The Cultural Ecology of Berries in Glacier Bay

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Abstract. A study of Tlingit berry picking in Glacier Bay provides new insights into the relationship between hunting-gathering peoples and plants. Historically, prime Tlingit berry picking patches, like prime salmon streams and other key resource areas, were named, owned, cultivated, conserved, and celebrated as places. The unique microclimatic conditions at Glacier Bay—especially its comparatively cool, dry air and glacier scrapped flats devoid of vegetative competition—created an extraordinary abundance of high-quality berries, which were internationally renowned and widely traded among Tlingits and neighboring groups, and comprised an important nutritional component of the diet and symbolic and spiritual element in ceremonial gatherings. Maintaining the productivity of prized berry patches involved various cultivation techniques and management strategies to control supply and demand, and thus avoid shortages. Despite Park Service restrictions on hunting and fishing in Glacier Bay, berry picking remains an important communal subsistence activity in the Park—one relatively free from controversy and competition—that continues to bind contemporary Tlingits to their ancestral homeland.

Introduction

Until recently, ethno-ecological investigations of plants and other "gathered" resources among the Native peoples of the Northwest Coast have been neglected in favor of more prestigious "hunted" foods, such as salmon (Moss, 1993; Turner, 1995; Thornton, 1999; cf. Deur and Turner, 2005). This study, conducted in collaboration with the Glacier Bay National Park and the Hoonah Indian Association, seeks to fill this gap for the northernmost part of the Northwest Coast culture area by examining the cultural significance of selected Glacier Bay berries to northern Tlingit communities, and what cultivation and resource management strategies these groups employed to insure a dense, predictable, and durable supply of these valuable plants. A variety of practical, social, and spiritual techniques were used to control the supply and demand of key edible fruit resources at Glacier Bay. Many of these practices are similar to those employed by other Tlingit and non-Tlingit groups; but some, including certain *héiwaa* (magic) techniques used to enhance berry production, may be unique to the Huna Tlingit. Conservation and resource management have been variously defined (cf. Hunn, and others, 2003), but can be broadly conceived as *conscious, effective practices by humans to insure a sustainable supply of a limited resource*. By this definition Tlingits can be said to have conserved and managed berries. However, it can be misleading to think of Tlingit conservation solely in terms of standard scientific ideologies of resource conservation, because Tlingit ideas about the nature of plants stem from a different environmental ideology and metaphysics. A key aspect of Tlingit ethno-metaphysics is that the universe itself is a community of living beings which have inner forms (spirits or *yeik*) as well as outer forms, all of which (including plants) have to be treated with respect. If plants and animals are not shown proper respect, they may cease to make themselves available to, or in some cases even harm, humans. Violations of behavioral prescriptions were considered *tligaas*, or taboo—literally "against nature" (de Laguna, 1972). Combined with other practices of controlling supply and demand, these beliefs and customs can be said to constitute a framework for the conservation, cultivation, and management of culturally significant plant resources.

Methods

This research was based on ethnographic fieldwork conducted between 1995–97 in Hoonah, Glacier Bay National Park, and other Tlingit communities whose residents have ties to Glacier Bay. Several field visits were made to the Park with elders from Hoonah and Sitka. Interviews were recorded and the information analyzed in the context of the broader ecological, ethnological, and historical records. Preliminary results were published in the Journal of Ethnobiology (Thornton, 1999).

Results

Cultural Significance of Berries: Tlingits harvested a wide range of berries (table 1), many of which thrive amid Glacier Bay's cool moist climate and unique landscapes of succession. In addition to being a major source of sugar and carbohydrates, berries contained other important vitamins and minerals, including vitamins A and C, calcium, iron, niacin, riboflavin, and thiamine, many of which were lacking in other foods. Like other prestigious Native foods, Tlingits report "craving" berries, especially during the spring and summer. Even berries considered to have a bland, bitter, or sour taste, like soapberries, were coveted for their ceremonial values, and rendered more palatable by combination with other foods. Berry leaves, *kayaaní*, also were consumed and considered

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Table 1. Edible Fruit Resources in Glacier Bay National Park.

Common Name	Tlingit Name	Scientific Name	Spring	Summer	Autumn
Berries	***tléikw***			x	x
Bearberry (kinnikinnick)	***tínx***	*Arctostaphylos uva-ursi*		x	x
Blueberry, (generic and oval-leaved)	***kanat'á***	*Vaccinium ovalifolium*		x	
Blueberry, Alaskan (ripens later)	***naanyaa kanat'aayí***	*Vaccinium alaskaense*		x	x
Blueberry, bog	***ts'éekáxk'w***	*Vaccinium uliginosum*		x	x
Blueberry, dwarf	***kakatlaax***	*Vaccinium caespitosum*		x	
Cloudberry, yellow	***néx'w***	*Rubus chamaemorus*		x	
Cranberry, bog	***k'eishkaháagu***	*Oxycoccus microcarpus*		x	x
Cranberry, highbush	***kaxwéix***	*Viburnum edule*		x	x
Cranberry, lowbush (ligonberry)	***dáxw***	*Vaccinium vitis-idaea*		x	x
Current, gray	***shaax***	*Ribes bracteosum*		x	x
Current, swamp	***kaneilts'ákw***	*Ribes lacustre*		x	x
Elderberry, red	***yéil'***	*Sambucus racemosa*		x	
Huckleberry, red	***tleikatánk***	*Vaccinium parvifolium*		x	
Nagoonberry	***neigóon***	*Rubus Arcticus*		x	
Raspberry	***tlekw yádi***	*Rubus idaeus (R. pedatus)*		x	
Salmonberry	***was'x'aan tléigu***	*Rubus spectabilis*	shoots	x	
Soapberry	***xákwl'i***	*Sheperdia canadensis*		x	
Strawberry, seaside	***shákw***	*Fragaria chiloensis*		x	
Thimbleberry	***ch'eix'***	*Rubus parviflorus*	shoots	x	

a vital sign of spring and potent medicine. Bearberry leaves were smoked as tobacco, and other plant leaves were used to make teas. The term *kayaaní* is a synonym for medicine in Tlingit. Shamans were trained in the arts of *kayaaní* and could harness plant power to promote healing, awareness, strength, affection, and other ends, even changes in weather. It could be dangerous for one without knowledge of these arts to handle plants casually or to introduce them into new settings.

Ethnoecology of Supply: Environmental manipulation was the most important strategy for controlling supply. Techniques included manipulating ecological succession (e.g., by fire), reducing competition (e.g., by weeding), adding inputs (e.g., fertilizer), and selection (e.g., domestication). Although we did not document the use of fire, Huna Tlingits did practice weeding to rid favored fruit patches of unwanted plants, such as alder. A second means of supply enhancement was the input of dog salmon (*Oncorhynchus keta*) eggs. Especially in Dundas Bay there was a tradition of ensuring the abundant regeneration of nagoonberries and strawberries by feeding the plants dog salmon eggs. The eggs, typically obtained from Dundas River, were conceived as offerings to the spirits of the berries, or *tleikw yakwaheiyagu*. These nourishing gifts would enhance future productivity, for although the plant's outer form withered and died, its inner spirit endured and gave life to a new plant the following year. In western agricultural terms, the eggs might constitute a kind of "fertilizer;" but Huna elders were not satisfied with this analogy, as it does not do justice to the spiritual mechanics of the act. The Tlingit term applied is *héixwaa*, loosely translated as "magic", referring to extraordinary techniques used by individuals to influence nature for human ends. A third technique was transplantation. Enterprising island Tlingit have been trying to transplant the coveted soapberry to their shores for years, apparently with little success. But transplants up and down the mainland were successful. De Laguna (1972, p. 409) observed, "*Soapberries…can now be found in Nunatak Fjord but are*

Figure 1. Richard Amy Winnie—The late Richard Dalton Sr. with Winnie Smith and the late Amy Marvin (center) sharing berries at Glacier Bay N.P. (Photograph taken by Tom Thornton, rinity College, 1996.)

Figure 2. Herman and Martha—Herman Kitka Sr. and the late Martha Kitka picking bearberries near Point Carolus, Glacier Bay. (Photograph taken by Tom Thornton, Trinity College, 1996.)

apparently a recent intrusion. In the last century they were imported from southeastern Alaska, probably derived from the interior via the Chilkat." Transplantation of other species, including salmon, has been documented (Thornton, 1997), and the custom likely predates 18th century European contact.

Another set of techniques revolved around redistribution of the resource in space and time. Spatial redistribution was accomplished through exchange. Berries were traded widely, especially across ecologically diverse zones, such as between island, mainland, and interior Native communities. Temporal redistribution, through preservation and storage, also helped to mitigate issues of supply. In Glacier Bay, berries were air dried (with the help of smudge fires), preserved in seal oil, and in the modern era, jarred and frozen. A jar of soapberries still fetches a good price in island communities, which do not have direct access to them.

A third supply strategy was to make the resource more available or useable through technological and sociological means**.** Some of the material inputs (e.g., dog salmon eggs discussed above) and technologies associated with berry picking (including baskets such as the wide-mouthed *táal*), are discussed elsewhere (Thornton, 1998, 1999). Overall, berry picking was a labor intensive endeavor; thus organization of labor was among the most crucial factors in raising supply. Tlingit labor was organized along matrilineal lines, but productivity was boosted by non-kin slaves, who assisted with harvesting and processing. This labor allowed surplus supplies of berries to be generated for purposes beyond consumption, such as gifts, ceremonial exchange, and trade. In the post-slave era, families, including children of all ages, worked together to facilitate production. Contrary to some ethnographic accounts, berry picking was not "women's work." Although women oversaw processing, picking was a family affair and often a time of great joy, song, laughter, and good cheer.

Ethnoecology of Demand: Territoriality and resource tenure helped limit demand and overharvesting. The economic defendability hypothesis, (Dyson-Hudson and Smith, 1978; Richardson, 1982), predicts that territorial systems will develop, "*when the costs of exclusive use and defense of an area are outweighed by the benefits gained from this pattern of resource utilization*." Such a situation generally develops "*under conditions of high density and predictability of critical resources*" without a "*superabundance*" (meaning more than enough resources for all users, thus rendering territorial behavior unnecessary). Many berry patches in Glacier Bay and elsewhere met these conditions and thus were claimed as matrilineal property (and later, in the allotment era of Federal Indian policy, as individual and family property). While this ownership carried with it the power to regulate access, in practice outsiders rarely were forbidden from gathering, provided they "paid tribute" by asking permission (or sometimes by paying a fee of blankets, food, or even cash) and, if possible, citing a kinship link to the owners. Among older Tlingits harvesting berries in Glacier Bay, this protocol is still practiced, as evidenced on our 1996 harvesting trip (see *A Time of Gathering,* University of Alaska, 1999), where elders made speeches relating themselves to Dundas Bay's T'akdeintaan owners before commencing to pick nagoonberries (from the Tlingit *neigóon*, a rare instance of an English noun borrowed from Tlingit). Failure to seek permission might result in sanctions through communicative structures (insults, gossip, etc.), or even physical violence (such as the destruction of ones berry basket or canoe).

Tlingit leaders also showed stewardship in controlling timing of harvests. Berry productivity is not continuous, nor is demand. Localized shortages and profound seasonal variations of food resources were not uncommon in Tlingit country. In the case of berries, these shortages could be exacerbated, if not precipitated, by periods of high demand. Preseason berry poaching or overharvesting, a phenomenon reported during heavy potlatch years (Garfield, n.d.), could compromise the productivity of good patches. Thus, the key to managing productive berry patches was to structure demand through stewardship so as to insure high yields for the owners and, if surpluses allowed, the community at large. According to Chilkat elder Suzie Nasook, the "*chief who owned a berrying*

Figure 3. Taal and berry basket—The large-mouthed basket, or táal, is used to pick soapberries, a favorite Tlingit ceremonial fruit. The cylindrical basket inside it is hung around the neck and used for picking most other varieties of berries. (Photograph courtesy of Alaska State Museum.)

area would send a man up to decide when the people should go after berries, and they would set a date to go up there, and he would send an invitation to the people to come up" (in Goldschmidt and Haas, 1998, p. 102). Thus, clan leaders clearly used their knowledge and authority over local patches not just to exclude others but also to facilitate others coming to gather when conditions were optimal and the supply abundant. By extending the invitation for others to pick, the leader could demonstrate his wealth and generosity and enhance his group's prestige in exchange for surplus berries. By responding to the invitation, guest pickers legitimized the host clan's prerogatives over the territory.

Conclusion

Glacier Bay National Park is a special place for berries, and the berries of Glacier Bay are special to Tlingit descendants of Glacier Bay. Berries not only formed a significant portion of the overall diet, they were a key source of nutrition, medicine, symbolic capital, and trade goods. Glacier Bay berries were considered of exceptionally high quality and abundance and thus were a celebrated feature of the Tlingit landscape; like a good salmon stream, a good berry patch was cultivated, tended, and cared for to a degree that blurs the distinctions between hunting-gathering and agricultural peoples. Tlingits employed a variety of strategies to maintain or enhance supplies and control demand in ways that ensured the sustainability of the resource and, whenever possible, boosted the prestige of owners. Especially important were those berries that could not be found in quantity in close proximity to Hoonah—bearberries, nagoonberries, soapberries, and strawberries. These fruits came to stand for Glacier Bay itself, especially in ceremonial gatherings.

Despite displacement from Glacier Bay, first by an advancing glacier and later by an advancing federal government, Tlingit ties to their sacred homeland remain strong. Berry picking represents a vital subsistence link to their territory. Indeed, a recent survey by the Alaska Department of Fish and Game among Huna hunters determined that 81 percent used berries from Glacier Bay (Schroeder, 1995, p. 287). Economic models alone cannot explain this strength and resilience of economy, as expenses to obtain the berries are high and substitute fruits are readily available. Social identity and cultural ideals also play a key role. Glacier Bay Tlingits hold that a person has rights to a resource area by virtue of his or her relationship to those who used the place in the past. Glacier Bay fruits are still considered special gifts from the homeland, the "storehouse" or "icebox" for Huna Tlingit. As elder Frank White puts it, "*Glacier Bay was special. When you tell [guests] this is Glacier Bay [food], it meant more to them—more to us than any other place. We've been there for centuries. It was our home*."

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References Cited

Deur, D., and Turner, N., eds., 2005, Keeping it living: traditions of plant use and cultivation on the Northwest Coast of North America: Seattle, University of Washington Press.

Dyson-Hudson, R., and Smith, E.A., 1978, Human territoriality—An ecological reassessment: American Anthropologist, v. 80, p. 21-41.

Garfield, V., [n.d.], Ownership of food producing areas: Seattle, University of Washington Archives, Masters Thesis.

Goldschmidt, W.R. and Haas, T.H., 1998, Haa Aaní, our land: Tlingit and Haida land rights and use, Thornton, T.F., ed.: Seattle, Sealaska Heritage Foundation and University of Washington Press.

Hunn, E.S., Johnson, D.L., Russell, P., and Thornton, T.F., 2003, Huna Tlingit traditional environmental knowledge, conservation, and the management of a "wilderness' park: Current Anthropology, v. 44 (Supp.) p. S79-103.

Laguna, F. de, 1972, Under Mount Saint Elias: The history and culture of the Yakutat Tlingit: Washington D.C., Smithsonian Institution Press.

Moss, M., 1993, Shellfish, gender and status on the Northwest Coast—Reconciling archeological, ethnographic, and ethnohistorical records of the Tlingit: American Anthropologist, v. 95, no. 3, p. 631-652.

Richardson, A.S., 1982, The control of productive resources on the Northwest Coast of North America, *in* Williams, N.M., and Hunn, E.S., eds., Resource managers—North American and Australian hunter-gatherers: Boulder, Colo., AAAS Selected Symposia 67, Westview Press.

Schroeder, R.F., 1995, Historic and contemporary Tlingit use of Glacier Bay, *in* Engstrom, D., ed., Proceedings of the Third Glacier Bay Science Symposium, 1993: National Park Service, p. 278-293.

Thornton, T.F., 1997, Know your place—The organization of Tlingit geographic knowledge: Ethnology, v. 36, no. 4, p. 295-307.

Thornton, T.F., 1998, Gathering in Tléikw Aaní ("Berry Land")—Tlingit harvest and use of berries from Glacier Bay National Park:. Bartlett Cove, Alaska, Draft report prepared for the National Park Service.

Thornton, T.F., 1999, *Tleikw Aaní*, The 'berried' landscape: the structure of Tlingit edible fruit resources at Glacier Bay, Alaska: Journal of Ethnobiology, v. 19, no. 1, p. 27-48.

Turner, N.J., 1995, Food plants of coastal First Peoples: Vancouver, University of British Columbia Press and the Royal British Columbia Museum Handbook.

University of Alaska, 1999, A Time of Gathering: Tlingit berry picking in Glacier Bay National Park: Juneau, Alaska, Video by Media Services, University of Alaska Southeast.

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Ground moss cradles nagoon berry leaves, autumn season. (Photograph by Bill Eichenlaub, National Park Service.)