

“Those Women of Yesteryear”: Woman and production of edible seaweed (*Porphyra abbottiae*) in Coastal British Columbia, Canada

TURNER, Nancy J.

School of Environmental Studies, University of Victoria, P.O. Box 1700, Victoria, British Columbia, V8W 2Y2 Canada nturner@uvic.ca

Red laver seaweed (*Porphyra abbottiae* and related species) has been a critically important food and condiment for indigenous peoples of northwestern North America. For the Gitga’at (Coast Tsimshian) of Hartley Bay, the harvesting and processing of this seaweed was the exclusive domain of women. At their springtime seaweed camp, while the men fished, the women worked with seaweed. Navigating long distances in dugout canoes and working in concert with the tides and weather, small, organized groups of women routinely harvested up to 400 kilograms of fresh seaweed per family each year. As well as general survival knowledge, they held specialized knowledge of the seaweed’s unique characteristics, its sustainable harvesting and effective drying. Later, after the initial drying, it was re-moistened and pressed in layers interspersed with fronds of cedar or salal leaves into special cedar boxes, letting it stand, weighted down, to “get its flavour”, then chopping it and re-drying it. The seaweed in various preparations is traded, used as gifts, served at feasts and enjoyed at family meals and for snacks. Harvesting and processing methods have adapted to changing employment and educational requirements in coastal communities, and to new technologies and changes in weather. Today, women are still considered the experts in seaweed gathering and processing, but men often participate, using large motored skiffs to bring women to their seaweed harvesting sites, and even help to pick and dry the seaweed. Nevertheless, the skills, knowledge, strength and resourcefulness of the original seaweed harvesters – the foremothers of the present generations – are acknowledged with awe and appreciation.

Key words: *Porphyra abbottiae*, red laver seaweed, marine algae, Gitga’at Nation, Coast Tsimshian,

“I think about ...those women of yesteryear and their strength, their knowledge of the weather, their knowledge of all the places, and how they could depend on their children to look after their siblings, without getting hurt, ...you know, taking care and respecting other animals and everything.” (Helen Clifton, Gitga’at Nation elder, Hartley Bay, pers. comm. 2001, as per other quotations here)

Red laver seaweed (*Porphyra abbottiae* and related species) has been a critically important food and condiment for indigenous peoples of northwestern North America. It was, and still is, widely harvested on central and north coast by Haida, Tsimshian, Heiltsuk, Oweekeno, Kwakwaka’wakw, and other First Nations, as far south as California. It is still a valued food and treasured gift and trade item. In this paper, I describe the details of harvesting and use of this valuable marine

alga by the Gitga’at Nation, a Coast Tsimshian group whose home community is Hartley Bay on the north coast of British Columbia.

The coastline in Gitga’at territory is rocky, and there are many large offshore islands which provide long stretches of ideal intertidal habitat for *Porphyra abbottiae* (Fig. 1), and for many generations – probably thousands of years – this alga has been harvested by groups of women. In fact, until recently, the harvesting and processing of this seaweed, called *lha’ask*, was the exclusive domain of women. The complex knowledge and skills required to harvest and process *lha’ask* is still retained by the older Gitga’at women like Helen Clifton, quoted above, but the girls and younger women of the community have fewer opportunities to access and harvest it, and so the knowledge and beliefs surrounding its use have been fading as peoples’ lifestyles and diets have changed. Here,



Fig 1. *Porphyra abbottiae* (red laver seaweed), growing on rock in the intertidal zone at low tide.

I describe, based on interviews and observations of seaweed preparation, Gitga'at women, particularly Helen Clifton, Colleen Robinson and Belle Eaton undertaken over the course of several years of collaborative research on Gitga'at ethnoecology, from the year 2000 to the present. More detailed accounts of seaweed use are presented elsewhere (cf. Turner 2002; Turner and Clifton in press; Turner and Thompson in press).

The Kiel Spring Harvest

Helen Clifton, Colleen Robinson and Belle Eaton all learned about harvesting seaweed from their own elders, especially Lucille Clifton, Eagle Clan matriarch of the Gitga'at in the early to mid-1900s, who was Helen's mother-in-law and Colleen and Belle's grandmother. The Gitga'at spring camp, where the families traditionally went each year for the month of May, is at a place called Kiel, on the northwest coast of Princess Royal Island. There, families stayed together in small cabins over the

course of the month. While the men and older boys fished for halibut, spring salmon and other seafood, the women harvested and worked with the seaweed. Younger women and older girls who didn't go out picking seaweed looked after the children and kept the fires going. Helen Clifton recalled when she first came to Kiel as a young bride:

When I first got married here, and, the children, I was one of the ones that stayed behind and helped look after the children while the women went out. The children, they'd be looking out to watch for canoes coming back... [from seaweed picking]. And they'd say, 'Hooo-oo-oo...' and they would name the person who owns the boat. If it was my sister-in-law Mabel, they would say, 'Hooo-oo-oo *Ma-bel!*'

Sometimes the seaweed harvesters had to stay overnight at camps along the rocky shoreline of the islands. Each camp belonged to a family, and they all had their own names. The women themselves handled the large cedarwood dugout canoes, and later, large wooden rowboats, maneuvering them next to the rocks in the surf to enable the harvesters to jump off onto the slippery rocks. One woman stayed with each canoe, and watched the tides and weather so that she could warn the others if they needed to leave quickly. They harvested seaweed only at the lowest tide, when it was exposed; as soon as the tide started to rise, they had to stop because the incoming waves were dangerous and could easily sweep a person into the ocean. In addition, they had to watch the weather, because they never picked seaweed if it was raining; this made the rocks too slippery and ruined the taste of the seaweed, as Helen Clifton explained:

We're not allowed to pick seaweed in the rain. ...The reason they say you don't pick seaweed in the rain is the rocks become extra slippery. You won't be able to stand up. You're taking a real chance. [If] you will fall, ...there's a lot of sheer dropoffs where we're picking seaweed. ... When they have those taboos, it's because of your life; you're taking a chance.... [Also] it doesn't taste the same."

It was difficult to dry the seaweed, too, if it was raining. This constraint was also linked to

other taboos relating to seaweed harvesting: you should never strip off cedarbark [for basketry] or harvest the large California mussels until after your seaweed is picked, because these activities are said to cause it to rain. Once harvested, the seaweed had to be quickly processed or it would begin to rot. Each woman and family group picked on their own spot on the shoreline, piling up the seaweed or putting it into sacks, to be loaded onto the canoe.

Because it was so arduous to travel to the picking spots, the women used environmental cues to know when the best time to go was. Helen Clifton was taught to use the growth of the stinging nettles (*Urtica dioica*) growing around the camp at Kiel to estimate how long the seaweed was growing. Helen noted that the seaweed can grow as much as 15 cm or more in a week. It is best only at a certain stage, when the nettles and the seaweed fronds are both around 30 cm long. There are several other "look-alike" kinds of seaweed, so the harvester has to know exactly what kind to select. She wouldn't want to pick the "seal seaweed" (*Iridea* sp.), which is similar but not considered edible for people. Also, seaweed that is touched by frost or too old is not good; the harvester has to take care to pick only those with exactly the right colour.

The women routinely harvested up to 400 kilograms of fresh seaweed per family each year, and some still gather this quantity when they can. Helen Clifton noted:

That's my goal usually... seven hundred pounds [of fresh seaweed every year]. If I get close to that or reach it, then I'm happy. I have enough seaweed for the family, ...enough to trade, ...enough to give away as gifts.... And I still have a little bit over to start the new spring – as we'll be gathering new every spring.

There is a special technique for grasping the seaweed with the fingers and pulling it off the rocks. With this method, the base of the seaweed is left and continues to grow. It was the common practice to "clean off" an entire stretch of shoreline, starting each day where the harvest had left off the day before. Then, as Helen Clifton explained, they would dry a whole batch of seaweed near the beginning of May and take it up the Douglas Channel to the neighbouring Haisla village of

Kitamaat and trade it for oulachen grease (oil rendered from a small smelt – a great delicacy), smoked oulachens and other products. They were able to return to Kiel after a couple of weeks and harvest a second "crop" from the same places, and this second growth of seaweed was finer than the first and considered of higher quality. This was what the Gitga'at women preferred for their own households.

Helen Clifton maintains that the seaweed grows best, and is most productive, where it has been routinely picked:

I feel because we used to have all these people that would... go out and pick the seaweed, and for seaweed, it's just like any garden, it has to be tended. So if you pick it every year then it grows strong the next year, it keeps coming back. So if it isn't picked for a few years, then it just has rotted away on the rocks there. ...It's better when it's picked every year. It's just like any plant that has been trimmed, it will grow stronger and better.

Some of the other resources that people obtained at Kiel in the spring include: shellfish (clams, mussels, chitons, crabs, and sea urchins); edible inner bark of hemlock (*Tsuga heterophylla*); herring spawn, collected on hemlock branches anchored out in the ocean; young tender shoots of thimbleberry (*Rubus parviflorus*) and salmonberry (*Rubus spectabilis*), "wild rhubarb" greens (*Rumex occidentalis*), cow-parsnip young stalks (*Heracleum lanatum*), northern riceroot bulbs (*Fritillaria camschatcensis*). Long ago, the people used to also harvest the eggs of Bonaparte gulls and oystercatchers, taking just a few from each nest. All of these foods were eaten fresh, and some were dried and taken back to the main village to be stored for winter (Hood and Fox 2003). Not only did the women harvest most of these foods, but they also were responsible for cutting and drying or smoking all the fish and seal meat the men brought in.

Drying and processing the Seaweed

Not only the picking spots, but the places where the seaweed was dried on the rocks belonged to certain women and their families. The harvested seaweed was brought to the rocky headlands, usually in late morning when the rocks had been heated

by the sun, then cleaned and arranged in squares or other shapes that fit the configurations of the rock. Some women, like Annetta Robinson, used dozens of specially made square cedarwood trays to dry their seaweed. Nowadays, women dry their seaweed on the wooden boardwalk back at Hartley Bay (Fig. 2). The seaweed dries on one side, and is then flipped over to dry on the other, and is then taken in before the sun goes down, so that it won't get dampened by the evening dew. Helen Clifton explained the importance of the timing of harvest, according to the tides and the sun:

The tides have to be right too, ... we like to have the low tides in the morning, early morning, so that we could get the seaweed, bring it back here, and pack it up on the rocks to dry before, we have to get them up before noon...

Formerly, women sometimes dried seaweed by hanging it over poles around a fire. On these occasions, they would sit together and tell stories



Fig 2. Helen Clifton is drying her seaweed in squares on the boardwalk at Hartley Bay. She is experimenting with using corrugated cardboard from grocery boxes instead of the usual cotton sheets for drying the seaweed.



Fig 3. Colleen Robinson of Hartley Bay sprays salt water on her dried seaweed squares before pressing them into her grandmother's bentwood cedar box to cure for three days prior to chopping and drying.

while they were toasting the seaweed. Working with seaweed was an enjoyable, but very messy business; the women came back to Kiel covered in blackish dust of toasted seaweed, and they had a special bathing place along the shore from their cabins.

The dried squares were stacked up and bundled in large sheets to be taken back to Hartley Bay. Here, they were kept and stored until the next processing stage: the compressing and re-drying of the seaweed, which was generally done in June.

This next process involves spraying the seaweed with salt water until it is damp (Fig. 3), then pressing the squares one at a time into a bentwood cedar box, interlayered with green cedar boughs or several leathery salal (*Gaultheria shallon*) leaves to keep them separate. A long strip of cedarbark or a piece of twine is run diagonally across each square as it is laid down, in order to help separate the squares later. As they are placed in the box, a towel is laid over them, and someone with clean

socks steps into the box and "kicks" the seaweed down, making sure it is evenly distributed to the edges. Then, after many layers, when the box is full, it is weighted down with a rock or other heavy object and left for several days to "get it's flavour."

Then, word is sent around to all the families of relatives in the village that "Granny [or whoever it is] is ready to chop her seaweed!" Usually a girl or woman representing each family will come and help to take the pressed squares and chop them up into tiny pieces with an axe on a large chopping block, made from a piece of yew (*Taxus brevifolia*) trunk or a large section of some other wood, with a piece of cardboard tacked around the circumference to prevent the seaweed from spilling onto the floor. A woman who doesn't have any seaweed herself can "earn" some seaweed by helping in this way. This chopped seaweed is then spread out to dry on large sheets on a warm, sunny day. It is brought in and allowed to cool, then, when fully dry, it is stored in airtight containers, to be used all through the year to be cooked with salmon eggs, or sprinkled on as a tasty condiment for soup, potatoes, rice or some other dish.

This seaweed genus, including its Japanese relatives called *nori*, was described by phycologist Louis Druehl as "probably one of the healthiest foods on our planet" (Druehl 2000: 155). It has undoubtedly been a major element in the very nutritious traditional food system the Gitga'at and other Northwest Coast peoples have enjoyed. Although it is still used and appreciated today, it is not consumed in the same quantity as formerly, and, in general, peoples' diets are not as healthy as they used to be, because of decreased use of such foods, and increased use of marketed, processed food that is generally high in fat and sugar but low in some of the important key nutrients.

Changes

There have been many changes in seaweed harvesting, processing and use over the past century. These are summarized in Table 1. Today, women are still considered the experts in seaweed gathering and processing, but men often participate, using large motored skiffs to bring women to their seaweed harvesting sites, and even help to pick and dry the seaweed. Nevertheless, the skills,

knowledge, strength and resourcefulness of the original seaweed harvesters – the foremothers of the present generations – are acknowledged with awe and appreciation.

Seaweed in various preparations is still traded, used as gifts, served at feasts and enjoyed at family meals and for snacks. Harvesting and processing methods have adapted to changing employment and educational requirements in coastal communities, and to new technologies and, recently, changes in weather. The past five years or so, from 2001 to 2005, have brought an unusual pattern of weather, with rain just at the time when people would generally harvest their seaweed:

For years you could depend on 'April showers will bring May flowers.' ... Worldwide, the weather is so different now, you can't depend on those old sayings. You're lucky if you get one day of sun. And if you're not at the right tide, even if you pick that seaweed for that [day], you might be picking late afternoon, and you can't dry it on those rocks. (Helen Clifton)

Because of this rainy weather, people have had find new ways to process their seaweed. Since there is an electric generator at Kiel now, people have their own deep freezers, and they have been experimenting with freezing the seaweed fresh, then thawing and drying it at a later date, such as in June, when there is a stretch of sunny weather. Many people have resorted to this, but, as Helen commented, "There's a difference to that seaweed that has been frozen. And so they [the older people] will taste it. Even though we try to save it, ... they'll try many ways because we haven't had the sun that we used to depend so much on."

Conclusion

Seaweed use still endures, and for many years "combo plates" of Hartley Bay seaweed and other seafood dishes have been the most popular lunch sold at the All Native Basketball Tournament held annually in Prince Rupert (Fig. 4). However, seaweed harvesting in general is declining, and Helen Clifton and the other elders of the Gitga'at Nation worry that the knowledge about harvesting seaweed is not being learned by the younger generation. People are willing to adapt their seaweed harvesting and processing practices to present day

Table 1. Changes in Gitga’at Harvesting, Processing and Use of Seaweed (*Porphyra abbottiae*) Over the Past Century, from 1900 to the Present (see also Turner and Clifton in press; Turner 2003).

Different Practices	Early 1900s and before	Mid 1900s	Late 1900s to present day
People harvesting seaweed	Women only	Women and some men	Women and men
Stay at seaweed camp	Entire month of May (whole families)	One or two weeks in May (whole families or just some)	One or just a few days (elders may stay longer with some younger adults to help; children usually only for a weekend)
Number of harvests	Two harvests, one early, one late	One or two harvests	Usually one harvest
Type of vessels used for harvest	Dugout cedar canoe, then wooden rowboat	Wooden rowboat, then small motorboat	Speedboat; fishing boat with small dingy; or aluminum punt
Communication	No way to contact harvesters or base camp	No way to contact harvesters or base camp	Two-way radios
Type of container for gathering	Cedarbark woven bag	Burlap potato sacks	Nylon onion sacks
Processing for storage	Dried on rocks and stored in cedar boxes or wooden barrels	Dried on rocks and stored in barrels or metal containers [kerosene tins]	Dried on rocks or frozen, then dried later on boardwalk; stored ziplock plastic bags and plastic totes with lids
Quantities harvested	Probably 500 kg or more fresh seaweed per family	Probably 500 kg or more fresh seaweed per family	Usually 50-100 kg for family; some get more, some none
Pressing, chopping and redrying seaweed	Pressed in layers into bentwood cedar boxes and left for ~3 days, then chopped and re-dried	Pressed in layers into bentwood cedar boxes and left for ~3 days, then chopped and re-dried	Some women still press the seaweed, and chop it, but many just use it dried in the original squares
Serving seaweed	Cooked with salmon eggs as soup; used as condiment for soup; sometimes eaten as a snack, toasted	Cooked with salmon eggs as soup; used as condiment for soup; sometimes eaten as a snack, toasted	Sometimes served in traditional dishes; cooked in chow mein; deep-fried in hot lard or oil – preferred by young people
Trade and sale	Traded, along with dried halibut, with Kitamaat and Nisga’a for oulachens and grease; with Gitksan for soapberries and Saskatoon berries; used as gifts and served at feasts (Potlatching was banned at that time)	Traded with Kitamaat and Nisga’a for oulachens and grease; with Gitksan for soapberries and Saskatoon berries; used as potlatch gifts and served at feasts	Traded with Kitamaat and Nisga’a for oulachens and grease; sold at All Native Basketball tournament in Prince Rupert (until 2006); used as potlatch gifts; served at feasts

technologies and applications, but even so, it is difficult with the young adults in wage employment



and children in school, to harvest seaweed in any systematic way. A reduction in harvesting seaweed means loss of significant knowledge, not just about the seaweed itself, but about survival on the ocean, and out on the land, and about the beliefs and practices that help people to sustain and care for their resources. Children do not have the same opportunities to learn these important lessons

Fig 4. A “combo plate” of Gitga’at food from Hartley Bay as sold at the All Native Basketball Tournament in Prince Rupert, with seaweed and salmon eggs, seaweed chow mein, cockle chow mein and herring spawn on kelp (*Macrocystis integrifolia*).

because they are required to stay in school and learn what is required in the established provincial school curriculum. Some of them still really appreciate the chance to go to Kiel and to travel around their territory and harvest seaweed and other gifts of nature, but it is increasingly difficult to do this. The community has recently undertaken several initiatives, including supporting the making of the film, *Gitga'ata Spring Harvest* (Hood and Fox 2003), and the Gitga'at Plant Project, in which students interviewed the elders and knowledge holders in their family and community about traditional use of plants, including seaweed as well as undertaking research through their library and on the internet about these plants (Thompson 2004; Turner and Thompson in press).

Taking advantage of new technologies, and renewing efforts to ensure that children have opportunity to spend time with their elders, and time outdoors, harvesting their nutritious traditional food

and learning survival skills will make a difference in their lives, and in the Gitga'at community. They have shown tremendous resilience, in maintaining seaweed gathering and other food harvesting traditions despite all the disruption and fragmentation of their original lifestyles. This resilience will help them as individuals and as a community to maintain their health, identity and social fabric into the future.

Acknowledgements

I am indebted to the women and men of Hartley Bay for teaching me about seaweed and so much else, particularly those mentioned here. I also thank my academic colleagues John Lutz, Anne Marshall, and Judith Thompson (Edosdi). Thank you to the ICEB Conference Organizers, especially Fusun Ertug and panel 6 organizers Martina Padmanabhan. This research was supported by Social Sciences and Humanities Research Council of Canada (#41020001166) and Coasts Under Stress (MCRI) research project (Dr. Rosemary Ommer, P.I.).

Literature Cited

- Druehl, L.** 2000. Pacific Seaweeds. A Guide to Common Seaweeds of the West Coast. Harbour Publishing, Madeira Park, B.C.
- Hood, R.J. and B. Fox** 2003. *Gitga'ata Spring Harvest*. A Co-production by the Gitga'at Nation and Coasts Under Stress Major Collaborative Research Initiative (Rosemary Ommer, P.I.), University of Victoria.
- Thompson, J.C.** 2004. *Gitga'at Plant Project: The Inter-generational Transmission of Traditional Ecological Knowledge Using School Science Curricula*. MSc. Thesis, University of Victoria.
- Turner, N.J.** 2003. The Ethnobotany of Edible Seaweed (*Porphyra abbotiae* Krishnamurthy and related species; Rhodophyta: Bangiales) and its use by First Nations on the Pacific Coast of Canada. *Canadian Journal of Botany* 81(2): 283-293.
- , and **J.C. Thompson**, editors. Forthcoming. *'Nwana'a lax Yuup* (Plants of the Gitga'at People). Hartley Bay, BC: Gitga'at Nation and Coasts Under Stress Research Project (R. Ommer, P.I.), Cortex Consulting, Victoria, BC.
- , and **H. Clifton**. In press 2005. The Forest and the Seaweed: Gitga'at Seaweed, Traditional Ecological Knowledge and Community Survival. In: *Integrating Local Level Ecological Knowledge with Natural Resource Management: Exploring the Possibilities and the Obstacles* (Charles Menzies, ed.), University of Nebraska, Lincoln. [also to be published in *Eating and Healing. Traditional Food as Medicine*. (2006) Andrea Pieroni and Lisa L. Price, editors. Haworth Press (USA)]