

red ogo seaweed

Gracilaria pacifica

BIOLOGY FACT SHEET



Photo: Wendell Wood (ww@oregonwild.org) [3]

San Diego seafood profiles

Taxonomic description

- Colored pale red to pinkish [1,2]
- Has a central axis from which up to 14 branches arise, each with 2-3 orders of branching [2]
- Slender branches, 1-3 mm (0.04- 0.12") diameter [1]
- Grows to 30-70 cm (1- 2.3 ft) tall [2]
- Used to be grouped with *Gracilaria verrucosa* [2]

Distribution

- Found from Southern California to Alaska [2]

Life history

- Like many seaweeds, it has separate, free-living sporophyte (2n) and gametophyte (1n) stages.
- Each stage looks similar, with the female gametophytes most obvious when

reproductive due to dark bumpy reproductive structures (cystocarps) on branches [2].

Habitat

- Found on soft substrates, with fine to coarse texture [4]
- Infrequent, discontinuous distribution on coarse sand or rocks with the ability to form dense beds in some areas [1,4]
- Mostly found in sheltered water from subtidal to high intertidal elevations [1,4]
- Commonly grows in association with a closely related seaweed, *Gracilaria lemaneiformis* [1]

References

- [1] Abbott, I., G. Hollenberg. 1992. Marine Algae of California. Stanford University Press. 844 pp. (listed as *G. verrucosa*)
- [2] Abbott, I.A., J.N. Norris. 1985. Taxonomy of economic seaweeds with reference to some Pacific and Caribbean species. California Sea Grant College Program.
- [3] Guiry, M.D. & Guiry, G.M. 2013. AlgaeBase. World-wide electronic publication, National University of Ireland, Galway. http://www.algaebase.org/search/species/detail/?species_id=4965.
- [4] Schaeffer, K., K. McGourty, and N. Cosentino-Manning (eds.) 2007. Report on the subtidal habitats and associated biological taxa in San Francisco Bay. NOAA Santa Rosa Office.

Did you know?

When the complex sugar (polysaccharide) in the cell walls of this and other red algae is boiled, it produces agar, a gelatinous substance used as a food thickener.

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FISHERY FACT SHEET

Gracilaria pacifica

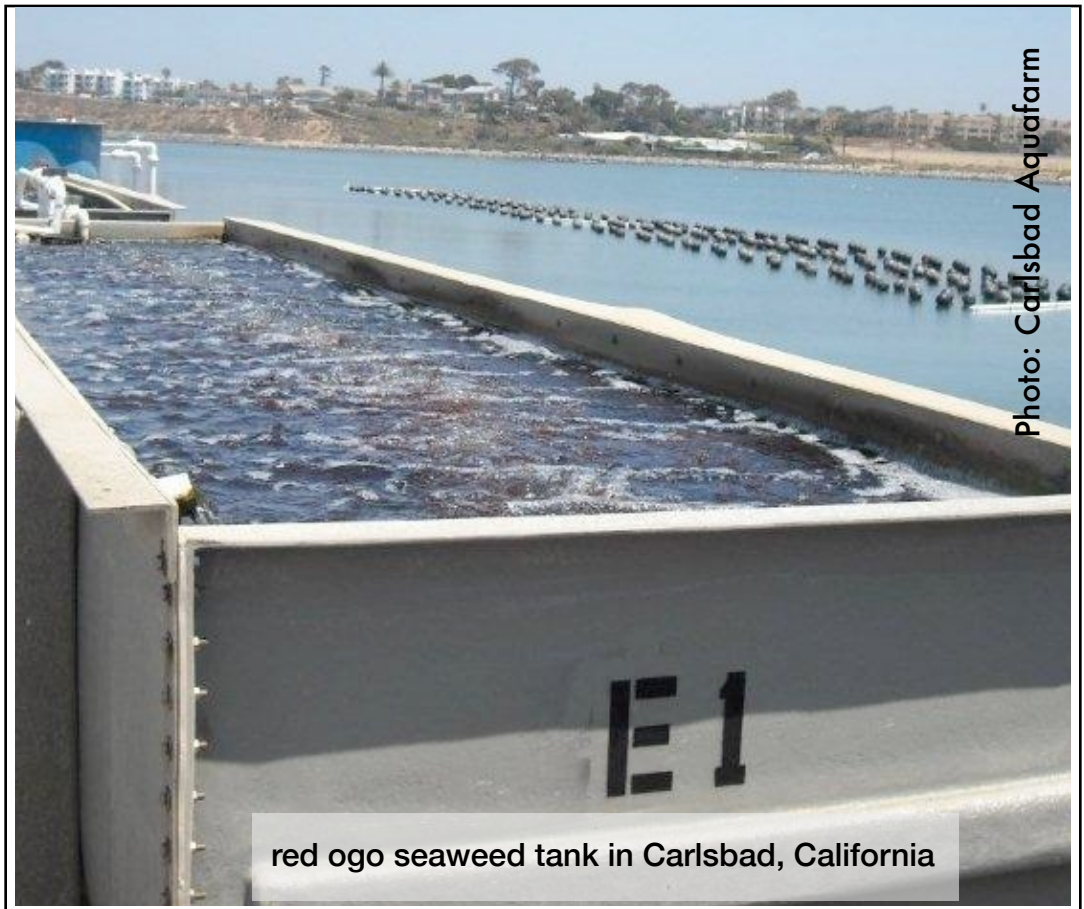


Photo: Carlsbad Aquafarm

red ogo seaweed tank in Carlsbad, California

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Seasonal availability

- Available May – November
- Takes a few months to create a harvestable mass [i]

Managing authority

- Growing methods & product are regulated by federal, state & local agencies (e.g., Army Corps of Engineers (lead), NOAA, U.S. Fish & Wildlife Service, US. Dept of Agriculture, Food & Drug Administration, County Dept of Public Health).
- California Aquaculture Association promotes sustainable commercial production of plants and animals by conserving California's land & water.

Gear type

- Grown in onshore tanks containing seawater & exposed to natural sunlight [i]

- In Hawai'i, a related species is grown in baskets at the surface of fish ponds where it can utilize excess nutrients [ii].

Status of the fishery

- *G. pacifica* is native to this coast and it not currently under any threat of decline.
- Abundant enough to form beds in some parts of its range, especially in response to nutrient addition.

Potential ecosystem impacts

- Aquaculture reduces the pressure on local natural populations and limits the need for imported seafood.
- No direct ecosystem effects of the gear except for the loss of upland habitat to make room for the tanks.
- Farming of this seaweed, as with most, improves water quality through the removal of nutrients.

References

- [i] Carlsbad Aquafarm. Prod. Brian Robles and Cindy Kendrick. Green-Scene, 2013. YouTube.
- [ii] Glenn, EP, et al. 1998. A sustainable culture system for *Gracilaria parvispora* (Rhodophyta) using sporelings, reef growout and floating cages in Hawaii. *Aquaculture* 165: 221-232
- [iii] Schaeffer, K., K. McGourty, and N. Cosentino-Manning (eds.) 2007. Report on the subtidal habitats and associated biological taxa in San Francisco Bay. NOAA Santa Rosa Office.
- [iv] FactoLex. 2013 *Gracilaria*. http://en.factoLex.com/Gracilaria:algae_red

Did you know?

Many other members of this genus, *Gracilaria*, are also collected and farmed for food and use as thickeners, especially in developing countries [iv].

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NUTRITION FACT SHEET

Gracilaria pacifica



red ogo seaweed salad

Recipes from the Kitchn (www.thekitchn.com)

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Edible portions

- Whole seaweed is eaten

Culinary uses

- Can be stored up to three days in a refrigerator in a covered container (do not place in water)
- Dipping the seaweed into boiling water for approximately ten seconds diminishes saltiness and brightens color, but reduces crispiness [2]
- Is great marinated, added to salads, sandwiches or pastas, or in any dish as a substitute for lettuce.
- Examples of dishes include seaweed and cucumber salad (with feta cheese and lemon) and healthy wraps with seaweed wrapped around rice, seafood or other meats.

Description of seaweed

- Crispy texture with a slightly salty taste
- When fresh, the seaweed has a bright red color, however changes to dark green once cooked [1]

Nutritional information

Considered a “superfood” because it is high in important trace minerals, and potassium, iron, calcium, magnesium and iodine [1]

Serving Size: 1 cup (80g or 2.8oz), fresh

Calories (kcal):	24
Protein (g):	1
Carbohydrate (g):	5
Total Dietary Fiber (g):	0
Total Fat (g):	0
Vitamin A (%):	13
Vitamins C, E (%):	0
Thiamin (mg):	0.02
Riboflavin (mg):	0.14
Niacin (mg):	0.08
Folate (mcg):	2.40
Vitamin B-6 (mg):	0.00
Vitamin B-12 (µg):	0.00
Calcium (mg):	472
Iron (mg):	6
Magnesium (mg):	96
Phosphorus (mg):	17
Zinc (mg):	0
Potassium (mg):	34
Sodium (mg):	60

Percent Daily Values are based on a 2000 calorie diet. [3]

Toxicity report

- There are no known contaminants

Seasonal availability

- Available farm fresh in San Diego May – November.

References

- [1] Ho, Emily. "Recipe: Red Ogo Seaweed Recipes." theKitchn. Apartment Therapy, 06 Aug 2008. Web. 13 Aug 2013. <<http://www.thekitchn.com/la-farmers-market-report-seawe-58761>>.
- [2] "Red Ogo Seaweed Information and Facts." Specialty Produce. Specialty Produce, 03 Sep 2011. Web. 13 Aug 2013. <<http://www.specialtyproduce.com/index.php?item=195>>.
- [3] Hawai'i Foods: Nutrition with Aloha. 2013. "Seaweed, Ogo". University of Hawai'i at Manoa, College of Tropical Agriculture and Human Resources. <http://hawaiiifoods.hawaii.edu/facts.asp?id=128110&sid=0>
- [4] Specialty produce. 2013. Red ogo seaweed. <http://www.specialtyproduce.com/index.php?item=195>

Did you know?

Eat with the fishes?! Red ogo seaweeds are not only popular with humans, they are also used for aquarium-fish food [4].

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CULINARY INFO SHEET

STEP 1: CLEAN

Tools:

FRESH

- Cold water

DRIED

- Newspaper OR oven
- Warm water

Method:

1. **FRESH** If not using immediately, store seaweed covered in the refrigerator for up to 5 days. Only rinse under fresh, cold water immediately before use.
2. **DRIED** To preserve fresh seaweed for long-term use, dry seaweed on newspaper in a sunny spot or place it in a warm oven for a few hours. When ready to use, submerge dried seaweed in warm water for a few minutes, until tender.



Photo: Carlsbad Aquafarm

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STEP 2: PREPARE

Appetizer | Red Ogo Seaweed Slaw

Adapted from sippitysup.com [1]

Ingredients (serves 4):

Dressing

- 2 tsp. sugar
- 1 tsp. crushed red pepper flakes
- 1/4 c. cilantro, chopped
- 2 tbsp. back sesame seeds
- 1 tbsp. ginger, peeled and grated
- 2 tbsp. olive oil
- 1 tbsp. fish sauce
- 1 lime, juice only

Base

- 2 c. red ogo, chopped
- 1/2 c. chinese red cabbage, shredded
- 1/2 c. carrots, shredded
- 1/2 c. red bell pepper, thinly sliced
- 1/2 c. shitake mushrooms, thinly sliced
- 3 scallions, thinly sliced
- (Optional) red chili peppers
- (Optional) 1 c. arame seaweed



Photo Credit: sippitysup.com [2]

Method:

1. In a bowl, combine ingredients for the dressing. In a larger serving bowl, combine ingredients for the base.
2. Mix dressing with base and serve immediately. If desired, top with arame.

SERVING SUGGESTIONS:

Red ogo may be eaten raw or boiled for 10 seconds to diminish saltiness, reduce crispness, and brighten color.

OTHER RECIPE IDEAS:

Tofu poke; seafood salad with ogo; garnish for fish; ogo tossed with fruit.

Entrée | Red Ogo and Tofu Salad

Adapted from thekitchn.com [2]

Ingredients (serves 4):

Dressing

- 2 tbsp. rice vinegar
- 1 tbsp. sesame oil
- 1 1/2 tsp. honey/agave
- 1 in. ginger, grated
- (Optional) Soy sauce/tamari/liquid amino acids

Base

- 1 c. red ogo, torn or chopped
- 1 c. (~2 small Japanese/Persian) cucumbers, sliced
- 6 oz. firm tofu, cubed

Garnish

- Chives, chopped
- Black sesame seeds



Photo Credit: Gregory Han; thekitchn.com [3]

Method:

1. In a bowl, combine sesame oil, rice vinegar, honey and ginger.
2. Add seaweed, cucumbers and tofu and mix by tossing.
3. If additional salt desired, add soy sauce.
4. Serve immediately with a garnish of chives and sesame seeds.

References

References

- [1] Greg, H. 2010. Notes from the Kona Coast: Ogo Slaw. www.sippitysup.com/notes-from-the-kona-coast-ogo-slaw/
- [2] Ho, E. 2008. Red Ogo Seaweed Salad. [theKitchn](http://thekitchn.com). www.thekitchn.com/la-farmers-market-report-seawe-58761



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