) is also called purple laver. It grows in upper tidal zones on rocks and other seaweeds. Nori is only one to two cell walls thick, making it a beautiful transparent yellow to purplish-brown.

The texture and taste of nori improves with drying, and it becomes sweeter, milder and earthier as it ages. It can be lightly toasted in a dry pan to make crunchy “nori chips” that even the most finicky eaters usually enjoy. It is called “Indian popcorn” among many native communities from Alaska down the coast to Washington State and has remained a popular trade item for countless generations. It is historically cooked with fish. The Japanese have been farming Nori since the 1700’s. It is now the largest of all aquacultural enterprises and constitutes a multi-million dollar industry. It is grown commercially in Japan and other countries.



Nori is high in vitamins, especially vitamins A and C, minerals and trace elements. It is used to prevent goiters. Sailors historically ate it to prevent scurvy. Herbalist Janice Schofield says that 100 grams of nori only has 280 calories, yet provides one-third our need for protein and vitamin C, more than half the required iron and niacin and all the vitamin A. It provides double the needed daily riboflavin.

## Sea Lettuce

Sea lettuce (*Ulva sp.*) is also called laver. It is the thin, brilliant green seaweed that grows on the upper tidal zone. It is only 2 cell layers thick and has a beautiful transparency when held up to the light. This tasty seaweed can be eaten fresh or dried and used as a seasoning. It is best in early spring to early summer and becomes whitish when it is past its prime. Sea lettuce should be rinsed in cold water to remove sand and grit before drying.

## Green Sea Salt

*Are seaweeds high in sodium? Well of course, they thrive in salt water after all. Salt substitutes are easy to make and incorporate more flavor and nutrients in to your meals. This recipe includes mineral-rich nettles and milk thistle seeds, which are excellent for liver health. Consider adding it to soups, beans, salads and savory dishes.*

- 1/4 cup powdered kelp
- 1/4 cup nettles, powdered
- 1/2 cup milk thistle seeds, finely ground
- 3 tablespoons sea salt

Combine all ingredients and store in a glass jar. Sprinkle a small amount onto food or blend in dishes.

*Recipe from Valerie Segrest, Muckleshoot Tribe*

## Detoxifying Sea Soak

*These ingredients make a detoxifying body soak that will relax your muscles and support skin health.*

- 1 cup Epsom salts
- 1/2 cup sea salts
- 1/2 cup powdered kelp or dulse
- 1/2 cup powdered nettles

Combine all ingredients in a bowl. Use 1/2-1 cup per bath. If you do not enjoy loose powdered herbs in your bath, place the salts in a muslin bag. The salts will dissolve and the seaweed and herbs will infuse in the hot water like a big tea bag.

*Recipe from Valerie Segrest, Muckleshoot Tribe*



## Kelp Pickles

*Kelp is thick and crunchy – making it a perfect match for pickling. You can embellish this recipe with your own flavor preferences including classic pickling spices or Asian flare with turmeric, ginger and garlic.*

- 2 cups vinegar
- 1 cup water
- 1 tablespoon salt
- 2 cloves garlic
- 1 tablespoon pickling seasoning

Gather kelp by pulling it up when in a boat or gather fresh looking kelp off the beach after a storm. One will be plenty. If the outer skin is tough, remove it with a vegetable peeler. Chop up the end bulb and the tail into small pieces. Place in a clean glass jar. Combine remaining ingredients and bring to a boil. Pour over the sliced kelp and cover with a lid. When cooled, refrigerate. Wait one week before eating.

*Recipe from Jennifer Hahn*

### **Additional Resources:**

*Discovering Wild Plants* by Janice Schofield

*Pacific Feast* by Jennifer Hahn

*Pacific Seaweeds* by Louis Druhl

Ryan Drum's website with seaweed articles: <http://www.ryandrum.com>

### **References and Reading Material:**

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**Artwork kelp** by Joe Seymour

