

The Ozette Prairies of Olympic National Park: Their Former Indigenous Uses and Management

Final Report to Olympic National Park
Port Angeles, Washington
Winter 2009



M. Kat Anderson, Ph.D.
National Plant Data Center,
USDA Natural Resources Conservation Service
Department of Plant Sciences 1035 Wickson Hall
One Shields Ave.
University of California
Davis, California 95616
mkanderson@ucdavis.edu

Title Page Photo Caption

Bog Cranberry
(*Vaccinium oxycoccos*)
Berries for food

Makah women picking bog cranberries, circa 1936 (location unknown)
Courtesy of the National Archives and Records Administration, Sandpoint.
Seattle, Washington
photographer unknown

Table of Contents

List of Figures	ii
List of Tables	iv
Acknowledgments	v
Introduction	1
Methods	4
Ecological Features of the Ozette Prairies	5
Role of the Ozette Prairies in the Life of the Makah	10
Indian Management of the Ozette Prairies with Fire	39
Cultural Purposes for Burning	47
Discussion	56
Conclusions	60
Management Options for the Ozette Prairies	61
References	64
Appendix 1	73
Appendix 2	77
Appendix 3	78
Appendix 4	80
Appendix 5	82
Appendix 6	85

List of Figures

Figure 1. View of Ahlstrom’s Prairie from the boardwalk	2
Figure 2. Map of Ahlstrom’s and Roose’s Prairies	3
Figure 3. Conifer encroachment onto Ahlstrom’s Prairie.....	4
Figure 4. Huckleberry (<i>Vaccinium ovatum</i>) shrub on Ahlstrom’s Prairie	6
Figure 5. Dead bracken fern (<i>Pteridium aquilinum</i>) thatch.....	6
Figure 6. The swamp gentian (<i>Gentiana douglasiana</i>)	9
Figure 7. Great burnet (<i>Sanguisorba officinalis</i>)	9
Figure 8. Map of the Ozette Village site complex.....	11
Figure 9. Ozette Indian Village.....	12
Figure 10. Lars Ahlstrom.....	13
Figure 11. Pete Roose	14
Figure 12. Pete Roose’s homestead.....	14
Figure 13. Ahlstrom’s homestead	15
Figure 14. Makah seasonal round.....	17
Figure 15. Swan map of Wyaatch and Ts’oo-yuhs Villages adjacent to prairies.....	21
Figure 16. T.T. Waterman map with trail placename	22
Figure 17. Map of the prairies accessed by the Ozette Village	23
Figure 18. Bud and Vera Klock.....	24
Figure 19. Salal (<i>Gaultheria shallon</i>) berries on Roose’s Prairie	25
Figure 20. Elizabeth Barlow using salal berry sauce as a topping on vanilla ice cream.....	25
Figure 21. Edie Hottowe, Makah, picking evergreen huckleberries.....	26
Figure 22. Leah Parker at her home on the Makah Reservation	31
Figure 23. Gary Ray, Makah, picking bog cranberries.....	32
Figure 24. Cathy Chamblin-Peterson, Makah.....	32
Figure 25. Indian tea (<i>Ledum groenlandicum</i>) on Ahlstrom’s Prairie	33
Figure 26. Pat Boachup, Makah, picking Indian tea on Ts’oo-yuhs Prairie.....	34
Figure 27. Tommy Peterson, Makah, picking Indian tea on Ts’oo-yuhs Prairie	34
Figure 28. William (Makah) and Klara (Nu-chah-nulth) Tyler.....	35
Figure 29. Edie Hottowe, Makah, at a bracken fern root traditional gathering site.....	36
Figure 30. Cathy and Ed Wilbur	36
Figure 31. The flower spike of slough sedge (<i>Carex obnupta</i>) in Ahlstrom’s Prairie.....	37
Figure 32. Gary Ray, Makah	38
Figure 33. Hans Boe slash-burning at Royal	41
Figure 34. 1895 Plat Map highlighting West Prairie and M.J. Boyle’s residence	43

Figure 35. 1895 Plat Map highlighting West Prairie and Manny’s Prairie.....	44
Figure 36. 1892-1897 Plat Map highlighting Manny’s Prairie and Sand Point Prairie.....	45
Figure 37. Bracken fern (<i>Pteridium aquilinum</i>) on Roose’s Prairie	46
Figure 38. James Wessler	47
Figure 39. The home of Judge William Morton Bowlby.....	48
Figure 40. Bud Klock.....	48
Figure 41. Kate McCarty	50
Figure 42. Sadie Johnson, Makah with daughter Yvonne Wilke and grandson Corbett	51
Figure 43. John H. Ides, Makah, and his wife Junette.....	52
Figure 44. Emil Person with his granddaughter	54

List of Tables

Table 1. Timeline for Major Events Affecting the Ozette Prairies	16
Table 2. The Makah Seasonal Round, as Reflected in Names of the Lunar Months	19
Table 3. Wetlands in Ozette Traditional Territory.....	20
Table 4. Plants Gathered on the Ozette Prairies.....	27
Table 5. Useful Plants likely Gathered on Manny’s, Ozette, and West Prairies.....	28
Table 6. 1895 General Land Office Survey of the Ozette Prairies.....	42

Acknowledgments

The conception for this study grew out of a National Park Service conference: *Cultural Resources 2000: Managing for the Future* in December 2000 in Santa Fe, New Mexico. I participated in a panel, “Challenges of and Opportunities for Park-Based Ethnobotanical Research.” I met Jacilee Wray for the first time at this meeting, and the seeds for this project were planted. She was a guiding force and visionary behind this study, understanding the significance of ethnobiology in bridging park research in the biological and social sciences—for the profound fact that certain biologically diverse landscapes are deeply intertwined with ancient human interactions. Such is the case for many of the prairies and wetlands on the Olympic Peninsula. Thus, these places can teach us about possibilities for envisioning new ways of relating to the land. Jacilee tirelessly assisted me in every way to complete this project, and I am deeply indebted to her.

Many other people contributed to this report. Thanks to Frederick York who encouraged me to take on this study, introducing me to key contacts, and arranging for me to speak to staff at various national parks about my work in California. Thank you to Larry Nickey for bringing me up to speed on the fire history of the westside Olympic Peninsula. I am grateful to David Egan for launching a special issue of the journal *Ecological Restoration* in the winter of 2003, which explored the theme *Native American Land Management Practices in National Parks*.

Foremost, thank you to all of the Native Americans and non-Indians who contributed to this study. At my first Olympic Peninsula Cultural Advisory Committee (OPICAC) meeting, native people from various parts of the Olympic Peninsula warmly embraced the idea for this study. Executive Director, Janine Bowechop (Makah), and her staff at the Makah Cultural and Research Center made many resources available to me and facilitated interviews with Makah elders. Deep gratitude is expressed to the people I interviewed: Pat Boachup (Makah), Bob Bowlby (Jamestown S’Klallam), Cathy Chamblin-Peterson (Makah), Cindy Claplanhoo (Makah), Ed Claplanhoo (Makah), Greg Colfax (Makah), Edie Hottowe (Makah), John H. Ides (Makah), Sadie Johnson (Makah), Bud Klock, Vera Klock, Kate McCarty, Leah Parker (Makah/Lummi), Emil Person, Melissa Peterson (Makah), Gary Ray (Makah), Larry Sears, William Tyler (Makah), James Wesseler, Ed Wilbur, and Yvonne Wilke (Makah).

I am grateful to many other people who contributed to my knowledge of the uses and management of prairies and wetlands in other parts of the Olympic Peninsula (outside of Olympic National Park) including Gladys Allen, Missy Barlow, Bea Charles (Klallam), Bob and Mary Huelsdonk, Muriel Huggins, Justine James (Quinault), Mary Leitka (Hoh), Ed Maupin, Harvest Moon (Quinault), Chris Morganroth III (Quileute), Lela Mae Morganroth (Quileute), Gary Peterson, Oscar Peterson, Marie Riebe (Hoh), Vi Riebe (Hoh), Elsa Schmidt (Aha Blip), Leta Shale (Quileute), Daisy Sinema, Adeline Smith (Klallam), and Myra

Vanderhoof. Special thanks to Chris Morganroth III, Justine James, and the rest of the OPICAC Committee Members for our many discussions and field trips to various prairies and wetlands.

Gratitude is expressed to Frederica Bowcutt for her plant identification skills and for sharing her Ozette Prairie botanical field notes with me. Fred Sharpe gave me a tour of the prairies and wetlands all over the Olympic Peninsula, provided a wealth of natural history knowledge, and gave me permission to use his photographs. Stan Graham devoted many years to mapping and cataloguing the prairies of the Olympic Peninsula and his report, conversations, and field trips were invaluable.

Eric Engles provided outstanding editing. Steve Oerding assisted me in inserting the photos and doing all of the excellent line drawings and maps and assisted with the layout of the report. Steve Dana and Dave Rowney generated the tables.

Peer-reviewers of part or all of the report included James Agee, Clayton Antieau, Dwight Barry, Frederica Bowcutt, Sarah Bridges, Marty Chaney, Shelly Davis-King, David Egan, Stan Graham, Richard Hebda, David Imper, Karen James, Linda Kunze, Dana Lepofsky, Brian Magnusson, Larry Nickey, Lisa Palazzi, David Peter, Joseph Randolph, Jerry Rouse, John Sawyer, Fred Sharpe, Linda Storm, Nancy Turner, Cathy Whitlock, Jacilee Wray, and Frederick York. Special thanks to Karen James for sharing her vast library with me, to Nancy Turner for answering many ethnobotanical questions, and to David Imper, David Peter, and John Sawyer for their insights, field experience, thought-provoking comments, and many discussions about prairies and wetlands.

The staff of the Washington Department of Natural Resources, especially Joe Arnett, John Fleckenstein, John Gamon, and Michael Polenz, answered my questions. Curators, archivists, and librarians were very helpful in tracking down relevant photographs, articles, surveys, reports, and books including Margaret Hutchison (Royal B.C. Museum), Victoria, Jerrice Barrios and Nina Cummings (Chicago Field Museum of Natural History), Shirley Dallas (Washington State Library, Olympia), Karen Dereszynski, Carol Lo and John LaMont (Seattle Public Library), Kathy Duncan (Jamestown S'Klallam) (Tribal Office Library), Sherrill Fouts (Forks Timber Museum), Forks Library, Jody Gripp (Tacoma Public Library), Gay Hunter (Olympic National Park), Jefferson County Historical Society, Lupita Lopez (Washington State Archives, Olympia), Nathan Matthews (BLM National Resource Library, Portland), Patty McNamee and staff (National Archives and Records Administration), Majorie Palmer (Port Angeles Library), Keely Parker and Theresa Parker (Makah Cultural and Research Center), Carol Turcotte (Washington Department of Fish and Game), University of California, Berkeley Bancroft Library, University of California, Davis Special Collections, University of Washington Library, Katherine Vollenweider (Museum and Arts Center Collection, Sequim, WA). Special thanks to Gay Hunter and Patty McNamee for tracking down

many obscure references.

Many other people contributed to the report in various ways and I am grateful. They include Steve Acker, Andy Bach, Don Baker, Kahled Bloom, Ed Bowen, June Bowlby, Greg Burtchard, Dave Conca, Ellen Dean, Susan Dolan, Frank Easter, Gerald Elfendahl, Daniel Gavin, Steven Gill, Paul Gleeson, Jerry Gorsline, Susan Harrison, Gregory Holm, Gus Hughbanks, Junette Ides, Jeremiah Johnson, Leslie Johnson, Loretta Klock, Frank Lake, Ken Lertzman, Cheryl Mack, Jeff Mauger, Maria Pascua, Evelyn Person, Scott Peterson, Jay Powell, Dennis Robinson, David Ruppert, Cheryl Schultz, David Smith, Susan Southard, Jennifer Thomas, Klara Tyler (Nu-chah-nulth), Richard Ward, Cathy Wilbur, and Bob Zybach.

Introduction

The Ozette Prairies—openings of bog, fen, and grassland in a forest of Sitka spruce, western hemlock, and western redcedar—lie two kilometers east of the Pacific Ocean, well within hearing distance of barking sea lions on the rocky islands offshore. One can walk from these wetlands to the coast on the Cape Alava Trail, which cuts through the openings and the surrounding forest along the route of an old Indian trail (Waterman 1920). Wandering off the trail into the forest, the travel becomes slow and cumbersome; one has to straddle downed logs and bushwhack through shrubbery and young trees.

The wetlands, on the other hand, are easily and comfortably traversed. They are inviting landing sites for ducks and geese, habitat for ground-nesting birds, and are attractive to Roosevelt elk, black-tailed deer, and black bears. Before the coming of white settlers, they were also attractive to the Ozette Indians, who hunted and collected food and useful plants there for perhaps 2,000 years (Blinman 1980; Wessen 1984). The Ozette people would come to the Ozette Prairies from their village at Cape Alava on the Pacific Ocean, seeking young horsetail sprouts to eat in spring, the leaves of a particular sedge to weave into their baskets in summer, and bog cranberries, Indian tea leaves, and fern rhizomes in autumn. They built shelters in the wetlands and dried and smoked their food there (Bertelson 1948; Gunther 1871-1981). Before 1910, two Swedish immigrants—Peter Roose and Lars Ahlstrom—filed 160 acre claims and moved onto these open areas, built structures, raised sheep and cattle, and planted vegetable gardens (see Figures 1 and 2). When Ahlstrom first moved to the area in 1902, he lived in an Ozette Indian hut and interacted with the Ozette as described by Bertelson (1948): “He got along fine with the Ozettes, and bought salvaged drift-boards and planks from them with which to build. And after he got settled and had acquired four cows, he traded butter and garden truck with the Indians for fish and game.”

Today, butterfly and plant experts view the Ozette Prairies as a wilderness refuge—a place sheltering unique plant and animal life. They are a biological focus area of the National Park Service because they represent excellence in beauty and biological diversity and harbor an array of rare and endangered plant and animal species (<http://www1.dnr.wa.gov/nhp/refdesk/lists/plantrnk.html>; Pyle 2002). In recognition of their cultural and ecological value, the wetlands have received official protection; their structures are on the National Register of Historic Places and the land is designated as wilderness or potential wilderness (Washington Park Wilderness Act of 1988; Ruth Scott pers. comm. 2007).

But formal designation alone is not enough to save the biotic diversity of these areas, as they are shrinking. Young western hemlock and redcedar trees, along with some Sitka spruce and Pacific yew, are advancing into the open habitats (see Figure 3). In the early 1940s, Alice Kalappa, Makah, complained to



Figure 1. View of Ahlstrom's Prairie from the boardwalk. #215. Photograph by Fred Sharpe, 2007.

anthropologist Elizabeth Colson in an interview that "Now there are lots of trees on the [Ozette] marsh because nobody takes care of it anymore." In 1981, Stephen Underwood, Ozette Subdistrict Ranger, wrote Olympic National Park visitors to solicit early photographs of the Ahlstrom's Prairie. He received slides and prints of Ahlstrom's Prairie from the early 1960s. He wrote the visitors thank you notes saying in one letter that "It's impressive how much growth has occurred out on the prairie [between the early 1960s and 1981]" (Underwood 1981). Wetlands ecologist Linda Kunze documented tree encroachment on the Ozette Prairies in her unpublished botanical field notes in 1989 (see Appendix 1). Ed Tisch (2002:6) explained the tree encroachment onto Ahlstrom's Prairie in an article in the *Voice of the Wild Olympics* magazine:

The highest, best-drained sites favor tree establishment. Most of these elevated areas currently support a hemlock\salal-evergreen huckleberry community type in which bracken, deer ferns, bunchberries, twinflowers, and beaked mosses are common, and the dominant shrubs grow to heights of three to ten feet. These expanding 'forests' are slowly repossessing.

In a faculty-reviewed geography master's thesis using aerial photos, Kate Ramsden (2004) estimated that Roose's Prairie decreased in size by 32.7 percent between 1964 and 2000 and that Ahlstrom's Prairie decreased in size by 53.5 percent during the same 36-year interval. Emil Person, a long-time resident of the western Peninsula who has watched the trees encroach over the years, estimates an even

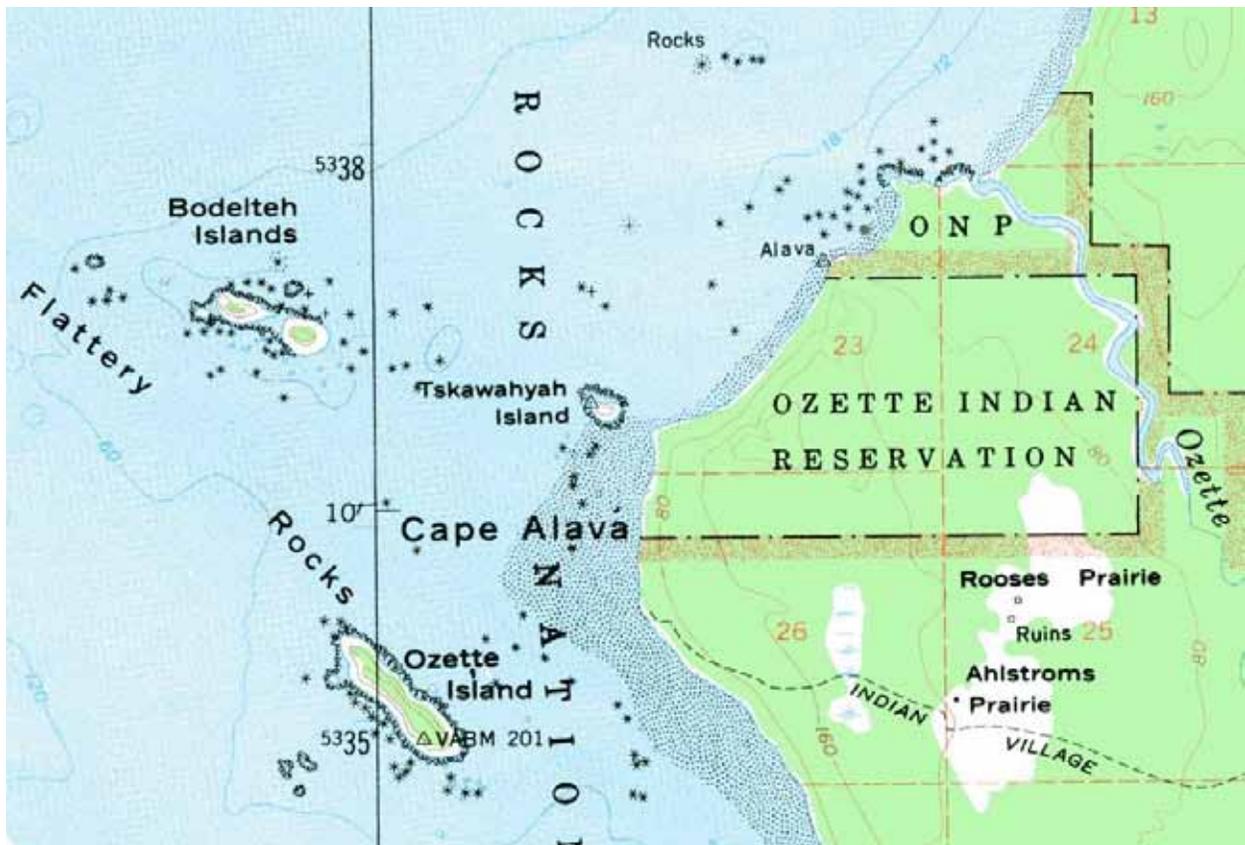


Figure 2. Map of Ahlstrom's and Roose's Prairies (Also known as the Ozette Prairies).

larger loss of open ground:

Well, the prairies have grown over so much. Seventy-five percent [of those prairies] [are] all filled in with trees. Pete Roose's place is practically all grown up [in trees]. And Ahlstrom's, when you used to first hit that prairie the whole thing was practically all just about bare except maybe for a little tree here and there. Now it's pretty near grown up so that you can hardly see anything out there. Ahlstrom's, that area there would probably be a hundred and fifty acres. Pete's place, the area there was probably eighty or maybe a hundred acres. You see Pete had sheep and that kept the brush down on his place. And the big prairie there at Ahlstrom's was kept down because the sheep would eat it down as well (Emil Person pers. comm. 2006).

Age data determined by tree core dating revealed that trees began encroaching on Roose's Prairie 50 to 100 years ago and on Ahlstrom's Prairie less than 50 years ago. The establishment dates of the encroaching trees coincide with the end of major disturbance on these wetlands—homesteader influence by way of sheep grazing and burning (Ramsden 2004). This use of the land came to an end when the land became part of Olympic National Park. Tree encroachment has progressed significantly on both areas since that time. Modeling predictions based on air photo analysis suggest that tree encroachment will continue at a rapid rate, covering most of the area within 100 years, at which point the wetlands will have likely become coniferous forest and woodland swamp (Ramsden 2004).

Until recently, we were limited by a relative lack of knowledge of former native use and management of the Ozette Prairies and how these actions may have influenced the shaping and maintenance of these openings. This report is intended to remedy this situation by collecting together for the first time much of the available cultural evidence—through a review of the historical literature and ethnographic interviews.

Methods

This report begins by outlining the setting: the unique and valuable natural features and biodiversity of the Ozette Prairies. Scientific names are from the USDA Plants Database (<http://plants.usda.gov>) developed by the USDA Natural Resources Conservation Service National Plant Data Center. It then turns to the indigenous people of the area, describing what is known about how they used the wetlands and then what has been pieced together about how they managed the wetlands with fire. This body of data comes from two lines of evidence (1) oral interviews and (2) the written historical record.



Figure 3. Conifer encroachment onto Ahlstrom's Prairie. #256. Photograph by Fred Sharpe, 2007

Oral Interviews

Oral interviews with individuals from various tribes and non-Indians with a long-term history in the area are considered a legitimate, scholarly method of information gathering in the fields of anthropology, ethnobiology, environmental history, and historical ecology and are used to reconstruct Native American uses of the flora and land management practices (Anderson 2005; Boyd 1999a; Deur and Turner 2005; Egan and Howell 2001; Goble and Hirt 1999).

There are Makah who are the present-day carriers of an oral tradition, chronicling the ancient practices and lifeways of the people. Native people still gather native plants and prepare traditional foods, and speak their native language. Between 2002 and 2007, thirty oral interviews were conducted with twenty-one individuals concerning the history of the Ozette Prairies. Seventeen interviews were conducted with thirteen Makah; two interviews were conducted with a Jamestown S'Klallam; eleven interviews were conducted with seven non-Indians with a knowledge of the long-term history of the area. Makah consultants were transmitting information that they received directly from parents or grandparents who had witnessed or used practices of which they spoke. Thus, this information is still quite fresh in the collective memory of the Makah and likely to be accurate.

The Written Historical Record

Supplementing the information from these interviews is a considerable body of archival evidence from the historic and ethnographic record, including nineteenth-century maps, newspaper articles, museum records and collections, and field notes from explorers, surveyors, botanists, and anthropologists which were studied along with General Land Office survey maps and accompanying notes for information on cultural uses and burning of the wetlands in the traditional territory of the Makah.

Ecological Features of the Ozette Prairies

The Ozette Prairies are a mosaic of wetlands and relatively drier treeless environments: bogs, fens, and grassland areas. Such open areas are rare in the forest that covers most of Olympic National Park and constitute some of the only habitats in which animals and plants not adapted to the shade of trees can survive. Since this open habitat is not extensive, some of these species are threatened or sensitive. In addition to being a refuge for these species, the wetlands have extremely high biodiversity because they encompass such a wide variety of ecological conditions, including bogs, fens, grasslands, and ecotones (transition

zones between forest and prairie). Because of these factors, the wetlands are a unique ecosystem, important not only for the species that require open habitats but also for the biota of the Olympic National Park as a whole.

An overview of the two main wetlands of the Ozette—Ahlstrom’s and Roose’s—serves to illustrate the ecological diversity of the Ozette Prairies.



Figure 4. Huckleberry (*Vaccinium ovatum*) shrub in the shade of western hemlock trees on the western edge of Ahlstrom’s Prairie. Photograph by Kat Anderson, 2007.

Ahlstrom’s Prairie receives both rainfall and overland water flows. Braided rills flow north to south through central portions of the peatland, draining excess water from the wetland into an outflow stream south of the wetland (Gutchewsky 2004). In the ecotone around the wetland’s margin grow some of the forest shrubs that have edible berries: salal (*Gaultheria shallon*), evergreen huckleberry (*Vaccinium ovatum*), and red huckleberry (*Vaccinium parvifolium*) (Kate McCarty pers. comm. 2007, Bach and Conca

2004). Also in the ecotone, particularly on the west side of the wetland, grow large, huckleberry bushes with no berries under the dense canopy of young western hemlock trees (see Figure 4). On the northeast perimeter of Ahlstrom’s Prairie there is a small patch of giant horsetail (*Equisetum telmateia*) and skunk cabbage (*Lysichitum americanus*) in the ecotone. Under the advancing conifers, there is a build-up of old, dead bracken thatch. (see Figure 5). Just out from the ecotone in the higher and drier perimeter of the

wetland a ring of bracken fern (*Pteridium aquilinum*) grows in very dense patches, particularly on the west side (Bowcutt 2007). Other associates along this perimeter include Indian tea (also known as Labrador tea) (*Ledum groenlandicum*), bog laurel (*Kalmia polifolia*), Menzie’s spiraea or hardhack (*Spiraea douglasii* var. *menziesii*) (Buckingham 1976-1977), and salal. (Note: Lenz and Cereghino (2002) found no rare species in areas dominated by salal and bracken fern, or in dense woody



Figure 5. Dead bracken fern (*Pteridium aquilinum*) thatch in the same location as Figure 4. Photograph by Kat Anderson, 2007.

bog communities dominated by Indian tea and bog laurel.

The next zone inward from the edge is dominated by slough sedge (*Carex obnupta*) and Indian tea. Associates in this zone include salal, deer fern (*Blechnum spicant*), bog laurel, and bracken fern (Bowcutt 2007). Deer and elk trails run through this part of the wetland, and along these paths one finds low-growing plants such as swamp gentian (*Gentiana douglasiana*), bog cranberry (*Vaccinium oxycoccos*), and bog St. John's-wort (*Hypericum anagalloides*).

The wetter lower areas in the center of Ahlstrom's Prairie are the most species-rich. This is in the heart of the fen. The vegetation is dominated by sedges, such as *Carex livida*, *C. aquatilis*, and *C. cusickii*, which are mixed with dense patches of rushes (*Juncus effusus* var. *gracilis* and *Juncus balticus*) (Bowcutt 2007; Buckingham 1976-1977; Gutchewsky 2004). These plants are half the height of the Indian tea and slough sedge that dominate areas of the fen along the edges and on the northern end. Thus, the shorter plants like bog cranberry, great burnet (*Sanguisorba officinalis*), king gentian (*Gentiana sceptrum*), swamp gentian, bog orchid (*Platanthera dilatata* var. *dilatata*), sundew (*Drosera rotundifolia*), northern starflower (*Trientalis borealis* ssp. *latifolia*), bog St. John's-wort, and cottongrass (*Eriophorum chamissonis*) grow here (Bowcutt 2007). The very center of the low point of the fen is dominated by a sedge with fine grass-like leaves and a small inflorescence (1cm. long) along with an airy grass with a very open panicle of brown-purplish flowers.

Botanist Nelsa Buckingham has documented the occurrence of two other species that are culturally significant as food to the Makah: springbank clover (*Trifolium wormskjoldii*) and dwarf blueberry (*Vaccinium caespitosum*) north of the Cape Alava Trail in Ahlstrom's Prairie (Buckingham 1976-1977).

Roose's Prairie has no water source other than rainfall (Gutchewsky 2004). It is similar to Ahlstrom's Prairie in terms of vegetation structure, but its flora is somewhat different. Along an unmarked trail that runs north from the main Cape Alava Trail to Roose's homestead there are two large populations of Vancouver ground-cone (*Boschniakia hookeri*) (Weissbach and Bivin 1997). The wetland that houses the complex of structures forming Roose's old homestead is approximately three acres. On the western side of this wetland near Pete Roose's house, the vegetation is dominated by salal and deer fern, interspersed with evergreen huckleberry and small patches of Indian tea (Bowcutt 2007). The larger conifers advancing in the wetland are approximately 25 to 30 years old (Weissbach and Bivin 1997). In the southern part of this wetland, grasses and forbs are common, including poverty danthonia (*Danthonia spicata*), and northern starflower (Weissbach and Bivin 1997). Non-native plants include the common hairy cat's ear (*Hypochaeris radicata*), velvet grass (*Holcus lanatus*), bull thistle (*Cirsium vulgare*), and foxglove (*Digitalis purpurea*).

The drier east-facing slopes have crowberry (*Empetrum nigrum*), bunchberry (*Cornus unalaschensis*), king gentian, twinflower (*Linnaea borealis* ssp. *longiflora*), running clubmoss (*Lycopodium clavatum*), slough sedge, velvet grass, bracken fern, northern starflower, false lily of the valley (*Maianthemum dilatatum*), hairy cat's ear, plantain (*Plantago* sp.), and a tall bunchgrass (Bowcutt 2007).

To the east of Roose's homestead is a bog that closely resembles the species composition in Ahlstrom's Prairie, but there is more sphagnum moss here and it is more boggy than Ahlstrom's Prairie. The vegetation in the wettest center of the bog contains: few-flowered sedge (*Carex pluriflora*), white beakrush (*Rhynchospora alba*), skunk cabbage, sundew, bog cranberry, great burnet, swamp gentian, king gentian, bog laurel, Indian tea, cottongrass, bunchberry, northern starflower, and bog St. John's-wort (Bowcutt 2007). Makah coppers sip nectar from the great burnet. Alaskan plantain (*Plantago macrocarpa*), a sensitive plant, is also found here (Weissbach and Bivin 1997).

East of this bog and northeast of Roose's homestead is a dry opening dominated by crowberry and bracken fern. Great burnet, deer fern, western bog laurel, Indian tea, slough sedge, and the low-growing bog blueberry (*Vaccinium uliginosum*) also occur here (Bowcutt 2007; Gutchewsky 2004:12). Further east there is another boggy area even larger than the one closer to the homestead. There are many sphagnum moss hummocks dominated by crowberry. Associates are Indian tea, western bog laurel, bracken fern, sticky false asphodel (*Tofieldia glutinosa*), sundew, bog cranberry, and spiraea (Bowcutt 2007).

Surrounding both Ahlstrom's and Roose's Prairies are slopes (greater than two degrees) with mineral soils. The dominant vegetation is made up of high, densely spaced shrubs, a few sedges and grasses, many young trees 1-10 m tall, and a dense understory of herbs, ferns, lichens, and mosses (<http://www.ac.wvu.edu/~andybach/Ozette>). Based on Andy Bach and Dave Conca's soil analysis (2001) and the existence of many burnt stumps and snags in this zone, one can conclude that the plants are growing on former forestland that was at one time cleared by fire. Two of the most common shrubs here are Indian tea and bog laurel. Salal is also abundant particularly near the wetland edge. Western hemlock, Sitka spruce, and western redcedar saplings and young trees are common on the uplands (Bowcutt 2007; <http://www.ac.wvu.edu/~andybach/Ozette>).

The state-listed threatened, sensitive, or review group plant species growing in the Ozette Prairies include Alaska plantain (*Plantago macrocarpa*), Vancouver ground-cone (*Boschniakia hookeri*), swamp gentian (*Gentiana douglasiana*), northern microseris (*Microseris borealis*), goldthread (*Coptis trifolia*), and two kinds of sedges: several-flowered sedge (*Carex pluriflora*), and long-styled sedge (*Carex stylosa*) (<http://www1.dnr.wa.gov/nhp/refdesk/lists/plantrnk.html>; Buckingham 1993; Lenz and Cereghino 2002). (See Figure 6).



Figure 6. The swamp gentian (*Gentiana douglasiana*), a plant (with sensitive status) used for nectar by the Makah copper. #313. Photograph by Fred Sharpe, 2007.

The delicate and sensitive swamp gentian, which naturalist Archibald Menzies painted on his botanical trip to the Northwest Coast of America with Captain George Vancouver in spring of 1792, occurs in boggy areas of the Ozette Prairies and its sweet nectar is sought out by one of the sensitive animal species of the wetlands—the rare Makah copper butterfly. Besides the swamp gentian, the adult butterflies also may gather nectar on great burnet (*Sanguisorba*), forget-me-not (*Myosotis*), a native *Hypericum*, a species of *Galium*, a small *Epilobium*, and a white mint (R. Pyle and T. Pyle 2001). (See Figure 7).

The Makah copper is a narrow endemic found on the Ozette Prairies and the North Bay bogs in Grays Harbor County. It is closely related to the Mariposa copper (*Lycaena mariposa*), but different enough to be described as a separate taxon. It is distinguishable from other coppers by a diagnostic pattern of light scales of the ventral hind wing organized into dramatic, almost silvery orbs between the veins (Pyle 2002:186). The larva feed on bog cranberry in the Ozette Prairies, but since only one egg has been found on this plant, more studies need to be done to better document the larval food plants of this butterfly. It is a State Candidate in Washington, and a Federal Species of Concern (Pyle 2002:186; R. Pyle and T. Pyle 2000).

The Makah copper and another butterfly, the Ozette skipper, are both sun worshipers, nectaring on plants that are in full sun in the heat of the day, when their main predators—birds—are least active (Peterson 1992:xiii). The Ozette skipper is a variation of the woodland skipper (*Ochlodes sylvannoides*) and is 2-3 cm. across. It is composed of blotchy patterns of yellow, orange and tan. It is still being studied to see if it warrants taxonomic distinction in the form of separate subspecific recognition (R. Pyle and T. Pyle 2001). Grasses and sedges are potential host plants to the skippers. Even less is known about the life cycle of the Ozette skipper.

Open habitats on the Olympic Peninsula are known to



Figure 7. Great burnet (*Sanguisorba officinalis*), a plant used for nectar by the Makah copper. Photograph by Fred Sharpe, 2007.

be important nesting sites for some ground nesting birds, as well as for cavity nesters that prefer snags in areas with more sunlight than the dense forest. Although bird inventories have not been conducted on the Ozette Prairies, they may be host to some cavity and ground nesters not found in the heart of the coniferous forests. These would be such birds as horned larks, western yellow throats, western bluebirds, and Lewis's woodpeckers (Fred Sharpe pers. comm. 2007).

Role of the Ozette Prairies in the Life of the Makah

The Ozette Prairies were useful to the culture and economy of the Makah, the native people who occupied the Ozette and the Cape Flattery region before settlement by Europeans and Asians in the mid-1800s. Although the Makah made much of their living from the sea, fishing and hunting marine mammals, they depended on the land for a large portion of their food and much of the material they used for clothing, shelter, tools, implements, and ritual objects. Due to their biodiversity and openness, the Ozette Prairies provided the habitat that supported many of the plants and animals from which food and material were derived.

Extensive permanent occupation of the Ozette Village and its surroundings began approximately 2,000 years ago (Croes and Blinman 1980; Wessen 1984; Samuels and Daugherty 1991:11). Archeological evidence reveals that the food procurement strategies and technologies, basketry and cordage manufacturing styles, and woodworking techniques remained stable over the period of occupation, suggesting 2,000 years of cultural continuity (Wessen 1990; Croes 1977).

Occupation of the northeastern Olympic Peninsula began as early as 11,000 BP at the Manis Mastodon Site near Sequim. The only limiting factor for early occupation of the northwest corner of the Olympic Peninsula was glacial ice that retreated over 12,000 years ago (Dave Conca pers. comm. 2008). Chronometrically dated archeological deposits on the northwestern part of the peninsula are much later with clear occupation dated around 4,560 +/- 80 years B.P. on what is now the Makah Indian Reservation (Dave Conca pers. comm. 2008) and 2,500 years ago at the mouth of the Hoko River (Croes and Blinman 1980). Non-chronometrically dated sites in the vicinity of Lake Ozette have been linked to occupations as early as 5,000- 8,000 B.P. based on artifacts style but as of yet have not been substantiated by radiocarbon dating (Conca 2000). Further research in this region will probably push back the limits of human occupation in the Ozette area into the mid to early Holocene, about 4,000 to 8,000 years ago (Dave Conca pers. comm. 2008).

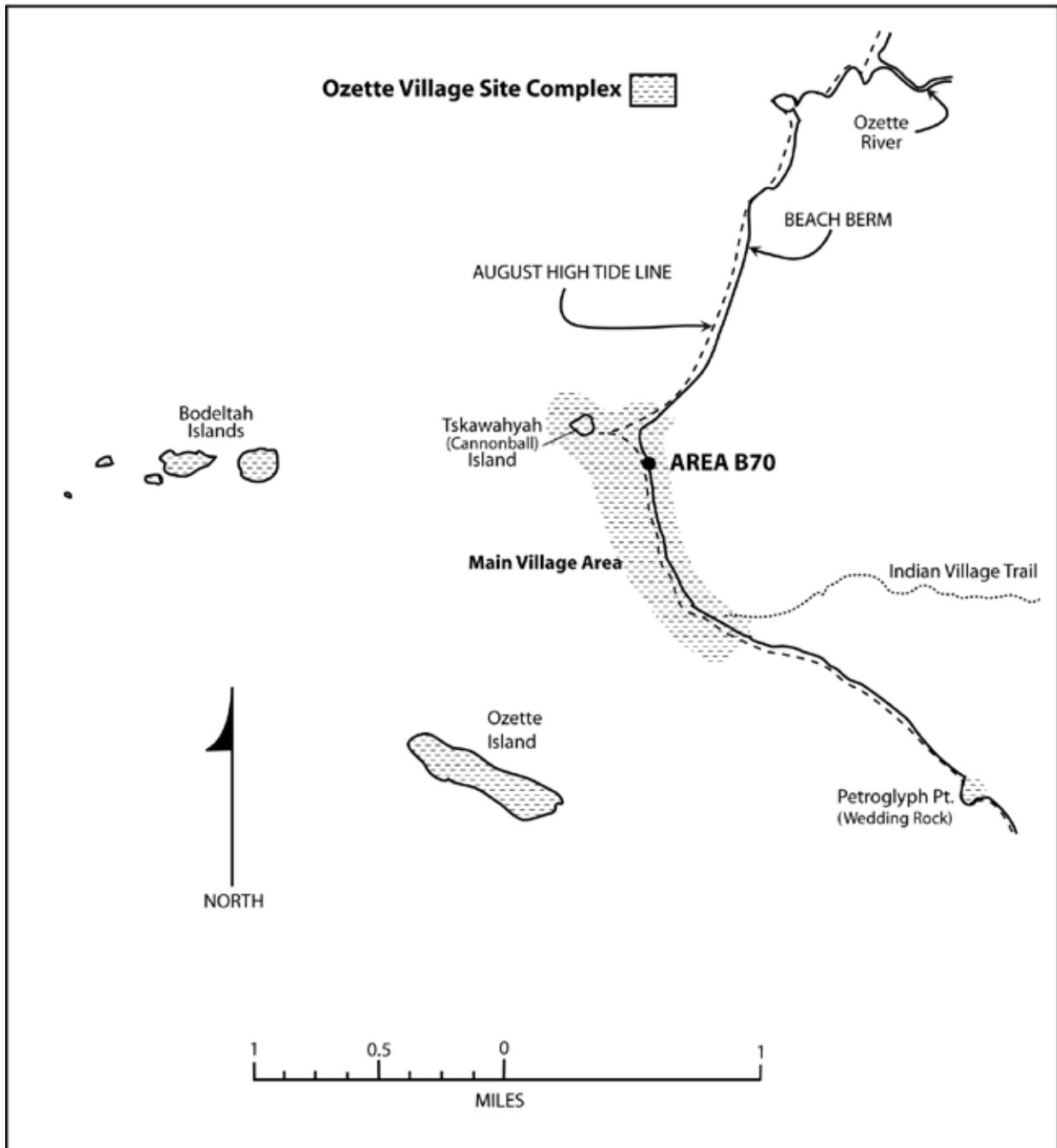


Figure 8. Map of the Ozette Village site complex. After Huelsbeck and Wessen 1994.

The Makah had five main villages: Neah Bay, Biheda, Wuh-uhch' (also spelled Wayacht, Waatch, and Wyatch), Ts'oo-yuhs (also spelled Sooes, Tuess, and Tsooess), and Ozette. The Ozette Village was the southernmost of these, and likely the largest during both prehistoric and early historic times (Samuels 1994:13; Samuels and Daugherty 1991:4-5). It was situated near what is now called the Ozette River, which flows

to the sea to the north of Cape Alava, the farthest-west point of land in the coterminous United States. It was a year-round village that encompassed a stretch of ocean beach and the islands of Tskawahyah (Canonball), Ozette, and Bodeltah (see Figure 8). The main part of the village faced the ocean above the rocky beach, bounded to the east by a steep hill with spruce forests and an understory of western swordfern (*Polystichum munitum*) (Gill 2005:55) (see Figure 9). A large offshore reef was exposed at low tide, allowing easy and safe access by canoe (Mauger 1991:39). To distinguish these people from the Makah in general, this report will use the terms "Ozette people" or "the Ozette."

An earthquake struck the Ozette region on January 26, 1700 A.D. (Atwater et al. 2005), causing a massive mudslide that buried several Makah plank houses at the Ozette Village. The vast wall of liquified clay had the effect of freezing the daily life of a few Ozette families in time. In February of 1970, Pacific storm waves exposed part of a longhouse, and then between 1970 and 1981, basketry, cordage, harpoons, lines, bags, pegs, tools, weapons, and boxes were uncovered by Washington State University archaeologists, in cooperation with the Makah and the National Park Service. In all, more than 50,000 artifacts were excavated. Hundreds of thousands of bones and shell fragments from sea and land mammals, birds, fish, and invertebrates were identified, quantified, and interpreted (Huelsbeck 1994a and 1994b; Wessen 1994; DePuydt 1994).



Figure 9. Ozette Indian village, one of five Makah villages, in 1879. It faced the Pacific Ocean near Cape Alava, twenty miles south of Cape Flattery. Courtesy of the North Olympic Library System. .

As unfortunate as the mudslide was for the Ozette people, it preserved enough of their physical culture to allow for the weaving together of a fairly complete picture of village life. In general, the environment of the Olympic Peninsula “favors neither the preservation nor recognition of archaeological resources,” says archaeologist Gary Wessen (1990:412). This is due to “heavy precipitation, dense vegetation, acidic soil, and frequently rugged relief, combined with the erosive effects of swift rivers and exposed beaches.” We are lucky, therefore, to have the Ozette Village site, along with a few rare wet sites where artifacts have been well preserved due to the lack of oxygen (Wessen 1990:412).

As was the case with many native groups, the lifeways of the Ozette people were disrupted early in the period of white incursion and settlement, eliminating most opportunities for anthropologists or other observers to record those lifeways in writing (Colson 1953; Wray 1997). When James Swan (1964:6) took the first census of the Ozette Village in 1869, he came up with only 188 people. The people had already lost between one-half and two-thirds of their population, probably due to introduced diseases. There may have been as many as 564 residents at the height of village life just prior to European contact. If two-thirds of the population were wiped out by disease as estimated by Boyd (1990:145), then the estimate would be 564 people at contact. Archaeologist Jeff Mauger (pers. comm. 2007) gives a more conservative estimate of 376 at contact. He took Swan’s 1869 census of the Ozette Village which was 188 people and then factored in disease, estimating that half the population was wiped out by the time Swan took the census.

In 1893, the people living in the village were confined to the 719-acre Ozette Reservation that was established by presidential proclamation, but this area, while it encompassed the village proper, still contained only a fraction of their original territory and undoubtedly they were forced to alter significantly their gathering and hunting regimes. They likely still harvested and hunted in Roose’s Prairie, however, as the southeast corner of the Ozette Reservation encompassed what is today the northern part of Roose’s Prairie. By 1896 the federal government began requiring the Ozette people to send their children to school. To comply, families started moving to other reservations, particularly the Makah Reservation. Bud Klock (pers. comm. 2003), whose family moved to Sekiu in



Figure 10. Lars Ahlstrom. #33111, Accession OLYM-567. Courtesy of the Olympic National Park archives. Photograph by Robert Hess, 1956.



Figure 11. Pete Roose at his place. Emil Person's dad, Emil Person, Senior, took the photograph in the 1930s.

1928, notes that “tuberculosis and smallpox wiped out a lot of the Ozette Indians and they disintegrated and went different ways to different reservations.” In 1888 the Ozette Village had only 91 inhabitants; in 1901, 44; in 1906, 35; and in 1923, 8. The last Indians to remain on the reservation were Charlie Weberhard and Elliott Anderson (Hult 1956). By the late 1930s the removal of the Ozette people from the Ozette area was complete. Nobody lives there today (See Table 1). In 1970, Congress transferred the Ozette Reservation to the Makah Tribe (Johnson 2006).

In the first decade of the 1900s, two Swedish immigrants, Lars Ahlstrom and Peter Roose (for whom the two main wetlands are now named) came to settle on the Ozette Prairies on 160-acre claims (Magnusson 2000:33; Bertelson 1948; Anonymous

1932) (see Figures 10 and 11). Lars Ahlstrom, from Bollnas, Sweden, settled on what came to be known as Ahlstrom's Prairie in 1902, while Peter Roose, from the same town, settled northeast of there on what came to be known as Roose's Prairie in 1907 (Bertelson 1948; Magnusson 2000:33). They built cabins, barns, and other structures, put up fences, plowed for growing potatoes and berries, and grazed sheep, cattle, and horses (University of Oregon 1989; Emil Person pers. comm. 2006; Bertelson 1948) (see Figures 12 and 13). These activities likely had some effect on the wetlands' vegetation and ecology. It must be noted, however, that both Roose and Ahlstrom set fire to parts of the wetlands periodically, following in general form, if not in detail, the former practices of the Ozette people (Klock pers. comm. 2002; Vanderhoof 1960). It is difficult to know exactly how the human disturbance of Roose and Ahlstrom changed the face of the wetlands—or, more to the point,



Figure 12. Pete Roose's homestead looking north. The picket fences and structures are of western redcedar. From left to right is the storage shed, new house, barn (in the background), and old house. The storage shed, new house, and barn are still standing today. Photograph taken in the 1930s. Photographer unknown. From the photo collection of Emil Person.

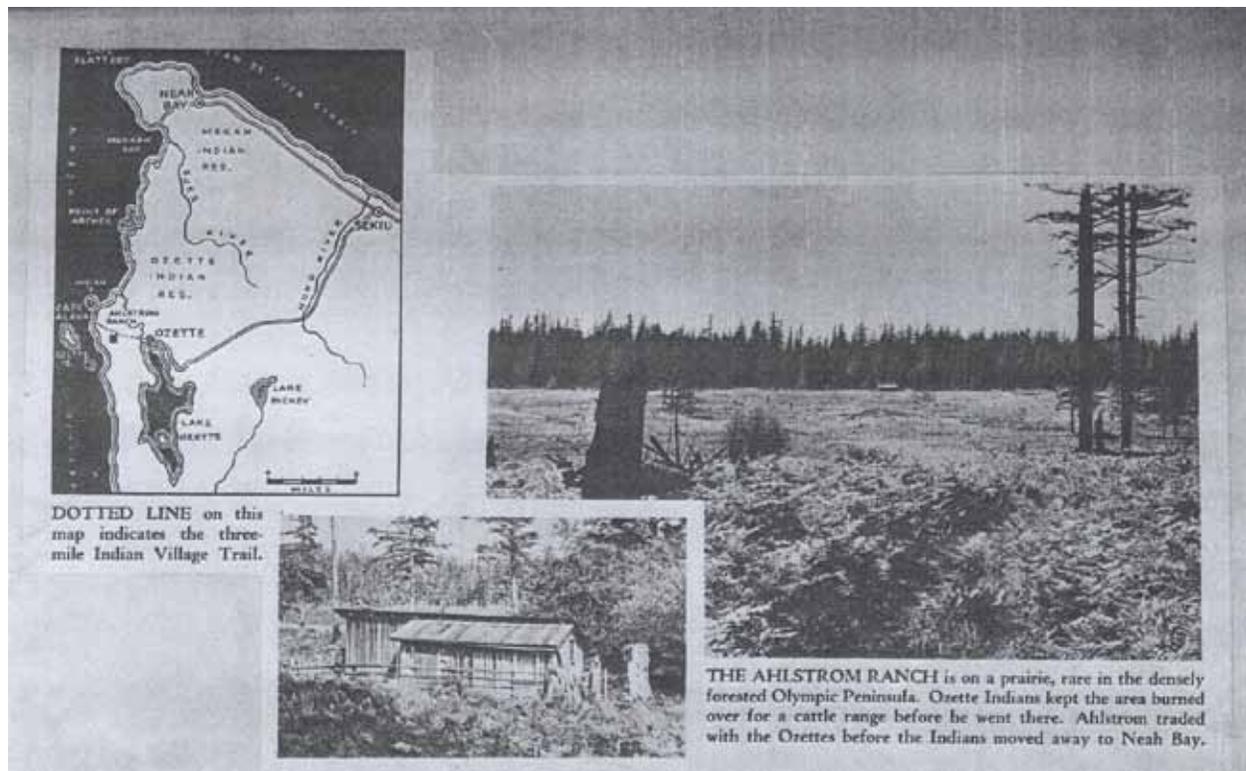


Figure 13. Ahlstrom's homestead from the article "Here's a man who went West just as far as he could go", which appeared in the *Seattle Times*, Sunday, July 25, 1954. According to Emil Person, "This photo was taken from the east side of the prairie looking West. Another trail ran on the ocean side through the woods. It started from where Pete Roose's mill, root house, and another little building were. It dropped down into a little flat there. It came out at Ahlstrom's house. I don't think I could find it again, it's all grown over" (pers. comm. 2007).

how the wetlands might be different today had Roose and Ahlstrom not settled there.

Because Ozette use of the wetlands ended by the early 1900s, we lack a complete historical or ethnographic record of how these people interacted with the wetlands. More than one hundred years after their relocation, descendants of the last Ozettes still remember the importance of the Ozette Prairies to their people. They recall some of the plants their elders gathered on the Ozette Prairies (see Table 4), the animals their elders hunted there, and some of the efforts the people undertook to keep the Ts'oo-yuhs wetlands on the Makah Reservation productive (see Appendix 5).

The Makah called themselves *Qwidicca-atx*, meaning "people who live on the cape by the rocks and seagulls." James Swan wrote that their remote territory was "almost out of the world," but to the Makah, of course, this land was, and still is the center of the world (Swan 1971; Erikson et al. 2002). The name *Makah* is itself from a Klallam word that means "generous with food" (Pascua 1991:40), which suggests that the Makah territory had a bountiful supply of edible plants and animals.

One reason for the Makah's plenitude was that they were able to exploit the rich resources of both land and sea (see Figure 14). Through much of the year, they focused on the ocean. California gray

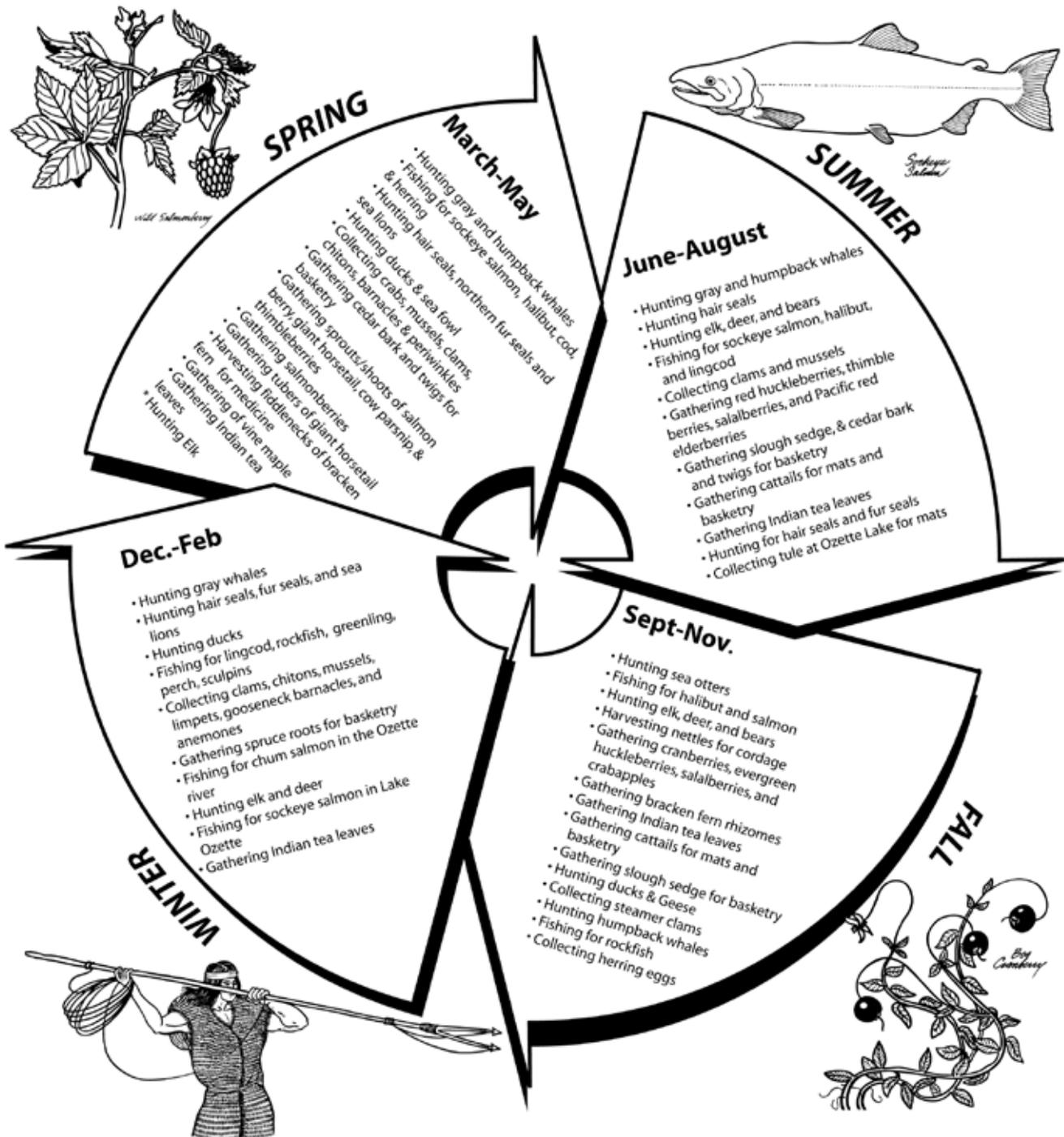
Table 1. Timeline for Major Events Affecting the Ozette Prairies

Settlement and Relocation	Date	Reference
Permanent occupation of the Ozette Village	2000 B.P.	(Samuels and Daugherty 1991:11)
Ozette Indian Reservation established by the federal government	1893	(Wray 1997)
M.J. Boyle (an Indian) is living on what will become Ahlstrom’s Prairie	1895	(GLO 1895 Survey for T31NR16W)
The federal government begins requiring the Ozette people to send their children to school and they begin to move to other reservations	1896	(Wray 1997)
Lars Ahlstrom moves to Ahlstrom’s Prairie and lives in an Ozette Indian hut	1902	(Bertelson 1948)
Pete Roose settles on Roose’s Prairie	1907	(Magnusson 2000:33)
Ozette Indian Reservation has two people	1932	(Wray 1997)

whales were hunted in spring and summer and provided a large amount of the village’s food, as well as sinew for bowstrings and bones for war clubs (Swan 1964; Pascua 1991:40). Hair seals and northern fur seals were hunted for their meat and oil (Swan 1964; Samuels 1994:87). Women dug clams with yew sticks at ebb tide, pried mussels and barnacles loose with tools made of whale ribs, and collected many other kinds of invertebrates—including shrimp, chitons, crabs, rock oysters, scallops, razor and butter clams, sea cucumbers, china slippers, and abalone—from tidepools and mudflats (Singh 1966:233). Halibut, silver salmon, king salmon, sockeye salmon, lingcod, and perch were also important components of the Makah diet (Huelsbeck and Wessen 1994; Pascua 1991; Singh 1966:15-19), and depending on the species and the season, fishing might occur in the ocean, on the Ozette River, or on Ozette Lake. The Makah constructed enclosures of rocks to trap perch for food in the ocean in front of the Ozette Village (Waterman 1920).

Despite their distinct orientation to the sea, the Makah—and the Ozette in particular—certainly did not ignore the land as a source of food and other resources. Roosevelt elk (*Cervus elaphus roosevelti*), black-tailed deer (*Odocoileus hemionus columbianus*), and black bears (*Ursus americanus altifrontalis*) were hunted for their meat and hides, although as a percentage of the meat diet these terrestrial mammals were less important than sea mammals and fish (Swan 1964:24; Singh 1966; Samuels 1994). Plants, too, were

Makah Hunting/Fishing/Gathering Round by Season



Sources: Gill 1983, 1984; Gunther 1936; Pascua 1991; Samuels 1991, 1994; Singh 1966; Swan unpublished field notes; Ward and Goodman 1985; Waterman 1920; oral interviews with the Makah.

Figure 14. Makah seasonal round.

a significant part of the Makah's material culture and food supply, as will be detailed below. In fact, the Makah would have found it difficult to carry on their ocean-based economy without plant products, since fish nets, fishing lines, fish weirs, baskets for the gathering of marine invertebrates, storage containers for dried salmon, fish drying racks, harpoon lines, harpoon shafts, canoe sails, and canoes were all constructed from materials derived from plants.

Relative to animals (both marine and terrestrial), plants are not well represented in the archaeological record. Whereas the bones, shells, and calcified exoskeletons of animals resist decay and remain in the soil for archaeologists to analyze, most plant tissue is highly perishable, especially in the moist environment of the Olympic Peninsula. With few exceptions, the remains of plants utilized by the Makah and other tribes of the Olympic Peninsula have not survived. In Pacific Northwest archaeology in general, this has resulted in a systematic bias toward groups' animal-based material culture and toward the roles of men, who did most of the hunting and fishing.

Nevertheless, we know from the several other types of evidence that plants were as important overall to the Makah as animals. Plants provided fuel for heat and cooking, building materials for structures, pliable leaves, stems, and roots for basketry, medicines, and fiber- and vitamin-rich foods for balancing a diet high in meat. After interviewing some Makah elders in the 1980s, Steven Gill (2005) concluded that plant foods may have made up almost 50 percent of the diet.

One reflection of the dual importance of land and sea to the Makah is their calendar (see Table 2). In keeping with the view that time is circular rather than linear in nature, the Makah call the year *ts e qwa q Etc*, which means "once around," and they name each lunar month for a significant feature of that time of the year. For most of the months, this feature is the appearance of or harvest time for a particular plant or animal (Waterman 1920:45 vol. I). Months named after plants (five) outnumber those named for animals (four). The natural cycles of renewal underlying this conception of the year were the heartbeat of Makah life, and these cycles in turn determined the portion of the varied natural world toward which the Makah turned their attention at any particular season. From their calendar, we can infer that the Makah were tied to terrestrial landscapes, and in seeking a certain kind of berry or other plant, they would return year after year to the particular places where that plant could be found. The fact that the month of September is connected with "the season for cranberries" underscores the importance of bogs as a habitat type to the Makah food economy. According to George B. Rigg (1925) who authored a number of articles on sphagnum bogs of the Pacific coast (1940; 1958), listed the bog cranberry as a characteristic bog plant and noted that it had "been found outside of bogs in very rare instances only."

The Ozette people ranged widely over their territory to hunt and gather the land's resources.

Table 2. The Makah Seasonal Round, as Reflected in Names of the Lunar Months

Month	Makah Name	Meaning of the Makah Name
December	Si'hwaxpEL	whaling season
January	I3i'kw1spEL	young-one season (female whales are gravid with offspring)
February	LuLu'tEkpEL	the season when women are avoided
March	U3u'tEkpEL	whale
April	Oqoska'd1LpEL	season when the salmonberry bushes sprout
May	KakEcpEL	salmonberries are ripe
June	Hisiga'ktkpEL	red huckleberries are ripe
July	Qaqyitoa'pExpEL	salalberries are ripe
August	Wiwi'kyukpEL	season for doing nothing
September	Q!a'spEL	season for woodworking; also season for cranberries
October	Ts!ibExwatitxpEL	season for taking rock-fish
November		[not recognized]

Each habitat—cleared areas near the village, riparian corridors, forests, wetlands, coastal dunes, the Ozette River, and Ozette Lake—provided a different set of useful plants and/or animals.

In the vicinity of the Ozette Village, plant patches in cleared areas and on middens supported populations of cow parsnip for edible stems, nettles for edible greens, stems for cordage, and roots for medicine (Gill 2005). After white explorers introduced the potato (*Solanum tuberosum*), the Ozettes cultivated fields of the tubers on the north and south sides of the Ozette Village and at Ozette Lake (Singh 1966:60).

The sunny riparian corridors provided a variety of edible berries. The roots (or rhizomes) of the yellow pond lily (*Nuphar lutea* ssp. *polysepalum*) were collected along the margins of Ozette Lake and used for medicine (Gunther 1973:29). Tules and cattails for the making of mats and baskets were also collected here.

On the coastal dunes, the large edible roots of yellow sand verbena (*Abronia latifolia*) were dug in the fall (Gunther 1973). This habitat also yielded the fruits of beach strawberry (*Fragaria chiloensis*), the edible roots of Pacific silverweed (*Argentina egedii*), (Gill 2005), and the roots of beach rye (*Leymus mollis* ssp. *mollis*). Bundles of the latter were used by the Makah to rub the body after bathing to stimulate the circulation (Pat Boachup pers. comm. 2002; Gunther 1973:21).

Seashore wetlands near the mouth of the Ozette, Ts'oo-yuhs' Wuh-uhch', and Hoko Rivers provided several kinds of edible roots, including the Pacific silverweed and Wormskjold's clover (*Trifolium wormskjoldii*) (Croes 1980:15, 17). At the mouth of the Ts'oo-yuhs River the Makah harvested the limp, tape-like leaves of eelgrass (*Zostera marina*) for making beautiful black designs in baskets of a fine weave (Alden et al. 1998; Gary Ray, Makah, pers. comm. 2007). The forests provided wood for carving masks,

boxes, spoons, and bowls. Mature coniferous forests yielded bark for clothing, rope, and basketry, and branches and trunks for firewood, canoes, and structures.

One of the most important terrestrial habitats on which the Makah (and Ozette people) depended was the wetlands. The wetlands provided a great diversity and dense populations of edible plants, basketry materials, and medicinal plants; they were one of the best places to hunt Roosevelt elk and deer; and as open habitats they served as good temporary habitation sites and corridors for accessing other areas and habitats. So important were wetlands to the Makah that Gary Ray, Makah, describes them as “pantries” (pers. comm. 2007), and it appears that proximity to a wetland was an important criterion in choosing where to site a village. All five Makah villages were within easy walking distance of at least one wetland, and two villages, Wuh-uhch’ (Waatch) and Ts’oo-yuhs’ (Tsooess), were built adjacent to coastal wetlands (see Figure 15).

People in the Ozette Village had access to at least six wetlands: Ahlstrom’s and Roose’s Prairies, Manny’s Prairie, West Prairie (also known as Cape Alava Prairie), Sand Point Trail Prairie, and Allen’s Prairie (see Table 3). There is definitive evidence that the Ozette made visits to the Ozette Prairies (Roose’s and Ahlstrom’s). T.T. Waterman (1920 Vol. I) recorded an Ozette place name—*TLisidatsan’ktsi*—that meant “going over to the prairie” and referred to a place where a trail from the beach goes inland toward the prairies (this spot on the Waterman map approximates where the Cape Alava Trail lies today) (see Figure 16). In addition, we know from Ernest Bertelson’s 1948 article about Lars Ahlstrom that Ahlstrom’s Prairie had at least one Ozette structure when Lars Ahlstrom got there in 1902. Finally, James Swan, in his 1864 journal, describes walking through West and Ahlstrom’s Prairies to Ozette Lake on an obvious trail, guided by Ozette people who clearly knew where they were going (Swan 1859-1866). (See Appendix 2).

Table 3. Wetlands in the Ozette Traditional Territory and their Estimated Size at Post-contact

Wetland	Post-contact Size (estimated acres)	Citation
Ahlstrom’s	150	Emil Person, pers. comm. 2006
Roose’s	150	Holyoke 2003
Manny’s	200	Emil Person, pers. comm. 2006
West	19	Kunze 1989
Sand Point	90	Kunze 1989
Allen’s	53	Kunze 1989
Ts’oo-yuhs	140	Gary Ray (Makah) pers. comm. 2007
Hobuck	70	Collins 1996
Baada	several acres	Collins 1996
Prairie along Wuh-uhch’ Slough (between Washburn’s Store and Cannery Wharf)	?	Waterman 1920 Vol. I

Note: “post-contact” covers a long period of time in which the size of of the areas may well have changed due to human impacts.

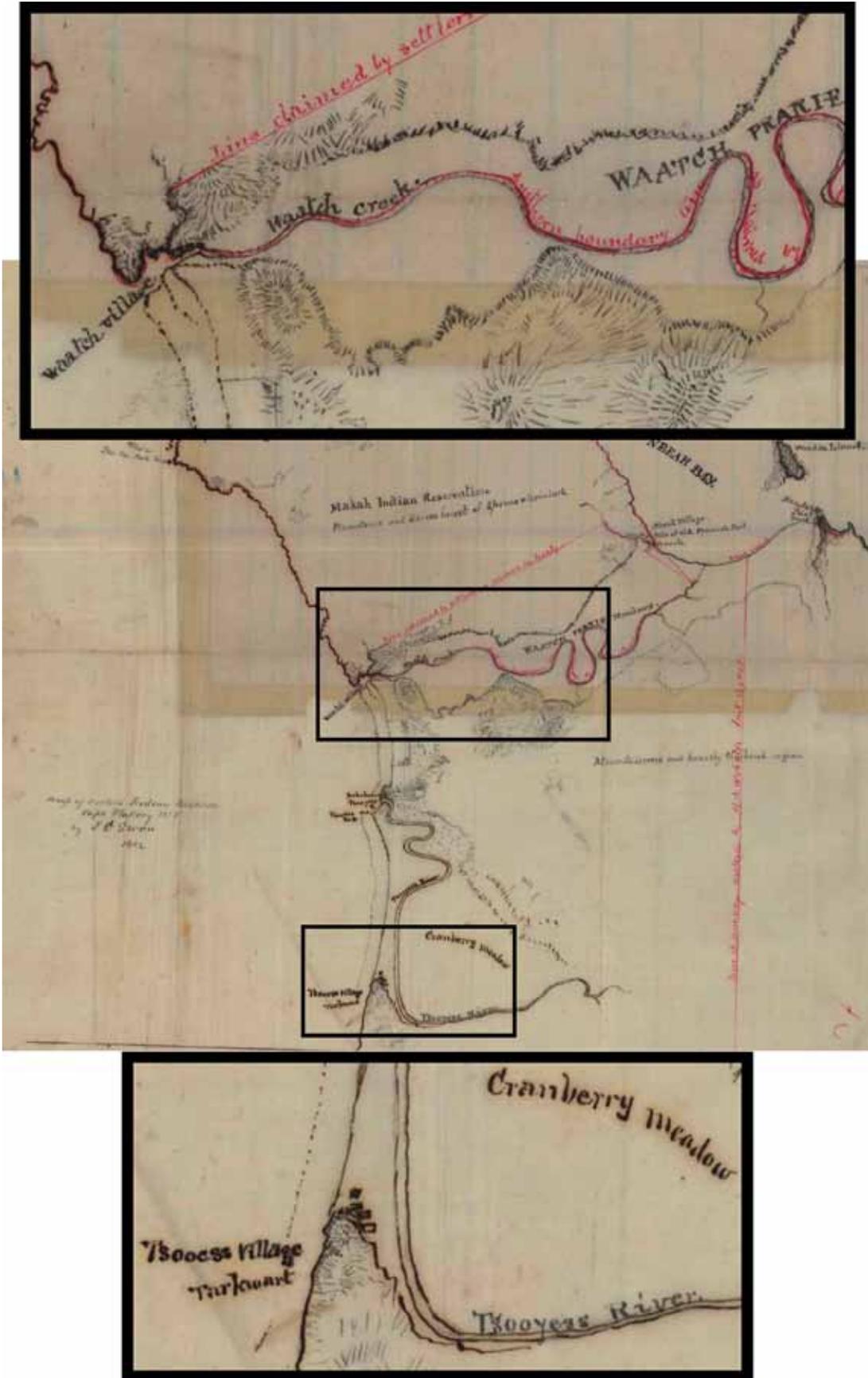


Figure 15. Swan map of Wuh-uhch' (Waatch) and Ts'oo-yuhs (Tsooess) Villages adjacent to wetlands. Map by J.G. Swan, 1862. Jefferson County Clerk Territorial District Court Case File #2-856, Series NW316-3-2. Courtesy of Washington State Archives: Northwest Region, Bellingham.

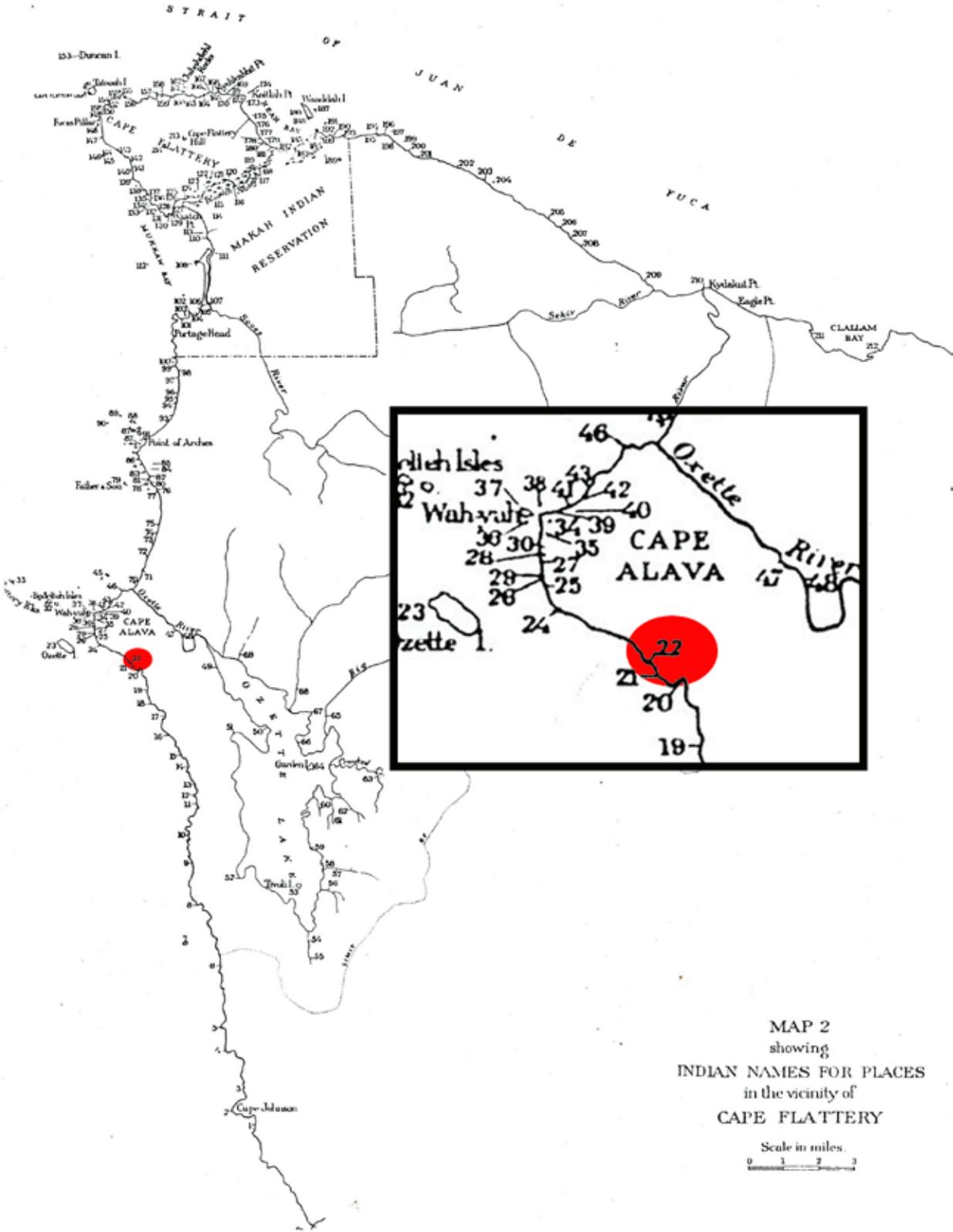


Figure 16. T.T. Waterman map. #22 according to Waterman is "Place where a trail from the beach passes inland, "Lisidatsa'ktsi" which means "going over to the prairie."



Figure 17. Map of the wetlands accessed by the Ozette Village.

It is possible that the Ozettes visited all six wetlands to hunt and to gather foods, basketry materials, medicines, and cordage materials because they all contain culturally significant plants that would have been useful to the people (see Appendix 1). Manny's Prairie was northeast of the old village; West Prairie was southeast (and one-quarter of a mile west of Ahlstrom's Prairie). Ahlstrom's and Roose's Prairies were also southeast of the village, and about a half mile from the Ozette River (because of this proximity to the river, they were probably accessed both by trail and by canoeing up the river and then going overland). Sand Point Prairie is west of Ozette Lake and Allen's Prairie is at the south end of Ozette Lake; it may have been shared with the Quileute (see Figure 17).

It is feasible that Ozette families accessed the Ozette Prairies not only by land but also by the Ozette River coming up at various times of the year to fish, hunt, and gather plants. According to Larry Sears (pers. comm. 2007) Roose had a trail to the Ozette River and a fish camp, which consisted of "four poles and a metal roof" and it is probable that this camp was accessed by an Indian trail or Indians at least had some kind of trail to Roose's Prairie from the river. According to Ruby El Hult (1956), "They [the Ozette] pushed their long dugout canoes up the Ozette River four miles inland to Lake Ozette to take blueback salmon, which they dried in quantity." Years later when the Ozette Reservation was established "one corner of the reservation took in a bend of the Ozette River, so they might continue to take their staple sockeye salmon" (Hult 1956). The reservation also was drawn up to encompass the northern end of Roose's Prairie, perhaps because of its valuable plant resources. Vera Klock's grandmother was Johanna Erickson who married Anders



Figure 18. Bud and Vera Klock. Photographed by George McCormick which appeared in the *Forks Forum* article "Klocks are grand pioneers for Fun Days", July 10, 2000.

Nylund and they took a homestead at the north end of Ozette Lake in 1895 and then moved to Royal (see Figure 18). "My mother [Inga Nylund Evans] used to tell how they [the Ozette] would come up the Ozette River in their canoes and they [my mother and her sisters] would stand on the banks and holler at them" (pers. comm. 2002). Inga Nylund Evans wrote a newspaper article (circa early 1940s Vera Klock pers. comm. 2009) recalling that: "The Indians used to paddle up the river past our place in their canoes, and into the lake. The Indians would camp along the lake shore, mostly at the south end" (Evans n.d.).

In a 1981 newspaper article by Mary Petroff, Hulda Sullivan Nylund (Inga's sister) also recalled that "the Ozette Indians, who were always friendly to the white man, travelled by canoe up the Ozette

River from their village to Eagle Point where they caught, dried and smoked salmon.”

The Ozette Prairies were probably visited all year round, because every season offered a particular set of foods or useful materials.

In spring there was young Indian tea and

good hunting; in summer the various berries took their turns ripening and basketry materials and Indian tea could be collected; in fall there were cranberries, Indian tea, bracken fern rhizomes, and basketry materials ready for harvesting; in winter Roosevelt elk and deer could be hunted (Anderson 2002-2007; Gunther 1936; Singh 1966:66).

Through oral interviews and a review of the ethnographic and historical literature, we know that at least nine kinds of plants were gathered on the Ozette Prairies (see Table 4). In addition, based on what we know about the plants used by the Makah and what grows today on the wetlands, we can say another twenty-one plant species were likely gathered on the wetlands and/or ecotones (see Table 5). These plants are discussed below, grouped into the general categories of berries, leaves for tea, root foods, basketry materials, and plants used for other purposes.

Four kinds of berries were gathered on the Ozette Prairies: bog cranberries and bog blueberries



Figure 19. Salal (*Gaultheria shallon*) berries on Roose's Prairie. Photograph by Kat Anderson, 2007.



Figure 20. Salal berries are still gathered by Indians and non-Indians alike. Elizabeth Barlow, Hoh River resident, and granddaughter of John Huelsdonk, using salal sauce as a topping on vanilla ice cream.

in the wet areas, and salal berries and evergreen huckleberries in the drier areas and ecotones (see Figures 19, 20, and 21). There is evidence to indicate that berries, as a group, were considered one of the most important resources that the wetlands had to offer. James Swan found that the people at Wuh-uhch' Village were reluctant to give him their names for a census in the late 1850s because they feared that doing so would result in "the Bostons" bringing "great herds of cattle" that would "eat up all their grass and berries" (Swan 1971:111–13). In an interview for this project, Cindy Lee Claplanhoo (Makah, pers. comm. 2002) put cranberries on a short list of the important items the Ozette people lost access to when they moved to the Makah Reservation. Another indicator of the importance of berries is that four months of the year were named after berries.



Figure 21. Edie Hottowe, Makah, picking evergreen huckleberries (*Vaccinium ovatum* var. *ovatum*) in front of the Makah Cultural and Research Center.

Berries were a healthy, tasty food, and in addition to being eaten fresh, they could be dried in cakes for future use (Gill 2005:409). We know through archaeological evidence that berries were very important to the Ozette people. Gill (1984:412) says: "The 448,943 non-coniferous seeds recovered from the excavation area of the Ozette Village provide ample evidence of the importance of berries in the diet. Of these seeds 99.69 % were salmonberry (*Rubus spectabilis*), elderberry (*Sambucus racemosa* var. *arborescens*), salal (*Gaultheria shallon*) or huckleberry (*Vaccinium* spp.)."

While we do not know the species of *Vaccinium* eaten at Ozette (through archaeological evidence), we do know that large quantities of one *Vaccinium*---*Vaccinium oxycoccus* (bog cranberries) were gathered by the Makah at Neah Bay and that they formed an item of trade with non-Indians as Swan recorded in his diary on October 23, 1859 that "Mr. Webster shipped on board of the Hartford 23 barrels of cranberries" (Swan 1859-1866).

The leaves of most of these berries had various other uses. Salal leaves were used to flavor smoked fish and to remove the fishy taste when cooking halibut heads (Densmore 1939:14). Gary Ray (Makah, pers. comm. 2007) reports that "salal leaves were gathered and chewed for stomach disorders and diarrhea." The leaves of bog blueberries were sweetened and used to make tea given to mothers for a

Table 4. Plants Gathered on the Ozette Prairies that were Traditionally Used

Species	Uses	Plant Part	Location	Time of Year Harvested	Reference
Bog Blueberry (<i>Vaccinium uliginosum</i>)	Food	Fruit	Ozette Prairies		Gill 2005:410-411
Bog Cranberry (<i>Vaccinium oxycoccus</i>)	Food	Fruit	Ozette Prairies	August – November	Gill 2005:409-410; Gary Ray, Makah, (pers. comm. 2007); Cindy Lee Claplanhoo, Makah, (pers. comm. 2002); Leah Parker, Makah/Lummi (pers. comm. 2002);
Bog Cranberry (<i>Vaccinium oxycoccus</i>)	Food	Fruit	Ahlstrom’s Prairie	August to Early September	Gill 2005:477
Bog Cranberry (<i>Vaccinium oxycoccus</i>)	Medicine	Leaves	Ahlstrom’s Prairie		Gill 2005:477
Bracken Fern (<i>Pteridium aquilinum</i> var. <i>pubescens</i>)	Food	Rhizomes	Ozette Prairies	“Root vegetables are usually better after the fronds have died back in the fall” (Nancy Turner pers. comm. 2007)	Gill 2005:367; Vanderhoof 1960
Bracken Fern (<i>Pteridium aquilinum</i> var. <i>pubescens</i>)	Medicine (toothache)	Fiddle-heads			Gunther 1973:14
Bracken Fern (<i>Pteridium aquilinum</i> var. <i>pubescens</i>)	Materials (for cleaning fish and laying fish on)	Leaves			Gunther 1973:14
Ca bup (<i>Carex obnupta</i>)	Basketry Material	Leaves	Ozette Prairies	July – October	Melissa Peterson, Makah, (pers. comm. 2003); Cindy Lee Claplanhoo, Makah, (pers. comm. 2002); Gary Ray, Makah, (pers. comm. 2006)
Evergreen Huckleberry (<i>Vaccinium ovatum</i>)	Food	Fruit	According to Buckingham (1975:77) this plant occurs on Roose’s Prairie	September – November	Kate McCarty (pers. comm. 2002); Vanderhoof 1960; Gill 2005:409
Indian Tea (<i>Ledum groenlandicum</i>)	Beverage/ Medicine	Leaves		September – October	Gill 2005:407; Yvonne Wilke, Makah, pers. comm. 2002; Gary Ray, Makah, (pers. comm. 2007)
Salal (<i>Gaultheria shallon</i>)	Food	Fruit	Ozette Prairies	July – November	Gill 2005:406; Swan 1869:25; Gary Ray (pers. comm. 2007)
Vancouver Groundcone (<i>Boschniakia hookeri</i>)	Food	Tuber	Ozette Prairies		Ed Wilbur (pers. comm. 2002)
Wild Onions (<i>Allium</i> sp.)	Food	Bulb	Roose’s Prairie		Parratt 2009

Table 5. Useful Plants Likely Gathered on Manny’s, Ozette, or West Prairies

Species	Uses	Plant Part	Location	Time of Year Harvested	Reference
Beadruby (<i>Maianthemum dilatatum</i>)	Food	Berries	Drier portions of Ahlstrom’s and Roose’s Prairies (Bowcutt 2007; Gill 1984)	September – November	Gill 2005:428 Densmore 1939
California Hazelnut (<i>Corylus cornuta</i> var. <i>californica</i>)	Disks for Gambling Game	Branches Trunk	Roose’s Prairie (Weissbach and Bivin 1997)		Swan 1870: 44
Cascara Sagrada (<i>Frangula purshiana</i>)	Food Medicine	Berries Bark	Roose’s Prairie (Weissbach and Bivin 1997)	July and August	Gunther 1973:40; Gill 2005:308-309
Common Camas (<i>Camassia quamash</i> var. <i>azurea</i>)	Food	Bulbs	Manny’s Prairie (Gill 1984)		Gill 2005:427 ¹
Deer Fern (<i>Blechnum spicant</i>)	Food, Medicine (for lung trouble and stomachache)	Leaves	Ahlstrom’s and Roose’s Prairies (Bowcutt 2007; Gill 1984)		Densmore 1939:319; Gill 2005:365
Elk Moss (<i>Lycopodium clavatum</i>)	Medicine	Whole Plants	Manny’s Prairie, drier areas of Ahlstrom’s Prairie, and mounds in bogs of West Prairie (Gill 1982:1)		Glenn Duncan (pers. comm. 2002)
Fool’s Huckleberry (<i>Menziesia ferruginea</i>)	Mats	Branches	Ozette Prairies (Weissbach and Bivin 1997)		Densmore 1939:320
Giant Horsetail (<i>Equisetum telmateia</i> var. <i>braunii</i>)	Food, Medicine (fertile shoots only)	Bulbs and Young Fertile and Sterile Shoots	Ahlstrom’s Prairie (Bowcutt 2007)		Gill 2005:363; Gunther 1973:10
Pacific Crabapple (<i>Malus fusca</i>)	Food, Medicine	Fruit	Ahlstrom’s Prairie (Bowcutt 2007)		Gill 2005:390-391
Pearly-everlasting (<i>Anaphalis margaritacea</i>)	Massage to soften skin	Leaves	Ahlstrom’s Prairie (Gill 1984)		Densmore 1939:321

¹James Swan planted camas in garden beds on March 27, 1862, at Neah Village. He was served camas at three houses at the Ozette Village on October 22, 1863. He was served camas on July 30, 1864, at Ol’ George’s lodge.

Species	Uses	Plant Part	Location	Time of Year Harvested	Reference
Salmonberry (<i>Rubus spectabilis</i>)	Medicine, Food, Pipes	Bark Fruits and Sprouts Branches	Roose's Prairie (Weissbach and Bivin 1997)		Gill 1984
Sitka Spruce (<i>Picea sitch- ensis</i>)	Basketry Material	Roots	Ahlstrom's and Roose's Prairies (Bowcutt 2007)		Gill 2005:372-373; Gary Ray, Makah, pers. comm. 2006- 2007
Skunk cabbage (<i>Lysichitum americanus</i>)	Materials (drying salal berries and lining berry baskets with them)	Leaves	Ahlstrom's and Roose's Prairies (Bowcutt 2007)		Gunther 1973:22
Skunk cabbage (<i>Lysichitum americanus</i>)	Medicine (raw root chewed to induce abortion)	Roots			Gunther 1973:22
Skunk cabbage (<i>Lysichitum americanus</i>)	Medicine (boiled roots are drunk to purify the blood)	Roots			Gunther 1973:22
Skunk cabbage (<i>Lysichitum americanus</i>)	Medicine (warm the leaves and apply to the chest for pain)	Leaves			Gunther 1973:22
<i>Sphagnum</i> spp.	Camp Bed- ding, Medicine (for dressing wounds)	Whole Plant			Gunther 1973:50; Gill 2005:361
Springbank Clover (<i>Trifolium wormskjoldii</i>)	Food	Roots	On prairie north of trail (Buckingham 1976-77)		Gill 2005:396 ² ; Gun- ther 1973:38
Stinging Nettle (<i>Urtica dioica</i> ssp. <i>gracilis</i>)	Cordage, Food, Medicine	Stems Young Tops Roots & Stems	On prairie north of trail (Buckingham 1976-77)		Gill 2005:396 ² ; Gun- ther 1973:38

²Gill's Makah consultant said that her grandmother dug it at "the prairie" (Gill 2005:396).

Species	Uses	Plant Part	Location	Time of Year Harvested	Reference
Tiger Lily (<i>Lilium columbianum</i>)	Food	Bulbs	Roose's Prairie (Weissback and Bivin 1997)	Probably in late summer or fall	Gunther 1973:25; Yvonne Wilke, Makah, (pers. comm. 2002)
Unalaska Bunchberry (<i>Cornus unalaschensis</i>)	Food	Berries	Ahlstrom's Prairie, Allen's Prairie, and Manny's Prairie (Bowcutt 2007; Gill 1984)		Gill 2005:404; Gunther 1973:43
Water Sedge (<i>Carex aquatilis</i> var. <i>dives</i> formerly <i>C. sitchensis</i>)	Basketry Material	Leaves	In the woods between Ahlstrom's and Roose's Prairies (Buckingham 1976-77)		Underhill 1945:109
Western Redcedar (<i>Thuja plicata</i>)	Basketry Material and Cordage	Young Branches	Ahlstrom's and Roose's Prairies (Bowcutt 2007)		Gill 2005:369-371
Woodnymph (<i>Moneses uniflora</i> ssp. <i>reticulata</i> formerly <i>Pyrola uniflora</i>)	Medicine (decrease boils, drain abscesses)	Leaves	Ahlstrom's Prairie (Buckingham 1976-77; Gill 1984)		Gill 2005:408
Woodnymph (<i>Moneses uniflora</i> ssp. <i>reticulata</i> formerly <i>Pyrola uniflora</i>)	Medicine (for coughs)	Whole Plants	Ahlstrom's Prairie		Densmore 1939:313, 315



Figure 22. Leah Parker at her home on the Makah Reservation. Photograph by Kat Anderson, 2007.

few days after childbirth to bring back their strength (Gill 2005:411).

Various pieces of historical and interview evidence indicate berry gathering on the Ozette Prairies. Born July 1st, 1917, Leah Parker (Makah/Lummi, pers. comm. 2002) remembered how she and her mother (Bertha Smith) gathered cranberries on the wetlands when she was a girl of 12 (see Figure 22):

“They [cranberries] were gathered in November. She [my mother] would carry them in a bucket. We used to all have to pick berries so we would get quite a bit. We gathered them at Ts’oo-yuhs and Ozette Prairies. Those are the only two places that I know of. There used to be a lot of berries. We used to get ten-pound cans.”

Kate McCarty (pers. comm. 2002) remembered gathering the berries of the evergreen huckleberry in the ecotone areas of the Ozette Prairies with her Makah in-laws:

I know when we used to go down to Ozette [Prairies] on the trail, years ago before they put the boardwalk in there, when we would go down there we would pick, in the fall time, we would pick what they call Ozette berries. And they’re little, tiny, about the size of a match head, a little bigger. And they’re a tiny, tiny huckleberry. The last time I went to Ozette I didn’t see any of those plants—none. It grew under the trees and the berries were almost black.

According to Greg Colfax, Makah (pers. comm. 2003): “They are some of the most fabulous cranberries you’ll ever want to sink your teeth into. We’ve picked cranberries around Ozette—off the Ozette trail by Ahlstrom’s Prairie.”

Memories of picking bog cranberries at Ts’oo-yuhs Prairie are still fresh and some Makah still gather them there today:

When I was a kid, I went with my mother [Ruth Claplanhoo], aunt, and her children from the Ts’oo-yuhs River bridge to the cranberry bog and pick cranberries in September or October when they turned red. There were a couple of acres. They



Figure 23. Gary Ray, Makah, picking bog cranberries on Ts'oo-yuhs Prairie, late September 2009.

were small, but they were in abundance so it was enjoyable to pick them. We used watertight woven baskets to pick any berries. We ate them raw or canned them (Ed Claplanhoo, Makah, pers. comm. 2002).

“My grandma [Hazel Purcer Johnson] said it was time to pick cranberries out at Ts'oo-yuhs after the first frost. It was usually around the first of October. I love them and I add sugar and water and boil them down. Usually I keep mine in the freezer. I don't always cook all of them. I usually save them because I like to add them to breads. Sometimes I just like to eat them by themselves because they're so high in vitamin C and it's just a really good, healthful food for you. They used to take them and mash them with meat or dried fish and make little hard cakes for eating. You could naturally let them air dry if it's nice weather or put them in the oven at a low temperature if you don't have a food dehydrator” (Cathy Chamblin-Peterson,

Makah, pers. comm. 2006) (see Figure 24).

My mother used to pick cranberries and I went with her. She picked at the cranberry marsh near the logging road. I still gather cranberries today--especially for Thanksgiving and Christmas. I pick at Ts'oo-yuhs. They are eaten raw or cooked as a cranberry relish. If I hit it just right, I can get two gallons of cranberries. But I usually shoot for a gallon--because it's too much



Figure 24. Cathy Chamblin-Peterson, Makah. Photograph by Kat Anderson, 2007.

work picking them. I pick for one-half day and get tired. They are right on the moss. I kneel, sit, and lay down. I gather the berries at the end of September to November. Bears eat cranberries and maybe coyotes (Pat Boachup, Makah, pers. comm. 2002).

Ethnobotanist Steve Gill has established that both salal berries (2005:407) and bog blueberries (2005:411) were gathered on the Ozette Prairies; and Gary Ray (Makah, pers. comm. 2007) corroborates this fact for salal berries: “All of the Allabush [Makah] sisters—Isabel Ides, Ruth Claplanhoo, Lena McGee, and Margaret Irving gathered them [salal] at the Ozette Prairies.”

Indian tea (*Ledum groenlandicum*; also known as wild, Hudson Bay, swamp, Labrador, or cranberry tea) was gathered on the Ozette Prairies, where it grows in association with cranberries. A number of elders reported the former practice of gathering this plant on the wetlands. Yvonne Wilke (pers. comm. 2002), with agreement from her mother, Sadie Johnson, noted that “there is a prairie too where they could get tea at Ozette. They would gather



Figure 25. Indian tea (*Ledum groenlandicum*), also known as Labrador tea, was (and continues to be) an important medicinal plant of the wetlands. Ahlstrom’s Prairie. Photograph by Kat Anderson, 2007

in September.” Leah Parker (pers. comm. 2002) said, “I imagine my mother picked the tea leaves because she used to go and pick cranberries [there on the Ozette Prairies].” According to Kate McCarty (pers. comm. 2007), “My mother-in-law said that there’s some Indian tea on the prairies. She meant Ozette Prairies. When Spencer [her Makah husband] was alive, we went down to Ozette and he’d pick the tea. It was sometime between 1960 and 1969.” Gary Ray (pers. comm. 2006) reported that “Isabel Ides [Makah] gathered it there” and he says that the Indian tea plant is called “Ozette tea”—an allusion to both its use by the Ozette people and its harvest on the Ozette Prairies.

Continuing an ancient custom, the Makah still gather the leaves from the reservation, steep them and drink the resulting tea as a refreshing beverage (Anderson 2002-2007; Gill 1984). Pat Boachup (Makah, pers. comm. 2002) describes the gathering and use of this plant:

I still gather them [the leaves] every year. We pick off the leaves that have molded or spoiled. We collect the good leaves and put them in a warm place to dry. If the leaves stay in a plastic bag they will turn black. They are put in a paper bag next to a wood stove to dry. I take a handful of leaves—enough to cover the top of the pot—and put them in a pan or pot with water. Take a fork and push down the leaves. When it starts boiling turn it down and steam it for 15-20 minutes. When it turns a rich orange it's ready. If steamed too long, it turns dark. I drink it most of the time hot with sugar. I gather 4 or 5 grocery bags of dried leaves every year. You can pick it all year round, but I usually go in the fall—September and October. To gather the leaves, take one or two pulls and the leaves come off from each plant and I make sure I leave some leaves so as not to kill the plant.



Figure 26. Pat Boachup, Makah, picking Indian tea on Ts'oo-yuhs Prairie, late September 2009.

Edie Hottowe, Makah, recalls: “We would gather the Indian tea at Ts'oo-yuhs when we were out cranberry picking with my mother [Ada Thompson]. It grows along in the cranberry marsh. We went in the fall, usually after a cold spell because it seemed to turn the cranberries a real pretty red color. They're



Figure 27. Tommy Peterson, Makah, picking Indian tea on Ts'oo-yuhs Prairie.

more tart in flavor, but smaller than a domesticated cranberry. The tea grows right along with them. We gathered them in October and the early part of November. My mother canned everything because we didn't have freezers. It wasn't a great amount. If we got a gallon it was a lot” (pers. comm. 2002).

Cathy Chamblin-Peterson, Makah, says: “My gram [Hazel Purcer Johnson] and I used to pick Indian tea in September out at Ts'oo-yuhs. The

way I prepare it is sort it, taking out unwanted plants, and then I put it in brown paper sacks to let it dry. Then after it's dried totally, then I put them in plastic bags. I store the leaves in a dark, dry place where it doesn't get real hot or cold. It is brewed like loose leaf tea. You can drink it all day long and it's good for keeping you well. It's good for colds. It's getting harder to find healthier looking Indian tea. A lot of the plants have sparse leaves that are blemished with disease. They're not full and green like they used to be. The area out at Ts'oo-yuhs for our Indian tea and cranberries is the size of a football field" (pers. comm. 2006).

Tea made from the leaves of Indian tea was, and still is, considered a general health tonic. William Tyler (pers. comm. 2002) noted that Indian tea "was good for just about everything—for your lungs, for breathing and for colds" (see Figure 28).



Figure 28. William (Makah) and Klara (Nu-chah-nulth) Tyler. Photographer unknown, 2002.

Two "root" crops were dug on the Ozette Prairies: bracken fern rhizomes and the fleshy, thickened tubers of Vancouver groundcone (*Boschniakia hookeri*). Bracken fern rhizomes were dug with a digging stick, roasted in ashes, peeled, and the starchy center eaten (Gill 1984:50) (see Figure 29).

According to Ed Wilbur (pers. comm. 2008) the tubers of Vancouver

groundcone were dug by Helma Ward, Makah, and her family in August and September on the Ozette Prairies, and according to Helma "They used to be everywhere" (see Figure 30). Although camas may have grown on the Ozette Prairies in prehistoric times, as far as we know the Ozette did not gather the edible bulbs of this plant on any of the wetlands in their territory (Manny's Prairie might be an exception—see Table 5)—instead, they got their camas from the Quileute in exchange for dentalium shells (Curtis 1913:145).

The Makah harvested the leaves of *ca bup* (also known as slough sedge or basket sedge) (*Carex obnupta*) from the wetter parts of the Ozette Prairies for the horizontal strands in basketry. Cindy Lee Claplanhoo (Makah, pers. comm. 2002) described where it was located on the Ozette Prairies: "I remember the grass growing right before you get right into the marshes, and we used to gather that and let it dry." Gary Ray (Makah, pers. comm. 2006) also recalled basket sedge being gathered on two prairies: "You've got to go down south a little farther at Ozette [Prairies] and Quillayute [Prairie] to get the grass that they used for weaving."



Figure 29. Edie Hottowe, Makah, pointing out a traditional gathering site of bracken fern root on the Makah Reservation.

Contemporary weavers still gather basket sedge and remember harvesting it on the Ozette Prairies: "We gathered...*ca bup* [*Carex obnupta*] to weave with...at the Ozette Prairies," said Melissa Peterson



Figure 30. Cathy and Ed Wilbur. Photograph by Kat Anderson, 2007.

(Makah, pers. comm. 2003). "The leaves of *cabupt* are cut off at the base with a knife from July to October. I heard that the later you wait the tougher and thicker they are. You separate the leaves from the stalk, then take the backbone off, dry splitting with the thumb nail or needle."

Two other plant parts used for basketry and

similar applications were likely gathered at the edges of the Ozette Prairies: the roots of Sitka spruce trees and the limbs of young redcedars (Singh 1966:25-26; Olson 1936:83). Although spruce grows away from the wetlands as well as in wetland ecotones, at the wetland edge the roots were easier to dig, as related by Gary Ray (Makah, pers. comm. 2007): “on the edge of it [the prairie] there was easy digging. Their [spruce] roots are just right on the top. I learned this from Isabel Ides [Makah].” Cedar limbs were probably harvested at the prairie edges for similar reasons—they were more likely to be slender and supple.

Several other plants known to have been utilized by the Makah were likely to have been harvested on the Ozette Prairies. These include sphagnum moss (used for plugging and insulating the seams of lodges [Swan 1964:5]) and crabapples (the fruit was eaten and the bark was gathered to treat arthritis and stomach upset) (Cindy Lee Claplanhoo pers. comm. 2002) as well as others (see Tables 4 and 5).

The Ozette Prairies were also important places for hunting Roosevelt elk and black-tailed deer. As open environments, the wetlands supported the rich growth of good forage for these animals and were thus crucial for their survival in the area. At the same time, the Ozette people took advantage of the fact that elk and deer were attracted to the wetlands and could be more easily tracked, stalked, and killed there.

Several sources of information indicate that elk and deer were hunted in the region and on the Ozette Prairies during the 1800s and into the early 1900s. James Swan jotted in his diary between 1863 and 1864 that the Makah hunted elk in the hills in the back of Neah Bay, between Neah Bay and Clallam Bay, around Ozette Lake, and along the Tokwaxose River (Swan 1859-66). He spotted fourteen elk on Ts’oo-yuhs Prairie on July 21, 1864. When Erna Gunther interviewed the Makah in 1934, they said that elk were formerly plentiful in the Ts’oo-yuhs valley, Ozette country, and even came out to Cape Flattery. She recorded that elk hunting was particularly good in spring and fall (Gunther 1936). If hunters were very far from the village when they made their kills, they would stop and dry the meat, and this practice, she was told, was common in Ts’oo-yuhs and Ozette country (Gunther 1871-1981). Ninety-two year-old Leah Parker (Makah/Lummi pers. comm. 2007), old enough to have witnessed hunting on the wetlands before they became part of Olympic National Park, said her family “used to hunt deer on the Ozette Prairies.”



Figure 31. The flower spike of slough sedge (*Carex obnupta*) in Ahlstrom’s Prairie, Olympic National Park. Photograph by Kat Anderson, 2007.

Born on February 2, 1926, eighty-three-year-old Kate McCarty (pers. comm. 2007) who has lived on the Makah Reservation most of her life, said that she “learned from Hugh Smith [Makah] that the Makah used to hunt deer out at the Ozette Prairies.” Henson (1960) described the Makah practice of hunting elk and deer on the Ozette Prairies: “Indians, from the shelter of adjacent trees, could get close enough to the animals to kill them with bows and arrows.”

Gary Ray, Makah, (pers. comm. 2006) talks about the advantages of hunting on prairies, and specifically Ts’oo-yuhs and Ozette Prairies: “There’s deer, bear, and elk that graze in there [Ts’oo-yuhs Prairie]. The reason that it’s so good is because you can walk so quietly in there. You just wait for a certain wind and then you enter the bog, whatever bog you want to hike in opposite the direction of the wind. There was good visibility and you can get so close--you could almost jump on the backs of some of them. These



Figure 32. Gary Ray, Makah. Photograph by Kat Anderson, 2007

areas had to be maintained for hunting well back when all one had was a spear and bow and arrow. You can get that close to the deer when they’re chomping on those cranberries. Same way with the bears. Deer also eat the moss. I hunt there every year [Ts’oo-yuhs Prairie]. Just about fill our freezer up with all that we need. There was good deer hunting on Ozette Prairies. It was always a pretty sure thing--that you could get one there.”

Almost every part of the elk was used: elk skins were cut into strips for rope; elk horns were used for barbs on harpoons, and as points for fish spears; elk bones were used for chisels; tallow provided a face grease for prevention of chapping and sunburn and served as a base for paint; the meat and leg-bone marrow provided food (Gunther 1936:117).

The Makah valued black-tailed deer for their meat, which was cooked and eaten on the spot or dried. The hooves were turned into dance rattles; the horns into ceremonial items for dances; the deerskin slit for dance aprons decorated with dewclaws at the end of each strip (Gunther 1936:117). Deer hide was

used to make deer-hide floats, probably used in sea mammal hunting (James Wesseler pers. comm. 2003).

It is likely that the Ozette people hunted bears on the wetlands as well. We know that black bears were hunted by the Makah, that their skins were made into blankets and capes for whalers and others, that their claws were used to make necklaces worn by shamans, and that their meat was eaten both fresh and dried (Gunther 1936:114). As late as the early 1970s Makah children walking through the Ozette Prairies on their way to the Ozette archaeological digs were told by their elders to wear something that made noise to warn the bears because, as Gary Ray put it, “you seldom went through the prairies without seeing bears” (pers. comm. 2007).

Finally, the Ozette Prairies may have been a place where the people hunted waterfowl and other large birds. Erna Gunther recorded that the Makah hunted sandhill cranes “in the prairie” during the month of April. These birds were favored for their meat (Gunther 1936:108). Ducks and geese would have been attracted to the wetlands and were probably hunted there also.

Indian Management of the Ozette Prairies with Fire

Evidence for Indian burning of the Ozette Prairies comes from three sources: (1) Elizabeth Colson’s abstract field notes, (2) newspaper accounts, and (3) oral interviews of non-Indians from families with long-term histories on the Olympic Peninsula (see Appendices 3 and 4). Additionally, support for burning in western Olympic Peninsula wetlands in general comes from old General Land Office surveys and maps and oral interviews with Makah who remember the practice of burning on wetlands (Ts’ooyuhs Prairie) on the Makah Reservation (see Appendix 5).

Other possible lines of physical evidence are summarized that were taken from a natural history study conducted by Andy Bach and Dave Conca (2004).

Finally, wetlands ecologist Linda Kunze observed and recorded in her field notes that not only parts of the Ozette Prairies are former burns, but that this phenomenon exists on the Cape Alava Prairie (also called West Prairie), Sand Point Trail Prairie, Manny’s Prairie, and Allen’s Slough (Allen’s Prairie) (Kunze 1989) (see Appendix 1).

Anthropologist Elizabeth Colson, professor emerita, UC Berkeley, conducted field research with the Makah in the 1940s, lived with the Makah between November 1941 and December 1944, and published a book in 1953 entitled, *The Makah Indians: The Study of an Indian Tribe in Modern American Society*.

She arrived early enough on the Makah Reservation to find an individual that still had memory of burning on the Ozette Prairies. She interviewed Alice Kalappa (Makah) in the early 1940s about Ozette Settlements and Ms. Kalappa said: "They used to burn the berry grounds, after they had picked the berries. And the cranberry marsh, they would burn that to have a good marsh to keep the trees out. Now there are lots of trees on the marsh because nobody takes care of it anymore" (Colson 1941-1944).

In 1940, reporter Jack Henson interviewed Charles Keller, one of the early non-Indian settlers in the Ozette area. He reported that:

Explanations of small and large prairies in the peninsula area was given by Keller, who claims the clearings were made by Indian fires. The Indians burned off the timber so they could more readily kill the elk and deer by hiding in the timber along the edges of the clearing and shooting the animals with their short range bows and arrows. Each year for years the underbrush was burned over so that eventually there was a natural open meadow on which grass grew. There was no heavy underbrush or trees left in the tracts and the game congregated there to feed.

Keller had a long history in the Ozette area. In 1913 he moved out to West Clallam and until 1918 Keller logged, trapped, farmed and store clerked in the west end. He married Ida Nylund (whose family homesteaded the Ozette Lake area in 1889-1890) in 1919 and the young couple went over the trail to Ozette Lake in the fall of 1919 and lived on Umbrella Bay. In 1927 the Kellers built a tourist resort at Lake Ozette and operated it until 1945 (Henson n.d.).

Keller spent time interviewing Makah at the Makah Reservation about historical events and his consultants included Elliot Anderson. Elliot Anderson was the last Ozette Indian to live on the Ozette Indian Reservation and was still living there in 1937 (Macy 1937). He took Anderson on one or several field trips (Keller 1941). Superintendent Preston P. Macy wrote in a memorandum to the Director of the National Park Service dated May 27, 1941 of Keller's credentials: "Mr. Kellers [sic] having lived at Ozette the greater part of his life and Mrs. Kellers [sic] having been born there, and knowing all of the old time Indians, has made it possible to get information and acquire objects of interest that we otherwise could acquire only with the expenditure of funds. As has been stated in previous correspondence, the only Indian living, with rights on the Ozette Reservation, is well along in years and perhaps will last a comparatively short time. He and the other old timers of neighboring tribes have a store of knowledge which Mr. Keller is in position to acquire since he speaks their language and they have the confidence in him that is required for acquiring information."

Myra Vanderhoof is Charles Keller's daughter. In an article published in 1960 she substantiated her father's claims of Indian burning of Ahlstrom's Prairie. Myra Vanderhoof, as a descendant of Ozette

settlers, knew the area's geography and settlement history intimately (Magnusson 2000). Jacilee Wray conducted an interview with Myra in 1991 and she had this to say concerning Ahlstrom's and Roose's Prairies: "The Indians did burn it every year or so, to keep down the trees, and to keep it open for the deer, and also for the bracken fern, which was one of their staples." When asked who she learned this from, she said"that would have been dad [Charles Keller] telling me about those things."

One newspaper account published November 28, 1953 (Anonymous 1953) mentions Indian burning of the Ozette Prairies in general. Four separate newspaper articles published between 1946 and 1960



Figure 33. Hans Boe slash-burning at Royal. From the article "Ozette Story: Ole Boe describes first trip to Lake Ozette in 1890," Port Angeles Evening News, February 22, 1961. From the files of Brian Magnusson.

report Lars Ahlstrom saying that the Ozette Indians had burned specifically Ahlstrom's Prairie before his arrival (see Appendix 3). One of these articles states that Ahlstrom also burned the prairie (Bertelson 1948; Haugland 1946; Henson 1960; Vanderhoof 1960). Lars Ahlstrom was interviewed by reporter Henrietta Haugland in 1946, and again in 1948 by Ernest B. Bertelson. The two other articles published in 1960, were published after Lars Ahlstrom's death. The one by Jack Henson was based on several interviews conducted with Ahlstrom prior to his death. The article by Myra Vanderhoof, mentioned earlier, was according to her, based on "memory and family recollections, for Ahlstrom was neighbor to our family for more than 50 years."

Three non-Indians, and one Indian whose families settled in the area early—James Wessler, Bud Klock, Emil Person, and Bob Bowlby (Jamestown S'Klallam)—corroborated Lars Ahlstrom's testimony during interviews conducted between 2002 and 2007 (see Appendix 4).

General Land Office surveys conducted in the area at the end of the 1800s recorded land that had been recently burned. In the 1895 General Land Office survey notes for Township 31 North, Range 16 West, there are no indications of burns in Ahlstrom's and Roose's Prairies, but the main portion of Roose's

Prairie was not surveyed (see Table 6). While the word “burn” does not appear in Ozette wetlands, at the south end of Ahlstrom’s Prairie there are the words “clearing” and “slashing” next to M.J. Boyle’s name. Slash is the residue left after the clearing of woody plants. The piles are often burned called “slash/burning” (see Figure 33). The wetlands are outlined in a solid, shaded block, and the block contains numerous parallel lines indicating an opening of grass on the plat map (see Figure 34). The most interesting information to be revealed in the 1895 GLO survey is that M.J. Boyle who lived on, what became known as Ahlstrom’s Prairie, was identified as a Weberhard. Weberhard is an Ozette Indian family name. The survey notes entry between sections 25 and 26 at 20.00 chains is: “Set a stake, 7 ft. long, for a corner of lands claimed by M.J. Boyle a Weberhard (an Indian). Note. This is not the Charley Weberhard, who is recognized by the Department, as holding land claim, adjoining the Ozette Village.” The areas designated “burn” in these GLO surveys and plat maps included acreage in and around Manny’s Prairie, West Prairie, and Sand Pt. Prairie (see Figures 34, 35, and 36). We do not know whether these fires were set by Indians or by white settlers (Ahlstrom, Klock, and Person all confirmed that early settlers burned like the Indians did) but this is to some extent a moot point since the settlers, by their own accounts, were simply mimicking what the Indians had done, and, like the Indians, wanted to keep the wetlands open.

Makah tribal members interviewed between 2002 and 2007 claimed that in former times the wetlands were burned. When asked which wetlands were burned, they could remember only Ts’oo-yuhs Prairie, which is on the Makah Reservation and was more easily accessible to their ancestors in the late 1800s and early 1900s than the Ozette Prairies proper. Six Makah individuals—Pat Boachup, Greg Colfax, John Ides, Sadie Johnson, Melissa Peterson, and Gary Ray—along with Kate McCarty, a non-Indian married to a Makah man, were told by Makah elders that setting fires in Ts’oo-yuhs Prairie was a traditional practice to enhance bog cranberries and Indian tea, improve hunting, and to keep the forest from encroaching. Additionally, Helma Ward, a Makah elder interviewed by ethnobotanist Steven Gill (2005) in the early 1980s, said that the cranberry bogs at Ts’oo-yuhs were burned every ten years.

Table 6. 1895 General Land Office Survey of Township 31 North, Range 16 West Focusing on the Ozette Prairies

Wetland	Annotation
Ahlstrom’s Prairie is located in portions of sections 25, 26, and 36 of T31NR16W.	In the 1895 survey, while surveying the section line between sections 25 and 26, the surveyor notes that he enters marsh at 50.60 chains; at 62.80 chains he enters slashing; at 64.75 chains leaves the slashing and enters a clearing; at 65.30 chains he passes within a hundred feet of M.J. Boyle’s house; at 67.27 chains he leaves the clearing; and at 73.16 chains leaves marsh.
Roses Prairie is located in section 25 of T31NR16W.	The only survey done in this area was the south boundary of the Ozette Indian Reservation. The transit line for the boundary passed through the narrowest portion of the prairie complex and the only notations were entering marshy land at 15.25 chains and leaving marshy land at 29.90 chains.

31-16N-B

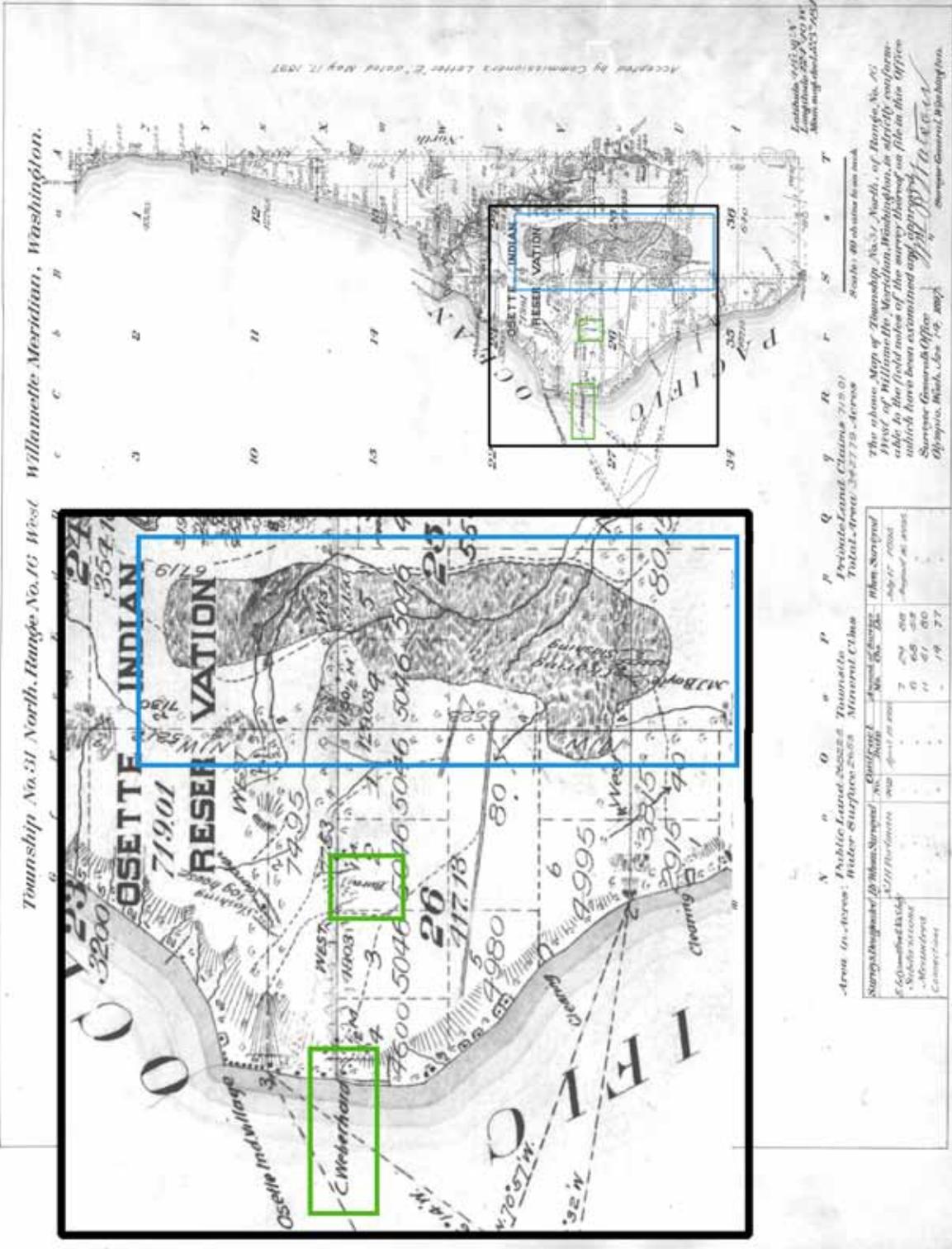


Figure 34. 1895 Plat Map. Township 31 North, of Range 16 West of Willamette Meridian, Washington, highlighting: (1) West Prairie burn in relation to Charlie Weberhard's (an Ozette Indian) residence (both outlined in green); and (2) M.J. Boyle's (an Ozette Indian) residence in the southern part of Ahlstrom's Prairie in relation to the Ozette Prairies as a whole (outlined in blue).

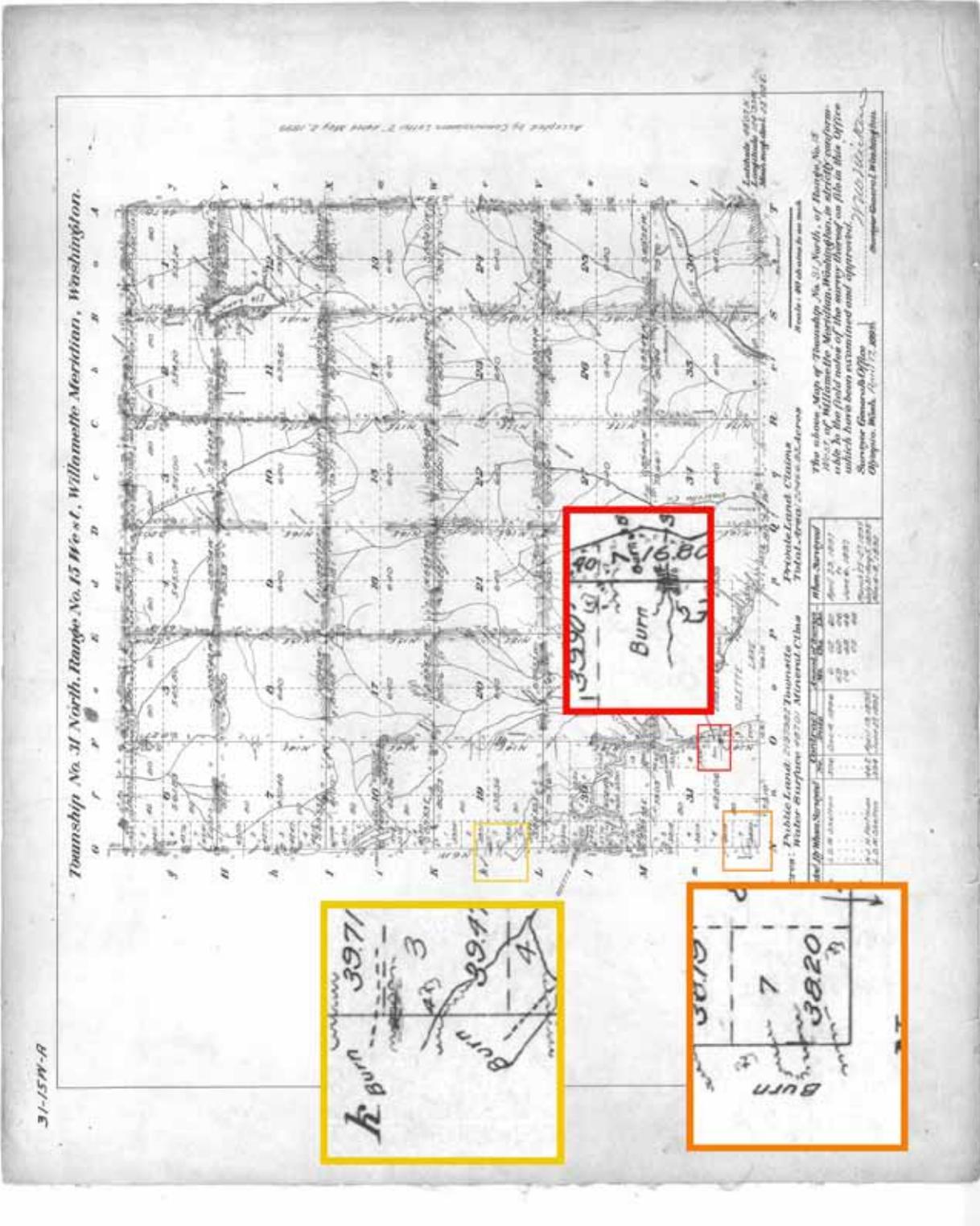


Figure 36. 1892-1897 Plat Map, Township 31 North, of Range 15 West of Willamette Meridian, Washington highlighting burned areas. Note the area burned (in yellow) is where Manny's Prairie is today. The area burned (in orange) is where Sand Point Prairie is today.



Figure 37. Bracken fern (*Pteridium aquilinum*) on Roose's Prairie #480. Photograph by Fred Sharpe, 2007.

Bracken fern grows throughout the Ozette Prairies, and its dead fronds burn readily enough to carry a fire and keep it burning over a large area (see Figure 37). Indeed, Lars Ahlstrom and Peter Roose were concerned enough about the fire danger posed by the previous year's dead bracken fronds that they would burn them off each year. Myra Vanderhoof (1960) remarked that, "such a practice was necessary as a means of fire-prevention, for the dead bracken became dangerous tinder after the first warm, sunny days of spring."

According to scientific studies, bracken fern is not only well adapted to fire, it promotes fire by producing a highly inflammable layer of dried fronds every fall (Agee 1993; Frye 1956; USDA Forest Service 1937). In the Pacific Northwest western bracken fern fronds grow to 7 feet, resulting in several tons of flashy fuel per acre (McCulloch 1942). Fuel loading in areas dominated by bracken fern can be quite high (McCulloch 1942; Agee and Huff 1987). Brown and Marsen (1976) have developed a formula to estimate fuel loading using the relationship between fuel loading and the ground cover and height of bracken fern (Crane 1990).

Other researchers have collected data showing that fire was used to expand the wetlands into the surrounding upland forests. Geographer Andrew Bach and archaeologist Dave Conca (2001) found that the soils of the transition areas between forest and peatland are modified forest spodosols rather than the mollisols more typical of grasslands or “prairies.” The modified spodosols indicate that fire was part of the soil forming or modification process in the wetlands. Bach and Conca (2004:10) conclude:

[T]hree soil types have been identified, two spodosols (forest soils) and a histosol (organic soil). Each soil type has distinctive soil properties, particularly the horizonation. Each soil strongly suggests a long history of different vegetative cover which produced the different soil types. The distribution of the soil types does not fully correspond with the current distribution of vegetation, suggesting that fire or other disturbances removed the forest cover from the perimeter of the prairie complex. This change in forest cover has altered the forest soils, resulting in depodzolization—the process of changing a spodosol into a different soil type.

Cultural Purposes for Burning

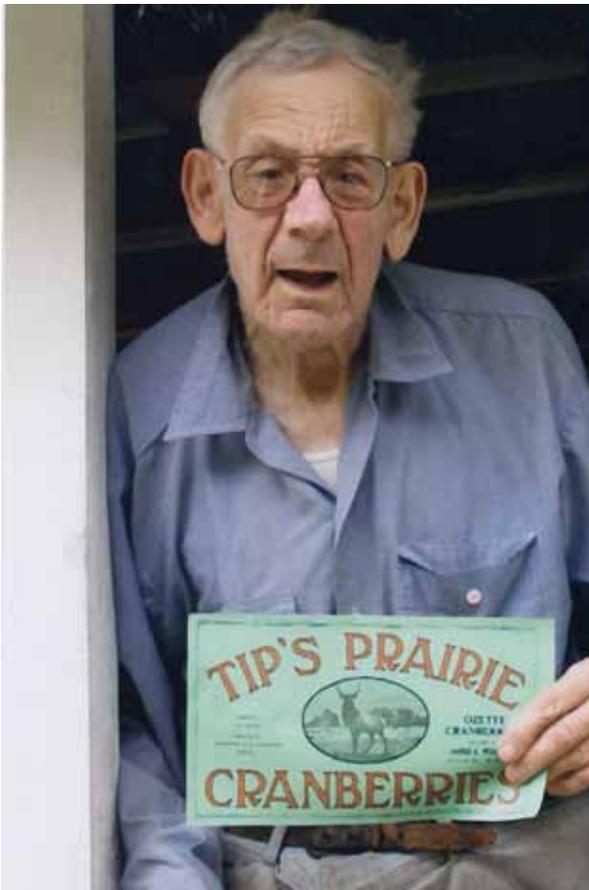


Figure 38. James Wesseler, a domesticated cranberry grower, on the Hoko-Ozette Rd., displaying the cranberry label designed by his father Isaac Tippecanoe Wesseler. Note the Roosevelt elk, a common visitor of both wild and domesticated cranberry bogs to partake in the fruits. Photograph taken by Kat Anderson, 2006.

To understand more fully how the Ozette people used fire to maintain the Ozette Prairies, it is necessary to examine their reasons for doing so.

Improve game habitat. Indian burning of the open habitat fostered three inter-related goals related to the hunting of game animals: it facilitated hunting by increasing visibility and access to animals; it lured the animals to the open areas to congregate by encouraging the growth of new lush vegetation; and it maximized the quality and quantity of food available to these animals.

James Wesseler, Bud Klock, Emil Person, and Bob Bowlby all recall that Indian burning enhanced hunting on the Ozette Prairies (see Appendix 4). James Wesseler’s father, Isaac Tippecanoe Wesseler, who homesteaded out along the Hoko-Ozette Road near Royal in 1902, told Jim: “The Indians used to burn off patches in



Figure 39. The home of Judge William Morton Bowlby (Bob Bowlby's paternal grandfather) on the Beach at Toleak Point 1938. From left to right: Lavin Coe (Quileute), Gene Jackson (Quileute), William H. Bowlby, Bob Bowlby (Jamestown S'Kallam), Chris Morgenroth II (Quileute), and Steve Penn (Quileute). Walter Jackson (Quileute) is in the doorway. William Morton Bowlby, photographer. Courtesy of Bob Bowlby.

the [Ozette] prairies. They would burn them off like that and then the grass would come up and the deer and elk would come in to feed and the Indians would hunt" (James Wesseler pers. comm. 2002) (see Figure 38).

Bob Bowlby (Jamestown S'Kallam) whose maternal and paternal grandparents homesteaded the western Olympic Peninsula very early said that

"Dad and grandfather knew the Quileute and Makah well. Both sets

of grandparents and both parents spoke Chinook jargon to the tribes" (pers. comm. 2009). Bowlby was born at Clallam Bay in 1926 and stated that, "My dad William Henderson Bowlby and my stepdad Clyde Maneval told of the Indians burning the prairies. The closest was Shuwah. No Beaver Prairie, then Shuwah, then Forks Prairie, then Quilleute Prairie, then Little Prairie. And those are the ones on that end in the eastern part. And then there was what we called Ahlstrom's Prairie up past Ozette Lake and Roose's Prairie. The Indians always waited until it was very dry before they burned so it would be probably a hot day in August [when they burned]. They burned once a year. When they started a fire it would burn everything that was there. And that was the object to burn everything that was there and keep the trees off of the prairie and around the edges so that the woods wouldn't creep in on the elk pasture. And of

course that would be the purpose of burning the prairie in the first place, so the animals--elk and deer--would have some grass to eat" (pers. comm. 2003).



Figure 40. Bud Klock, 1993. Photographer unknown. Courtesy of Vera Klock.

According to Bud Klock who has lived in Sekiu since 1928: "the Indians used to burn those [Ozette] prairies every year or every other year to keep all the brush down, to keep it open...because it was good hunting when everything was burned down. After they would burn those prairies everything

would come up in little green sprouts and that was real good feed for the deer and the elk" (Bud Klock pers. comm. 2002).

Emil Person (pers. comm. 2006) remembers his father (who moved the family to Royal in 1921) and other "old-timers" telling him how burning of the Ozette Prairies attracted game animals: "By burning it off, then the new foliage would come out and then the deer and the elk would come out there and probably bear too." According to Emil, the animals would feed on the swamp grass and the moss. "Then they [the Indians] had a good chance of getting animals because they could surround them and they couldn't get away. That's the way that they would get their meat."

Enhance productivity of below-ground food plants. Bracken fern rhizomes were a staple in the diet of all the tribes on the Olympic Peninsula, and we know that the Makah and the Ozette people gathered them as well. Bracken fern patches in the Ozette Prairies were burned and cultivated for edible rhizomes, as well as for fiddleheads for food and medicines and fronds for cleaning and serving fish.

According to Myra Vanderhoof (1960), enhancing the growth of bracken fern was one reason for burning Ahlstrom's Prairie: "The Indians burned it yearly to discourage further tree growth... to foster the growth of the bracken and the fruitfulness of the evergreen huckleberries, both of which were important items in their [the Indians'] diet."

In the mid 1950s archaeologists Stallard and Denman (1955-56) surveyed a large open space bordering the ocean, located at the foot of the trail which leads to the ocean from Allen's Bay. They found a cover of bracken fern which reached a height of seven feet. They correlated this archaeological site with field notes of Ram Raj Singh, who said that this clearing had been "maintained [by the Indians] to provide bracken fern as a source of food."

Bracken fern is common following fire, and in fact, repeated fires favor it (Page 1976; Tryon 1941; Agee and Huff 1987; Ingram 1931). Most sources agree that bracken fern's primary fire adaptation is its deeply buried rhizomes, which sprout vigorously following fires before most competing vegetation is established (Crane 1990; Skutch 1929). Rhizomes range in depth in the soil from 8 to 30 cm, but may be as deep as one meter (Crane 1990). Fire benefits bracken fern by eliminating competing plants while it sprouts profusely from surviving rhizomes (Page 1982). New sprouts are more vigorous following fire, and in the open habitats created by fire, western bracken fern becomes more fertile, producing far more spores than it does in the shade (Page 1982; Haeussler and Coates 1986).

Enhance productivity of above-ground food plants. Some Makah have distinct memories of Ts'oo-yuhs Prairie on the Makah reservation being burned specifically to enhance production of both Indian tea and the many types of berries that grow there (see Appendix 5). According to Melissa Peterson, Makah, “people who owned the marshes burned the marshes for the cranberry for the health of the plant to increase yield and also to keep other invasive plants from taking over” (pers. comm. 2007). Pat Boachup (Makah, pers. comm. 2002) agrees: “People burned in the cranberry marsh [Ts'oo-yuhs] to promote a better crop of cranberries and Indian tea.”



Figure 41. Kate McCarty. Photograph by Kat Anderson, 2007.

Kate McCarty, a non-Indian woman married for many years to a Makah man, further discusses the importance of fire to the growth and well-being of beverage and food plants (see Figure 41):

There have been a number of people here that talked about burning the Ts'oo-yuhs Prairie at the cranberry marsh so that the trees

wouldn't come — my father-in-law Jerry McCarty and Minerva Claplanhoo. The Labrador tea can just keep growing and growing and growing until it gets real leggy. And all that you have is just a few little leaves on top. But after it's been burned then it starts all over again. Its just like pinching flowers off of the chrysanthemum to make them bush out. And the little cranberry plant — it seemed like when they would burn them, they would just burn the top part of the sphagnum moss and not down where the roots are. After a fire it seemed like there were more and then they would get less and less (pers. comm. 2002).

Greg Colfax, Makah, learned about burning of cranberry bogs in Ts'oo-yuhs Prairie from his dad Lloyd Colfax:

My dad mentioned that the [Ts'oo-yuhs] prairie was burned yearly or whenever it was necessary. When the cranberry bogs would get so overgrown then the folks knew that it was time to do it.... What I was told is that it just gets overgrown and you've got few berries. And so you've got to burn it to burn down all the other kinds of vegetation and plant life that chokes off the cranberries. Once you do that then they've got room to do what they have to do. It [the fire] releases other kinds of fertilizers and

nutrients. And it does something to create the balance to give you a big harvest of cranberries (pers. comm. 2003).

Sadie Johnson, Makah, learned about burning Ts'oo-yuhs Prairie from both sets of grand-



Figure 42. Sadie Johnson, Makah, on the left, with her daughter Yvonne Wilke, and grandson Corbett. Photograph by Kat Anderson, 2007.

parents, all of whom once lived in the Ozette village (see Figure 42): “There was burning of the land—only the cranberry marsh. There was talk about that when I was young. I remember them talking about it so that the cranberries and the Indian tea would grow, you know, grow right” (pers. comm. 2002).

Gary Ray, Makah, (pers. comm. 2007) learned from Lewis Trettivick that “the Makah used to burn the Ts'oo-yuhs bog to make the cranberries better.” Trettivick was married to a Makah woman for many years.

The Ozette Prairies were also burned to enhance the growth of cranberries, just as Ts'oo-yuhs Prairie was. Both wetland areas have tree encroachment problems and both sites have bogs that contain cranberries and Indian tea. Anthropologist Elizabeth Colson (1941-1944) interviewed Alice Kalappa (Makah) in the early 1940s about Ozette Settlements and she remembered former burning (see quote in appendix 3).

Eighty-five-year-old John H. Ides (Makah) reflected on this notion:

“I imagine that they might have had the same thing there at Ozette. Because Ozette is similar to what the Ts'oo-yuhs Valley is. If Ozette [Prairies] had some [cranberries] it would be the same procedures of growing.... My father [Perry Ides] said that a long time ago that they used to burn the cranberries for harvest. They would burn portions of it too, you know, lay hay on there I guess and then burn the cranberries. And they said that kept cranberries going.... When they burned they burned the whole bog. It was an ancient method of rejuvenating the earth” (Ides pers. comm. 2006).

We do have some evidence that the Ozette Prairies were burned for another kind of berry. In a newspaper article published in 1960, Myra Vanderhoof (1960) wrote that the Indians burned the Ozette Prairies to encourage the growth of evergreen huckleberries.

Keep the wetlands open. Native people on the Olympic Peninsula valued wetlands specifically for their open, treeless nature. As open habitats, wetlands served as corridors for easy travel, offered sites for temporary camps, and created landscape diversity in a land otherwise swathed in forest. The Makah were well aware that these environments would disappear unless they were burned, and consultants have often couched the reasons for burning in terms of maintaining the openness of wetlands.

According to Emil Person (pers. comm. 2006), “another reason that they [the Makah] burned it [the Ozette Prairies] was to keep the brush from closing in too fast.” Speaking of Ts’oo-yuhs Prairie, Pat Boachup (Makah, pers. comm. 2002) said: “Another reason to burn was to keep the brush and trees from growing. Otherwise it would be a loss. The marsh behind the school, unless someone burns it, it will be history. It is being encroached by trees and shrubs. Unless they’re cut down and burned, they’ll eventually take over the cranberry marsh just like at Ozette.”

The white settlers who homesteaded on the western Olympic Peninsula understood immediately the value of wetlands as open habitats, and the wetlands were always the places they chose to settle. When they became the land’s owners, Lars Ahlstrom and Peter Roose continued burning off the wetlands in order to keep the forest from reclaiming the open land (see Appendix 3).

Although we have a fairly good idea of why the Ozette people burned the wetlands, we do not know very much about *how* they did so—how frequently they burned, the time of year they chose, or how they realized the different cultural goals of burning. We don’t know if parts of a wetland were



Figure 43. John H. Ides, Makah, and his wife Junette. Photograph by Kat Anderson, 2007.

burned one way and others a different way. Knowledge of the specifics of burning is not lacking entirely, however. There are good bases for making some general conclusions and well-founded speculations.

During what season did the Ozette people burn the wetlands? The possibilities narrow down to summer and fall, because these seasons offer times when drier and warmer weather leaves the vegetation dry enough to burn. Although some sources (Emil Person, for example) mention summertime burning (June and July), the bulk of the evidence points to fall as the season for bringing fire to the wetlands.

According to fire ecologist James Agee (pers. comm. 2009):

July and August are the highest months for lightning ignitions. This is not suggestive that native burning necessarily followed the same pattern. The lightning ignitions are forest-related and focus on moisture content of fine dead fuels, while the prairie fires would have depended on partially cured herbaceous fuels, which likely occurred later than July and August, and the cultural advantage of burning after berry harvest. Clearly, east winds, which occur at higher frequency in summer and fall, and carry lower humidity (and sometimes higher velocity) would have been favored times to burn, and even after September rains an east wind can dry fine fuels in a day or less. They normally occurred over 3-day periods, which gave natives the opportunity for short-term planning.

The Makah name for the fall season is *qw!aya'tex*, a word that means “hard” or “tough,” but which can be translated to mean “dried-up time” when used in a seasonal context (Waterman 1920:46 vol I.). This conception of the autumn suggests that the Makah thought of it as the time when the vegetation was at its driest and thus best able to carry a fire. Bud Klock stated that he believed September and October were the months that the Indians burned the wetlands, and according to several sources this was also the time of year that Pete Roose did his burning of the wetland (James Wessler and Bud Klock pers. comm. 2003). It is reasonable to assume that Roose was following what he knew the Indians had done.

In the historical literature, Albert Reagan (1908:148–149) mentions that the Olympic tribes burned the bracken fern in the fall to enhance its growth in the spring. In reference to Ts'oo-yuhs Prairie, two Makah informants mentioned the fall (September and October) as the time when the wetland was set fire, and another informant, John H. Ides, says the burning occurred when the cranberries were picked—which corresponds to early fall as well.

Sources vary considerably as to the frequency of burning on the Ozette Prairies. Four sources (two newspaper accounts, and the testimony of Emil Person, and Bob Bowlby) say that burning in the Ozette Prairies took place every year. Bud Klock stated every one to three years. With regard to Ts'oo-yuhs Prairie, Kate McCarty said that burning did not take place every year. Greg Colfax said that burning

happened “yearly or whenever it was necessary.” John H. Ides stated every one to five years. Gill (1984:5), who interviewed Makah elder Helma Ward in the 1980s, reported that “[f]ormerly the cranberry marsh at Tsues [Ts’oo-yuhs] was burned every ten years or so to maintain cranberry production.”

A reasonable way to interpret these varying frequencies is that they are referring to different localities or goals and may therefore all be accurate. Annual burning, for example, would not make sense for patches of berries. Scientific studies confirm that berry production in salal and various species of western huckleberries is generally delayed for at least three to five years after fire (Martin 1979; Nancy Turner pers. comm. 2007), which points to an ideal burning frequency of once every 5 to 10 years for berry patches. On the other side of the scale, more frequent burning may well have been necessary for inhibiting tree encroachment at the periphery of the wetlands or for greening up the forage for Roosevelt elk, black-tail deer, and black bears in certain areas. It is quite plausible, then, that different parts of the Ozette Prairies experienced different fire-return intervals, varying from once a year to once every 10 years. In this

regard, the following observation by Emil Person seems germane:

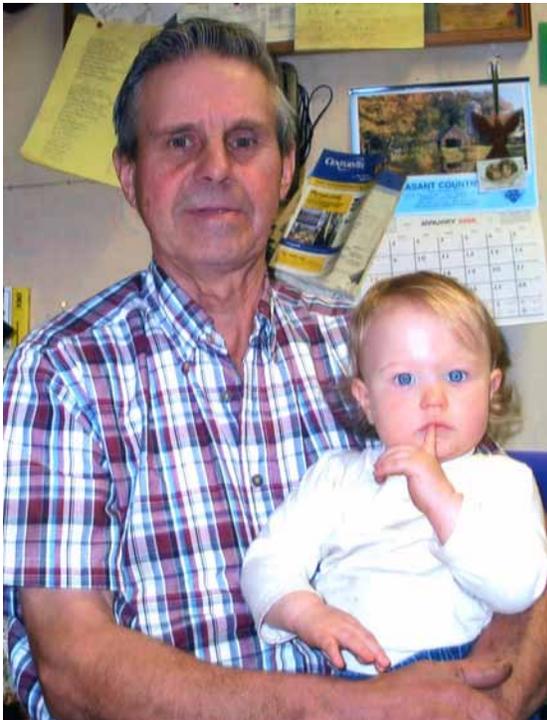


Figure 44. Emil Person with his granddaughter. Photograph by Kat Anderson, 2007.

“The Indians probably burned portions each year. I don’t think that they burned the whole prairie each year. I think that they burned every year, but they always burned small areas. If you burned the whole thing off then you wouldn’t have any area for the deer to come back or the elk to come back to because it would be all black. If you burned small areas off you would still have the areas where the deer could have food and you could still get them” (pers. comm. 2006).

Limitations of the Interview Data

None of the consultants interviewed witnessed burning firsthand through direct observation in the Ozette Prairies and therefore, their knowledge is secondhand. People do not remember everything accurately and this could lead to error in interpretation. If one person said their relatives or the Indians burned in coastal wetlands we would probably have some doubt. But, as person after person (both

Indians and non-Indians) comes forward with similar stories and not just in this area, but on Ts'oo-yuhs Prairie too, there comes a point when we can not ignore it anymore.

Another limitation is that none of the Makah consultants interviewed for this report remembered burning on the Ozette Prairies, only burning on Ts'oo-yuhs Prairie. This is probably due to the different fates experienced by the Makah of Neah Bay and the other nearby villages, versus the Makah people of the Ozette Village. The Makah have maintained cultural traditions, uninterrupted, for the length of time they have inhabited the northwestern tip of the Olympic Peninsula at Neah Bay. The fact that the Makah Reservation was established to encompass four of their pre-European contact villages, has helped ensure cultural continuity. Thus, the passing down of certain customs and oral traditions were not broken. On the other hand, the Makah at the Ozette Village, were not so fortunate, and while a reservation, the Ozette Reservation, was established in their traditional territory, the people were forced to relocate early-on and did not have continuous ties with their Village and the Ozette Prairies through to the present day. Their interactions with the Ozette Prairies were by-and-large severed over 100 years ago.

The veracity of these oral accounts is strengthened through the process of cross-referencing the information with other kinds of evidence (Anderson 1996). The newspaper article testimony from Lars Ahlstrom, himself, who lived on the Ozette Prairie that was named after him, corroborates what four non-Indians, Charles Keller, Emil Person, Bud Klock, James Wesseler, and one Native American Bob Bowlby (Jamestown S'Klallam), all long-time residents of the area are saying (see Appendices 3 and 4). Consistency of the information between regions also substantiates oral accounts. Makah consultants from the Makah Reservation that were interviewed for this report were raised by parents and grandparents who had witnessed burning firsthand on the Makah Reservation, specifically on Ts'oo-yuhs Prairie and this knowledge was transmitted through oral tradition. Thus, there is consistency in information on burning gathered for the Ozette Prairies and the Ts'oo-yuhs Prairie. This is important information because some of the same culturally significant plant species occur on both Ts'oo-yuhs and the Ozette Prairies and are not found readily outside wetlands in Olympic rain forests, but rather restricted to open swamps and bogs. Bog cranberries, for example, were gathered on both the Ozette Prairies and Ts'oo-yuhs Prairie. A month in the Makah calendar is named in their honor, suggesting the prominent place they held in the Makah diet (see Table 2).

While Indian burning at Ts'oo-yuhs Prairie does not automatically mean that the Ozette Prairies were burned as well, the fact that the same culturally significant plants occur on both sites, both wetlands are experiencing encroachment by conifers, and knowing of the significance of this habitat type to the Makah for useful plant resources, points to the likelihood that both wetlands were burned for similar reasons. Soil studies should be undertaken to characterize both sites with regard to a variety of factors

such as parent material, land form, hydrology, aspect, landscape position, plant species, and soil function to make more concrete comparisons of the two wetlands.

Discussion

It is important to explore alternative explanations for the persistence of the Ozette Prairies. Lightning fires might have kept them open. However, natural fire in the form of lightning is very rare in coastal coniferous forests of the Pacific Northwest (Gavin et al. 2003; Henderson et al. 1989; Lertzman et al. 2002), so it is most likely not responsible for keeping lowland openings free of trees such as the Ozette Prairies. Forests of western redcedar, sitka spruce, and western hemlock burn on average, once every 937 years and the fires tend to be stand-replacing events (Agee 1993). Most of the lightning fires in Olympic National Park between 1916 and 1975 occurred in the northeasterly half of the Park and most above 1220 m elevation (Pickford et al. 1980). Ecologist Jan Henderson and colleagues (et al. 1989: 38) state that “In zones 0-3 [which includes the Sitka Spruce Zone in which the Ozette Prairies lie] there were very few fires of appreciable size in the last 700 years. Those that have been recognized occur along southerly aspects mostly at mid-elevations (the thermal belt) and rarely exceed 1000 acres in size.”

There are a number of other possible explanations for the persistence of the Ozette Prairies without tree encroachment until relatively recently. Wind is a major disturbance factor in this area (Agee 1994; Henderson et al. 1989). Yet, “wind disturbance does not eliminate tree regeneration and tree blow downs that periodically occur, return to forest rapidly” (David Peter pers. comm. 2009). According to fire ecologist James Agee (1993:193), while openings in the forest are created through wind disturbance, these areas provide “both a gap suitable for regeneration and a substrate for tree establishment.” “With the exception of anthropologically maintained openings, some wetlands, rocky areas, alpine areas, and highly eroded areas (beaches, sea cliffs, river bars, etc.) forest rapidly grows almost everywhere on the western Olympic Peninsula” (David Peter pers. comm. 2009).

Smaller-scale perturbations that are connected with heavy rainfall include avalanches, slope failures, soil creep, and scouring of riverbanks (Jenkins et al. 2002), but these are more expected at higher elevations, along streams, or on lands with steeper gradients, not in slight depressions in lowland flats-- such as the Ozette Prairies. Insects and pathogens cause tree mortality on the wetter side of the Peninsula, but their effects are local, not widespread (Henderson et al. 1989).

Another possible explanation is the presence of infertile soils with poor drainage that create conditions that favor an herbaceous and shrub vegetation that is adapted for life in saturated soil conditions

(Kulzer et al. 2001). Bogs dominated by Sphagnum, along with fen plants such as sedges (*Carex* spp.) and white beakrush (*Rhynchospora alba*) would be capable of keeping these wetlands open for millennia (Richard Hebda pers. comm. 2009). Thus, the recent encroachment of the area with conifers could be due to changes in groundwater levels and alteration of surface water hydrology with the construction of structures, fences, trails, and plowing the land under the tenure of Lars Ahlstrom and Peter Roose. According to Hebda (pers. comm. 2009), "We suspect that a water table decline of 10-20 cm over several decades would be more than enough to cause succession in wetlands." Further soil studies are needed to evaluate this hypothesis. According to David Imper (pers. comm. 2009), "Unless drainage channels were built, these developments are very unlikely to change the hydrology."

David Peter (pers. comm. 2009) points out that, "Encroachment of trees onto the Ozette Prairies also might cause a drop in the water table as trees increasingly transpire soil water." Imper (pers. comm. 2009) explains: "As encroachment begins from islands in the wetland and around the edges, the increase in transpiration, accumulation of litter and root mass increase radially, exponentially. Even at a low stocking rate initially at say six inch radial growth per year, can fully close a site in not many years (twenty to fifty years)."

The Ozette Prairies include wetland areas that might not forest over (Kunze 1989), but they also contain wetland and non-wetland areas that almost certainly will grow up into forest and they are (R. Pyle and T. Pyle 2000; observation of the author). The non-wetland open areas at Ozette are probably old and would have been expected to be forested. So why aren't they? One explanation might be that Roosevelt elk grazed and browsed the open wetlands and ecotones, favoring this vegetation, and this disturbance was frequent and extensive enough to keep the Ozette Prairies and other wetlands open, restricting or slowing the invasion of woody species (Moral 1985; Skinner 1934). Exclosure studies in the Olympic rain forest show that cervid herbivory is significant in structuring forest understories. Herbivory decreases tree, shrub, and fern cover and increases grass cover (Woodward et al. 1994; Schreiner et al. 1996.) Additionally, the grazing of large flocks of geese and other waterfowl, may have had a lesser role in keeping the Ozette Prairies open. David Peter (pers. comm. 2009) argues that "Perhaps this would work if there was already an opening--but then how did that opening form? If there was not already an opening, ungulate browse might alter the understory, but leave the overstory more or less intact." Furthermore, when the natural predators were in place on the Olympic Peninsula, particularly gray wolves (*Canis lupus*), the elk probably frequented openings for shorter periods of time, moving more often because their natural predators would keep them moving.

This earlier grazing regime may have been altered with overharvest by non-Indians visiting and/or settling on the Olympic Peninsula, reducing herd size, and thus leading to a respite--enabling conifers

to advance onto the Ozette Prairies. In a newspaper article published February 15, 1940, Jack Henson reported: that “Keller said that from the best information he can gather, at one time there were many hundreds of elk around the [Ozette] lake. There were so many that instead of the dense underbrush that is there now the vegetation had been browsed down like it is on the upper Hoh river. About fifty years ago [circa 1890] hide and teeth hunters entered the district and killed the animals off. The hides were shipped out of the country by sailing schooners from a trading post at the mouth of the Ozette river. The hides were sent to the market to be tanned for leather. The animals were slaughtered like the buffalo of the plains. To prove this contention Keller said that the late Walter Ferguson, who half a century ago operated a trading post at the mouth of the Ozette river, told him he saw a band of 250 elk in Swan Bay, Lake Ozette, one day and killed 70 of them that day. Early in the nineties there was a large influx of homesteaders into the area and they also killed many of the elk for food and for the hides.”

Another explanation might be that the climate is changing becoming warmer and drier over the last century due to anthropogenic greenhouse gases. Geographer Cathy Whitlock (pers. comm. 2009) says, “Climate change may have provided the backdrop that enable colonization and rapid growth of seedlings in the absence of anthropogenic fires.” Studies are needed to document changes in temperature and precipitation over the last one hundred years.

Indian Use and Burning of the Ozette Prairies

A large section of the report was devoted to documenting the Makah historical use of the Ozette Prairies. It is significant that the Ozette, Ts’oo-yuhs, and Wuh-uhch’ wetlands are all situated at or near Makah village sites. These findings are corroborated by the documentation of the cultural importance and key locations of other prairies and wetlands to other tribes on the western Olympic Peninsula such as the Quileute (Powell 2002) (see Appendix 6). Furthermore, the Makah have access to large bays (Neah and Mukkaw Bay) and the Ozette river with its abundant marine and fresh water resources. Although considerable evidence for use has been assembled, there are large gaps in our knowledge of the cultural significance of the Ozette Prairies to the indigenous people. We are at a disadvantage because the Ozette people were forced to move so early from their homeland and relocate to the Makah Reservation or other areas. Furthermore, no archaeology has been done on the Ozette Prairies or other wetlands within the Ozette traditional territory (Dave Conca pers. comm. 2007). Without this work, it has not been possible to assemble a complete regional picture of how the Ozette Prairies fit into the annual resource utilization scheme of the Ozette people.

Critics of the scenario that Indians burned the wetlands often claim that the wetlands were too wet to be easily ignited or to carry a fire. But the Makah had the capability to fell individual conifers with

fire and had the technology to overcome the ignition problem, and in the right kind of weather the vegetation itself would have taken care of the carrying problem (see sidebar below). All tribes on the Olympic Peninsula had knowledge of pitchwood, resin-rich wood that was effective kindling for starting fires and which could be used to make torches for keeping fires burning, even in wet weather.

Felling Trees and Pitchwood

The Indians had the capability to fell trees with fire, and large cedars felled in this manner by the Indians were often made into canoes. Their unique method of felling trees was through burning a cut with hot coals (Magnusson 2000). Immigrants at Ozette Lake and surrounding area followed the Indian method of felling trees. Anders Nylund, of Finnish descent, for example, who came to the Ozette area in 1890, cleared 15 acres by cutting holes at the tree base and dropping in live coals. Bellows were used to keep the fire burning long enough to fall the tree. Nylund planted a fruit orchard, berries, and a big vegetable garden on the cleared land (Petroff 1981). Magnusson (2000:14) refers to the technique of felling trees with fire by both Ozette Indians and Scandinavians as “slash/burning.” According to Magnusson (2000:15) while “the tradition of clearing forest through slash/burning was an ancient practice in Northern Europe, which is commonly referred to as svedjebruk... there do not seem to be any Scandinavian precedents for felling trees through burning a cut (with hot coals) as was done by Native-Americans in the Pacific Northwest” pointing to their adoption of this technique from the Ozette Indians.

The Makah knew the properties of all the woods of their territory and described the fuelwood properties given to spruce trees in their mythology: “To one they said, you are old, and your heart is dry, you will make good kindling wood, for your grease has turned hard and will make pitch (kluk-ait-a-biss), your name is Do-ho-bupt, and you shall be the spruce tree, which when it grows old will always make dry wood” (Swan 1964:65).

Spruce pitchwood provided light for ceremonies conducted in lodges, was used for duck hunting at night, and could be used as a weapon in warfare (Swan 1964:67). Swan describes its use in hunting sea fowl on foggy nights: “A fire of pitch-wood is built on a platform at one end of the canoe, and by the glare of its light, which seems to blind or attract the birds, the Indian is enabled to get into the midst of a flock, and spear them at his leisure” (Swan 1964:25). On September 19, 1861, James Swan relays the use of such pitchwood to light Makah war canoes at night and to be used to set fire to the houses of the Elwhas as part of their plan to destroy the village: “Each canoe contained a number of torches made of fagots of pitchwood, split fine and tied to poles four to five feet long.”

The Makah were so skilled at making and using fire that they used spruce pitchwood in hair seal hunting in pre-contact times, as Maria Parker Pascua (1991:48) vividly describes: “Hair seals live in caves

near Ozette; their meat and oil are excellent. A canoe would be dashed in these surf-charged caves, so hunters must swim in. To light the way, they twist their long hair into a topknot and insert spruce sticks, which they ignite like candles with a glowing coal carried in a hinged shell. The light blinds the seals as the hunters climb up the rocky perches and strike them with clubs carved in their image.”

It has already been suggested that the kind of burning practiced by the Ozette people did not have adverse effects on many plant species and, in fact, promoted their productivity. Many wetland plants, for example, have deep rhizomes that are not damaged by low-intensity fires and resprout vigorously after above-ground portions of the plant are burned. This is particularly true for bog cranberries, a plant the Ozette targeted in their burning of the wetlands (Matthews 1992b; Flinn and Wein 1977). After a fire, bog cranberries utilize the nutrients in ash, contributing to their rapid growth. Experiments show that bog cranberry becomes more abundant in terms of numbers of stems, flowers, and fruits with repeated fires (Flinn 1980; Flinn and Wein 1977).

Indian tea is similarly tolerant of fire. It responds to light fires by resprouting from stems. If completely top-killed, the plant regenerates from root crowns and rhizomes (Gucker 2006; Calmes and Zasada 1982; Parminter 1984). Regeneration is typically rapid (Scotter 1972). Indian tea can survive even severe fires because the rhizomes lie as deep as 50 cm in the soil (Flinn and Wein 1977; Flinn 1980).

Conclusions

1. Anthropologist Colson’s unpublished field notes, findings from Native American interviews conducted between 2002 and 2007, the historic literature on the Makah, and newspaper articles support the conclusion of historical subsistence use of the Ozette Prairies by the Makah.
2. Historical and physical evidence suggest that the Ozette people burned the Ozette Prairies periodically. Looking at all the lines of evidence together, it is difficult to avoid the conclusion that fire was indeed wielded as a management tool on the wetlands to prevent the encroachment of trees, encourage the growth of useful plants, and maintain the wetlands as desirable habitat for large mammals. The Ozette people valued the wetlands highly and knew that they had to be cared for if they were to continue serving as an important foundation of the people’s economy and culture.
3. The Ozette Prairies are probably of natural origin determined by topography, soils, and climate, maintained by aboriginal burning and to some extent elk grazing.

4. The areas surrounding the true wetlands likely were created by Indian burning-- expanding the size of the Ozette Prairies. With repeat fire, the clearings eventually went beyond the saturated conditions to include surrounding upland soils--the areas where the trees are actively invading today. These openings were probably kept open with the non-Indian ranching and burning activities of Lars Ahlstrom and Peter Roose.

5. The Ozette Prairies are a product of both natural and cultural forces. Non-anthropogenic and anthropogenic factors have been at work during the Holocene to give us the high biodiversity found there today. The Ozette Prairies best fit the National Park Service category of *ethnographic landscape*, which is defined as “a site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it” (National Park Service 2001).

Management Options for the Ozette Prairies

There are a variety of options for the management of the Ozette Prairies such as mechanical tree removal, the reintroduction of fire, and a hands-off approach—letting nature take its course. What is needed is an accounting of all of the available management options and the weighing of environmental, cultural, and economic advantages and disadvantages for each option. Additional scientific research will be required.

This section discusses the upsides and downsides of one of these options—to reintroduce burning to control the encroachment of woody vegetation. Reintroducing burning is complex and controversial. While Indian burning may have enhanced culturally significant plant species in the past such as bog cranberry and Indian tea and these plants can survive low to moderate intensity burns (<http://www.fs.fed.us/database/feis>), it is unknown how the reintroduction of burning may affect Plant Species of Concern listed in this report—given the current climate, recent land use history, and the presence of non-native plant species. The presence of non-native plants in the current vegetation is a major consideration to park managers when planning fire prescriptions. The presence of invasive plants may change the dynamics of the vegetation that develops after burning and in some cases may increase the invasion of alien plant species (Graber 2003). The use of prescribed fire is also restricted by air quality regulations and atmospheric and fuel conditions (Larry Nickey pers. comm. 2009; Graber 2003).

Botanists, ecologists, and geographers have argued that if modern climate change is leading to a warmer/drier climate, then these wetlands may experience altered hydroperiods that are unable to

support their existing flora or parts of it (Clayton Antieau pers. comm. 2009; Graber 2003; Whitlock 1992). Ecologist David Graber (2003:264) says that “moreover, applications of previously benign or positive management practices, such as the relatively light and local burning programs Native Americans practiced for many years...now may produce undesirable, less ‘natural’ outcomes, or may simply be inadequate to mitigate anthropogenic stressors.”

It is unknown how the Makah copper and the Ozette skipper may respond to fire. The ecological literature demonstrates that using fire to maintain prairie and wetland habitat for rare and endangered butterflies can be either beneficial or detrimental to the populations of the insects (Black et al. 2009; Swengel 1996; Schultz and Crone 1998; Panzer 2002). We don’t know enough about these particular butterflies, however, to assign them to either category.

Butterfly expert Robert Michael Pyle is against the reintroduction of fire in the Ozette Prairies, but he recognizes the importance of open habitat for the welfare of the butterflies and recommends mechanical removal of the trees:

Although major fire scars on the south sides of the large ‘cypress-like’ hemlocks in S. Ahlstrom’s Prairie show that fire has been an ecological feature of the area, we recommend against employing fire to reduce biomass on the Ozette Prairies. A large body of evidence is building that indicates fire is hostile to butterfly populations unless a large area of adjacent habitat remains unburned to permit refuge and recolonization. The gentian, the violets, the copper, the skippers, and their host plants, bog cranberry and grasses, will all be better served through small tree cutting than by fire, which could extirpate them. On the other hand, fire at Roose’s homestead appears to represent no threat, unless it escapes onto Roose’s Bog (R. Pyle and T. Pyle 2000).

Fire ecologist James Agee (pers. comm. 2009) says that:

Another alternative to consider in active management of the Ozette Prairies is to mechanically remove the trees and then reintroduce fire to portions of the prairies every few years. This should mitigate the butterfly impact and in the long run increase habitat for them.

Bog ecologist Richard Hebda states:

There are multiple factors involved with tree encroachment on the Ozette Prairies and yes absence of fire has likely played a role and grazing changes too. My recommendation would be to do some limited experimental fires at the margins of one of the wet areas and see what happens. Fire can have negative effects on wetlands increasing nutrient fluxes, reducing rate of peat formation, especially in Sphagnum areas, perhaps changing hydrology in the wetland itself so caution is warranted. Cutting out the trees may also be an effective approach if the tree cover is the key element of the hydrological processes.

The Makah are in favor of the reintroduction of burning to the Ozette Prairies. Ben Johnson, Jr. (2006), former Chairman of the Makah Tribal Council, addressed this action in his comments on the Draft General Management Plan/ Environmental Impact Statement for Olympic National Park:

Cultural landscape definitions seem to exclude prehistoric landscape features. Prehistoric features such as the Ozette prairies are being lost due to the conflict with wilderness designation and management. These prairies are important cultural resources as they provide a source of medicinal plants. Limitations on fire use prevent the long-term maintenance of these cultural landscapes.

The restoration of coastal wetlands in other regions has met with some success. New Lake Fen in coastal Oregon has been burned and the shore pines girdled with encouraging initial results (Christy 2005:16). Richard Hebda (pers. comm. 2009) says: "Our work at Burns Bog is all about doing in the trees. We are raising the water table and increasing the hydroperiod by damming peripheral and internal drainage ditches in order to kill or reduce the growth of pine and encourage growth of Sphagnum. We are still trying to understand the basic processes" (see Howie et al. 2009).

The story of the Ozette Prairies and their former indigenous use and management is an important story to be told to park visitors. Conservation biology textbooks that highlight indigenous conservation strategies, for the most part, only use examples from locations other than the United States (Groom et al. 2006). Ecology textbooks that discuss cooperative relationships in nature between humans and plants and/or other animals such as mutualism, feature domestication as the main embodiment of that interaction (Townsend et al. 2008). The Ozette Prairies are an example of places where rich biodiversity, beauty, and human use all co-existed for centuries or millennia. The Ozette people belonged to the Ozette Prairies, and so even now, more than 100 years after the establishment of the Ozette and Makah Reservations, the wetlands can help us understand how it is possible for humans to fit *within* nature.

References

- Agee, J.K. 1993. *Fire Ecology of Pacific Northwest Forests*. Washington, D.C., Island Press.
- _____. 1994. An analysis of catastrophic forest disturbance on the Olympic Peninsula. Unpublished report prepared for Rayonier Inc. Hoquiam, Washington.
- Agee, J.K. and M.H. Huff. 1987. Fuel succession in a western hemlock/Douglas-fir forest. *Canadian Journal of Forest Research* 17:697-704.
- Alcorn, R.L. 1977. Pioneers settle at Lake Ozette in 1895:Tacomán, then Girl, recalls early days. December. *The Tacoma News Tribune and Sunday Ledger*.
- Alden, P., A. Gregoret, R. Keen, D. Mathews, E.A. Oches, D. Paulson, R. Sundstrom, and W.B. Zomlefer. 1998. *National Audubon Society Field Guide to the Pacific Northwest*. Alfred A. Knopf, New York.
- Anderson, M.K. 1996. Tending the wilderness. *Restoration and Management Notes* 14(2):154-66.
- _____. 2002-2007. Unpublished field notes and transcripts in the author's possession.
- _____. 2005. *Tending the Wild: Native American Knowledge and the Management of California's Natural Resources*. University of California Press, Berkeley.
- Andrade, M.J. n.d. Quileute ethnology notes. American Philosophical Society Library, Philadelphia.
- Anonymous 1932. Ahlstrom's pioneer home on Cape Alaya [sic] most western in continental U.S.; Keller is most western postmaster. July 28. *The Tacoma News Tribune*.
- Anonymous, 1953. Prairies kept cleared by Indians. *Port Angeles Evening News* November 28.
- Atwater, B.F. et al. 2005. *The Orphan Tsunami of 1700: Japanese Clues to a Parent Earthquake in North America*. U.S. Geological Survey, Reston, VA. in association with University of Washington Press, Seattle.
- Bach, A. and D. Conca. 2001. *Soil Influences on the Existence of the Ozette Ahlstrom's and Roose's Prairies, Olympic National Park, Washington*. Report to Olympic National Park.
- _____. 2004. *Draft Report: Natural History of the Ahlstrom's and Roose's Prairies, Olympic National Park, Washington*.
- Bertelson, E.B. 1948. The man farthest west in continental U.S. *The Seattle Times*. Sunday August 8. Magazine Section.
- Black, S.H., C. Mazzacano, and L. Lauvray. 2009. Report to the U.S. Fish and Wildlife Service and the U.S. Forest Service: Mardon Skipper Survey of Coon Mountain Burn Site Late May and Early June 2009.
- Blinman, E. 1980. Stratigraphy and depositional environment. Pages 64-68 In *Hoko River: A 2,500 Year Old Fishing Camp on the Northwest Coast of North America*. D.R. Croes and E. Blinman (eds.). Laboratory of Anthropology Reports of Investigations 58, Hoko River Archaeological Project Contributions 1, Washington State University, Pullman.
- Bowcutt, F. 2007. Unpublished Botanical Field Notes of Ahlstrom's and Roose's Prairies.
- Boyd, R. 1990. Demographic History, 1774-1874. Pages 135-148 In: *Handbook of North American Indians*

Volume 7 Northwest Coast. Wayne Suttles Volume Editor. Smithsonian Institution, Washington, D.C.

_____. 1999a. *Indians, Fire and the Land in the Pacific Northwest*. Corvallis: Oregon State University Press.

_____. 1999b. *The Coming of the Spirit of Pestilence: Introduced Infectious Diseases and Population Decline among Northwest Coast Indians, 1774-1874*. University of Washington Press, Seattle.

Brown, J.K., and M.A. Marsden 1976. *Estimating Fuel Weights of Grasses, Forbs, and Small Woody Plants*. Res. Note INT-210. U.S. Department of Agriculture, Forest Service, Intermountain Forest & Range Experiment Station. Ogden, Utah.

_____. 1991. *Climate change and the origin of old-growth Douglas-fir forests in Puget Sound lowland. Wildlife and vegetation of unmanaged Douglas-fir forests*. USDA Forest Service, General Technical Report PNW-GTR-285. Pacific Northwest Research Station, Portland, Oregon.

Buckingham, N.M. 1976-1977. *Port Angeles and Ozette Unpublished Plant List*. Olympic National Park.

_____. 1993. *Flora of the Olympic Peninsula, Washington*. Unpublished List. Olympic National Park.

Buckingham, N.M., E.G. Schreiner, T.N. Kaye, J.E. Burger, and E.L. Tisch. 1995. *Flora of the Olympic Peninsula*. Northwest Interpretive Association and the Washington Native Plant Society. Seattle, WA.

Cajander, A.K. 1913. *Studien über die Moore Finnlands*. Acta Forestalia Fennica 2:1-208.

Calmes, M.A. and J.C. Zasada. 1982. *Some reproductive traits of four shrub species in the black spruce forest type of Alaska*. Canadian Field-Naturalist 96(1):35-40.

Christy, J.A. 2005. *Sphagnum Fens on the Oregon Coast: Diminishing Habitat and Need for Management*. Unpublished report to the U.S. Fish and Wildlife Service, Region 1 Portland, Oregon.

Collins, C.C. 1996. *Subsistence and survival: the Makah Indian Reservation, 1855-1933*. Pacific Northwest Quarterly. 87(4):180-193.

Colson, E.F. 1941-1944. *Abstract field notes in the possession of the Makah Cultural and Research Center*.

_____. 1953. *The Makah Indians: A Study of an Indian Tribe in Modern American Society*. University of Minnesota Press. Minneapolis.

Conca, D.J. 2000. *Archaeological Investigations at Site 45-CA-432: Reevaluating Mid-Holocene Land Use on the Olympic Peninsula, Washington*. Master's Thesis. Western Washington University.

Crane, M.F. 1990. *Pteridium aquilinum*. In: *Fire Effects Information System*, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis/>

Croes, D.R. 1977. *Basketry from the Ozette Village Archaeological Site: A Technological, Functional and Comparative Study*. Ph.D. Dissertation. Washington State University. Pullman.

_____. 1980. *Cordage From the Ozette Village Archaeological Site: A Technological, Functional, and Comparative Study*. Laboratory of Archaeology and History. Washington State University, Pullman. Project Reports 9.

- Croes, D.R. and E. Blinman. 1980. Hoko River: A 2500 Year old Fishing Camp on the Northwest Coast of North America. Hoko River Archaeological Project Contribution No. 1. Washington State University Laboratory of Anthropology Reports of Investigations No. 58.
- Curtis, E.S. 1913. *The North American Indian: The Indians of the United States, the Dominion of Canada, and Alaska*. Volume 9. Reprinted by Johnson Reprint Corporation, New York, N.Y.
- Densmore, F. 1939. Nootka and Quileute music. *Smithsonian Institution Bureau of American Ethnology Bulletin* 124. United States Government Printing Office, Washington, D.C.
- DePuydt, R.T. 1994. Part IV: Cultural implications of avifaunal remains recovered from the Ozette site. Pages 197-303 In: *Ozette Archaeological Project Research Reports. Volume II: Fauna*. S.R. Samuels (ed.). Department of Anthropology Reports of Investigations 66. Washington State University, Pullman, and National Park Service, Pacific Northwest Regional Office, Seattle.
- Deur, D. and N. Turner. 2005. Introduction: reassessing indigenous resource management, reassessing the history of an idea. Pages 3-36 In: *Keeping It Living: Traditions of Plant Use and Cultivation on the Northwest Coast of North America*. D. Deur and N.J. Turner (eds.). University of Washington Press, Seattle.
- Douglas, W.O. 1964. The last frontier in a dark forest. Pages 176-190 In: *A Vanishing America; the Life and Times of the Small Town*. T.C. Wheeler and H. Carter (eds.). Holt, Rinehart and Winston, New York, New York.
- Egan, D. and E.A. Howell. 2001. *The Historical Ecology Handbook: A Restorationist's Guide to Reference Ecosystems*. Island Press, Washington, D.C.
- Erikson, P.P, H. Ward, and K. Wacchendorf. 2002. *Voices of a Thousand People: The Makah Cultural and Research Center*. University of Nebraska Press, Lincoln.
- Evans, I. Nylund. n.d. Ozette pioneers had housing shortage too; whole family worked at building new home. *Port Angeles Evening News*. Lake Ozette file. Olympic National Park Archives.
- Fish, H.U. 1983. *Tracks, Trails, and Tales in Clallam County, State of Washington*. Self-published. Port Angeles, Washington.
- Flinn, M.A. 1980. Heat Penetration and Early Postfire Regeneration of some Understory Species in the Acadian Forest. Master's Thesis. University of New Brunswick. Halifax, NB.
- Flinn, M.A. and R.W. Wein. 1977. Depth of underground plant organs and theoretical survival during fire. *Canadian Journal of Botany* 55:2550-2554.
- Frye, T.C. 1956. *Ferns of the Northwest*. Binford & Mort, Publishers, Portland, Oregon.
- Gavin, D.G. L.B. Brubaker, and K.P. Lertzman. 2003. Holocene fire history of a coastal temperate rain forest based on soil charcoal radiocarbon dates. *Ecology* 84(1):186-201.
- Gill, S. 1983. *Plant Utilization by the Makah and Ozette People, Olympic Peninsula, Washington*.
- _____. 1984. *Ethnobotany of the Makah People, Olympic Peninsula, Washington*. Makah Language Program, Neah Bay, Washington and Marion Ownbey Herbarium Washington State University, Pullman, WA.
- _____. 2005. Plant utilization by the Makah and Ozette People, Ozette Peninsula, Washington. Pages 337-546 In: *Ozette Archaeological Project Research Reports Volume III. Ethnobotany and Wood Technology*. D.L. Whelchel (ed.). WSU Department of Anthropology Reports of Investigations 68. National Park

Service, Northwest Regional Office, Seattle.

Goble, D.D. and P.W. Hirt. (ed.). 1999. Northwest Lands, Northwest Peoples: Reading in Environmental History. Seattle: University of Washington Press.

Graber, D.M. 2003. Facing a new ecosystem management paradigm for national parks. *Ecological Restoration* 21(4):264-277.

Groom, M.J., G.K. Meffe, C.R. Carroll and Contributors. 2006. Principles of Conservation Biology. Third Edition. Sinauer Associates, Inc. Sunderland, MA.

Gunther, E. 1871-1981. Erna Gunther Papers. Record Group No: 19.26.0614. Special Collections, University of Washington, Libraries. Seattle, WA.

_____. 1936. A preliminary report on the zoological knowledge of the Makah. Pages 105-118 In: Essays in Anthropology Presented to Alfred Louis Kroeber in Celebration of his Sixtieth Birthday. Books for Libraries Press, Inc. Freeport, New York.

_____. 1973. Ethnobotany of Western Washington: The Knowledge and Use of Indigenous Plants by Native Americans. Seattle: University of Washington Press.

Gutchewsky, M. 2004. Paleoenvironmental Reconstruction of the Ozette Prairies Through the Analyses of Peatland Cores, Olympic National Park, Washington. Master's Thesis. Department of Geography. Western Washington University, Bellingham.

Haeussler, S. and D. Coates. 1986. Autecological Characteristics of Selected Species that Compete with Conifers in British Columbia: A Literature Review. Land Management Report No. 33. Ministry of Forests, Information Services Branch, Victoria, BC.

Harbison, D.E., J. Fishback, and O.D. Stanton. 1939. Reconnaissance survey of the Makah Reservation Washington. Record Group No. 75. BIA Taholah Indian Agency. Taholah, WA. Dec. File. Corr. 1926-1950, 919-921 Hunting and fishing box 152: "919.0 Agriculture (Reconnaissance) TC-BIA, 1939." National Archives Pacific NW Region. Seattle, WA.

Haugland, H. 1946. Lars Ahlstrom home, three miles west of Lake Ozette, farthest west in country. Port Angeles Evening News. September 10.

Hebda, R.J., K. Gustavson, K. Golinski, A.M. Calder. 2000. Burns Bog Ecosystem Review Synthesis Report. Prepared by Environmental Assessment Office, Province of British Columbia.

Henderson, J.A., D.H. Peter, R.D. Leshner, and D.C. Shaw. 1989. Forested Plant Associations of the Olympic National Forest. USDA Forest Service Pacific Northwest Region R6 Ecol Technical Paper 001-88.

Hensen, J. n.d. Great variety of frontier skills. Newspaper clipping from unidentified newspaper.

_____. 1940. Great elk herds once kept Lake Ozette area free of underbrush. Port Angeles Evening News. February 15.

_____. 1960. Final rites held for pioneer resident of 'westernmost' area. Port Angeles Evening News. March 16.

Holyoke, B. 2003. Letter to Park Anthropologist Jacilee Wray regarding acquisition of Ahlstrom's and Roose's Prairies by the National Park Service.

Howie, S.A., P.H. Whitfield, R.J. Hebda, T.G. Munson, R.A. Dakin, and J.K. Jeglum. 2009. Water table and vegetation response to ditch blocking restoration of a raised bog in southwestern British Columbia. *Canadian Water Resource Journal* 34:381-392.

Huelsbeck, D.R. 1994a. Part II: Mammals and fish in the subsistence economy of Ozette. Pages 18-91 In: *Ozette Archaeological Project Research Reports. Volume II: Fauna*. S.R. Samuels (ed.). Department of Anthropology Reports of Investigations 66. Washington State University, Pullman, and National Park Service, Pacific Northwest Regional Office, Seattle.

_____. 1994b. Part V. The utilization of whales at Ozette. Pages 265-304 In: *Ozette Archaeological Project Research Reports. Volume II: Fauna*. S.R. Samuels (ed.). Department of Anthropology Reports of Investigations 66. Washington State University, Pullman, and National Park Service, Pacific Northwest Regional Office, Seattle.

Huelsbeck, D.R. and G.C. Wessen. 1994. Part I: Twenty-five years of faunal analysis at Ozette. Pages 1-15 In: *Ozette Archaeological Project Research Reports. Volume II: Fauna*. S.R. Samuels (ed.). Department of Anthropology Reports of Investigations 66. Washington State University, Pullman, and National Park Service, Pacific Northwest Regional Office, Seattle.

Hult, R.E. 1956. The puzzle of the Ozette Indians. *The Seattle Times*. April 29.

_____. 1954. *The Untamed Olympics*. Portland, Oregon: Binford & Mort.

Ingram, D.C. 1931. Vegetative changes and grazing use on Douglas-fir cut-over land. *Journal of Agricultural Research* 43(5):387-417.

Jenkins, K., A. Woodward, and E. Schreiner. 2002. *A Framework for Long-term Ecological Monitoring in Olympic National Park: Prototype for the Coniferous Forest Biome*. Forest and Rangeland Ecosystems Science Center Olympic Field Station. U.S. Geological Survey, Department of Interior.

Johnson, B. 2006. Letter to Carla McConnell regarding comments on the Draft General Management Plan and Environmental Impact Statement for Olympic National Park in Washington. Dated December 20th, 2006.

Keller, C. 1941. Letter to Superintendent Preston Macy, Olympic National Park. April 25. *Archaeology—Indians—General File 740-02.4*. Olympic National Park Archives.

Kulzer, L., S. Luchessa, S. Cooke, R. Errington, F. Weinmann. 2001. *Characteristics of the Low-elevation Sphagnum-dominated Peatlands of Western Washington: A Community Profile*.

Kunze, L.M. 1989. Unpublished Field Evaluation Forms on file with the Washington Department of Natural Resources, Washington Natural Heritage Program, Olympia, Washington.

_____. 1994. *Preliminary Classification of Native, Low Elevation, Freshwater Wetland Vegetation in Western Washington*. Natural Heritage Program, Washington State Department of Natural Resources, Olympia, Washington.

Lenz, L. and P. Cereghino. 2002. *Survey for Rare Plants: Bach Research Soil Sample Sites--Ozette*. Unpublished Report. Olympic National Park Archives.

Lertzman, K., D. Gavin, D. Hallett, L. Brubaker, D. Lepofsky, and R. Mathewes. 2002. Long-term fire regime estimated from soil charcoal in coastal temperate rainforests. *Conservation Ecology* 6(2).

Macy, P.P. 1937. Letter to O.A. Tomlinson, Superintendent, Mount Rainier National Park dated April 27. Olympic National Park Archives.

_____. 1941. Memorandum to the Director of the National Park Service. May 27. Archaeology—Indians—General File 740-02.4. Olympic National Park Archives.

Magnusson, b.B. 2000. Observations on the Material Culture of the Scandinavian Immigrant Settlement at Lake Ozette and Royal (1880-1910). Unpublished report. Olympic National Park Archives.

Martin, P.A.E. 1979. Productivity and Taxonomy of the *Vaccinium globulare*, *V. membranaceum* complex in western Montana. Master's Thesis. University of Montana. Missoula, MT.

Matthews, R.F. 1992a. *Vaccinium uliginosum*. In: fire Effects Information System [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis/>

_____. 1992b. *Vaccinium oxycoccos*. In: fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). <http://www.fs.fed.us/database/feis/>

Mauger, J.E. 1991. Shed-roof houses at Ozette and in a regional perspective. Part II. Pages 29-169 In: Samuels, S.R. (ed.). 1991. Ozette Archaeological Project Research Reports: Volume I, House Structure and Floor Midden. Reports of Investigations 63. Department of anthropology, Washington State University, Pullman, and National Park Service, Pacific Northwest Regional Office, Seattle.

McCrone, J. 2000. Fire up. *New Scientist* 166(2239):30-34.

McCulloch, W.F. 1942. The role of bracken fern in Douglas-fir regeneration. *Ecology* 23:484-485.

Moral, R. del. 1985. Succession on abandoned homesteads in the Queets River Valley, Olympic National Park, Washington. Unpublished report prepared under Purchase Order No. PX-9000-5-0464 to the National Park Service, Pacific Northwest Region.

National Park Service. 2001. Cultural Resource Management Guildeline, NPS-28. www.cr.nps.gov/history/online_books/nps28/28contents.htm.

Newcombe, C.F. (ed.). 1923. Menzies' Journal of Vancouver's Voyage April to October 1792. Archives of British Columbia Memoir No. V. Authority of the Legislative Assembly, Victoria, B.C.

Page, C.N. 1976. The taxonomy and phytogeography of bracken--a review. *Botanical Journal of the Linnean Society* 73:1-34.

_____. 1982. The history and spread of bracken in Britain. *Proceedings of the Royal Society of Edinburgh* 81(B):3-10.

_____. 1986. The strategies of bracken as a permanent ecological opportunist. Pages 173-181 In: *Bracken: Ecology, Land Use and Control Technology*. July 1-July 5, 1985. R.T. Smith and J.A. Taylor (eds.). Lancs: The Parthenon Publishing Group Limited. Leeds, England.

Panzer, R. 2002. Compatibility of prescribed burning with the conservation of insects in small, isolated prairie reserves. *Conservation Biology* 16(5): 1296-1307.

Parminter, J. 1984. Fire-ecological Relationships for the Biogeoclimatic Zones of the Northern Portion of the Mackenzie Timber Supply Area Summary Report. Ministry of Forests, Province of British Columbia, Victoria, BC.

Parratt, S. 2009. *Gods & Goblins: A Field Guide to Place Names of Olympic National Park*. Edited and

- expanded by G. Peterson and G. Peterson Schaad. Poseidon Peak Publishing. Forks, WA.
- Pascua, M. Parker. 1991. A Makah village in 1491: Ozette. *National Geographic*. 180(4):38-53. October.
- Peterson, R.T. 1992. Forward. Pages xiii-xvi In: *Handbook for Butterfly Watchers*. R.M. Pyle (author). Houghton Mifflin Company. Boston, Mass.
- Petroff, M. 1981. They followed a dream to Ozette. *Forks Forum-Peninsula Herald and Sequim Press*. July 8-9.
- Pickford, S.G., G. R. Fahnestock, and R. Ottmar. 1980. Weather, fuel, and lightning fires in Olympic National Park. *Northwest Science* 54(2):92-105.
- Pojar, J. and A. MacKinnon (eds.) 1994. *Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia & Alaska*. Lone Pine Publishing, Vancouver, British Columbia.
- Powell, J.V. 2002. Quileute Exploitation and Maintenance of Prairies in Traditional Times. Unpublished Report based on published and archival sources and ethnographic notes recorded by the author between 1968 and the present at LaPush and Lower Hoh River, Washington.
- Pyle, R.M. 2002. *The Butterflies of Cascadia: A Field Guide to All the Species of Washinton, Oregon, and Surrounding Territories*. Seattle Audubon Society. Seattle, WA.
- Pyle, R.M. and T.L. Pyle. 2000. Final Report: Oregon Silverspot Survey, Ozette Prairies, Olympic National Park. Unpublished.
- _____. 2001. Final Report: Oregon Silverspot Survey, Ozette Prairies, Olympic National Park Second Summer's Work.
- Ramsden, K.H. 2004. Spatial and Temporal Patterns of Recent Tree Encroachment on the Ozette Prairies, Olympic National Park, Washington. Master of Science. Western Washington University.
- Reagan, A.B. 1908. Some notes on the Olympic Peninsula, Washington. *Transactions of the Kansas Academy of Science* 22:231-238.
- Rigg, G.B. 1925. Some Sphagnum bogs of the North Pacific Coast of America. *Ecology* 6(3):260-278.
- _____. 1940. The development of Sphagnum bogs in North America. *Botanical Review* 6(12):666-693.
- _____. 1958. Peat Resources of Washington. Department of Conservation, Division of Mines and Geology Bulletin 44. State Printing Plant. Olympia, WA.
- Samuels, S.R. (ed.). 1991. *Ozette Archaeological Project Research Reports: Volume I, House Structure and Floor Midden*. Reports of Investigations 63. Department of anthropology, Washington State University, Pullman, and National Park Service, Pacific Northwest Regional Office, Seattle.
- _____. 1994. *Ozette Archaeological Project Research Reports. Volume II: Fauna*. Department of Anthropology Reports of Investigations 66. Washington State University, Pullman, and National Park Service, Pacific Northwest Regional Office, Seattle.
- Samuels, S.R. and R.D. Daugherty. 1991. Introduction to the Ozette Archaeological Project. Pages 1-27 In: Samuels, S.R. (ed.). 1991. *Ozette Archaeological Project Research Reports: Volume I, House Structure and Floor Midden*. Reports of Investigations 63. Department of anthropology, Washington State University, Pullman, and National Park Service, Pacific Northwest Regional Office, Seattle.

Schreiner, E.G., K.A. Kreuger, P.J. Happe, and D.B. Houston. 1996. Understory patch dynamics and ungulate herbivory in old-growth forests of Olympic National Park, Washington. *Canadian Journal of Forest Research* 26:255-265.

Schultz, C.B. and E.E. Crone. 1998. Burning prairie to restore butterfly habitat: a modeling approach to management tradeoffs for the fender's blue. *Restoration Ecology* 6(3):244-252.

Scotter, G.W. 1972. Fire as an ecological factor in boreal forest ecosystems of Canada. Pages 15-25 In: *Fire in the Environment. Symposium Proceedings May 1-5, 1972.* U.S. Department of Agriculture, Forest Service. Denver, CO. FS-276.

Singh, R.R. P. 1966. *Aboriginal Economic System of the Olympic Peninsula Indians, Western Washington.* Sacramento Anthropological Society, California State University, Sacramento.

Skinner, M.P. 1934. Unpublished report on Roosevelt elk, Olympic Peninsula to the Committee on the Olympic Peninsula of the Boone and Crockett Club. Box 12. Washington State Archives, Olympia, WA.

Skutch, A.F. 1929. Early stages of plant succession following forest fires. *Ecology* 10(2): 177-190.

Stallard, B. and Denman. circa 1955-1956. *An Archaeological Site Survey on the Coast of Western Washington.* Stallard and Denman Archives transferred to Olympic National Park from the Burke Museum in Seattle, WA.

Swan, J.G. 1859-1866. *James Gilchrist Swan Papers. Daily Journals.* Accession No. 1703-001. Special Collections, University of Washington Libraries, Seattle, Washington.

_____. 1964. *The Indians of Cape Flattery: At the Entrance to the Strait of Fuca, Washington Territory.* Facsimile Reproduction of the 1868 publication. Shorey Book Store, Seattle, Washington.

_____. 1971. *Almost out of the World: Scenes from Washington Territory.* Washington State Historical Society, Tacoma, Washington.

Schultz, C.B. and E.E. Crone. 1998. Burning prairie to restore butterfly habitat: a modeling approach to management tradeoffs for the fender's blue. *Restoration Ecology* 6(3):244-252.

Swengel, A.B. 1996. Effects of fire and hay management on abundance of prairie butterflies. *Biological Conservation* 76:73-85.

Tisch, E. 2002. The natural history of a coastal prairie in Olympic National Park. *Voice of the Wild Olympics* 10(2):5-7.

Townsend, C.R., M. Begon, and J.L. Harper. 2008. *Essentials of Ecology.* Third Edition. Blackwell Publishing, Malden, MA.

Tryon, R.M. 1941. A revision of the genus *Pteridium*. *Rhodora* 43(505):1-31, 36-67.

Underhill, R. 1945. *Indians of the Pacific Northwest.* W.W. Beatty (ed.). Washington, D.C.: Branch of Education Bureau of Indian Affairs.

Underwood, S. 1981. Letter to Darlene Allen, August 20. Ozette Prairies File, Olympic National Park Archives.

University of Oregon. 1989. *Olympic National Park Roose's Prairie Homestead and Kestner-Higley Homestead.* Department of Landscape Architecture, University of Oregon, Eugene, Oregon.

U.S. Department of Agriculture, Forest Service. 1937. *Range Plant Handbook.* Washington, D.C.

Vanderhoof, M. 1960. Death of pioneer ends story of 'last man west.' Port Angeles Evening News. April 11.

_____. 1991. Interview by Jacilee Wray. Oral History Collection Olympic National Park.

Ward, H.S., and L.J. Goodman. 1985. A Makah biography. Pages 51-57 In: *Digging for Roots: Works by Women of the North Olympic Peninsula*. Dalmo'ma 5. C.V. Pacosz and S. Oliver (eds.). Self-published.

Washington Natural Heritage Information System. 2007. Known High-Quality or Rare Plant Communities and Wetland Ecosystems of Washington. Clallam County. <http://dnr.wa.gov/nhp/refdesk/lists/communitiesxco/clallam.html>

Washington Park Wilderness Act of 1988. Public Law 100-668. 100th Congress. Title I--Olympic National Park Wilderness. 102 Stat. 3961-3968. Approved November 16.

Waterman, T.T. 1920. Puget Sound Geography. Vol. I Files 1-8. Vol. II Files 9-14 and Vol. III Files 15-25. Copy from microfilm [1864 Wash., Ethnol.] at University of California Archives, Museum of Anthropology Archives, Berkeley.

Weissbach, M. and M. Bivin. 1997. Roose's Prairie Survey of Vascular Plants. Unpublished Report.

Wessen, G.C. 1984. A Report of Preliminary Archaeological Investigations at 45Ca 201: A 'Second Terrace' Shell Midden near Sand Point, Olympic National Park, Washington. (Report on file with the Division of Cultural Resources, Pacific Northwest Region, National Park Service, Seattle.)

Wessen, G.C. 1990. Prehistory of the ocean coast of Washington. Pages 412-421 In: *Handbook of North American Indians*. Vol. 7: Northwest Coast. W. Suttles, (ed.). Smithsonian Institution, Washington, D.C.

_____. 1994. Part III: Subsistence patterns as reflected by invertebrate remains recovered at the Ozette site. Pages 93-196 In: *Ozette Archaeological Project Research Reports*. Volume II: Fauna. S.R. Samuels (ed.). Department of Anthropology Reports of Investigations 66. Washington State University, Pullman, and National Park Service, Pacific Northwest Regional Office, Seattle.

Whitlock, C. 1992. Vegetational and climatic history of the Pacific Northwest during the last 20,000 years: implications for understanding present-day biodiversity. *Northwest Environ. J.* 8:5-28.

Woodward, A.W., E.G. Schreiner, D.B. Houston, and B.B. Moorhead 1994. Ungulate-forest relationships on the Olympic Peninsula: retrospective enclosure studies. *Northwest Science* 68:97-110.

Wray, J. 1997. Olympic National Park Ethnographic Overview and Assessment. Olympic National Park, WA.

Appendix 1

Linda Kunze's Unpublished Botanical Survey Notes of Wetlands in Olympic National Park, 1989

(Note: State listed plant information is eliminated from these notes)

Linda Kunze's Survey of Ahlstrom's Prairie

"81 acre 'prairie'. Rolling topography, ridges, and troughs oriented basically north-south. Ground is uneven with microtopographic variation-mosaic of swales and wet depressions within generally higher ground. Three drainages: Eastern and westernmost are short, wet but with conifers. Larger coastal drainage is wet and has few conifers--seems to not have an outflow. Central drainage is dominated by sedges and has living sphagnum. Seasonally flooded. Rest of site appears to be seral stage, recovering from fire. Small conifers are abundant. Understory is dominated by *Ledum*, *Pteridium Aquilinum*, *Kalmia occidentalis*, *Sphagnum*, *Gaultheria* in places and has lots of *Calamagrostis nutkensis*. The small depressions are vegetationally like the drainages. Soils in the drainages have peat development. The higher ground (ridges) often have virtually no soil development=mineral soil of glacial till. The area was burned recently--probably by Ahlstrom to create pasture for sheep. The drier areas appear to be evolving towards a THPL-TSHE / GASH-VAOV [*Thuja plicata*-*Tsuga heterophylla*/*Gaultheria shallon*-*Vaccinium ovatum*] coastal forest. The drainages and depressions may continue to be fairly open, or may progress towards a wetter THPL-TSHE community. It is possible that the area was kept clear in presettlement times by natural fires and/or fires set by the native people. Park staff have no plans currently to burn the prairie."

Plants that Linda Kunze recorded on Ahlstrom's Prairie that are useful to the Makah include: *Blechnum spicant*, *Carex obnupta*, *Cornus canadensis*, *Empetrum nigrum*, *Eriophorum chamissonis*, *Gaultheria shallon*, *Ledum groenlandicum*, *Lycopodium clavatum*, *Maianthemum dilatatum*, *Pteridium aquilinum*, *Pyrus fusca*, *Vaccinium ovatum*, and *Vaccinium oxycoccos*.

Linda Kunze's Survey of Roose's Prairie

"74 acres 'prairie' northeast of Ahlstrom's Prairie. It is located partially in the Olympic National Park and partially in the Ozette Indian Reservation. Roose's buildings are in a clearing on a ridge S.W. of the prairie. Roose pastured sheep in the area and probably burned portions of the prairie to create/maintain open areas for them. The prairie is composed of 1) 48 acres/ uneven topography that is relatively dry, was burned and is currently vegetated with low growing sphagnum bog species, GASH [*Gaultheria shallon*], VAOV [*Vaccinium ovatum*] and small/young conifers; 2) 2 acres/ a draw that is perennially wet and has dense sphagnum and is dominated by sedges and herbs; and 3) 24 acres/ a large flat area of sphag-

num hummocks dominated by *Empetrum nigrum* that has stunted conifers. Numbers 1 & 2 were clearly used by livestock and 1 was apparently burned and some trees cut. 3 appears untouched or has made a remarkable recovery from past use. Number 1 will probably progress to a THPL-TSHE/GASH-VAOV [*Thuja plicata-Tsuga heterophylla/Gaultheria shallon-Vaccinium ovatum*] forest community. The sphagnum communities at this stage are interesting. Number 3 may continue to be what it is now or may slowly transition to a wet THPL-TSHE forest. Conifers are stunted and there are many small snags suggesting that trees don't grow well and the system may be at a climatic climax."

Plants that Linda Kunze recorded on Roose's Prairie that are useful to the Makah include: *Blechnum spicant*, *Carex obnupta*, *Cornus canadensis*, *Empetrum nigrum*, *Eriophorum chamissonis*, *Gaultheria shallon*, *Ledum groenlandicum*, *Lycopodium clavatum*, *Maianthemum dilatatum*, *Pteridium aquilinum*, and *Vaccinium oxycoccos*.

Linda Kunze's Survey of Capa Alava Prairie [also called West Prairie]

"Approximately 19 acre sphagnum bog about 2 miles west of the Ozette Ranger station on the Cape Alava trail. About 1/4 mile west of Ahlstrom's Prairie, narrow and rectangular in shape, oriented north-south. Generally dominated by low growing shrubs (LEGR & KAOC) and several species of sedges. Small THPL & TSHE are abundant in areas. The system drains along its east side. This drainage is wetter than the rest of the site and the vegetation reflects it--there is more RHAL & CALI along the drainage in particular. The site appears to have burned in the past. There are snag/stumps in the bog that were burned, as well as on the hillside to the west. The site is seasonally flooded. Soils are peat. I don't have any land use history for this site, but it is probable that sheep and possibly cattle were grazed here in the past. It is possible that the area was purposely burned to increase pasture for livestock."

Plants that Linda Kunze recorded on Cape Alava Prairie that are useful to the Makah include: *Blechnum spicant*, *Carex obnupta*, *Cornus canadensis*, *Empetrum nigrum*, *Eriophorum chamissonis*, *Gaultheria shallon*, *Ledum groenlandicum*, *Pteridium aquilinum*, and *Vaccinium oxycoccos*.

Linda Kunze's Survey of Manny's Prairie

"Approximately a 49 acre 'Prairie'. Burned in recent past. Manny, and often large, THPL snags. Repro [reproduction] dense THPLA & TSHE with GASH, VAOV, and PTAO understory. Lost of LEGR, *Cornus canadensis* and *sphagnum*. May be later successional stage of 'prairies'. Large THPLA snags, density of repro and GASH-VAOV suggest that it is different from most prairies. Don't know whether fire was natural or set by settlers. Site is marginal between wetland and upland."

Plants that Linda Kunze recorded on Manny's Prairie that are useful to the Makah include: *Blechnum spicant*, *Cornus canadensis*, *Gaultheria shallon*, *Ledum groenlandicum*, *Lysichitum americanum*, *Pteridium aquilinum*, *Vaccinium ovatum*, and *Vaccinium parvifolium*.

Linda Kunze's Survey of Allen's Slough [Allen's Prairie]

"27 acres open bog and 26 acres bog forest along Allens Slough, S.W. end Lake Ozette. Long narrow wetland system on either side of Allens slough, slow moving stream of brown water with beaver activity. Wetland in sphagnum, sedge and heath peat with woody material in bog forest. Open bog is dominated by *Myrica gale* (MYGA). In places MYGA is 5-6' tall, forming dense thickets over sphagnum moss. *Sanguisorba*, *Spirea douglasii*, *Pyrus fusca* and *Carex sitchensis* may also be prominent. In places MYGA is 1 foot tall and is codom. [codominant] with *Sanguisorba*, *Carex livida* and sometimes *Dodecatheon jeffreyi*, *C. ph. llomanica*, *C. rostrata*, *C. sitchensis*. A few areas are dom. by *C. sitchensis* but have the other species in the understory. The site appears in excellent condition. There is a series of lines, oriented east-west, at the south end of the site. These may be section-township lines created by surveyors. Most are shallow channels now. The bog forest is mostly on the south. & west sides of the slough. That near the NW was not surveyed but will be included in site #118. Near the open bog it tends to have more PICO and avey from the bog were THPL. MYGA and other open bog species occur in the forested bog. But also GASH & VAOV. Peat soils, very wet. Small streams, c & springs and surface water. Losses of supersaturated mud holes. A few cut trees found west of 11: pole sized. Northern 1/3 of slough bog is a mosaic of MYGA SPOO/CHORS. This site includes small bog NW and upstream of slough (see community survey form for Allens Bay Bog) Forests between slough-Bay and Pacific Ocean are not wetlands for the most part. They are THPL\VAOV that appear to have been burned in the past."

Linda Kunze records the presence of lodgepole pine (*Pinus contorta*) at Allen's Prairie which C. Leo Hitchcock and Arthur Cronquist (1973:62) say is found "often in pure stands in areas long since burned over."

Plants that Linda Kunze recorded on Allen's Slough (Allen's Prairie) that are useful to the Makah include: *Blechnum spicant*, *Carex obnupta*, *Carex sitchensis*, *Cornus canadensis*, *Gaultheria shallon*, *Ledum groenlandicum*, *Maianthemum dilatatum*, *Pteridium aquilinum*, *Pyrus fusca*, *Vaccinium ovatum*, *Vaccinium parvifolium*, and *Vaccinium oxycoccos*.

Linda Kunze's Survey of Sand Point Trail Prairie

"90 acre area along Sand Point Trail, Lake Ozette. Burned in past and some logging. Appears to be regenerating. THPL-TSHE/GASH-VAOV forest communities. Highly grazed/browsed and trampled in places so open. Pocket wetlands with sphagnum and 'prairie' veg. These appear to be being encroached upon by conifers. A rectangular hold line with logs may be an old well. It is located in the wetland at the far north end of the site. If it is a well, it suggests that the site may have been homesteaded as were most of the 'prairies' in the area."

Plants that Linda Kunze recorded on Ahlstrom's Prairie that are useful to the Makah include: *Blechnum spicant*, *Carex obnupta*, *Cornus canadensis*, *Empetrum nigrum*, *Gaultheria shallon*, *Ledum groenlandicum*, *Lycopodium clavatum*, *Maianthemum dilatatum*, *Pteridium aquilinum*, *Pyrus fusca*, *Rhamnus purshiana*, *Vaccinium ovatum*, and *Vaccinium oxycoccos*.

Appendix 2

Quote from James Swan's Unpublished Field Notes

On July 21, 1864, James Swan had lunch at the Ozette Village and then took off by foot down what is now called the Cape Alava Trail, bound for Ozette Lake, accompanied by Indians from Badda, Kiddecubbut (a Makah summer village), and Ozette. On the way they walked through West Prairie and Ahlstrom's Prairie, both of which Swan described in the following passage (1859-1866):

"The trail commenced a short distance south of the village and runs up to the top of the hill or bluff which is rather steep and about sixty feet high. From the summit we proceeded in an easterly direction through a very thick forest half a mile and reached an open prairie which is dry and covered with fern, dwarf sallal [sic] and some red top grass, with open timber around the sides. This prairie has the appearance of being long and narrow. Its length running in the direction of the coast and about a quarter of a mile wide where we crossed it, although from the appearance of the land south I infer that it is much wider at intervals. From the prairie we pass through another belt of timber to another prairie lying in the same general direction as the first but somewhat lower and having the appearance of being wet and boggy. This was covered in its drier portions with a coarse grass and some red top and in the lower portions with water grass and thick moss which yielded moisture on the pressure of the feet."

Had Swan taken photographs, made accurate field measurements, and done a vegetation transect, we would have had a better idea of what the Ozette Prairies were like before they began their change to forested habitat. But his description offers some vital clues nevertheless. It appears that West Prairie, at least, was much bigger than it is now. It was a quarter of a mile wide where Swan crossed and appeared 'much wider at intervals,' whereas a 1984-edition quadrangle map shows a maximum width of little more than a quarter mile as well as constrictions that make it discontinuous along its length. Swan also described the wetland as being surrounded by "open timber," whereas the present bordering forest is dense and thick with undergrowth.

Appendix 3

Evidence of Indian Burning on the Ozette Prairies of Olympic National Park

From Colson's Abstract Field Notes and Newspaper Articles

Anthropologist Elizabeth Colson (1941-1944) interviewed Alice Kalappa (Makah) in the early 1940s about Ozette Settlements and Ms. Kalappa said: "They used to burn the berry grounds, after they had picked the berries. And the cranberry marsh, they would burn that to have a good marsh to keep the trees out. Now there are lots of trees on the marsh because nobody takes care of it anymore."

"Old settlers say the prairies such as Forks, Quillayute, Beaver and Ozette, were Indian hunting grounds. They believe the clearings were first caused by lightningset forest fires. Then when the ferns grew up and become dry in the fall, the Indians set them afire. After a few years all the charred stumps and logs were consumed and no second-growth trees had a chance to grow. Grass came up and the deer and elk came there to feed. The Indians built platforms in the trees at the edge of the clearings and shot the animals with bows and arrows as they congregated on the prairie" (Anonymous 1953).

"Explanations of small and large prairies in the peninsula area was given by Keller, who claims the clearings were made by Indian fires. The Indians burned off the timber so they could more readily kill the elk and deer by hiding in the timber along the edges of the clearing and shooting the animals with their short range bows and arrows. Each year for years the underbrush was burned over so that eventually there was a natural open meadow on which grass grew. There was no heavy underbrush or trees left in the tracts and the game congregated there to feed" (Henson 1940).

"Although listed on the maps as 'prairie,' Ahlstrom stated his clearing was an area burned over by the Indians before his arrival.... He back-packs his supplies in by trail from the end of the road where Emil Pearson [sic] leaves them for him. Pearson [sic] takes his orders for supplies into Clallam Bay" (Haugland 1946).

"There already was a clearing here when Lars came in 1902. The Ozette Indians, who had a village on the ocean beach a mile to the west, had kept the area burned over for a cattle range. There was an old native hut, too, in which Lars lived while he gathered material for his present home. He got along fine with the Ozettes, and bought salvaged drift-boards and planks from them with which to build. And after he got settled and had acquired four cows, he traded butter and garden truck with the Indians for fish and game" (Bertelson 1948).

“Today’s visitor may find it a little more difficult to imagine the wonder I felt at first sight of Ahlstrom’s Prairie. Having been reared where people struggle to cut down, root out, and keep back the dense growth of the rain forest, I had never before seen so much naturally unforested land. It seemed unbelievable when the grown-ups belittled the seemingly vast expanse by informing me that there were places in the world where one could not even see a tree. Moreover, they said, this was not a true prairie because it was covered with sedges, heaths, and bracken, not grass. Furthermore most of it was not even a natural opening but a ‘burn,’ a place where the trees grew poorly because of the glacial, hardpan soil. The Indians burned it yearly to discourage further tree growth so that deer would find better browse, and to foster the growth of the bracken and the fruitfulness of the evergreen huckleberries, both of which were important items in their [the Indians’] diet... Serious misfortune inflicted a serious setback to his [Ahlstrom’s] developing homestead and his plans when, during one of his absences, all of his buildings burned to the ground. The settlers on the burns had continued the Indians’ practice of firing the burns each year. In fact, such a practice was necessary as a means of fire-prevention, for the dead bracken became dangerous tinder after the first warm, sunny days of spring. Unusually dry weather that year permitted the burning fire to become an uncontrolled threat. Ahlstrom’s nearest neighbor and fellow-homesteader [Pete Roose] had worked through two days and a night to save his own buildings, and had the fire under control, he thought before leaving for Lake Ozette. He was dismayed to find only blackened, smouldering remnants of his neighbor’s [Lars Alstrom] building when he returned the next morning” (Vanderhoof 1960).

“Ahlstrom, a former logger, more than half a century ago settled on the prairie and built his home there. The open prairie in the woods contains more than 100 acres... On my several visits to Ahlstrom I found he was a supreme optimist. For half a century he expected a road to pass through his place. The prairie was one of those created by fires many, many years ago. Indians perpetuated the prairies as hunting ground by each year burning the dry bracken that covered them. This burning kept the second growth timber from growing. That prairie and others, were grazing places for deer and elk. Indians, from the shelter of adjacent trees could get close enough to the animals to kill them, with bows and arrows. Immediately west of Ahlstrom’s prairie is a smaller one, also the home of many deer” (Henson 1960).

Appendix 4

Evidence of Indian Burning on the Ozette Prairies of Olympic National Park

From Oral Interviews and Historical Literature

“The Indians used to burn off patches in the prairies [Ozette Prairies]. They would burn them off like that and then the grass would come up and the deer and elk would come in to feed and the Indians would hunt” (James Wesseler pers. comm. 2002).

“...the Indians used to burn those prairies [Ozette Prairies] every year or every other year to keep all the brush down, to keep it open. And because it was good hunting when everything was burned down. It was just common knowledge that they used to burn on those prairies. After they would burn those prairies everything would come up in little green sprouts and that was real good feed for the deer and the elk. And where they used to burn mostly was at the south end. There was a big prairie at the south end [Norwegian Memorial Trail skirts that prairie]. Ross Colby, Myron Colby and their father Harry would go down and hunt there. When I was in high school there was still good hunting down there because the prairies had been burned quite extensively. I don't know if every year, or every two or three years they would burn them. They burned in September or October--September probably. Harry Colby was full-blooded Indian” (Bud Klock pers comm. 2002).

“The only ones that I ever heard from were the old-timers, Ahlstrom and Pete Roose, telling us kids that the Indians used to burn the Ozette Prairies and Manny's Prairie for hunting grounds. By burning an area off, then the new foliage would come out and then the deer and the elk would come out there and probably bear too. The animals would feed on the swamp grass and the moss. Then the Indians had a good chance of getting animals because they could surround them and they couldn't get away. That's the way that they would get their meat. But you take that woods out there--it's just about impossible to hunt it's so thick. The Indians most likely burned in June or July when it was dry. I think most of them burned when the wind was blowing from the Northeast towards the ocean and that's the driest time. There's less chance of a fire going very far from the northeast because the only way that it could do it, it had to go to the ocean. It couldn't go inland. The Indians probably burned portions each year. I don't think that they burned the whole prairie each year. I think they burned small areas each year. If you burned the whole thing off then you wouldn't have any area for the deer to come back or the elk to come back to because it would be all black and there's nothing to eat. If you burned small areas off you would still have the areas where the deer could have food and you could still get them. Another reason that they burned it was to keep the brush from closing in too fast” (Emil Person pers. comm. 2006).

“My dad William Henderson Bowlby and my stepdad Clyde Maneval told of the Indians burning the prairies. The closest was Shuwah. No Beaver Prairie, then Shuwah, then Forks Prairie, then Quillayute Prairie, then Little Prairie. And those are the ones on that end in the eastern part. And then there was what we called Ahlstrom’s Prairie up past Ozette Lake and Roose’s Prairie. The Indians always waited until it was very dry before they burned so it would be probably a hot day in August. They burned once a year. When they started a fire it would burn everything that was there. And that was the object to burn everything that was there and keep the trees off of the prairie and around the edges so that the woods wouldn’t creep in on the elk pasture. And of course that would be the purpose of burning the prairie in the first place, so the animals--elk and deer--would have some grass to eat” (Bob Bowlby pers. comm. 2003).

“And, the prairies at the north end of the lake, which had been created by the Ozette Indians by burning to provide grazing and hunting land for deer and cattle, were then, after 1900 partially occupied by three bachelors. Lars Kristopher Ahlstrom came in 1902 and was the westernmost settler along the Ozette trail to the ocean, while two cousins, Peter and Arthur Roose lived east of Ahlstrom from 1905 until 1930” (Fish 1983:18).

“Ahlstrom’s prairie, located on ONP’s coastal strip, halfway between Cape Alava and the north end of Lake Ozette, belongs in the wet prairie category. It, too, has had a long fire history. In a recent interview with Myra Vanderhoof, one of the last children born to homesteaders at the now-extinct Lake Ozette settlement, she informed me that in the early 1900s the white settlers found an abundance of fire-scarred trees in the forests adjoining Ahlstrom’s Prairie to the west. At that time most of the trees between Ozette and Cape Alava also seemed smaller than they are today. The homesteaders assumed that the local Ozette Indians had burned their prairies to eliminate trees and to keep down the salal understories. When Myra first visited Ahlstrom’s Prairie, around 1927, she found it very sparsely forested” (Tisch 2002:1).

“Burning forests was indeed an ancient practice. The West End has a half-dozen or more prairies created by burning. The Indians burned to create meadows which in turn would attract game. They burned the prairies annually in the fall to keep the brush down. The Forks, Quillayute, and Ozette Prairies were the largest. White settlers burned forests not only to open up land for farming but also to encourage the growth of berries” (Douglas 1964:177).

“Ahlstrom gained prominence as the westernmost rancher in the United States. His prairie probably was an old burn created by Indians from Ozette village for a hunting ground” (McDonald 1961).

Appendix 5

Evidence of Indian Burning on Ts'oo-yuhs Prairie from Oral Interviews and the Historical Literature

"I gather crabapple bark, Labrador tea, and cranberries at Ts'oo-yuhs in September and use them on special occasions. I make a sauce out of the cranberries and I heard that to preserve them people would float them in water. The Labrador tea leaves are dried out in the open for a couple of days. They are steeped for 3 to 4 minutes. I heard that they burned the marsh [Ts'oo-yuhs] for cranberry" (Melissa Peterson, Makah, pers. comm. 2003).

"There have been a number of people here that talked about burning the Ts'oo-yuhs prairie at the cranberry marsh so that the trees wouldn't come--my father-in-law Jerry McCarty and Minerva Claplan-hoo. It seemed like they burned in the fall time after they picked the berries and after they picked the tea--it seemed like October. It was after the cranberries so it wouldn't have been October. It could even have been December if there was no snow" (Kate McCarty pers. comm. 2002).

"The Labrador tea can just keep growing and growing and growing until it gets real leggy. And all that you have is just a few little leaves on top. But after it's been burned then it starts all over again. It's just like pinching flowers off of the chrysanthemum to make them bush out. And the little cranberry plant--it seemed like when they would burn them, they would just burn the top part of the sphagnum moss and not down where the roots are. After a fire it seemed like there were more and then they would get less and less. They didn't burn every year, but I don't know how often they burned " (Kate McCarty pers. comm. 2002).

"My dad [Lloyd Colfax] mentioned that the [Ts'oo-yuhs] prairie was burned yearly or whenever it was necessary. When the cranberry bogs would get so overgrown then the folks knew that it was time to do it. And so it was generally in autumn I think when it happened--just at the time when you had your long spells of light summer weather in September and October. And it was the perfect time to do it because you match it to the wind and you match it to upcoming rains. So there was really quite an art to it. I have a friend, Ernie Chieko and he can remember going out into the prairie and coming out within a couple of hours with gallon buckets of cranberries. What I was told is that it just gets overgrown and you've got few berries. And so you've got to burn it to burn down all the other kinds of vegetation and plant life that chokes off the cranberries. Once you do that then they've got room to do what they have to do. It [the fire] releases other kinds of fertilizers and nutrients. And it does something to create the balance to give you a big harvest of cranberries. The prairie is about 50 or 60 acres (Gary Colfax, Makah, pers. comm. 2003).

“My father [Perry Ides] said that a long time ago that they used to burn the cranberries for harvest. They would burn portions of it too you know lay hay on there I guess and then burn the cranberries. And they said that kept cranberries going. They would do that every so often. They burned in September--when they're all bloomed out and Thanksgiving Day the cranberries would be there. See after the east winds[stop] before the rain sets in you know. They always call it nine days wind you know. The plants would dry and they would start fires there--before the cranberries got sogged. I don't know how often they burned--every year or every so often. Maybe five-year period. But they wouldn't burn the same place all the time you know. But I imagine that it was to fertilize itself. My dad told me that it doesn't burn the seeds. They said that after that it would get to be charred, but the root would not be hurt. And that's how come it would come back and be cranberries. When they burned, they burned the whole bog. It was an ancient method of rejuvenating the earth. I imagine that they might have had the same thing there at Ozette. Because Ozette is similar to what the Ts'oo-yuhs Valley is. If Ozette had some [cranberries] it would be the same procedures of growing” (John H. Ides, Makah, pers. comm. 2006).

“It's a sixty or eighty acre bog out in Ts'oo-yuhs. It probably has shrunk to less than thirty acres now. They would gather the tea leaves [Indian or Labrador tea] and cranberries in there. I call it Ozette tea. With no activity in the bog, the little spruce trees are now six feet high. The only fire that I have witnessed in my lifetime or even heard about was set probably in 1986 and it was not intentionally started. It was a brush fire and the east wind kicked up. It burned about ten acres. The places where it got burned are the choicest cranberry pickings now and have the riches tea leaves. Before the tea leaves were very coarse and it was hard picking. Now in the areas where that fire was, you can fill up a bag in a little time. The cranberries are almost double the size in the burned area. It just shows me that somebody tended to that bog years ago. If you walk out there--as your standing on four feet of moss your foot might sink down underwater in some places. The 1986 fire was a fast, quick fire--that burned on top where it was dry” (Gary Ray, Makah, pers. comm. 2006).

Pat Boachup says that Indian tea (*Ledum groenlandicum*) has five names: “Indian tea, wild tea, Hudson Bay tea, swamp tea, and Labrador tea. People burned in the cranberry marsh to promote a better crop of cranberries and Indian tea. Our people have been drinking the Indian tea for thousands of years. But you can never drink enough. A lot of people like the Indian tea. Another reason to burn was to keep the brush and trees from growing. Otherwise it would be a loss. The marsh behind the school, unless someone burns it, it will be history. It is being encroached by trees and shrubs. Unless they're cut down and burned, they'll eventually take over the cranberry marsh just like at Ozette” (Pat Boachup, Makah, pers. comm. 2002).

Gary Ray, Makah, hunts on the Ts'oo-yuhs Prairie. He says (pers. comm. 2006): “There's deer,

bear, and elk that graze in there. The reason that it's so good is because you can walk so quietly in there. You just wait for a certain wind and then you enter the bog, whatever bog you want to hike in opposite the direction of the wind. There was good visibility and you can get so close--you could almost jump on the backs of some of them. These areas had to be maintained for hunting well back when all one had was a spear and bow and arrow. You can get that close to the deer when they're chomping on those cranberries. Same way with the bears. Deer also eat the moss. I hunt there every year. Just about fill our freezer up with all that we need. There was good deer hunting on Ozette Prairies. It was always a pretty sure thing--that you could get one there."

Gary Ray, Makah, (pers. comm. 2007) learned from Lewis Trettivick that "the Makah used to burn the Ts'oo-yuhs bog to make the cranberries better." Trettivick was married to a Makah woman for many years.

"There was burning of the land—only the cranberry marsh. There was talk about that when I was young. I remember them talking about it so that the cranberries and the Indian tea would grow, you know, grow right." (Sadie Johnson, Makah, pers. comm. 2002).

Helma Ward, Makah, told Gill (1984:5) that "Formerly the cranberry marsh at Tsues [Ts'oo-yuhs] was burned every ten years or so to maintain cranberry production. At present, fruit production on the prairies near Neah Bay and Ozette is generally very sparse."

Appendix 6

Quileute Exploitation and Maintenance of Prairies in Traditional Times

By J. V. (Jay) Powell, PhD

December, 2002

(A report based on published and archival sources and ethnographic notes recorded by the author
between 1968 and the present at LaPush and Lower Hoh River, Washington)

INTRODUCTION

The Quileute Indians live on the western side of the Olympic Peninsula of Washington. Their traditional territory includes the watersheds of the Sol Duc, Calawah, Bogachiel and Dickey Rivers, and extends from the Olympic mountains to the Pacific littoral. The Quileute Reservation is at LaPush, a village located at the mouth of the Quillayute River. Note that various anglicized spellings of Kwo'liyoť have come into use over time and are used or quoted herein as they are used: Quileute, Quillayute, Quilute, Quillehuyt.

The Quileute were aware of the value of prairie areas. They maintained them, occupied them, and relied on the food and materials they hunted and harvested there. They called prairies yaqw. Several of these open flatlands existed within their traditional territory at the time of contact. This report is primarily about the Quileute, but another Quileute-speaking tribe, the Hoh, live to the south of the Quileute at the mouth of the Hoh River, whose watershed comprises the Hoh's traditional territory of use and occupancy. I will occasionally refer to the Hoh, as well. That the Quileute and Hoh systematically exploited and maintained their prairies is recorded in the historic and ethnographic record. This report undertakes to document the lore (knowledge, beliefs, behaviors, and products) of prairies in the traditional lifeways of the Quileute-speaking peoples. The term "traditional" will be used with regard to Quileute perspectives and behaviours that pertained just before treaty times and, in many cases pertained into this century or continue to the present.

The body of this report, then, is composed of a cultural description of aboriginal prairie use. The Quileute cultural patterns that I present appear to be warranted based on historical records and the recorded statements of Quileute elders. As recently as the 1980s, I interviewed Quileute old people who had foraged and camped in those prairies in their youth and even saw them burned. It is our goal to reconstruct a cultural perspective, a set of traditional Quileute cognitive definitions that will allow us to project how the talaykila pots'oqw ("the old-time Indians") actually thought about their prairies in terms of issues such as ownership, stewardship responsibilities, annual cycle, exploitation of the prairies, and

the spiritual world of the prairies. Such a reconstruction of a past and not-clearly-attested aspect of culture is an anthropologically daring undertaking. To the extent that it is successful, readers will be enabled by narrow definitions and logical inference to visualize what traditional Quileute did in their prairies and to understand why they did these things.

For ease of reference, this report includes an appendix that presents an incomplete set of Quileute ethnographic texts, chronologically arranged. Quotes and notes in the body of the report primarily refer to this appendix material. The report is intended to provide a cultural overview rather than an exhaustive ecological treatment of aboriginal prairie use. As such, it may serve as a starting point in considering some broader issues.

THE IMPORTANCE OF PRAIRIES IN TRADITIONAL QUILEUTE LIFE

Yaqw – The Quileute concept of prairie. The term yaqw (pl. yayaqw; lexical suffix -lowot) meaning “prairie” in Quileute refers to a lowland area that is not treed. It does not refer to alpine uplands above the tree line such as the Seven Lakes area (t’sixil t’lotoqwlta, “high lakes-place”). Nor does it refer to wetlands that were either seasonal marshes or bogs (loq’wt’lil, pl. loloq’wt’lil) or year-round swamps (t’lixa’, pl. t’lit’ixa’)

The Prairies of Quileute Country. There were 9 main prairies within the traditional Quileute territory and several small open wetlands. The old people appear to have thought of these prairie areas in terms of five main groupings. They certainly distinguished one prairie from another within each area, though. The main prairie areas and the particular prairies that comprised each area were:

A) the Forks Prairie (qit’layaqw, “upriver prairie”) – the large flatland that became the site of the settlement of Forks. It was extensively exploited in traditional times, both for hunting and foraging, especially for bracken roots, which provided dependable carbohydrate sources.

B) the Quillayute Prairie (sat’ayaqw, “downriver prairie” or chikwyaqw, “the large prairie”) and adjacent Little Quillayute Prairie (q’wadiyaqw, “little prairie”) – the site of numerous early homesteads and the Quillayute airbase during WWII, these adjacent prairie areas were known as the “camas prairie” (qwalal’alita, “camas getting place”). The Quileute, especially groups of women, visited it often and much of what they needed to round out subsistence diets was available there.

C) The small Maxfield Creek Prairie (liwaqq’at’sit yaqw, “prairie at the corner (where the river

turns)" or k'ikiLti, "Elk's home" since Quileute tradition holds that Elk lived here at the Time of Beginnings and was created here. Close to the traditional settlement site of Shuwah (shoxwat' or bo'lakw "turbulent water place"), it was important as a hunting, berrying and digging grounds.

D) The Soleduck Valley (t'sixwoqwsq, "the high-upstream prairie area, or possibly t'axital, "hot area") was a large area of contiguous and interlocking prairies that was cognitively divided by the Quileute into the following general divisions: (a) t'loqwolyaqw, "lakeside prairie," what became known as the Tyee Prairie (a post-contact name, Tyee is the Chinook Jargon word for 'chief'); (b) an area that was traditionally called Beaver Prairie (qwat'layaxi yaqw, "Whale-rocks prairie," because it contains a chain of backbone-shaped rocks attributed by Quileute myth to a primeval whale dropped here by Thunderbird; and (c) prairie segments as far up as the mouth of Bear Creek. This was an important hunting area, especially for bear, deer and elk. It was also a foraging area. (d) There were also open wetlands along lower Beaver Creek, Lake Pleasant, lower Lake Creek, and elsewhere in this region that were important reed-collecting areas but they were not considered prairies.

E) The camas prairie (t'lot'lopa yaqw, "lots of blue things prairie," located south of Forks on the east side of the highway, southeast of Dennis the Woodcarver's workyard) and other open areas in this region between the Bogachiel and the Hoh Rivers. It was much used by both the Quileute and Hoh, served by a trail that ran from the south edge of the Forks Prairie to the loop in the middle Hoh River. There are both prairies (yaqw) and seasonal wetlands (loqwt'lil) here: (1) the central lower half of Sect. 27 between Hell Roaring Creek and Alder Creek (Lilotq'achal Loq'wt'liL, meaning unknown.), (2) the central lower half of Sect. 25, east of Alder creek (name unknown).

Prairie Resources utilized by the Quileute. The prairies were basic to Quileute economic patterns. Their prairies were considered to be both the breadbasket and meat larder of the people. According to a reconstruction of the ten most important aboriginal food categories (based on Ram Singh, p.48), the products of prairie foraging represented the 4th and 5th most crucial subsistence foodstuffs: camas, fern, and other roots; and berries and sprouts. Families regularly moved to summer campsites, over which they had recognized use-rights. At other times, women would travel alone or in groups to forage in the prairies. In 1916 Frachtenberg [3:127] remarked "The Quileute, men and women, are good walkers. Even today many women go for camas south of Forks (14 miles)." Men would hunt in the prairies; women, along with the elderly and the young, would forage for roots, berries and other edibles, medicinal herbs and various materials. The following discussion of the economic resources of the Quileute prairies derive primarily from the work of Reagan (1923; 1934), Frachtenberg (1916), Gunther (1973), and interviews by the author.

Prairie Animal Resources. The prairies were important to Quileute for hunting in traditional times. According to Billy Hebaladup, quoted by Frachtenberg (1916:3,37):

The Quiliutes used to hunt along the banks of the rivers...The prairies too were full of game and they hunted especially on Quiliute Prairie (c'hikwyaqw or sat'ayaqw), Forks Prairie (qet'Layaqw), Little Prairie (q'wadiyaqw), Beaver and Tyee Prairies (t'axetal yaqw), and Lower Bear Creek prairie area (t'sixwokwotsoqw yaqw). The hunting areas belong to the whole tribe and are available to anyone.

Although there were "killing zones" or "game runs" through the woods where a few good runners, usually with dogs, would chase elk and deer into narrow ambushes where their hunting partners waited with their bows and clubs, the prairies were favored hunting areas for both large and small game. In the prairies, blinds were commonly used. According to Hebaladup, "A good hunter could shoot (with a bow and arrow) at a target 200 yards (away) and hit the mark," skills that Quileute males learned from a variety of childhood games, contests and constant practice. Besides bow and arrow, spear and hunting club, a variety of traps, snares, springpoles, deadfalls, and pitfalls were traditionally used in hunting. The first gun became available to the Quileute in the late 1850s, acquired by Wastoc'hit, b.1836, the father of David Hudson, according to Hal George; but firearms were not commonly owned by the Quileute until the 1890s, when a trader named Sutcliffe Baxter, who took over after Dan Pullen left LaPush, started trading 45.90 caliber rifles for "a stack of fur seal pelts as high as the rifle stood" (Powell NB 1978:9). Thus, hunting patterns started to change in the 1890s, along with so many other aspects of Quileute life associated with the prairies. Until then, hunting was a primary subsistence activity. In 1916, Arthur Howeattle and Billy Hebaladup told Frachtenberg:

In former days hunting was as important among us Quiliute as fishing, but with the advent of the white people, the establishment of the reservation, and the going into effect of state game laws, the Quiliutes gave up hunting until today they are almost exclusively fishermen, going out on the hunt only in cases where they are short of fish. In former days the country abounded in all kinds of games, especially deer and elk (3:37).

Ram Singh noted that hunting was not only an issue of being able to shoot straight with a bow and arrow. This is particularly true in the prairies where, shooting from hiding, Quileute hunted alone or in small groups; whereas, in the mountains and woods, hunting was generally a group activity with runners and ambushers. In any case, it is clear that traditional Quileute believed that there is a spiritual component to successful hunting.

Super-natural means of production....Elk hunters among the Quileute and Quinault were believed to

require the help of particularly strong spirits. In order to obtain a spirit power the young prospective elk hunter prayed, bathed in a prescribed manner, and subjected himself to severe discipline and hardship.... When he got the power, he was able to lead a party to hunt elk. Indians often hunted elk in the lower valleys and prairies (Ram Singh, p.43). ...Upriver people among the Quileute were expert in all types of hunting....Most elk hunters with elk hunting power lived in upriver communities (Ram Singh, p.57).

In traditional times, late June was the beginning of the elk-hunting season. Bull elks were considered to be at optimum fat "when the devil's club was red." Cows were hunted in July and August when, after rutting, they were at peak fatness. Deer were usually hunted in prairies from June to August at dawn and sunset, and were not chased but shot from blinds and hiding places. Throughout the year, elk, deer, bear, cougar, wolves and lynx were occasionally caught with spring-poles. Large and small pitfalls were dug to trap bear and smaller animals. Rabbits and other small animals, grouse, eagles, seagulls and other birds were snared. Rabbits, raccoons, skunks and other small animals were collected after being incinerated. The meat of large animals was jerked (cut in strips and dried on racks) at prairie camps and taken home to be stored for winter provisions. Smaller mammals were eaten immediately. The prairies provided the following to Quileute hunters:

deer (hawayishka), elk (K'ikil), bear (akil), cougar (widaxwt'si), lynx (da'ida), wolf (lawat'sakil), raccoon (q'aq'awit), skunk (t'sikw), weasel (wit'sit'si), squirrel (hi'ichiyal), fisher (t'sak'aba) and other small mammals; also, birds including grouse (hibhib), ducks (general, qwid), and goose (hohokwal).

The prairies appear to have been a meat larder. But, as economic anthropologists often realize by studying the subsistence patterns of hunting and gathering peoples, the men usually hunt for a living and live on what the women forage. In traditional times in Quileute country, which was rich in fish and game, this may not have been the case, but the importance of the roots and fruit of the prairies was clearly basic to survival.

Terrestrial Plant life as Prairie Resources for the Quileute. The first published description of the Quileute included a description of the Quileutes' camas prairie, Sat'ayaqw, which later came to be known as Quil-layute Prairie. This first mention makes it clear that the prairie was extensive and rich in ferns.

On ascending this, I found the beautiful prairie stretched out before me, level with the top of the ascent, covered with ferns higher than my head, and extending in a northeasterly direction five miles or more in length and from a half to three quarters of a mile wide [Swan, Wash. Standard, Oct 5, 1861].

Ram Singh discussed the importance of prairies to the peoples of the Peninsula in aboriginal times:

In prairies there are camas and ferns with edible roots. There are a few prairies in Quileute and Quinault country; the Makah had none. The Ozette used one prairie but it was only slightly productive. Camas and ferns grew profusely in these prairies; the former were economically important and the amount produced did not meet the demand. It was so highly valued that it was one of the few items purchased by the Makah and Ozette from the Quileute and Quinault. Camas had a special place at feasts and potlatches [p.25].

The inquisitive and observant Albert Reagan, who once interrupted a Shaker ceremony at LaPush to take the pulse of participants, was also not content to simply note that the prairies of Quileute country were rich and fertile. He described them as follows:

As far as the writer knows, the soil of the prairies, treeless areas covering 4,000 acres, has never been analyzed. It is a black loam two or more feet in thickness. It is composed of decayed fern roots that have been collected since the retreat of the great ice sheet. This soil is known to be as good as any in the state. In fact, the writer has examined the soil in various parts of the United States and he has found none better (Reagan 1908:21).

Reagan had lived in LaPush with many older Quileute who had been alive in the days before traders and officials and settlers arrived and everything began to change. He was interested in what we now call "ethnobotany," and he interviewed knowledgeable elders about what plants were used and how the old people used them.

While in charge of different tribes of West Coast Indians from 1905 to 1909 and in 1928, the writer made a study of the plants used by them. This included a study of the plants they used for food and medicine and those used in making baskets, mats, in house building, etc. The use of more than eighty plants are given, their descriptions, and uses to which the Indian put them...These Indians were great users of the plants of the region in the old days, and still do use some of them (Reagan 1934:55).

Reagan was not only interested in the fact that the Quileute used a particular plant found in their prairies, but in how it was used. For instance, he describes the crucially important and highly valued bracken fern, one of the prairie root-plants used by the old people, as follows:

Fern Family. Bracken Fern. Indian name: kakwaput, kah-a-kwa, wot-tsa-a-balk. This fern grows in the "prairies" of the region and burned-over places, especially in the middle upland regions. It is the fern of

Forks and Quillayute prairies. It has been carried to the beach with feed and appears in the old graveyard near where the old (Mr. Wesley Smith) schoolhouse used to be at LaPush-Quillayute Indian village. At Forks prairie it grows as high as a horse... They also dug the roots of these ferns, pounded them to a pulp, dried the pulp, mixed it into a sort of dough and baked bread from it, which then claim was pretty good bread. Unluckily, the writer appeared on the scene too late to see any of this fern-paste bread... (Reagan 1934:56).

It is clear that traditional Quileute knew the plants of their prairies. They knew the uses to which these plants could be put, at what stage in their growth they should be harvested and how to process them for use or consumption. What follows is a brief listing of the prairie plant life harvested and used by the Quileute in traditional times. Some of them, such as camas, are still used on a ceremonial or medicinal basis characterized by infrequency. Many are not found solely in prairie areas. They are listed by categories: 1) roots, 2) berries and fruits, 3) Other plants used as foodstuffs, and 4) Plants used as materials for manufacture, medicine, cosmetics, and ceremony.

Roots and Rhizome Plants harvested in or around prairies

Ferns (pilapila, a general term for ferns taken from a traditional game played by children and adults) The game is played by holding a long fern frond and, after taking a deep breath, touching each of the leaf-ends, going around the frond counterclockwise as quickly as possible, saying, "Pila" as you touch each leaf-end. You cannot take another breath and must finish in one breath.

Bracken (k'aqwa'apat), Sword Fern (pilapila), and Ladyfern (t'sikwipat)- The roots (t'sikwi') were collected, dried, scraped, ground into a paste, made into a loaf and wrapped in skunk cabbage and then cooked under fire ashes (called t'soq'wo'ot'sit, "buckskin bread"). Sarah Hines once told the author that after she was married (c1920) she went out and dug a mess of t'sikwi' and made them into t'soq'wo't'sit like her grandmother did, but she had forgotten how much work it was and she never did it again. Arthur Howeattle told Frachtenberg that the roots were dug over the winter from November to April (a surprising timetable!). Fern roots were rolled up and dried in the house by laying them on racks. The roots, dried like this, lasted a whole year. The recipe: dried fern roots were cut into 2" lengths and roasted over an open fire, then rolled over a mat to scrape off charcoal. Then they were shredded on flat rocks using wooden wedges. The bark was mixed with dried salmon eggs and eaten. (He then says, "The inside meat was thrown away." This is at odds with other reports by Reagan, Ram Singh, Gunther and others). The fronds were used for mattresses while camping and wiping (Gunther 1973:13-14; Reagan 1933:56; Frachtenberg 1916:3:25, 3:27, 3:29, 4:81).

Camas or lacamas (kwala)- The type of camas in the Quileute prairies has small white bulbs generally 1"

long by 1/2" thick. It was found originally in most prairies of Quileute territory, but most abundant in the Quillayute and adjacent Little Prairies and Forks Prairie. The bulbs are dug by turning the earth around the distinctive blue flowers and can be dug at any time of the year. According to Reagan (p.56), "In preparing this food, a pit is dug in which a fire is built. On the fuel cobbles are piled, which, when heated to red heat, are covered over with wet leaves, brush, or grass. On this the bulbs are piled and over all wet leaves are spread to the thickness of, say, seven inches. Then over all, clay, earth or sand is heaped. Just before completing the covering over with earth, a quantity of water is poured on the cooking product and then when the covering is completed a small hole is left through the dirt-layer for the escape of steam. The cooking is then permitted to continue for about twenty-four hours. The product is removed through a hole dug through the top of the pit. The earth mound is left and the shifting sand fills up the hole from which the baked articles have been taken. The mound is then complete, a puzzle for future archaeologists (clams and fruits were also prepared by the oven process). Oven mounds are scattered throughout the Olympic region and northward to the Fraser River country." Camas is still found in the prairie along the highway south of Forks; even using a shovel, it is hard for two people to gather a gallon in an hour. It was considered a noteworthy cultural occurrence when, in 1989, a tractor was turning the earth in an uncultivated area of the Quillayute Prairie; and, Terri Tavenner took the QTS students out and they collected 200 lbs. of camas that was used in several tribal hayoqqwa (ceremonial invitation dinners). Camas was an important trade item with the Makah, who had none. Many Quileute myths include scenes in which camas plays a part.

Clover (la'it'ay, "gathering hands")- The whitish roots were an important foodstuff, eaten either raw or cooked: steamed and eaten with salmon eggs or dipped in whale oil, or ground and made into loaves for baking. They were often dug and eaten with silverweed roots.

Silverweed (t'lit'lishit)- Grows in similar environments to clover. Considered a staple and a basic foodstuff. Usually eaten fresh and collected generally in fall and spring. Only the roots were used: dug and steamed, which was necessary to remove the bitterness, and then eaten with fish eggs or whale oil. There were both long, straight roots and curly roots. In a meal, the straight roots were given to chiefs and headmen.

Tiger Lily (lilipiwada'yu) and chocolate lily (k'wachawada'yu)- the roots of both were picked and cooked (usually steamed) and eaten. Because of a strong (peppery) taste, they were often mixed with oil. Occasionally eaten with salalberries, with which it often grows, and eaten with fish.

Buttercup (kik'iliq'axpat, "elk bone plant")- the bones were dug between September and February and cooked on hot rocks, dipped in whale or salmon oil and eaten with dried salmon eggs.

Thistle plant (bo'olob) According to Hal George the old people used to eat the roots of thistles in the old days. The roots look like little white carrots and can be cut up and boiled in soups or boiled and eaten with other roots or with a jelly made of wild bitter cherry fruit.

Berries and fruits common to prairie environs

Salmonberry (cha'alowa)- The most common and most anticipated berry of Quileute country, as it was the first berry of the spring and a cherished treat after a winter of preserved foods. The sprouts (yacht'silat) were peeled and eaten raw or steamed. The red and orange berries were eaten raw or the juice was extracted and drunk – one of the few juices in the traditional diet.

Red huckleberry (tilo'ot)-

Thimbleberry (taq'achil)-

Trailing blackberry (bada'abixw)-

Wild strawberry (t'obiya, "bending over")-

Elderberry, red (t'siba)-

Salal (kwo'od)-

Blue huckleberry (towadak or yayaxad)-

Lowbush cranberry (p'ap'a'is)-

Stink currant (t'lilo'oc'hiyil)-

Rose hips (t'likway)-

Wild crabapple (soyoyoxwa')-

Wild bitter cherry (the Chinook Jargon term, pilpil olalie, "blood fruit" is the only term remembered)-

Blackberry (evergreen or himalaya) (shipq'it'sa, "black berry")- an introduced berry that spread and quickly became a staple.

Other plants found in prairie areas used as foodstuffs

Giant Horsetail (probably ba'ax)- Found in wet areas of the prairies, the young shoots were steamed and eaten in the spring. The juice in the reed was sweet and was sucked out if one were thirsty and not close to water. The roots (t'sixak) may have been eaten. The juice was used by women as fingernail polish and by men to make bows, paddles, and canoe prows shine.

Cow parsnips (t'lopit)- One of the most awaited spring plants, along with blackberry and salmonberry sprouts. It was eaten raw by scraping off the outer fuzz and eating the tube-like stalks like celery. It served as a tonic, too, when eaten in quantities. In the late summer, tough stalks could be scorched on a hot rock by the fire and the ashes rubbed on meat or fish as a condiment. Stems were split and woven into a type of basket called a t'lopitbay

Ha'hibá, Trees common around the prairies

Hemlock (tila')- various sources have mentioned that the prairies were surrounded by stands of large hemlocks. This shows both that the prairie fires did not burn the surrounding trees and that both the prairies and those surrounding trees had been there for a long time. For the Quileute, the most important use of large girth hemlocks was to be a source long, wide strips of hemlock bark that were used in the walls and roof of the prairie camp-house, the loq'wati, prairie bark house

Red Cedar (t'sapis)- The red cedar grew on the edge of some of the prairies. The traditional Quileute uses of this important tree, called "the tree that made Northwest Coast Indian culture possible" are myriad (see Powell and Morganroth, p.6-10). Of special interest with regard to the Quileute use of prairies was the use of cedarbark for berry drying pans and other camp uses, including twined rope. But, even casual acquaintance with the practical details of traditional Quileute lifeways makes it apparent that cedar was a daily necessity of life.

Yellow cedar (q'alba)- Yellow cedar was used for carving (esp. bows) and the bark was collected for finer shredded bark manufacturing, in skirts and for use around the collars of vests and cloaks. Medically, yellow cedar boughs would be burned to cleanse a home or campsite after someone had been ill or ghosted in a dream or some surprising spiritual manifestation had occurred.

Douglas fir (t'lixits)- Especially preferred for poles in camp-houses such as the loq'wati, hemlock bark houses in the prairies. Also used for spear handles and canoe poles. Fir gum was used to treat abrasions and chewed for pleasure.

Silver Fir (t'lixitschaqli, "similar to a fir")- The silver fir was known as the "helping tree." Quileute myth told how in the Time of Beginnings Silver Fir was the brother of Fir and would always help him out when he needed something. Fir boughs were used in the kit'lakwal "elk dance ritual," and when a hunter had not had luck the last time out, he would sleep on silver fir boughs on the nights before going out hunting again.

Grand Fir (t'lokwaliyat, "Wolf Dance ritual wood" or sibi'yat, "stinkwood"), preferred for making the masks of the t'lokwalí Wolf Dance Society ritual. Since the prairies were common places for members of the secret societies to get together, the materials for ritual gear and regalia were regularly collected in prairie areas.

Sitka spruce (yaksa)- Important to basketry were spruce roots that were dug and pulled up, split and then used in burden baskets, especially the large openwork baskets carried by women to the prairies

with tumplines. Also used in the weaving of rainhats, nets and ropes. The wood was used in a variety of manufactures. The boughs had a special power to help cleanse the mind of selfish thoughts and defend users against unclean thoughts and evil-intentioned spirits, so bunches of sharp spruce needles were used as body rubs during spirit bathing and sweat bathing. If someone died in a house, a wall of spruce boughs would be set up around the spot of death to encourage the soul of the departed to actually depart and move off to the entrance to the underworld. Spruce boughs were useful to a kit'lakwal "elk dance society hunter," who wanted to be free of lustful distractions while preparing spiritually for a hunt, and he would heap them over himself on his sleeping mat while at his hunting camp. The gum was chewed for pleasure after being boiled.

Yew wood (xiya')- Yew was hard, so it was used for arrows, digging sticks, wood splitting wedges, hammers, barnacle-prying bars and other implements that required toughness. Used medicinally, a piece of yew bark from below the level of the ground was used as a poultice for an infected abrasion. Yew needles were mixed with kinnickinnick leaves to make qaboqwol, "mixture" used in traditional smoking before tobacco was introduced. Prominently mentioned in Quileute myths, the yew appeared frequently in dreams and would communicate with people when something important was about to happen to them. Thus, it was common for a hunter to use a yew tree as part of a blind or to leave a yew tree growing near the edge of a prairie.

White pine (xwaxalpat)- The pine was sometimes used in fine carving because of its whiteness (similar to the wood of devil's club). The pitch was used medicinally for coughs and for waterproofing baskets. Fred Woodruff told of a dance apron he had seen with the long penile-shaped cones of white pine sewn on the front, so that when the dancer twirled the cones swung out and "became erect."

Cottonwood (kwodokw, also referred to as t'lxitslo talopat, "fir tree's sister" because of cottonwood's thick fir-like bark)- In myth logic, at the Time of Beginnings Fir and Cottonwood were siblings, and Cottonwood was an excellent dancer, so when she became a tree, her leaves would shake rhythmically. The cottony seedpods were mixed with cattail fluff, dog wool, and feathers for loom weaving in traditional times.

Willow of various types (lilaq'a)- Willow poles were driven into the creek and riverbeds and used for uprights in fish weirs because they would take root under water and hold the weir in place. Willow bark was dried and used for weaving. According to Reagan, willow limbs were split and scraped thin for use in basket making. Willow bark tea was used for tonic and medicine. Good cooks had a bag of willow leaves and would add them to haxk'isa, (fish head soup) for flavor.

Vine maple (t'apsiyowpat, "splittable plant," or lalakwtsil)- A truly important wood in Quileute traditional life, vine maple poles and stakes were used for a variety of purposes in construction, for racks and frames and implement making. Vine maple withes were split for basket making; the baxwowi basket was made of vine maple.

Broadleaf maple (la'axal)- Used for carving larger bowls and pots, which were hollowed out. The large leaves of this maple were used to line the inside of po'pqw and wi'i'is (small and large alder bark baskets used for storing berries underwater for use during the winter. The thick moss on the north sides of these trees was rubbed on a boy-child's chin to cause a thick beard in adulthood.

Red alder (kakaliya)- The alder was common around the prairies, and usually the first to invade an open area, it was the special objective of the burning process to wipe out encroaching alders. The wood was used for carving commonly used (and replaced) utensils, e.g. cups, platters, dippers. The bark was dried and used for red dye used for basketry materials and, even, women's hair.

Dogwood (bixa'a ha'ba, "blossom tree")- used in making utilitarian utensils, e.g. hooks and arrows, since the wood becomes hard after it dries. A myth tells why the Quileute did not eat the berries of dogwood but may eat the similar looking bunchberry, which were called bixa'aha'bat'sa "little dogwood."

Cascara (akilipat, "bear plant")- The bark had medicinal uses, primarily in the treatment of visceral disorders.

T'lo'ob, grasses found in prairie areas

Beargrass (iba)- the most sought after of the basket grasses, not actually recorded as growing within memory in the Quileute prairies, but its habitats suggest it could've been on or around the prairies. It is called bear grass because bears eat the new growth in the spring; the Quileute term, iba, has no etymological meaning. Traded by the Quileute as far north as Vancouver Island. It was picked in July or later and hung in bundles to dry, then split and used for the sidewalls of fine basketry or for basketry designs when dyed.

Basket sedge or slough sedge (loq'way)- the most common grass in Quileute country, called "swamp grass" by the Quileute women. It did not grow in the dry prairies, but was common along the streams through the prairies, in the natural and maintained seasonal marshes or bogs (loq'wt'lil) and year-round swamps (t'lixa'). Picked, hung in bundles, dried, split and woven in small and large imbricated basketry.

Cattail (sit'say)- There were areas within and along the prairies that provided the cattail reeds that were

brought home by the canoeload from wetland areas. Because the “measure of a traditional Quileute woman” was the quality of her hokwtit, “cattail mats,” women had special places to get quality cattail reeds and took special care to keep the spirits of the area on-side and to avoid transgressing taboo interdictions while harvesting. Most women kept the location of their cattail sites a secret. The finest cattails were remembered to have come from the wetland areas of the Beaver and Tyee Prairie areas.

Tule (xapo’)- Another mat material was both hard and soft-stemmed bulrush, used by the Quileute for mats, as well. The tule mats were considered “outside mats” for the covering of camping shelters and temporary smokehouses. The reeds, sometimes up to 8’ in length but usually around 4-5’ long, were also common on the edges of the prairie at lower Beaver Creek and around Beaver Lake.

Ryegrass (kakipat)- This grass (and xitsi’, the similar dune rye not found in the prairies) was harvested early in the summer and then dried and long strands (up to 4’) were used for basketry and shorter pieces were bunched for scrubbing while bathing or pregnant women rubbed themselves with it in order to have healthy babies.

Scented bedstraw (hac’ht’ada t’lalapat)- The vanilla-ish scent of this plant with burrs made it attractive, and the Quileute had various uses and folkloric beliefs associated with it. For instance, if a woman wishes to attract a man, she need only get a couple of his hairs and press them together with some of her own and some bedstraw, and he will be magically charmed by her. These types of activities are appropriate to the prairies, which are spiritually active areas and appropriate places for conjuring.

Bedstraw (t’lalapat)-This burred straw-grass was probably distinguished by the Quileute from the scented variety above. It was also used by the Quileute for conjuring and required sensitivity on the part of the user, otherwise it could result in the user having blotches on their face if used selfishly or without gratitude. It was not used for bedding by the Quileute (the name comes from the tradition that Mary slept on a bed of ferns and bedstraw, and the ferns did not acknowledge her baby and, hence, they do not have flowers; but the bedstraw did and ever since has greenish-white flowers).

Pilapila, ferns common to the prairie areas

Deer fern (kistolapat)- Quileute children were taught to find and eat the root of this plant in emergencies, even though it was not tasty. It was used for suppression of appetite between meals (chew up a leaf, spit out the pulp and swallow the juice). Leaves were also boiled and the liquid drunk as a tonic for general ill health. Wet fresh leaves were put on limbs for stiffness or paralysis.

Maidenhair fern (hapoqlpat)- The rhizome was not eaten, but it was used for packing (since it was water-

proof), and the stalks were used in weaving for designs on beargrass baskets. It was also burned and the ashes rubbed into the hair for tonic.

Other plantlife common to prairies and adjacent areas in Quileute territory

Anemone (haga'yk'iswa bixa'a, "frogskin flower")- used by gamblers, who rubbed it on the back of their hands, where it blistered the skin and made their hands look like frogskin, since frogs were associated with the spirits of good luck.

Baneberry (kwo'loqwol, "open oneself up thing" or hat'alichiyil, "hair seal leaves")- Hair seals and sea mammals were thought to be fond of this and the leaves looked like hair seal skin. Sea mammal hunters carried the leaves in their harpoon pouches. They knew that it makes one sick to the stomach, but sometimes put a leaf behind their upper lip when preparing for a hunt as a cathartic. Pregnant women sometimes chewed a bit for morning sickness with the logic that if one was already queasy, baneberry (which caused intense stomach upset) would neutralize the morning sickness. It was applied to boils to bring them to a head.

Boykinia (chiwawoxwchi'oxla)- The leaves were eaten for TB according to Erna Gunther.

Coltsfoot (k'wa'yixpat)- The root was used to make cough medicine, either boiled in tea or eaten raw.

Not only the root, but the flowers were collected in the spring. The flowers were boiled and the infusion of these was rubbed on the skin after swimming.

Columbine (t'lit'lixlix, "scar maker")- Since wounds were evidence of experience (that gave men some authority), it was important that a scar was left, so columbine was rubbed on an open wound to insure a visible scar (goat's beard was used on a closed wound). The roots were scraped with a sharp rock and the milky pulp was put on sores to help them form a scab. The leaves are chewed and spit on sores without swallowing the juice.

Daisy, Ox-eye (introduced species, but called q'abalpilila, "White faced thing")- the stems and flowers were dried and boiled into a pulp for chapped hands. Girls wove them into skirts for "stone-faced dolls," a children's beach toy made by girls in the old days. The faces of the flowers made old people laugh because they were able to see the images of deceased friends in them, (according to Hal George, "It's like seeing a face in the moon." Plantlife such as this daisy were drawn quickly into Quileute lifeways, pharmacology, and folklore.

Devil's club was used as an indicator of season – when the devil's club is red it's time to go out and get

your elk. Although the white wood of larger stalks made it a useful, sought-after resource, the primary uses of devil's club were medicinal and ceremonial. Tea made by boiling whole chunks of the stalk was used as a blood purifier and treatment for illness in general. Nets were rubbed with devil's club so fish would be drawn to enter them. Fishermen carried small carvings of fish from devil's club for luck. Fireweed (k'aliba)- the stems were steamed and eaten and the sweet syrupy stems were prized. Could also be eaten raw by peeling off the silky outer covering. The sap was sucked out of the stem like a straw and used to sweeten sour things. The fluffy cotton was mixed with other things like cottonwood fluff and dog hair and used for weaving.

Ginger (hac'hit'adapat, "good smelling/tasting plant")- The big leaves are used in the steam pit. Tea from the leaves was used for depression or loss of appetite. Leaves were dried in the sun for two days before using, but if they got too dry they lost their smell. The leaves are also used in a potpourri with moss for baby cradleboards and mattresses.

Goat's beard (t'lilixpat)- used as a medicine by grinding the root into pulp and smear it on open sores. If the sore is open, drink tea made of ground plants if it won't heal. The tea was also used as a tonic and blood purifier.

Indian paintbrush (p'ic'habixa'a, "red flower")- The whole plant incl. flowers but not roots was crushed and made into a tea that cause menstruation to be regular, sometimes accompanied by rubbing the vulva with the blood of a male kwid, "black surf duck."

Kinnickinnick (qaboqwol, "mixture")- leaves were mixed with other barks or the burrs of bedstraw (and later, tobacco) and smoked by the old people in pipes. Quileute smoking involved inhaling smoke in-breathing again and again without allowing any to smoke escape the lungs, causing dizziness and, often, unconsciousness. The berries could be eaten, although considered tasteless, and were sometimes used to stuff birds while cooking (adding a few salalberries that were ripe at the same time).

Labrador tea (kwaxwachiyil, "skinny leaves")- Used for tea in treatment of chills, illness or for external application for itches and eruptions...the Quileute did not make tea as a beverage or merely soothing drink; they only made tea as a treatment for a particular malady.

Miner's lettuce (p'ip'ic'hist'sip, "red on the ground")- A pregnant woman rubbed her body with it and yarrow to have a healthy, strong baby. Also made into a tea to cause cathartic urination. It was ground and rubbed into the hair to treat dandruff.

Mint (k'i'ilt'adapat, "cool smelling plant")- Mint leaves were used for a rubbing unguent. Chew the leaf for a nice breath and mix in a leaf with kinnickinnick for a cooler smoke. Not used in cooking.

Nettles (various types: pidawaqwol (small nettles) and tsitskalowa (tall nettles)- the stems were dried and split and used to make string traditionally used in tying nets (see Frachtenberg, 2:33 for the process). After the birth of a boychild, a father would hang a string of nettle fiber across the area of the house where the child lay and attach small carved arrows, bows, and spears to it so his son would be an accomplished hunter. At puberty, boys were rubbed with old dipnets made of nettle fiber to toughen them. Adults sometimes beat themselves with nettles to make themselves open to contact with the spirit world. Nettle strings were used in cat's cradle games and to wind around tops to start them spinning.

Ocean spray (xak'ilpat, "hard plant")- Sometimes called 'ironwood', as was yewwood, also, it was prized for making arrows, cod hooks, salmon barbecue sticks and other objects that received hard duty. The bark could make people tougher, too, and was sewn into whalers' cloaks. Leaves and seeds were ground up and mixed with other tea-makings to add toughness to the other benefits of the infusion.

Pearly everlasting (sisibalowa, same as yarrow)- used as yarrow, but also well known as a steambath plant – Lay it on hot rocks and sit over it with a blanket over your head covering you completely and pour water on the rocks. It was used for tea, and the infusion could be rubbed on sore joints for easing pain. Also, it can be rubbed on an open sore

.

Saxifrage (chiwawoxwchiyolit or qwalichiyil, "three leaves")- The leaves were eaten fresh for lung problems and coughs

.

Scouring rush (tsilachlpat)- The bushy growth of the rush was used for sandpapering and smoothing spears and harpoon handles after dogfish skin had been used. It was also used in bathing, for scrubbing the body to toughen oneself up (along with handfuls of spruce needles and rough sand). Women polished their fingernails with the juice, which dried shiny.

Selfheal (t'lot'lopabixa'a, "green/blue flowers")- Believed to have been given to particular families to use as a private medicinal herb, although poisonous to families who have no rights to it by Q'wati at the Time of Beginnings.

Silver burrweed, cocklebur plant- The burrs were used in fertility medicines. Smells sweet and was thought to help a person live to an old age, so it was picked by old people and put under their sleeping platform.

Skunk cabbage (t'okwa or xitsxits)- One of the most used plants in Quileute territory, the skunk cabbage even had a lunar month named after it: xitsxitsaliqtiya'at, "skunk cabbage getting days." Leaves were used to line steam-cooking pits for cooking elderberries and to line the berry storage baskets. The roots (white part below ground) could be cooked, which takes away the acrid taste, and eaten (but were not highly prized, and considered late winter fare when the larder was empty). In late pregnancy the roots were pounded and boiled and the juice, if drunk, would cause an easy delivery. Leaves were applied to cuts and swellings. A fur seal hunter puts the leaves under the bowpiece of his canoe and when they lie straight the seals will lie flat, too.

Spaghnum moss (t'owa'as)- Spaghnum moss was collected by the canoeload and brought home for use as baby diapers in the cradleboards (often mixed with wild ginger leaves). It was pushed into the cracks between houseplanks as insulation and used to wipe fish. It was used in bending bows, wrapped around the bow and dampened and buried in hot ashes until pliable.

Trillium (k'wok'wotstadaqchiyil, "thieves' leaves," called that because the leaves move slowly in a "sneaky" manner)- Used medicinally, the bulb is scraped and the scrapings are applied to boils to bring them to a head.

Twisted stalk (ya'wapat, "snake plant," because traditional Quileute thought that snakes ate the berries; and, since snakes are a spiritually liminal creature, if they eat something it is inappropriate for pots'oqw ("Indians, people") to eat it. Leaves were thought to smell good and were mixed with wild ginger and put into the moss used for mattresses.

Wood sorrel (ka'alats or ki'axlatspat)- Hunters chew the leaves, though bitter, while lying in wait for game to keep themselves keenly focused. Wilted (steamed) leaves are put on boils to draw them.

Yarrow (sisibalwa, same name as pearly everlasting)- Leaves were eaten by women in labor to ease pains. A newborn was bathed three times a day and rubbed afterwards with cedar bark and yarrow...and then greased with shark oil. Babies were rubbed with yarrow before they were named. Boil the leaves in an infant's bedspace to make the area smell good. Damp leaves were laid on rheumatic limbs. Yarrow teas were brewed and drunk as a general tonic.

Yellow avens (hat'alichiyil, see also baneberry, above; there seems to be some Quileute relationship between the two)- Leaves were chewed during labor, because they are supposed to grow where the seals give birth. Sea mammal hunters carry the leaves in the pouch. Chewed to spit on a boil in order to bring it to a head, but do not swallow the juice.

THE TRADITIONAL CULTURE OF QUILEUTE PRAIRIE USE

Traditional Ownership of the Prairies of Quileute Country: Use Rights and Stewardship Obligations

In this section, we will consider native prairie use in terms of the traditional Quileute concept of tribal territory and individual land ownership, which are the basis for their sense of land-use rights and stewardship obligation. First, let's detail the basis for the Quileute's sense that their traditional territory belonged to them, a premise about which they had no doubts. This assumption derives from their world-view as depicted in their oral tradition. According to the Quileute cosmogony, the world always existed. Then, during the Time of Beginnings a shape-changing transformer called Q'wati went about the region changing living things and features of the natural world into what we see in the world today. At the Time of Beginnings, animals and people were simply beings who had or were given by Qwati the features of the animals that they became. There are narratives, still told among the tribe, that account for many of the focal features of Quileute country. For example, Q'wati created the rivers of Quileute country while escaping from a pack of wolves. Then, later, at the mouth of the Quileute River, Q'wati transformed those same wolves into the ancestors of the Quileute; and, finding the p'ip'isodat'siLi ("upside-down people") living at the mouth of the Hoh River, he created the ancestors of the Hoh people as we know them by showing them how to walk on their feet instead of their hands. Thus, the oral literature that is Quileute tribal history confirms that they were created to inhabit, use, collectively own, and pass on to their descendants the area that includes the drainages of the various rivers that combine to make the Quillayute River. As Jack Ward said in a potlatch speech in 1928 (QT, p.12).

...yix tas t'siq'ati yix hicha'wataxw hilokiL xi' chiLqwat'oqw hixat
xwa' tchi:qa'axw xwa' tchiLqwat'oqw.

...the land, as it belongs to our children as well as to our children's children.

There is some tension between many published assumptions about native land "ownership" and the traditional Quileute concept. In order to make the Quileute customary perspective on land ownership clear, we will discuss it in terms of:

- (a) the Treaty of Olympia's term "open and unclaimed" land;
- (b) Quileute Use-ownership -vs- American legal real property ownership;
- (c) Quileute Use-ownership based on building or a continuing improvement on the land;
- (d) Quileute concepts of Alienable and Inalienable property;
- (e) Permissive utilization of a property's resources -vs- users in common

Were the Quileute Prairies "Open and Unclaimed land?" The terms "open" and "unclaimed" were

regularly used in discussing Indian land ownership on the Olympic Peninsula from treaty times up to the present. The anthropologist Ronald Olson, implied such a generally loose sense of property ownership when he described Quinault boundaries as follows:

In theory, the tribal territory embraced the whole region drained by the Quinault River....But, the feeling of ownership or exclusive right to this territory was unheard of, and if expressed would no doubt have been considered a great joke. Anyone had the right to travel along the beach, to dig clams where he pleased and to hunt where the game was most plentiful (Olson, p.13).

The Treaty of Olympia implies the same thing in its use of the term "open and unclaimed" with regard to a guarantee of privileges secured to the signatory tribes:

Article III. The right of taking fish at all usual and accustomed grounds and stations is secured to said Indians in common with all citizens of the territory, and of erecting temporary houses for the purpose of curing the same; together with the privilege of hunting, gathering roots and berries, and pasturing their horses on all open and unclaimed lands (emphasis added).

In fact, we can distinguish two senses of "open and unclaimed" territory in the Quileute (and, probably, neighboring tribes') traditional sense of their territory: 1) open and unclaimed territory on the liminal edges of their territories where they bordered the territories of adjacent tribes; and 2) "open and unclaimed" areas within their territorial boundaries which is not claimed as private property of a Quileute individual or family and therefore available for other tribal members to claim or to use (along with their alien guests) without permission. Based upon their location well within the member-recognized boundaries of Quileute territory, the prairies listed above were clearly areas of the second type, since they were used collectively by tribal members without permission and by alien guests with permission.

Quileute Use-ownership. When we read Frachtenberg's ethnographic description of Quileute pre-contact land ownership, it is different than fishing grounds and stations. He reports, "Land was neither individual nor family property. It belonged to the tribe" (p.4:57) but, yet, later he speaks of "fishing grounds as the inviolable property of individuals" (p. 4:59). This contradiction appears to result from failure to distinguish between use-ownership and the Western concept of legal private property. Quileute use-ownership can be characterized as the community-recognized right of a person or family to exclusive control over property (i.e. a parcel of land or resources). Exclusive control implies that others may not visit the land or hunt/fish/forage the resources of the land without permission of the use-owners. Thus, while all land is seen as belonging to the tribe, clear use-ownership rights are recognized by tribal members as inheritable and continuing for as long as the property use-owners inhabit even seasonally or utilize the

property (with the exception of beach rights, which must be validated by periodic potlatching). Use ownership in traditional times was a claim to use that was recognized by members of the community.

Quileute Use-ownership based on building or a continuing improvement on the land. Use ownership in traditional times was usually based on an individual or family building a structure (e.g. house, smoke-house or drying rack, fishing weir and, later, a garden or simply by improving part of a prairie by burning it) and their use ownership was then recognized by others as long as that structure stood. There are several references to this perspective and practice that make it clear:

A man or family, however, was looked upon as the proprietor of the place on which he built his permanent fishing, digging or hunting houses. These houses could be inherited. A man wishing to build or settle on a place asked nobody's permission provided it was occupied by no one else. All fishing grounds, whether on the beach or on the river, were the property of a family (who built a weir on it) and no one else could fish there without the consent of the head of family. The hunting grounds up the several rivers were also family inheritable and indivisible property. (Frachtenberg 1916:4:57)

The property of the river was more or less assumed by the villagers who had a weir there. No other person would come and exploit it unless he had been granted permission. Moreover, a stranger never dared to fish in another man's area...Beaches were not communally owned by the Makah and Quileute. The individual families owned them...the beaches were inherited like property. If a person wanted to acquire a new beach he had to give a potlatch and announce his intentions. After the potlatch, the beach became the family property, and others accepted it as such. (Singh 1966:117)

A very explicit expression of this Quileute canon of claiming ownership of unused lands by improving them (in this case, opening and maintaining a garden on the land), was given by Pettitt.

In 1915, the Quileute absorbed more knowledge concerning the difference between white ownership of property and the traditional Indian concept that ownership continued only as long as the property was used. For several years a number of the Quileute had been planting vegetables on a piece of riverbottom land within the area belonging to Harvey Smith. When Mr. Smith fenced his land and evicted the Indians from this gardening area, the Indians felt that they were wronged because the land was not in use when they took it over. The matter was explained, but not to their satisfaction. (Pettitt 1955:29)

With particular reference to claiming prairie areas, Ram Singh gave this statement:

Each family had an occupancy right in a great prairie such as O'took Prairie or Quileute Prairie. The

family burned over its part of the prairie in the spring so that dead ferns would be destroyed, giving way to camas. Generally no outsider would trespass unless he received permission from the family which “owned” the site. (Singh 1966:25-6)

Quileute Concepts of Alienable and Inalienable Possession. To suggest that the Quileute did not recognize ownership as exclusive possession overlooks a grammatical feature of their language, which emphatically recognizes the heritable, ascribed nature of land-use holdings. Quileute grammar requires that speakers distinguish between things which are “alienably possessed (i.e. things which can be acquired, lost, given away, or in some way removed from the individual’s ownership) from “inalienable possession” (i.e. things which are inherited and which cannot be taken away from a person or lost to them). The category of alienable things are those that one acquires in life, which are often destroyed at one’s death, e.g. clothing and items of adornment, gear, weapons, and tools. Inalienable things are those ascribed things which one inherits and which aren’t destroyed at death but are passed on to descendants, e.g. names, songs, re-incarnated features and spirit powers, one’s house and (surprisingly) dogs, canoes (and automobiles!) and, especially, rights to tribal and family lands and grounds. The inalienable possessive marker is -lo or -t’ot (for relatives) and the alienable possession marker is -ya’as. So, one says in Quileute, for example:

Hix-as kwo’liyo’t-lo t’siq’ati.	but	Hix-as kwo’liyo’t-ya’as t’sikbai.
This-is (the) Quileute’s-inalienable land.		This-is (the) Quileute’s-alienable basket.

Quileute grammar clearly appears to indicate that traditional-thinking Quileute conceptualized possession as real and that it implied ownership and control.

Permissive Utilization -vs- Users in common. So, the traditional Quileute can be characterized as recognizing tribal territory, and the inheritable exclusivity of use-ownership within their territory. Land and resources that were recognized as use-owned by tribal members could be used by permission of the owners. Thus, to understand Quileute ownership patterns, we must distinguish between permissive users, who are those who use lands (e.g. for hunting, fishing, and gathering) with implied permission of those who have recognized ownership of the land, and users in common, who are those who use lands which are recognized by members to be tribal open areas that nobody has exclusive ownership of, which can be used by tribal members (and their alien guests) without asking permission.

Summary: Traditional Quileute Conceptions of Prairie Ownership and Use Rights. Based on the above definitions, we can suggest precisely how traditional Quileute conceptualized the prairies of their territory. The Quileute prairies, then, can be characterized as viewed by the Quileute to be open tribal areas

which can be used without permission by tribal members (and their alien guests), and that sites on those prairies may be recognized as inheritably use-owned by tribal members who have built houses or drying racks on particular sites. This clarifies the tribal access to the prairies, and why these resource areas were so consistently and completely utilized by Quileute families in traditional times. The prairies were commonly held tribal resource areas.

THE QUILEUTE CONCEPT OF STEWARDSHIP OF THE PRAIRIES

Stewardship of the Prairies as a Responsibility – Who was Responsible? As we have characterized or defined Quileute common ownership of the prairies within their traditional lands, we can see that traditional Quileute thought of the prairies as belonging to all of them. One could argue that if the prairies belonged to everyone, then, in fact, they really belonged to no one in particular. That brings up a question with regard to maintenance of the prairies and the stewardship function that motivated the Quileute old people. If the prairies didn't belong to anyone in particular, who among the tribal members had the responsibility to maintain them? First we have to attempt to clarify the concept of stewardship from a traditional Quileute perspective.

Webster's definition (New Collegiate Dict.) of steward is "...An officer or employee...on a large estate, to manage the...concerns, etc...An administrator, or supervisor; a manager." What is clear from that definition is that in contemporary English we understand that the concept of a steward and his/her responsibility (i.e. stewardship) is that the person is in charge of outcomes. Stewardship involves managing things and making sure that things work out the way they are supposed to. However, when we use the term stewardship for Quileute "management" of their prairie areas and resources, we will think ethnocentrically unless we bear in mind two aspects of the traditional Quileute belief system. Firstly, the old people believed that outcomes were in the hands of the spirits, and that it made the spirits indignant when mortals arrogated unto themselves responsibility for the outcome of events or for the future in general. (Powell, *Aborig. Value Cont.*, p.12; *Quil. Relig.*, p.27ff)

Stewardship assumption #1- Outcomes of activities should be in the hands of the spirits. The following example might illustrate this sense of how traditional Quileute felt that outcomes should be left in the hands of the spirits:

I asked Hazel Bright, said to be 90 years old, why she felt the Quileute didn't maintain the welcoming figures (a T'ist'ilal, "Thunderbird" carving) at the entrance to the village done much earlier by Sixtis Ward. She answered, "It's our responsibility to put those traditional figures up. It's the spirits' obligation

to keep them up.” (paraphrased from the author’s Quileute field notes, 1969)

This aspect of the traditional Quileute perspective, where outcomes were in the hands of the spirits, relates to individual responsibility. In mainstream contemporary society, individuals are responsible for the outcomes of most of their actions, so before acting one considers the consequences, weighs the alternatives, and decides on a course of action. A second example amplifies this issue. It appears that the traditional Quileute approach may have included a sense of activities as appropriate or not, and that was the most important consideration.

In 1969, I visited Teddy Hudson at Hoh River, who was carving a canoe in front of his house. I asked him, “What kind of animal is that head on the front of the canoe?” I was referring to the traditional design feature on the nose of the canoe, which resembles a head with ears, nose and chin. Teddy responded, “I don’t know what that is. It’s just that the canoe isn’t made right if that’s not on it.” (paraphrased from the author’s fieldnotes, 1969)

Ritual has such an aspect, that one need not consider the reason for an action. It is the appropriate thing to do, so one does it. In the traditional Quileute perspective, such actions will be noted by the spirits, who can be expected to be pleased and to take responsibility for the consequences. Thus, the old people may not have perceived themselves as taking on a management role when they engaged in prairie stewardship activities. There seems to have been an important aspect of “doing the appropriate thing.”

Stewardship Assumption #2 – The need to avoid waste or lack of gratitude for resources. A second Quileute spirit-based belief was that T’siq’ati, the nature spirit became indignant when nature was wasted or used without thankful respect and ritual (Ibid. p.33ff; Don’t Spoil the Nat. Env., p.5,10ff). Spirits offended by waste and disrespect could cause the salmon, elk, and subsistence plantlife to withhold itself from the Quileute. Thus, each Quileute had an obligation to avoid offending the spirits and each Quileute would feel inclined to do things that were known to cause the spirits to find favor with the tribe. Since the prairies were such a critical resource to traditional Quileute subsistence, it was vital to avoid offending T’siq’ati, who could visit scarcity or famine upon the tribe. It was the obligation of each Quileute to ingratiate the spirits and avoid offending them. The activities that derive from the perceived need to placate the spirits would probably be referred to as “religious,” since they have to do with beliefs relating to the spirit world, ritual, and prayers. There was certainly an overlap between the traditional belief system and the customary economic system with regard to this area of subsistence. In order to understand the Old People’s concept of the spirit world, it is useful to internalize three basic assumptions.

The Spirit world was presumed to be Natural rather than Supernatural. Traditional Quileute presumed

that spirits were just as natural as the physical world. You simply couldn't see spirits (unless you had the gift to do so). This shouldn't be hard for contemporary readers to understand, since we believe on the basis of scientific evidence that radio waves are invisible and still are passing imperceptibly through us on the way to our Walkman receiver. Thus, the term supernatural is inappropriate for the native spirit world. Nowadays, we feel that there is something miraculous about interventions of the spirit world in everyday life. Traditional Quileute thought it was natural and ordinary. Some examples which suggest that traditional people didn't see interactions with spirit figures as remarkable or "un-ordinary" (paraphrased from the author's fieldwork journals at LaPush, 1969-72):

(In August, 1971) Nellie Williams told me that she had been "ghosted by my son" ('Bugsy,' who had died and was covered by name taboo, so she could not mention him by name). In the dream, he had told her that he was missing his ball cap and could she also get him some cigarettes. So, she was taking it down to burn on the beach just east of Lonesome Creek mouth. I asked was she troubled (meaning saddened or frightened, I guess) by the visit and she looked at me like I wasn't following the conversation and said, K'iyiyakwopqalaxw. ("He was just asking for some help")

(In June of 1970) the old man (Woodruff) and I were speaking to a woman called Laloose at a funeral... [she] lived around Olympia, claimed to be a descendant of a Chimacum mother. They were speaking about how powerful the old people used to be when they were young, and that when she was a little girl she saw a man turn into a wolf. I agreed how real it looks when wolf mask dancers sweep their blanket in front of their face. And when they lower the blanket they have their mask on and are dancing with wolf-steps. She said, "No. I saw a man change into a wolf."

It is probably because the spirit world is considered to be natural that many rituals and references to spirit beings treat those spirits as if they were motivated by ordinary human appetites and motives, and that they are subject to being fooled or at least won over by blandishments that are quite transparent.

Humans were "At Cause" rather than "At Effect" with regard to the spirit world. This is a distinction that is critical to internalize if one is to understand the traditional Quileute worldview. Contemporary North Americans are largely schooled in the sciences and, for the most part, use an "at effect" perspective. That means that they presume that most non-social phenomena are governed by predictable natural processes, e.g. rain is caused by evaporation and condensation of water vapor acted upon by winds and temperature or that pregnancy happens due to conception caused by an egg being fertilized by sperm, usually as the result of a sex act. And humans are "at effect" in that the processes are predictable...we can, in the latter case, for example, engage in activities to keep it from happening, but we cannot change the process itself. Traditional Quileute saw themselves as "at cause." That means that they believed that

the spirit world paid attention to what humans did, and therefore whatever happened, it was presumed to be in response to something that humans had done. As an example,

A contemporary person with a scientific perspective and a traditional Quileute are both at home when an earthquake hits. The contemporary, with an “at effect” viewpoint will probably think, “Ah! They said we are overdue for a quake. Those tectonic plates keep moving and sooner or later our area was due for a good lurch. I wonder what the effect of the quake was...any broken windows or things shaken off the shelves?” The traditional Quileute with the “at cause” perspective would think, “I wonder what I did to cause that quake...and if not me, who in the community could have offended the spirits to that extent?” (Don’t Spoil the Environment, p.10)

Such an “at cause” perspective resulted in very different presumptions about the reasons for occurrences and outcomes than would seem logical to contemporary observers with an “at effect” viewpoint. And, depending on the worldview different success strategies would seem appropriate. For instance:

If a contemporary, “at effect” person wishes to prepare for running a track and field event, he would eat wholesome food and work out regularly because muscles develop due to diet and exercise. The traditional Quileute using an “at cause” approach would’ve assumed that you won races because your spirit power caused it to happen. Thus, he/she would’ve done what was necessary to achieve and maintain a proper relationship with his/her t’axilit (spirit power): breaking no taboos, doing rituals that were known to be pleasing to particular spirits, staying clean and avoiding other effrontery to the spirits. Often that involved fasting and other activities that today’s coaches would say are detrimental to physical conditioning. (Ibid.)

This difference in perspective between contemporary “at effect” people and the traditional Quileute “at cause” viewpoint certainly had effects on the type of stewardship activities that would seem appropriate for maintenance of the prairies. Nowadays, for example, scientific conservation techniques emphasize balancing amounts harvested with growth capacity for sustainability, while traditional Quileute logic presumes that resources will continue to be available in plenty as long as the harvesters do not offend the spirit world. Contemporary conservation uses biological cause and effect logic to validate maintenance techniques, restricted access to prairies and regulated exploitation of prairie resources. Traditional Quileute perspectives handle all of those issues by appropriate ritual and prayers, avoiding taboo behavior and other activities known to be pleasing to the spirit world.

The effects of taboos, ritual, prayers, song, amulets, personal cleanliness in an “At Cause” world. Traditional Quileute, using an “At Cause” perspective, felt that the spirits (in particular the great Na-

ture Spirit, T'siq'ati) rewarded people who honored them and who avoided behaviors that offended the spirits. Old Quileute knew that various activities were pleasing to the spirits and kept them in a "right relationship" with the spirits. Among these were the following:

Attention to taboo – Traditional Quileute knew that the spirits could be displeased by various activities. Such proscribed actions are said to be taboo behavior. Breaking a taboo, even if it were innocently done out of ignorance, irritated or angered the spirits with the effect that hunters came home empty handed, fishers were not lucky, foragers found little to gather, people became ill or had accidents, babies were born deformed, and natural disasters such as storms and high tides might be expected. Among taboos relating to the use of prairies for instance, were the following discussed by Frachtenberg:

Pregnant women could not eat or touch t'sikwi ('fern roots') because if she did, she would have pains as if stung by needles. She could not eat or touch fern roots (that were long and skinny), because these travel like a snake through her body. She could not eat or touch kwala ('camas'), otherwise she would have lumps in her belly. Nor could she touch t'lopit ('cow parsnips') as these would cause sores on the woman's and child's skin. She could not eat or touch cha'aLowa ('salmon berries')...tak'achiL ('thimble-berry')...yacht'siLat ('berry sprouts')... etc. Pregnant women in the prairies could not look upon a dying or dead animal. She could not eat or touch any type of game. Her husband, too, was not allowed to hunt for any type of game (pp.4:81-3). Children were not allowed to go near the head of a killed elk. (p. 5:37)

Taboos were a clear expression of the "at cause" perspective used by traditional Quileute. The old people assumed that the spirits knew when taboos were broken and would be offended, causing embarrassment at best and famine, storms and accidents at worst. The prairies were so important to the Quileute that they were especially careful to avoid breaking taboos in any activity that related to prairies.

Ritual – We are using the term ritual to refer to actions that were traditionally carried out by the Quileute in order to precipitate a particular spiritual reaction. We know of some rituals that related particularly to the use of the prairies, but there were probably many of them. For example, while hunting:

A bear caught and killed with a bow and arrow or caught in a pitfall was taken in(side the lok'wati, 'hemlock bark camping shelter') and a plate full of food placed before him. Earrings and a headband were put on him and also a few feathers on his head... They also talked to him thus, "You are given these ornaments so that you may tell your brother to come here also. We will dress him thus likewise." Then the meat was cut up (Frachtenberg 5:37-8), or

while hunting elk with dogs [usually done in t'laxaliktiya'at, "elderberry gathering time," the month of August, when people went to the prairies and the elk were everywhere and fat] the dogs faces were

painted red with ochre. It was believed that this would protect the dogs from wolves, as it was believed that wolves would not attack dogs whose heads were painted. (op.cit., p.3:47)

Rituals seem to have been facts of economic life for traditional Quileute. They seem to have been considered necessary in order to assure success in the critical subsistence activities (hunting and gathering) that were carried on in the prairies.

Prayers – According to Frachtenberg’s field notes, interviewing Wibaxad Jones and Dixon Payne (5:35),

The Quileute prayed to the Sky only. They prayed every morning early and also late at evening. While praying “talking to the sky” the prayer faced the rising sun or the moon, raised his hands above his head occasionally, and dipped some water into his hands and blew the water out of his mouth, talking at the same time to the sky. Of course, in these prayers they asked for (the help of) certain guardian spirits and they received these, but all praying was addressed to the sky directly.

Lillian Pullen claimed that as a daily ritual and whenever she went foraging, she said a prayer such as the following, which she felt was the “right thing to do” (Powell, NB 1989, p.10; Conversations with Nature, p.4ff).

O yix chikw T’siq’ati. Oqalik sa’a. Hac’hikiyatilo’oL.

Oh, great nature spirit. You are here. Help me well.

Kiyi’atilashiLlich xaxi xi’ paqitti’l. Wataxw ti as’o’osto’o ishas xi’ q’iq’it’sa.

Help me now with my work.

Thank you for the many berries.

Song – The Quileute used song in various circumstances: as part of a mythic narrative (the songs that spirit characters sing in the narratives), for entertainment (e.g. courting songs and, later, drinking songs), and when an individual was communing with his/her guardian spirit (spirit songs). The latter songs were especially important.

Amulets - Charms were often carried by traditional Quileute to keep them in a right relationship with their spirit guardians. Hunters, especially, carried amulets, often in a small woven wistay, “power bag.” According to Frachtenberg:

Every hunter carried in his bag “a certain medicine” (powdered roots, small newborns or fetal forms of the animal he is hunting, which will draw the animal to the hunter). A hunter having bad luck prayed

to the sky and tried to obtain the right medicine, such as baby lizards, baby suckers and baby squirrels. (5:30)

Hal George told that “people used to carry pretty stones or a bone or shell they found where they had good luck. They also carried a little carving of their spirit guardian if it was something they’d seen like a little elk with great big horns” (NB 1978.1, p.40).

Personal Cleanliness - Personal cleanliness was especially important to traditional Quileute. Hal George expressed it like this: “Bathing was important, especially when you wanted to get in a right relationship to your spirit power. Scrub your body with fine sand and then coarse until it bleeds. Spirits don’t like unclean people and won’t come around. They wouldn’t come near you if you weren’t really clean, in your heart and outside. Lucky people were always scrubbing in streams” (NB 1978.1, p.47). Hal used to bathe before going hunting. We can see how this practice related to subsistence activities, since a hunter or gatherer’s success was so clearly related to the help of that person’s *taxilit* ‘spirit power’.

Summary: Traditional Quileute Perspective on Prairie Stewardship Obligation. For traditional Quileute, then, we can suggest that stewardship behavior would be appropriate actions and activities that maintain the prairies and allow them to be exploited without waste or disrespect that would offend the spirits. This attentiveness to ingratiating the spirit world as a factor in traditional Quileute folk science leaves me uncertain as to the logic behind stewardship activities in the prairies. It is clear that the old people were aware of the cause and effect relationship of regular burning to keeping the prairies open. The question is whether they were primarily motivated by this realization of useful ecological cause and effect or whether the focal motivation was spiritual. An example might help clarify the distinction.

In 1968, I was invited to go out collecting seagull eggs by Hal George and Harvey James, two old men who had been to school but who were *taLayikila potsowq*, ‘oldtime people.’ We went by outboard boat, pulling a canoe to an island south of La Push. Reaching the island, where hundreds of seagulls were nesting, Hal and Harvey got out and, talking appeasingly to the seagulls that were angrily screeching and diving at them, they walked around the island and stepped on every egg on the island...crunch, crunch, crunch. Then we got back in the boat and went to Queets for two days, visiting friends of Hal’s. On the morning of the third day, we went back to the island and, after singing a song of praise to *T’siq’ati*, collected every egg on the island until the canoe that we were pulling behind was full of eggs. When I asked the men, “Why do you break all the eggs?” Their response was that by breaking the eggs first is the only way that they can be sure that the eggs they actually collect are fresh. But, when I persisted, “There won’t

be any seagulls next year(!),” Hal looked at me and essentially said, “Oh, Jay, you’re such a Whiteman. Don’t you realize that if there are seagulls next year, it won’t be because of some biological cause and effect but because we are good people for the spirits to send the kwalel (‘seagulls’) to.” (paraphrased from Quileute NB#2(1969) p.101ff)

Such an explicit statement of the cultural logic underlying Quileute aboriginal folk-scientific reasoning makes us insecure, presuming that even the most basic assumptions of contemporary conservation can be applied to the logic underlying aboriginal cultural patterns. Based on the ethnographic record it seems that traditional Quileute responded to interconnected spiritual and folk-scientific understandings, resulting in a satisfyingly logical technology (a set of tools and techniques for maintaining their livelihood and caring for the world). Since the spiritual world was perceived as natural and real, it made sense to relate obligation to the spirits, who were responsible for outcomes. But, traditional Quileute were also responsible for the other living things of the world, which they relied on for subsistence. This interconnection of obligations seems to have provided the basis for the logic of traditional Quileute stewardship of the prairies.

TRADITIONAL QUILEUTE PRAIRIE STEWARDSHIP ACTIVITIES

Prairie Stewardship Activities. The Quileute clearly engaged in prairie stewardship activities. Some of these involved prairie maintenance; some of them related to conservation of prairie resources. All seem to have been validated by traditional natural science, a set of natural generalizations and spiritual rationales. That these were recognizable patterns to the Quileute is indicated by the fact that there were particular names for these activities:

- (a) Burning of the prairies, hokwoyakw, “prairie burning.”
- (b) Selective burning to leave some resources (e.g. crabapple trees) unharmed.
- (c) Taking (only) what the T’siq’ati, the Nature Spirit, provides, piLil’al, “taking our enough.”
- (d) Restricting utilization to avoid over-exploitation,
- (e) Rituals for assuring that the Great Nature and personal spirit powers would provide.

Burning of the Prairies as a Stewardship Activity. .

1) The family burned over its part of the prairie in the spring so that dead ferns would be destroyed, giving way to camas (Ram Singh 1966:25).

2) Each family had a part of a prairie where its members could go to dig roots. The prairies were burnt and weeds were kept under control by means of fire (Ram Singh, p. 11). The Indians who dug roots in prairies burned over such sites in order to give useful roots a chance to grow instead of weeds and ferns. They took precautions not to burn the surrounding trees and bushes, and burned the prairies section by section. Their methods of fire control were so effective that in the Olympic Peninsula, except for a small area of forest near Little Prairie, none of the forest surrounding a prairie shows any sign of fire. (Ram Singh 1966:112).

3) Bracken fern grows on the "prairies" and burned over places, especially in the middle upland area. The burning of this fern year by year was what kept up these prairies and extended their area. The Indians burned the prairies over for the purpose of clearing out the area so they could shoot deer and elk when they came to feed on the young sprouts. The prairies, about ten in number, probably were started as camping sites, which were gradually extended by the annual burnings (Reagan 1923:203).

4) The Indians burned the ferns for the purpose of clearing out the prairies so they could shoot the deer and elk when they come to feed on the young fern sprouts (verbatim repeat of #3 above, Reagan 1934:56).

5) Thought they were going to burn the prairie because his father talked about it a lot and he was excited and a little scared about a big fire, but there was no fire. They didn't burn it that year. The whitemen didn't like them setting fires in the prairies. Later he saw them burning part of Sat'ayaqw (Quillayute Prairie), but they only burned a small area, burned when the grass was damp and it didn't make a big fire (Bill Penn).

6) It was burned every fall to encourage further growth. Mark Williams was trying to burn the prairie (hokwalillowot, "burning the prairie) and get matches from a Whiteman. (Hal George, p.44).

7) Yes, they used to burn both prairies so they could get the little bulbs at the bottom like onions. They would come up after the burn you see and burning (sic). But the principle reason they burned them was to get the rabbits and things that lived around in this tall grass (Royal Pullen).

8) The Indians knew how to handle fire and it never got away (Mattie Howeattle).

There is now considerable interest in the aboriginal practice of maintaining the prairies by burning. There seems little doubt that the prairies would not have existed if the native people had not burned them regularly to keep them open. Both Swan [1861] and Frachtenberg [2:46] mention that the prairies were surrounded by stands of great hemlock, suggesting that the prairies, as well, would've been forested with

hemlock except for the process of regular burning. It may be worthwhile, though repetitive, to include the general and inclusive statement about prairie burning from the cultural Resources Module of the Sitkum and South Fork Calawah Watershed Analysis (p. 2.1-15).

Although Quileute use of fire in maintaining the prairies and some other wetland collecting sites is inarguable, the ethnographic record is not totally clear about the details of traditional burning strategies. Albert Reagan [1934, p.56] does not tell what time of year the prairies were burned, but writes "The burning of (the bracken) fern year by year was what kept up the prairies...The Indians burned the ferns for the purpose of clearing out the prairies so they could shoot deer and elk when they came to feed on the young fern fronds." Ram Singh mentions, "The (particular) family burned over its part of the prairie in the spring so that dead ferns would be destroyed, giving way to camas" [p.25]. Hal George remembered that the prairies were burned, on the occasions that he witnessed it during the 1890s, in the lunar month of T'saq'it'sa, "no berries time," late September in the season of Early Fall (the Quileute recognized five seasons, including Early and Late Fall). By then, families had already foraged for roots and berries and the grasses were dry.

Bill Penn remembers that his elders did not burn the prairie at the end of their camping on the prairie, which was probably in the later summer, although he does make the point that only a small area was burned. This concurs with Ram Singh that the prairie was burned section by section, and the implication that, since individual families had rights to sections of prairies, each family would burn their own area. Both Ram Singh and Mattie Howeattle mention that the old people were skilled and careful not to allow the fires to get out of control. Only Bill Penn suggests a strategy of setting fires when the grass was damp as a means of controlling the blaze.

Selective Burning to Leave some Resources Unharmed. Little is known about the degree to which the practice of prairie burning took into account tactics to leave important resources unharmed. For instance, many prairies included stands of crabapple trees, which do not survive burning. Burns were made in such a way as to avoid injuring these important features of the prairies. The same is probably true of cranberry bushes and other plants. It is certainly an issue in the maintenance of the prairies.

Taking Only as Much as is Needed. No ethnographer can conduct research on the economic practices of contemporary Quileute without realizing that it is a strongly held continuing community value to take only what is needed from the natural world and to avoid wastefulness. These statements from Lillian Pullen clarify what they mean by "taking what one needs."

1) I never waste what I take or what somebody gives me. We're only supposed to take what we need. If

you waste what you are given, you won't get as much as you need next time. We say, Wa t'akw dok-wlita (Don't waste [said to a woman]) and my grandma told me that again and again when I was a girl (NB1993-4, p.62).

2) We only take as much as we need. When I'm going out, I always have a little prayer for guidance to go here and there and do this and that. It's possible that ...you could take too much and be wasteful and ruin it for everybody or the kids could get sick (NB 1978, p.89).

3) We never waste like the hokwat' (lit. 'drifting house people,' Euro-Americans, were called that because their sailing ships were thought to be drifting houses by the early Quileute). That's the reason that our people are so lucky. T'siq'ati knows that we are good people to be caught by.

However, as we mentioned above, the traditional concept of "only what is needed" may include amounts sufficient to allow ceremonial or personal generosity on a dramatic scale. Furthermore, there appears to have been a traditional assumption that the spirit world would make it clear how much was needed by causing fish, animals, plantlife, and materials to make themselves available to Quileute in the amounts that were really needed. An example is the following, paraphrased in fieldnotes from an account by Hal George:

Fish and animals, especially sea mammals (seals and whales) and elk give themselves to men in the quantity that they are really needed. Old man Harold Johnson, Ta'axawil, told him that when he was young he was hunting and a bunch of elk just came up and looked at him. He shot one, and then he shot another and then another. They didn't move. And he knew that they were sent by his Kit'lakwal (Elk-dance society) spirit. So he shot them all. He used that meat to give a big naming feast for his nephews, to get them initiated into the elk song society, Kit'lakwal. (Powell, NB 1978:19)

Contemporary Quileute speak nowadays of taking only as much as is needed, implying or overtly claiming that this was done to avoid a negative impact on the environment by over-fishing, over-hunting or over-harvesting. They suggest that this conservation-approach was followed by the old people, as well. However, Old Man Fred Woodruff once attempted to clarify the difference between contemporary and traditional Quileute views as follows:

These guys (current Quileute young people) are always talking about culture. They don't know about culture. In the old times there was so much of everything we never thought about taking too much. We filled up a wagon full of ya'likala (razor clams), and when it was full we got another wagon. We filled up the smelt nets until the canoes sank. But, when we took something, we used it or gave it away or sold it.

We never left it to waste. Them old people was like that. (Powell, NB 1969:1:33)

According to Mr. Woodruff, the traditional Quileute sense of dokwlita (to waste something by taking more than one will use) was an offense to the spirits rather than an upset to the balance of nature. Although we are attempting to clarify a historic, traditional perspective, we are lucky to have other extant statements that give us insights into this aboriginal worldview. For example, when the linguist Manuel Andrade visited LaPush in 1928, Jack Ward offered to dictate a speech with a message to non-Indians if Andrade would publish it in his book. The speech, called “Don’t Spoil the Country” seems to use this talaykila (old-time Quileute) perspective. However, Andrade had had little exposure to Quileute culture and he provides a translation that uses the perspective of Western scientific environmentalism rather than viewing Ward’s statements from the viewpoint of the traditional Quileute worldview. The following excerpts from Mr. Ward’s speech are provided with Andrade’s translation and an interpretive comment by Eleanor Wheeler (a Quileute woman with an extremely traditional viewpoint), that gives us an insight into the Quileute traditional perspective, which she presumed Ward would’ve been using.

(Jack Ward original) ItcaqLasqalo sa’a luwo hat’citaLetili tcaqLaqalou kiya’atilawociL xe’ it-sappaqetik hequ xo’o yix ot’oqu t’ot’sa luba’ po’oq. (2) Tso’ot’e sa’a xaba t’atca xe’ t’sixa xwa’ itcaqayilakiLt’oqu kiyaxat tciali xe’ xabat’so’ oxo’o yix tas t’siqati yix hetca’wa taxu helokiL. Xe’ tciLqwatoqu hexat xwa’ tsiLqa’axw xwa’ tsiLqwat’oqu... (3) Itso La dakiL taxu wait’coli s yokiL wa’alici uxwat’so’ o xe’ qabaLuwat qale xe’ k’eki: hawayicka hexat s xabat’so’ o xe’ qabaLuwat... (4) ALa dakiL yix hokwat’ qaxayootaqwa ...pawa- Laksveda LaxuLe toqowa xwa’ t’Laatilayaxu xwa’ t’Laxataqwayo’.

(Andrade translation) Thus, we bring this message of good-will to you, wishing to be of service to you in whatever work you undertake in this land where we Indians were born and raised. (2) That is the reason we all should know the right way to act, helping each other to observe conservancy of the products of land, as it belongs to our children as well as to our children’s children. (3) Otherwise, all the animals of the woods may disappear, such as the elk, deer, and others. (4) But, you White people are wasteful...acting wantonly, persisting in breaking the laws of the lawgivers [ed. i.e. the lawmakers of the state game laws and game wardens].

(Wheeler interpretive comment) He [Ward] says to the Whitemen, “So I’m giving you the good word so you can be successful because, unless the spirits like you, things never work out; and we were born and raised here, so we know what the spirits don’t like and what wins them over.” (2) And he says, “So I’m helping you know how to survive around here, because the spirits can make it really tough if you take more than you need and waste it.” That’s what he’s saying. Don’t waste the things T’siq’ati gives you or

he'll take it away. And not only from you but from your kids and your kids' kids. (3) If you waste food, sure enough you'll lose your luck. Maybe the whole village, that's what the old people thought, that unless you're right with the spirits the animals will just go somewhere else. That applies to everything we get from the land. (4) And he says, "Them Whitemen waste a lot all the time and aren't grateful in the ways the taxelits (spirit powers) like you to be grateful. That makes the spirits upset, mad enough to ruin the whole country for everybody. You can't disrespect the great t'laxa'a. The t'laxa'a is the great plan of T'siq'ati that tells what is natural for each living thing: people, animals, fish, trees, birds. Everything. Break the t'laxa'a and the spirits make the fishermen go broke, the hunters get skunked, the people go hungry. That's what Ward was saying.

Mrs. Wheeler gives a very different sense of what Ward was trying to say than the message implied in Andrade's translation. Mrs. Wheeler presumed that Ward was using a traditional Quileute perspective. We are grateful for such an eloquent expression of her people's viewpoint on taking what one needs from the environment. (See J. Powell, "Don't Waste the Environment" and Jay Powell and Dell Hymes, "Don't Waste the Environment – An Interpretive Re-consideration of a Quileute Discourse on the Natural World")

Restricting Utilization to those with Occupancy Rights to avoid over-exploitation. It seems clear that the Quileute recognized that restricting utilization in the prairies was a conservation issue that maintained the valued resources of the prairies. According to Ram Singh:

Each Quileute family had an "occupancy right" in a great prairie such as Quileute Prairie. The danger of excessive exploitation of food resources seems to have been recognized for (only) a few species. The restriction of hunting or gathering food in a particular territory to the members of one's own group or family was at least partly motivated by the realization that production by outsiders would diminish the available supply (p. 29). There were some other kinds of property which were owned by the individual family. The prairies were such examples. The private ownership of prairies was based on the principle that a person owned whatever he had made or improved by means of labor. Each family had a part of a prairie where its members could go to dig roots. The prairies were burnt and weeds were kept under control by means of fire. All of these acts involved labor. (p. 112)

Ceremonial Life Calculated to Keep the Prairies Producing.

(a) Giving the spirits credit. Traditional Quileute gave credit to T'siq'ati, the nature spirit by invoking that name orally. Hal George made that point while generally discussing that life was not without hard work in the old days.

They think that it was easy, but we had to work hard. Sure, the talaykila pots'oqw (old people) just gathered what the great nature provided. They'd say, "T'siq'ati, t'siq'ati, t'siq'ati" (It's the nature spirit, nature spirit, nature spirit) when they were picking or eating food. (Powell NB 1978:1:68)

(d) Feeding the dead. One of the ceremonials still maintained by the Quileute is alitsish xwa' loba'a, "feeding the dead." A plate of food is burned while remembering someone who has died. The ritual is believed to both insure that the ghost has sufficient food (in the underworld) and to keep the ghost interceding with the spirit world on behalf of the living. There is sometimes also the assumption that the ghost will frequent the area where food is burned in its name, exerting its good offices to influence the spirit world in favor of the living.

Big Bill remembers lots of the names and stories about his ancestors because they talked about the old people when he was young. The old people put aside food for the ancestors and would burn it, especially up in the prairies because that would keep the ghosts up there making things go right. Food that you burned for the dead was multiplied and kept the ghosts eating well (Powell NB 1978:1: 61).

(c) Avoidance of tabooed behavior in the prairies. Traditional Quileute believed that various behaviours would offend the spirit world. Most taboos had to do with avoidance of activities: not doing, looking at, eating or touching certain things at particular times. We have already enumerated a few of the taboos, which Arthur Howeattle told to Frachtenberg, having to do with things done or harvested in the prairies. Attention to taboo interdictions was mentioned by Sarah Woodruff Hines in a thoughtful comment relating to an early (c.1920) trip to harvest in the prairies.

We got there early 6:30, 7:00. Aubrey and Henry Taylor took us over in a big canoe to above K'i'il (Rialto Beach). Worked, too. We were all barefoot except Ida Taylor, who carried her shoes. Some had digging sticks. Mary had a bunch of k'woyokws (digging sticks) in her baxwuy (burden basket, usually with tumpline) that weren't sticks, they were cut off elk horn tips. It was easy to dig if you stuck it down in the right place. We mostly dug t'sikwi' (bracken and sword fern roots) and la'it'ay (clover roots). Effie (sister, Eli Ward's wife) couldn't dig t'sikwi' because she was pregnant. Everybody laughed. I don't think they really believed it would hurt the baby. But they thought t'siq'ati didn't like it, so she just went and dug more la'it'ay. The baskets got real heavy. (Powell NB 1978:75)

Other Maintenance activities relating to prairies. For much of Quileute life, it was presumed that the natural world would, with the help of favorably disposed spirits, maintain itself. Thus, the old people spoke of few activities, which involved their intentional intervention in the course of the natural world. Among these are the following:

(a) Trail maintenance. Keeping up the trail to the prairies other than simply by use. According to Ram Singh [p.25], "The trail to a prairie was kept up by the people who used it." Other trails resulted from the wear and tear of use, but those to the prairie were actually maintained. It is clear from Hal George's comment below that to maintain a trail was a departure from the Quileute old people's usual patterns.

Now, the old people said bitsatsqal yix t'siq'ati (the land takes care of itself) and that means everything. They didn't plant gardens or build fences to keep deer out. They didn't make la'wqwol or lotoqwli (roads/trails or bridges) never chopped down trees to cross rivers. (Powell NB 1978:71)

QUILEUTE MYTHIC REFERENCES TO THE PRAIRIES

The Prairies in Quileute Mythic Narrative- The importance of prairies to the traditional Quileute is apparent in their many mentions in Quileute myth and in the degree to which the prairies were considered to be the haunt and home of spiritual beings. Because spirit powers were considered to be both near and responsible for the many benefits to be reaped from the prairies, the old people felt an obligation to demonstrate their gratitude for the gifts and enabling powers. Thus, the prairies were places for prayer, cleansing and ritual. And, in return the people were able to see the results in their success at hunting and foraging. The old people felt that spiritual approval and assistance was most clearly visible through successful hunting and provision gathering. If you pleased the spirit powers, they made you skillful and successful. And, since the hunting and gathering done in the prairies was critical to making it through the annual cycle, the spirits were seldom out of mind while camping in the prairies or making foraging daytrips. As we know, the spirit world was natural and real, but simply couldn't be seen. The old people had heard the stories and learned the traits of the various prairie spiritual beings since childhood. A visit to the prairies was a trip to a powerful part of their territory where unpredictable things could happen and the unexpected was not surprising. As Hal George would smile and say, "Hixas k'itaqli xaba okil chi yaqw. K'idiloqwalich chikwliqaqlas o cha'a yaqwo'wa." (It's different up on the prairie. You feel-strange too-greatly-different in the prairie.)

Quileute cultural narrative: myth, legend and folkloric accounts - In this section I attempt to discuss what we know about the mythic history of the Quileute prairies that explained their special spiritual qualities to the old people's satisfaction. I will be treating only myth that refers to prairies or is located at least partially in prairies. The cultural narratives that we refer to were primarily recorded from the following sources.

1) [AR] Albert Reagan. "Some Myths of the Hoh and Quillayute Indians," Transactions of the Kansas Academy of Sciences, 1935. 40 stories recorded while Reagan was sub-agent and teacher at LaPush between July 1, 1905 and Oct.15, 1909.

2) [R&W] Albert Reagan and L.V.W. Walters. "Tales from the Hoh and Quileute," Journal of American Folklore, Vol. 46, #182 [Oct 1933]. 52 stories, all but seven of which were collected between 1905-9 by Reagan. Walters edited them for publication and, "to have a few type myths to use as a standard of the Quileute English-speaking narrative style," he went to LaPush in 1932 and collected seven stories from Hal George. Just before publication, Walters had discovered that Andrade was preparing Quileute Texts for publication, so he dropped nine stories "to avoid needless duplication" since the stories "were almost identical versions" of those published by Andrade. This suggests the degree to which Quileute mythic narratives were consistent from teller to teller.

(3) [QT] Manuel Andrade, Quileute Texts. Columbia University Contributions to Anthropology, Vol. 12 [1931]. Contains the Quileute and English (side by side) versions of 70 Quileute mythic, legendary and folkloric texts. 26 were collected by Andrade in 1928 and 44 of them were transcribed by Leo Frachtenberg in 1915-6 and, later, edited by Andrade for inclusion in this corpus.

4) Oral narratives as told to the author by Sarah Hines, Fred Woodruff, William "Big Bill" Penn, Hal George, Harvey James, Nellie Williams, Rosie Black, Eleanor Wheeler (Kaikaka), Pansy Hudson, Lela Fisher, Herb Fisher, Helen Lee, Lillian Pullen, Chris Morganroth II & III, Calvin George, Porky Payne

It is, at first consideration, surprising that so many Quileute myths take place in prairies. The prairies are a very small part (less than 1%) of Quileute traditional territory. Yet, no less than ten of the 40 myths in Reagan [1935] take place in prairies. These stories are focal in Quileute cultural narrative because they do what powerful oral traditions do: they explain the basis for customs and values and they account for the origin of natural phenomena. For instance, Quileute traditional stories give us the following answers:

1) The origin of the Quileute in Quileute Country- Q'wati, the Changer who went around at the Time of Beginnings transforming the natural features of the world and creating the differences between the species caused the wolves who inhabited the Quillayute River area to be changed into the ancestors of the Quileute (see QT, p.82).

2) The origin of the prairies of Quileute Territory- T'istilal, called Thunderbird, formed the prairies by catching whales to take back to his lair on the Blue Glacier or Mt. Olympus, and set the whale down to rest part way home. As soon as it hit the ground, the whale flopped and fought, leveling all the trees for

some distance. These level places became the prairies of Quileute country (see R&W, p. 320, AR, p.63).

3) The Origin of the line of rocks in Beaver Prairie- T'istilal the Thunderbird and Mimlos Whale (Mimlos is the Chinook Jargon word for "to die" or "to kill," i.e. Killer Whale) thrashed and fought in the area that is now Beaver Prairie. Mimlos Whale was killed and a group of upriver Quileute discovered the whale and butchered it. They left the bones, which became the line of rocks in the prairie, visible to this day. The people also died for the effrontery to take a whale that didn't belong to them (See AR, p.63).

4) How did the practice of burning the prairies come into being- The Changer, Q'wati, introduced burning the prairies by tricking the Quileute women to start prairie fires using torches. "Some young women went to the prairie to dig camas. Each wore a headband, from the front of which there extended a long pointed stick about two feet in length. On the other end of each stick there were tied pitch shavings and the whole formed into a torch. They had these torches lit. Q'wati mocked the shy girls, who fell flat on the ground to hide themselves, and they accidentally started the big ferns on fire. The whole prairie burned. Q'wati jumped into the river, but it was boiling hot and he jumped out (See R&W, p.308).

5) Why the weather is warm on the prairies and there are lots of rabbits there- Doqwis, the Rabbit, went up the river and Ka'olat, the cold East Wind was busy freezing the world, as was his wont. Rabbit was crafty enough to kill East Wind when he tried to steal a fish from Rabbit's canoe. Rabbit hit Ka'olat a terrible blow with his club and split him like a chunk of ice and then scattered him to the other four winds, who moderated the temperatures. Rabbit stayed upriver in the prairies (See AR, p.77).

6) The origin of the qit'lakwal, elk hunting spirit power, in the prairies and how to get it- At the Time of Beginnings, an ixwalola (medicine man) tried to discover whether it would be appropriate for people to hunt the elk (who, after all are descendants of a being who had once been a man and had a soul). In the story, the human goes questing and finds a spirit being who gave him a headband and he discovers that if he gets a spirit power, elk will be unable to resist him. It is the beginning of the elk hunters' song society, which often met in Forks Prairie.

7) Why the Quileute sing and pray in gratitude to T'siq'ati, the Great Nature Spirit- The Quileute learned that if they didn't express gratitude to the Great Nature Spirit for providing them with the gifts of the natural world and the skill and luck to avail themselves of these products, they would either be stricken down or have no further luck. They learned this while bringing a whale to shore "but while towing it they did not sing and pray to Se-kah-til, them other earth." And they all died (See AR, p.69).

8) Why the Quileute honor the deer (and other large mammals) that they kill in the prairies- The Quileute learned that if they did not express gratitude and appreciation to the mammals that they killed in the prairies, that they would lose their luck in hunting. In the myth of Deer and Wolf, "a mother deer and a mother wolf went to the prairie to get fern roots to make into flour." The mother wolf killed and ate the mother deer. From that day on, the other deer warned each other whenever the wolf was near and the wolf had a difficult time finding food. The Quileute honor the deer that submit themselves to the Quileute hunters (See AR, p.60).

9) Why the Quileute are endogamous, marrying someone from their own tribe- A Quileute woman sleeping on the prairie wishes to marry and that night her suitor comes and takes her away to live in a prairie on the other side of the sea. After years she becomes homesick and returns to Quileute country with her husband to see her parents. She decides not to return and her husband has to return to his country alone. "That is why the Quillayutes try to marry women of their own tribe" (AR, p.60).

10) Why the Quileute traditionally practiced the levirate, widows marrying a male kinsman of their dead husband- The first husband of the woman in the story above died. She was pregnant and unable to feed herself in the isolated place on the immense prairie. "Finally one day when she almost ready to die, there came a rap at the door, and a young man entered the house...He said, 'This place belonged to a relative of mine.' Upon hearing her story, the young man said, 'We live at the other end of this large prairie. I am single. Come with me to my house and be my wife.'" This practice provides a patrilineal social mechanism for a family to keep the children of their son in the event that the son dies. Rather than their son's widow taking their grandchildren away when she returns to her own family, that widow traditionally marries a brother of her dead husband or some other kinsman of her husband's. This custom, called the "Levirate" was common among traditional Quileute, and had its origin in the prairies (AR, p.59).

Unexpected things happen in the prairies. There is a sense of the prairies as the threshold to the other world, a quality where the line between the visible world and the invisible (spiritual) world is less defined. In the Quileute cultural narratives, spiritual beings seem to appear often on the prairies. A few examples are the following occurrences which, albeit, are recognized to have happened in myth times but exemplify the liminal nature of the prairies:

1) A myth starts: Two young ladies were digging fern roots on the prairies. Night came on and they retired, but did not go to sleep. As they reclined on their mats they talked and talked the hours away. As they were conversing, one of them looked up into the heavens and said: "I wish I had that bright star. I would marry him. Hardly had the words been spoken when two suitors from the starry vault came to visit them. As soon as they came, one of them said to the lady who had made the wish: "I am the person

you love. Come with me." The suitor was, in fact, a heavenly being and took the woman from the prairies to the heavens. Stories such as this made it clear to traditional Quileute that in the prairies you had to be careful what you wished for. (AR, p.54)

2) A myth starts: A long time ago two girls went to the prairies to dig ferns for flour. As they went they passed by an open space in the woods where the decapitated head of a young man was suspended on a pole-stake...The young lady remarked: I wish that man had been my husband. He has a good looking face. I wish he could be my husband now." They went on to the prairie... they dug fern roots and piled them in piles to dry.... (they were tired and, that night, soon after they had gone to sleep, there came a rap on the wall. "I am here. I am the man you want to marry." The suitor took the girl across the sea to a different world. Again, the prairies are places where women are enabled to wish for their lovers and, magically, their dreams come true (AR, p.58).

3) A myth starts: Once there was a tribe living by the beach. The chief of this tribe had one daughter and they thought a lot of her. In her sleep, this daughter would dream about a dog, a handsome dog. When she grew older, she would go out on the prairie and dig roots for the family. One day she met this dog she dreamed about so much. The girl became pregnant and gave birth to a batch of puppies. She moved away and, alone, tried to forage to feed the dog children. One day she discovered the dog children were ordinary babies who were wearing dog costumes. So she snuck in and burned the puppy costumes and the children were ordinary people ever since. By now, it is no surprise that when a girl dreamed of a handsome dog as lover, she would find him in the prairie (R&W, p.304).

4) A myth says: Two virgins came along the trail going to the prairie to gather fern roots. They heard a child crying. It was Q'wati. He was lonely because no woman would have him for a husband. So, he transformed himself into a baby and hid himself on the trail leading to the prairie, where the women found him. They felt sorry for the baby, so the older girl took it and raised it. When Q'wati had grown into a man, she became his wife and they went back and forth over the earth together doing good to all people. In this story it is apparent that the prairies are a place where spirit beings can have their own way with the mates they long to have (R&W, p.309).

It is interesting that people, especially women, who are depicted in myths as doing right and avoiding selfishness or evil actions are often portrayed as digging roots in the prairies. It's as if someone who is digging roots in the prairies couldn't be evil or troublesome. Here are some examples:

1) An old time Quileute happens upon an evil medicine man who killed people with his doctoring power. He kills the evil medicine man and goes home. The followers of the evil shaman descend on his

house to retaliate, “but he stood them off. So, then they went to the prairie to kill his wives, who were digging fern roots to make into flour. On seeing the armed men coming, the women loaded their baskets with roots and started for home so quietly as to make believe that they thought that everything was alright.” In this story, the good man and his wives prevail. After all, the women were digging roots in the prairies (AR, p.70).

However, not everyone who digs roots in the prairies is upright. The Quileute woman of the woods – the kelp-haired child snatching cannibal, Dask’iya, is regularly portrayed as digging camas while she plans her next abduction of innocent children.

Dask’iya was a giantess. She went around eating little children. Q’wati went to where she was digging camas on Quillayute Prairie. He offered to carry her baskets, and hung one in front and one on his back. Then he started running, eating handfuls of camas as he ran. Dask’iya chased him and when she stopped for a drink, Q’wati changed into a minnow and swam where she was drinking. She swallowed the minnow, which immediately changed into a whale inside her stomach. That was the end of the evil Dask’iya (one of her many ends) (R&W, p.312).

When a man encounters a being in the prairies, it could either be a good or an evil one. It is up to the man to be circumspect. For instance, in the following story, a man, Tuscobuk, survives a meeting with an evil stranger because he is wary:

Tuscobuk meets a stranger in Forks Prairie who has been killing Quileute hunters and intends to kill him. The stranger has been killing hunters by trading rubbery “magic” arrows with the hunters and then changing into an immense elk that, unhurt by the hunters’ rubbery arrows, kills them all. Well, tuscobuk is wary and doesn’t trade arrows, nor does he stand behind the tree that the stranger suggests. And, when the gigantic elk comes along and charges the tree, expecting to find Tuscobuk, he is disappointed. Then, Tuscobuk jumps out from hiding and hits the elk with four yewwood arrows. The elk dies and Tuscobuk skins it and throws the hide up into the sky, where light shining through the arrow holes makes the constellation Cassiopeia’s Chair (R&W, p.326).

There are also a few Quileute myths relating to the prairies that seem impossible or uncomfortable to interpret. These stories have images that connote meaning for us, but the story does not lead to an obvious message. For instance:

1) Q’wati Gives the Women Bees – Q’wati came along the trail by the prairie with a basket swung at his back. He was singing, “I’ve got lots of elk meat in my basket.” He was singing this for he was passing

a place in the prairie where several young women were digging fern roots. He really had a box of bees in his basket. The girls ran out shouting, "Oh, Q'wati, give us the meat." Q'wati told them to hold out their baskets and look the other way, which they did. Then he let out the bees and they stung the girls, who rolled on the ground and screamed. Q'wati grinned and disappeared (R&W, p.308).

Question of Interpretation: By now we understand that women who are digging roots in the prairie con- note women innocent of bad intentions. We also know that Q'wati can be presumed to be helping the Quileute in his mythic escapades, even though he is prone to being sexually stimulated by unescorted women. An analysis which simply suggests that this is a myth which explains the existence of bees in the prairies seems to overlook all of the detail which could arguably be sexual imagery. At this point, it is a myth about the prairies with familiar motifs of innocent women digging fern roots.

There were also prairies in the Quileute Land of the Dead. According to Frachtenberg [5:33]: There are prairies in the very heart of the underworld...and beyond this is a prairie full of strawberries, where they could pick and eat berries. It is clear that the daily lifeways of the traditional Quileute included knowl- edge and use of the prairies so comprehensively, that prairie lore was imprinted on their cognitive maps, on their worldview and on their cultural logic. This report has attempted to articulate some of the tradi- tional aspects of Quileute prairie knowledge, belief and use.

APPENDIX: A PARTIAL PERSENTATION OF DOCUMENTARY EVIDENCE OF THE TRADITIONAL USE OF THE PRAIRIES OF QUILEUTE COUNTRY

Note: Sources are chronologically arranged according to the date of publication or notation (in the case of unpublished anthropological fieldnotes). This is a partial list and includes primarily material that is not available on library shelves. Excerpts from the author's fieldnotes are presented throughout the body of the text; and, they have generally not been explicitly presented below except for quotes from Sarah Hines, William "Big Bill" Penn and Hal George.

Swan, James G. From A cruise in the Sarah Newton (July 18-August 24, 1861), Washington Standard, 5 & 12 October 1861. Reprinted in *Almost out of the World*, William A Katz, ed., Wash. St. Hist. Soc. [1971].

Swan [1818-1900] came to the Northwest in 1852, one of the first Euro-Americans settled in Shoalwater Bay; 1859-66, lived in Neah Bay as agent and teacher. He visited the Quileute at least three times: (1) in 1855, when the mail-steamer Southerner was wrecked at the mouth of the river, (2) on the cruise aboard

the Sarah Newton in 1861, and (3) in 1879, when he and Chas. Willoughby met the Quileute chiefs Xawishat'a, Tlakishka, and Taxa'wil at the mouth of the Quillayute River, all of whom signed an affidavit that they had been misled by the treaty negotiators in 1856.

Swan describes the location and size of the "cammass" prairie in sufficient detail (7 miles from the mouth of the river, on the north side of the river, and bounded on the south by a steep hill about 100 feet high, about 4 miles long by mile wide) for us to recognize it as the Quillayute Prairie (Sat'ayaqw). He remarks its openness and the immense ferns. Finally, he notes that there was a well-defined trail that led into the prairie, suggesting that it had considerable thoroughfare. Finally, it is of interest that the chiefs decided, of all places in their territory, to take Swan to the prairie that contained the village's most accessible camas beds.

[Part One]

I wrote you, my dear sir, that I purposed a cruise on the coast during the past summer, as far south as Quillehuyt River. I will now give your readers the result of my observation.

....When the tide rose, we pulled the schooner into the river and anchored in ten feet of water near the Indian village. The Indians immediately came on board in great numbers, all friendly and very curious. I perceived among them some of the Quenaiults, old acquaintances, Mackamus, on the chiefs. He soon made me acquainted with Hawelatl, head chief of the Quillehuyts, who invited Capt. Beynon and myself on shore, where he conducted us through the lodges of his village.

The following day we passed in trading and on Thursday, August 1st, I made arrangements with Howelatl and Wackamus to accompany me up the river to Cammass Prairie.....

QUILLEHUYT RIVER. The Quillehuyte River is a fine little stream, varying from fifty to two hundred yards in width and with a depth of eight to twelve feet of water.... About a mile up from the bend of the river (which looks from the ocean as if it was the real entrance), we came to a rapids extending some 300 feet at the head of which is a lodge and a strong weir for taking salmon.... We proceeded up the stream three-fourths of a mile, when we stopped at the mouth of a small brook and all went ashore to walk, as the current here was two (sic) strong for us to row any further although canoes go miles beyond. The Indians requested me to drink some of the water of this brook, which I did and found it remarkably cool and refreshing, and totally unlike the river water, which is also very pure. After securing the boat, we started off on foot, walking along the river bank for a quarter of a mile, when we came to another fish weir and an Indian lodge. Here we struck of into a trail which led to the CAMMASS PRAIRIE, which lies in a northerly direction through a bottom of alder, willow and vine maple. We passed several patches of potatoes planted by the Indians, and all fenced in. After walking through a bottom for half a mile over

a very good but circuitous trail, we came to a creek nearly dry at this season, but evidently a large water course during freshets. We crossed this by means of a fallen tree constructed by the Indians into a rude bridge, and then passed up to a bench of land almost ten feet higher than the alder bottom. This I found to be a fine level piece of land, which was covered with a heavy growth of hemlock.... After passing through the hemlock forest, we came to the foot of a sharp hill 100 feet high. On ascending this, I found the beautiful prairie stretched out before me, level with the top of the ascent, covered with ferns higher than my head, and extending in a northeasterly direction five miles or more in length and from a half to three quarters of a mile wide. Beyond this prairie is a level forest and beyond that the mountains and hills that make the southern boundary of the Strait of Juan de Fuca.... We walked by a trail through the ferns to the center of the prairie, where the ground rises with a gentle elevation.... I have named the prairie Laighton's prairie in compliment to my friend Joseph E. Laighton, Esq., late treasurer of Jefferson County.... I only remained on the prairie long enough to get the bearings by compass of the various mountain peaks and hills, and at 12 o'clock, noon, I started on my return to the schooner, and reached her at half past three o'clock. I called the distance from the mouth of the river to Laighton's prairie seven miles. [End of Part One]

[Part Two]

On leaving the prairie, we retraced our steps over the same trail we came, and having reach the brook where we had left our boat, we partook of a lunch of cold meat and hard bread which we washed down with a draught of the pure cold water of the brook and then started down the river....(describes village, climbs the fortress islet, Alekistet, and names it James' Island).

THE NATIVES ...The Quillehuyt village is at the mouth of the river, on the little bay behind James' Island. Howeatl, the head chief, is a quiet and very friendly Indian, and was of great service to the whites at the time of the wreck of the Southerner. After the passengers had left, a party sent to take charge of the mails.....remained several weeks and were treated with the greatest kindness and hospitality. Since that time, there have not (been) more than two or three white men passed that way. Ours was certainly the first trading vessel ever there and the actions of the Indians showed how unaccustomed they were to a stock of goods, but they had but little to trade with and our bargains were soon closed. They evinced their kind feelings on our departure by all coming down to the beach and bidding us good-bye, a procedure that I never saw Indians do before on a like occasion....

James G. Swan [1879]. Documents and notes from a meeting held August 20-1, 1879, in the village at the mouth of the Quillayute River between Chas. Willoughby (U.S. Indian Agent), James G. Swan (interpreter and clerk) and the chiefs and sub-chief of the Quileute.

This meeting, held 24 years after the Quileute speaking chiefs signed the treaty, speaks of the memories, intentions and sentiments of the chiefs who signed the treaty. The chiefs claim that they did not understand the provisions of the treaty and they specifically mention “the prairie land where the camas grows” as a part of their territory which they would never give up voluntarily.

Tahahowtl, Sub Chief of the Quillehute, under the treaty then said: “I told Mr. Simmons that my land was from the island of Upkowitz (i.e. Tatoosh Is.) opposite Kwedaitatsit (i.e. Cape Flattery, lit. “Makah people place”) down the coast to the Hooh River. This was my land formerly, and we would not sell our right to the river where we got our salmon (running) into the land at the mouth of the river where we now live. We always wish to live where we are. We also claim the right to the sea coast as far as our land extends. And we want one half of the prairie land where the camas grows. The rest we will sell to Washington. Mr. Simmons said it was good, and he wanted to do as the Indians wished. Mr. Simmons said I have not bought your land. All I want of you is to look out for any white man who may be wrecked on your coast or come to you in distress. I want you to take care of them.

Mr. Simmons gave us at that time, to each man one blanket and to each woman one blanket, and three yards of calico or white cotton cloth to each child. Mr. Simmons said, “this is a cultus potlatch (a gift) it is not in payment for land....

Signed by Tahahoweth (his mark) Witnessed by Peter (his mark) & Jessie (his mark)
by James G. Swan, and
by Chas. Willoughby

Reagan, Albert B. [1908] The Olympic Region. Alaska-Yukon Magazine, October 1908. pp. 18-24.

Albert B. Reagan came to LaPush as school teacher in 1905 and stayed four years (he was later there briefly as Indian Agent). He was a man of wide interests and, besides teaching and serving as local Indian Agent, he made notations on Quileute life, community happenings, and the geography and natural science of the surrounding Olympic area. Reagan returned briefly to work for the Indian Agency at Hoquiam later (1928). He wrote a number of articles on various aspects of Quileute life, cultural narrative and ethnobotany. He died in 1936 in Ouray, Utah and many of his papers were placed by his widow, Otilia Reagan, in the Brigham Young University Archives. Reagan also did a short ethnographic manuscript on the Quileute that is located in the BAE, Wash. D.C.

[p. 18] Railroad activity in northwestern Washington for the past two years has brought before the public

eye the Olympic peninsula with its giant timber and fertile valleys and prairies....Governor Stevens' treaties in the (18)fifties settled the Indian troubles. The scenery here is as striking as any in the state. In the lowlands, it is true, one sees nothing but stately timber, because he is engulfed (sic) in it, except when an occasional prairie is encountered.

[p. 21] As far as the writer knows the soil of the prairies, treeless areas covering 4,000 acres, has never been analyzed. It is a black loam two or more feet in thickness. It is composed of decayed fern roots that have been collecting since the retreat of the great ice sheet. This soil is known to be as good as any in the state. In fact, the writer has examined the soil in various parts of the United States and he has found none better.

Curtis, Edward D. [1913] *The North American Indian: Salishan Tribes of the Coast* [Vol. 9, p. 141-150] Norwood Publ. (Boston).

Curtis, the photographer and amateur ethnographer traveled and documented Quileute and their life-ways in the early 1900s. He obtained important historical information regarding the Chimacum, the linguistic congeners of the Quileute, who were largely extinct as a tribal group by then (having been wiped out by Clallam and Suquamish raiding, and later intermarried with those groups). He included in his information regarding Quileute economics and hunting, belief systems, myth and language.

Supplications were addressed to one's own particular guardian spirits, and all persons prayed to the sun and to Tsikati (the universe) asking for long life and for success in any contemplated undertaking. Some would utter the prayers from a hilltop, others standing in a stream or in the sea at a secluded place (p.148).

Thunder is believed to be the clapping of the wings of Tistilal, a huge bird and lightning is the flash of the yellow feathers under his wings. This bird catches whales in his talons. A folktale describes how a man once saw it alight on Beaver prairie with a whale to rest and watched it fly away without the whale. Some people from Qiliyut found the whale and butchered it, but when the flesh was all cut up a great hailstorm arose. Huge hailstones killed the people, and their bodies and the whale's were turned into stones, which are now pointed out on the prairie as proof of the event (p.149).

Frachtenberg, Leo [1916]. *Quileute Fieldnotes* (notebooks recorded in LaPush, Summer of 1916) American Philosophical Society MS, Philadelphia. 7 vols.

Leo Frachtenberg taught at Chemawa School in Oregon during WWI. Several Quileute young people attended at that time, and Frachtenberg became acquainted with Hal George, who helped him arrange

a summer of interviews in LaPush during 1916 with knowledgeable elders such as Arthur Howeattle, Talicas Eastman, Billy Hebaladup.

Frachtenberg's notes include various historical and contemporary references to Quileute residence in and exploitation of the prairies. The material reproduced below represents information that relates generally to traditional Quileute use of the prairies.

[NB 2:1] Arthur Howeattle – Territory

Quiliutes lived in former times on James Island....Temporary lodges were put up on Beaver Prairie (NE of LaPush. [2:4] At the time of the treaty (1855 and 1856), they lived in Lapush. According to this treaty made between G. Isaac Stevens and Old Chief Howeattle (an uncle of the last chief), the Indians ceded to the Government the northern half of Lake Ozette and eastern half of Quiliute Prairie, keeping for Indians the other half and also forks Prairie, their camas-grounds and also fishing and hunting grounds. [2:6] Forks Prairie was called qet'La'ayaqw "upper (i.e. upstream) prairie." Quiliute prairie was called sat'a'ayaqw "lower (i.e. downstream) prairie" ...Every place along the river had a name and each place was the property of a certain family. The following is a list of names and fishing grounds: ...(#14) ts'ixwo'ot', "above the prairie" on the Calawah River 200 yards upstream from the highway bridge at the north end of Forks, belongs to Po'oqshq' (Dixon Payne, now to Tom Payne). This was the next (2nd) best place because he was liwo'wa a'ach'it ('next to the chief'). [2:9] Although the fishing grounds belonged to particular families, hunting grounds were communal property. These grounds included the prairies and the upper part of each river and reached clear to the Olympic Mountains.

[2:39] Arthur Howeattle and Talicus Eastman -Shelter

Permanent houses were called t'ik'al...While fishing along the river they occupied permanent homes of the same style and material as those (in the village at the mouth of the river). During the hunting season (i.e. while camping on the prairies) they used houses or lodges made of hemlock bark and called Loq'wa'ati 'bark house'. Hunting and berrying lodges were also built of underbrush and called tsasa'ati, 'brush house'. Hunting lodges were also constructed of elk skins and called hokwodisti, 'hide houses'. [2:46] Loq'wa'ati 'bark houses' were used during summer while they were located at the prairie digging camas and fern roots. These were built of hemlock bark. The prairies are regularly surrounded by hemlock stands. The bark was cut this way. Circular incisions were made at the desired length of the trunk; a similar incision was made at the bottom of the tree. Then one perpendicular incision was made from the top to bottom and the bark was peeled off. A level spot was chosen. Then, at each end of the desired house-site, a hemlock pole with a groove in the top was set upright. Four such corner posts were set up. The two hind-posts were shorter, thus making the rood slanting just as in the shed-roofed traditional Quileute permanent dwelling t'ik'al. On top of these posts horizontal poles were placed, but instead of

four such rafters only two were used, one on each side. The front and back of this bark-lodge had no rafters. The rafters were tied to the posts by means of twigs. These rafters were of the same length as the bark. Then on top of these rafters smaller poles were placed at equal distances and right angles reaching from side to side and tied with malleable twigs or with-ropes to the rafters. They usually used a number of these poles, so as to prevent the weight of the bark from bending them downwards. On top of these poles the strips of bark were laid perpendicularly which were weighed down by means of chunks of wood or stones. The number of bark-strips necessary for the roof depended upon the size of the house. The strips of bark on the roof were placed in the same way as the boards on the roof of permanent houses. The walls consisted of underbrush or small hemlock limbs, which were inserted between two poles fastened at each end with twigs. These poles (one set at the bottom and one at the top), together with the brush were fastened to the rafter by means of limbs; and, as the front and back part had no rafters, horizontal poles were tied at right angles to the two corner posts at a lower distance from the tops, and to these poles the walls were tied. For an entrance, one side of the house was left entirely open, usually in the direction away from the wind, so they often faced NE. These houses were large enough to hold one family only.

A *tsasa'ati*, 'brush house' was used during hunting season (summer or winter) and in the prairies it could be used both as a shelter and a blind while waiting for game. It would usually be used for a few nights only. These houses were built of brush. A level site under a large tree was chosen. Then two posts (one at each end) were set into the ground and across these, somewhat lower than the top, another pole was tied. This opening served as the entrance to the lodge and also the front part of it. Against each of these two upright poles another pole was leaned, one end resting on the ground and the thinner end tied to the upright pole. Then across these two poles, three other poles were laid horizontally and fastened by means of twigs. One pole at top, one in the middle and one close to the ground. At right angles with these poles layers of hemlock limbs were placed. The front of the house was away from the tree. Two people in one lodge.

Hokwodisti, 'skin house' was a hunting lodge set up by the hunters. It could be put up by hunters if they were in heavy rain because it was more waterproof than bark or brush lodges. The skin of freshly killed animals could be used. Mostly the skins of deer, elk or bear were used. They could either be used in prairies or bush.... The skins were tied on top of a frame, overlapping with the hairy part on the inside. For walls skins or old mats were used. One side was left open for an entrance. One house usually accommodated one family. They were square; not oblong.

[2:55] Away from home, in the prairies or other camps, cooking was done in pots of various sizes and shapes (*haxixw*), improvised from hemlock bark and called *po'oq* (square) and *wi'ees* (oblong shaped).

They occasionally cooked in baskets of spruce roots, if these were tight enough.

[3:18] Arthur Howeattle – Subsistence [Note: this section edited and expanded by Hal George during an interview with Powell, 1978; these additions are included below).

The following roots were eaten. The preferred root-food was camas (kwala). Also, ferns, esp. bracken, sword ferns, ladyferns, and rarely woodfern were eaten. Ferns in general were called pilapila; fern-roots in general were called t'sikwi'. Bracken were called (k'aqwa'apat) and licorice fern was called tsaqqwa'at, a term later used for chewing tobacco, because it was chewed. The Quiliute also dug and ate clover roots (La'it'ay), camas (kwala), buttercup (k'ikiLiqa'apat), tiger lily (LiLipiwada'yu), silverweed (t'Lit'Le'eshit), horsetail (t'sexaq), wild parsnip (saqwsuda'), and thistle roots (bo'olob or Liloq'wa'atapat) and LeLxwac'so'ot, meaning unknown.

The following berries were eaten (most available in the prairies of Quileute territory): salmonberry (cha'aLowa), red huckleberry (tiLo'ot), blue huckleberry (towadaq or yayaxad), salalberry (kwo'od), thimbleberry (taqachiL), strawberry (t'obiya), elderberries (t'siba'), lowbush cranberry (p'ap'a'is), trailing blackberries (bada'bixw), blackberries (introduced species, evergreen and himalaya, all called shishipq'it'sa), gooseberry (t'ik'wapat), crabapples (soyoyoswa'), stink currants (t'Liloc'hiyiL), rose hips (t'Lik'way), Oregon grape, and serviceberry (questionable use, no Quiliute name recalled).

[3:19] Roots were dug by means of a digger (t'iyuq'wo'tsoqwoL meaning "used for digging the ground"). Made of spruce, yew, and vine maple limbs, crooked and pointed at the end. The point was barbed. These had handles occasionally. They were from 4-5 feet long and about a 2-3 inches thick. Elk and deer horn hand-diggers were also used.

Preservation of food. Elk and deer meat was dried. The fat was first cut away and left to dry separately. Occasionally the fat was first partly smoked and dried...Smoke-drying meat was done only during the cloudy months. The upriver prairies were much sunnier than downstream areas and the river mouth, and meat was wind dried up there. In the summer when the sun was bright, the slices were smoked for a short time only to keep the flies away and then they were placed outside on a platform above the ground, whose poles were about 6 inches apart and left to dry in the sun. At night the meat was taken off and put on again in the morning. Meat dried this way could keep about a year. Bear, cougar, and wildcat meat was cut in long, one-inch thick strips and dried or smoked by being flapped over horizontal poles above the ground. Of course, these meats were also eaten fresh, as was the meat of smaller animals and birds, which were usually not preserved by drying.

[3:25] Fern roots were (taken home, then) rolled up and dried in the house by placing them across two or

more poles. Roots dried in this way kept a whole year. Camas was preserved by simply being kept in a dry place. The other roots were dried by laying them on a mat or the ground and exposing to the rays of sun. Gooseberries, salmon and huckleberries, thimble and strawberries and crabapples were eaten fresh. Huckleberries and all other berries were preserved by either drying or steaming. Crabapples were also crushed and mixed with grease (as were all berries) for a sweet treat. Elderberries were steamed (just like camas) in this way: a circular hole was dug in ground or sand about one-foot deep. This hole was lined on the bottom and sides with rocks. On top of these, a fire was built and into it more rocks were put. When stones were red-hot, the wood was taken away and fire permitted to die out. On top of the ashes were wide straps of alder bark spread on, which the berries were spread out, this protected them from touching the dirt of the edges by means of skunk cabbage leaves. The berries were then covered with layers of skunk cabbage leaves which were sprinkled with water to produce steam, and on top of these dirt or sand was piled about 6 inches thick. On top a big fire was made and enough wood piled to make the fire last a whole night. Next morning the berries were uncovered and smashed finely by pounding them with the bottoms of wooden spoons. Then they were put into pikwo' (special elderberry storage baskets). The berries were cooled off and transferred into those baskets made of hemlock bark covered up with leaves of soft vine maple and stored away in the mud of shallow creeks.

Salal and huckleberries were dried either by the fire or in the sun. They were spread on mats (outside, if it was sunny) and left to dry. After being dry, the berries were placed in bags made of cedarbark and stored away. Fresh salalberries were mashed in carved wooden bowls if available or bark containers in the prairies, and made into oblong cakes with rounded corners, some three-inches thick and dried slowly in the house, away from the fire. When dry they were stored away. One such cake was worth a blanket. Fresh salalberries were also mashed in wooden pots made into long thin cakes and placed high upon skunk cabbage leaves to dry slowly. Huckleberries were only dried on mats.

Roots and berries were dug and gathered by men and women. When the whole family went out, the men usually dug the roots while the women picked the berries. Fernroots were dug in winter from November until April. Camas and wild parsnip was dug during spring from April to June. Wild clover roots were dug in June and July. LeLxwat'so'ot (meaning not known) were dug in March and horsetail roots all year round. When camas time came, they left their permanent homes in March going up to Forks, Little or Quiliute Prairie, staying until a sufficient quantity was obtained. None of the roots were dried at their temporary lodges in the prairies. The berries were picked in their seasons and the women were never absent alone from their homes for more than 2 or 3 days at a time. Gooseberries and salmonberries ripen in the later part of June: blue and red huckleberries in July, likewise elderberries, salal and blackberries in August; thimbleberries in July; strawberries during June & July, and crabapples in September.

[3:37] Billy Hebaladup and Arthur Howeattle, Hunting.

The Quiliutes used to hunt along the banks of the rivers...The prairies too were full of game and they hunted especially on Quiliute Prairie (c'hikwyaqw or sat'ayaqw), Forks Prairie (qet'Layaqw), Little Prairie (q'wadiyaqw), Beaver and Tyee Prairies (t'axetal yaqw), and Lower Bear Creek prairie area (t'sixwokwotsoqw yaqw). The hunting areas belong to the whole tribe and are available to anyone. Hunting was done with bows and arrows (taxwLo' hixat ha'itat). They also snared and trapped animals. During hunting, dogs were always used (except when hunting from canoes or waiting at blinds in the prairies). These were the wolf dogs and were highly prized. Tradition has it that they were purchased by trade from the Neah Bays. Usually a bitch was bought and bred by the Quiliute. Dog collars (Lichq'adasqwol) were used only while in camp. These were made of leather and had a long bark line fastened to it. When ready to start hunting, they painted the dog's head with red ochre. This was to protect them from wolves for wolves would not touch dogs whose heads were painted. Dogs were turned loose when close to game and called in by whistling.

[3:47] The regular and most important hunting season was during the month of June (t'Laxaliqtiya'at).

[ed. - Hal George said, "Too early! They'd go get their elk in late July or early August! That's when it was fat."] In that month the bull elks were really fat. After the rutting season, the bulls become lean and the hunters went home. Of course, they hunted at other times and when game presented itself, but were not as successful as in June. When hunting for bull elks in June, a whole party participated consisting of several families. In the other hunts usually one or at the most two families took part. [Elk hunting, butchering, distribution among members of the hunt described.]

Deer were usually hunted on prairies during morning and late evenings. These were not hunted with dogs, but were shot from a convenient hiding place. During mating season elk were hunted with dogs (in the prairies and lower areas) who cornered the animals until the hunters arrived. In these hunts, the hunter's very often caught the bull and cow at the same time, since the bulls did not leave their mates easily. [description of snares, springpole snares, deadfalls and pitfalls, none of which were commonly used in the prairies.] A good hunter could shoot (with a bow and arrow) at a target 200 yards (away) and hit the mark.

[3:127] Arthur Howeattle - Transportation

All travel was done in canoes or on foot... River canoes are propelled by means of paddles and long poles, especially on shallow water. These poles were made of hemlock and called t'LixiL. Travel on river was rather extensive, since the rivers were navigable to the small canoes almost clear up to the Olympic range... All overland travel eastwards was done during their journeys to the hunting and berrying or fern grounds. The Quiliute men and women are good walkers. Even today [1916] many women go for camas as far as Forks (14 miles). Today teams and horses are used occasionally, but owing to lack of pasture

lands and to lack of a road from LaPush to Mora, few horses and only two teams are owned in the whole village. Their best salalberry and crabapple grounds were situated about 6 miles east of LaPush... All burdens were carried in canoes or in baskets by means of tumplines (haq'waqstiL) of cedar or, now, rags, worn by the women on their foreheads. Young babies were carried by women in the folds of their blankets in front of them (Likwtipilil). These blankets were tied around the waist of the woman by means of a packstrap, and the two ends of the blanket were fastened together on the right shoulder by means of a pin made of bone. Older children were placed on the top of the baskets (t'axaq'wadasLil), carried by the women with tumplines. In case there were two children, the man usually carried the larger in the same way.

[4:39] Arthur Howeattle and Tommy Payne – Social Organization

The village community (wic'hiyolit) was divided into greater families (ho'oLwat), house groups (wiLqpat) and nuclear families (wiLwat). There was no clan system. The whole tribe owned the tribal territory in common due to mythic common origin. Greater families and house groups had rights (usually accorded to the status person in the family or group) to economic resources, names, dances and songs. Individuals had guardian spirits (t'axilit) that were acquired originally by individuals and thereafter heritable to descendants. These crests had nothing to do with the common origin of the family from one ancestor... Thus, Arthur's great grandfather was a great t'axilit-man. His crest was the Thunderbird and Whale (a crest associated with the mythic history of the origin of the prairies). The Howeattle family obtained it from him.

[4:57] Land was neither individual nor family property. It belonged to the whole tribe. A man or family, however, was looked upon as the proprietor of the place on which he built his permanent fishing, digging or hunting houses. These houses could be inherited. A man wishing to settle on a place asked nobody's permission provided it was not occupied by anybody else...Berrying and root digging grounds were also common property. These common grounds were only accessible to the members of the tribe. Outsiders [non-Quiliutes] were excluded from them.

[4:61] Festivals.

In former years, up to about 70 years ago, the only presents given during a potlatch consisted of food such as dried salmon, camas, etc. [baskets of camas are always mentioned as preferred gifts at potlatches, e.g. 4:67; and were valued trade items, i.e. 3:142]

[4:81] Arthur Howeattle - Birth, Childhood, etc. (incl. Taboos)

A woman with child for the first time and any pregnant woman had a good many taboos (apolaks, "it is taboo for her to ...") imposed upon her. [These affected a pregnant woman or new mother visiting or

working in the prairies].

...She could not eat or touch fern roots (t'sikwi'), because she would have pains as if stung by needles, just like the plant has them. She could not eat or touch a certain species [?] of camas, otherwise she would have lumps in her belly. She could not eat or touch horsetail roots (tsexaq) for the same reason. She could not eat or touch fern roots because these travel like a snake inside her body. [Taboo against various types of berries picked on prairies and elsewhere.] She could not eat or touch wild parsnip (saqwsuda') as these would cause in her womb lumps shaped just like carrots. Nor could she touch xa'at'ada (a plant like camas but smaller and very hard [?]). Nor q'a'abat's (a long plant 4 inches wide and one-half inch through [?]), as it will cause lumps in her belly. She could not touch any bird, as otherwise the child would act just like the eaten or touched bird. She could not eat nor touch any kind of game (deer, elk, etc.) because the child will act just like the eaten animal. A pregnant woman could not look upon a dying or dead animal or person, because the child will be dead also. The husband of a pregnant woman is forbidden to see, touch or eat any of the things forbidden to his wife.

[4:107] Twins. The parents of twins and young twin children had especially stringent taboos, including camas. The parents of twins could not look at the river or streams or at the ocean. As soon as twins were born the parents and the children moved away into the woods or prairie to avoid the sight of the ocean and river, otherwise there wouldn't be any fish or whales in the water. After eight months all taboos are expired.

[5:13-15] Orphans and widows. Orphans were allowed to eat anything after the death of their parent, but the widow or widower could not eat any berries, camas. A woman or man eating berries or camas then would become dried out and skinny like the dried berries or camas.

[5:22] Webb Jones and Dixon Payne - Religion, worldview, origins.

Thunder and lightning are caused by Thunderbird....Originally he is a man....He has a house in the snow peaks of the Olympics. Everytime he goes to the sea he puts on his blankets which make him look like a bird. Upon returning he takes off his clothes and becomes a man again. He looks like an eagle, but is much larger. His wings are so large that they extend from the top of a tree to the ground and the feathers are 12 feet long. He causes the thunder by flapping his wings and the lightning by spreading them out. He can still be seen [and heard] today. One day a woman saw him at Forks Prairie (qet'Layayqwoqw). Her husband came to see it and got a feather from the tail. This made him a great elk hunter.

[5:23] The fire and how to start one was shown to the people by Q'wati. [This happened in Forks Prairie area and was the beginning of keeping the prairies open by burning them.]

[5:33] [There are prairies in the land of the dead. In the very heart of the underworld...] Beyond this is a prairie full of strawberries, where they could pick and eat berries. [There are other places in the underworld and the road that leads to it which sound like prairies, as well.]

[7:8] Arthur Howeattle, Webb Jones and Dixon Payne – Guardian Spirits.

Men and women had guardian spirits, called taxilit, which were acquired some time during their lives, usually between the ages of 18 and 35. The guardian spirits were divided into two classes. Those “for to sing with” (taxilit), and those to cure with (possessed by medicine men only and called ixwaLola’aqoLowa taxilit).... The qit’La’kwaLi taxilit live upstream on the Forks Prairie, east of Lapush, and they too begin their travels Westward in the winter. The tLokwali guardians live north and begin to travel southward in November. These guardians always travel in air-canoes and can be seen only by those who obtain those spirits. Those who have Tlokwali spirits often camp in the prairie alone during clear nights in November, dancing the tLokwali with a small fire, pausing regularly to check the sky for the air canoe of the tLokwali spirit.

[7:9] A person desiring a certain taxilit has to pray for it every morning and night while bathing from new moon until full moon. In former years those who wanted a medicine or hunting taxilit used to go up into the mountains or along the edge of prairies, staying there about a month and even longer. While there they build a platform about 4 ft. high, kindle a fire on both sides of it and lay on the platform waiting for the taxilit. Whale fat and elk tallow are placed on the fire to attract the guardian spirits. As soon as the taxilit comes, the man jumps down and grabs him and hugs him to his breast. Thereupon he faints several times, regains his consciousness and goes home – in possession of the taxilit.

Reagan, Albert B. [1917] *Archaeological Notes on Western Washington and Adjacent British Columbia*. (Proceedings of the California Academy of Sciences) Fourth Series, Vol. VII, pp. 2-31.

[p. 3]the Olympic Peninsula is a very difficult country in which to do research work. There are but three wagon roads in the entire area west of the Olympics. One of these roads, aggregating some 50 miles in total length, connects Port Angeles with Lake Crescent and Port Crescent and the latter again with Lake Crescent. The second road extends from East Clallam, on the Strait of Juan de Fuca, west to LaPush, on the Pacific front, a distance of about 50 miles. The third road connects the above roads along the line of the Soleduck River. Trails also extend from West Clallam to Ozette Lake and the Dickey Lake country, and from the latter to Quillayute prairie. Another trail connects Forks with the Hoh country. A few short trails also branch off of the main trails here and there. These afford all the means of gaining access to the interior, except by canoe on the various streams.

[p. 8] Middens. The middens (of Quillaute country) are of three classes, based upon age: ancient, old and recent. The recent middens were made since the Astoria-Hudson Bay fur trading began, as is attested by the Hudson Bay Company's beads intermingled with the middens....The middens here designated "old," underlie the recent occupation at LaPush and on James Island, scattered patches also occur at several other places...The ancient middens underlie and are found to be intermixed with the more recent middens on James Island (due to the use of these heights as a garden for many years). They are also found on the Pacific water-front, also flanking and capping Pacific Street ridge at LaPush. Middens of this age are also found far inland, at Beaver Prairie, Forks Prairie, Quillayute Prairie, and at various camping places along the Quillayute River and its tributaries; more recent middens are also found at each of these places. These ancient middens, as of the other classes previously mentioned are composed of decaying remains of marine shells, intermingled with enormous quantities of ashes, calcined and fractured rocks and other refuse material, all showing evidence of extreme age. Their age is further attested by the fact that huge trees, hundreds of years old, are growing on them. (Especially in the prairies, parts of which are undisturbed)...many "oven mounds" are found. In outward appearance they resemble the burial mounds above described. Within, however, are the charred remains of fruits or sea species that have been oven-baked. That these are oven mounds, there is no doubt. As the Quillayute bake clams, wild fruits, and "lacamas" in the same sort of oven to this day. A pit is dug...(description of cooking process)...The earth-mound is left and the shifting sand fills up the hole from which the baked articles have been taken. The mound is then complete.

[p. 20] This regarding the Waatch Prairie, once part of Quileute territory, but was Makah-speaking territory at the time of European contact. Concerning the Flood myth the Makahs say: A long time ago the water of the Pacific flowed through what is now the swamp and prairie between Waatch village and Neah Bay, making an island of Cape Flattery. The water suddenly receded, leaving Neah Bay perfectly dry. For four days the water ebbed out. Then, without any waves or breakers, it rose till it had submerged the whole country, excepting the tops of the mountains at Cloquet [Clayoquat]. The water was warm as it came up to the houses. As it rose the Indians took to their canoes and floated off with the current, which set very strongly to the north, but as there were no landmarks and as the sky was continually clouded, some drifted one way and some another. When the waters subsided to their accustomed level, some of the Makahs found themselves at Nootka, where their descendants now reside. Some found homes at other places to the north. Many canoes came down in trees and were destroyed and numerous lives were lost. The waters were four days regaining their accustomed level.

The Waatch prairie shows conclusively that the water of the Pacific once flowed through it; and on cutting through the turf at any place between Neah bay and Waatch the whole stratum is found to be fine beach sand, intermingled with ocean shells, sometimes collected in piles and ridges as if they had

been ancient midden heaps. In some places the turf is not more than a foot thick; at others, the alluvial deposit is two or three feet. As this portion of the country shows conclusive evidence of volcanic action and earthquake disturbances on a gigantic scale, there is every reason to believe that there was a gradual depression and subsequent upheaval of the earth's crust, which made the waters rise and recede, as the Indians allege.

Reagan, Albert B. [1929] Whaling of the Olympic Peninsula Indians of Washington, *Natural History*, Vol. 25, pp. 25-32.

[p.25-6] The origin of the stones in Beaver Prairie. The Thunder Bird is represented as engaged in dreadful battles with whales. Once this bird, after killing the powerful ocean monster, was nearly robbed of its prey by a group of people who came to the scene and cut up the whale. But scarcely had they done so when it began to rain, snow and hail. The ThunderBird, the flash of whose eyes are the lightning and the flapping of whose wings produces the mighty winds, came flying up in anger. Soon he caused great chunks of ice to fall. The people were scared. Some tried to flee, others concealed themselves under logs and rocks to escape the wrath of this god of the air. But all were stricken and turned to stone as was also the meat of the whale. Whoever visits the scene of their fatal gathering may view their remains, represented by great blocks that form a ridge from one end of Beaver Prairie to the other. One may even see the ribs of the whale's carcass and its massive head.

[p. 32] Whale oil is used (as a condiment) in eating potatoes, camas, roots, dried clams, and boiled or dried fish, which are dipped into it.

Reagan, Albert B. [1923] *Flora of the Olympic Peninsula, Washington*. (Transactions of the Iowa Academy of Science) Vol. 30, pp. 201-243. [N.B. The entries in this article duplicate, generally verbatim, the entries in Reagan, 1934, q.v.]

[p. 201-2] The peninsula is in northwest Washington....The area of the peninsula is about 8,000 square miles. [geology, climate, rainfall]...Growing under this equable climate with such an abundance of rainfall (enough in amount to preserve the forest and shrubbery from general destruction by fire), the peninsula, with few exceptions, is the most densely forested region in North American, and smaller plants do equally well.

[p. 203] Bracken fern. Grows on the "prairies" and burned over places, especially in the middle upland area. It is the fern of Forks Prairie. It has also been carried to the beach with feed and appears in the

old graveyard near where the old (Mr. Wesley Smith) school house used to be at LaPush. The writer has seen it in the upland regions. At Forks Prairie it grows as high as a horse. The burning of this fern year by year was what kept up these prairies and extended their area. The Indians burned the prairies over for the purpose of clearing out the area so they could shoot deer and elk when they came to feed on the young sprouts. The prairies, about ten in number, probably were started as camping sites, which were gradually extended by the annual burnings. They also dug the roots of these ferns and pounded them into a pulp, which they dried. This they made into a sort of dough when it was needed and baked it into a blackish bread, which they claim was good eating. Unluckily, the writer appeared too late on the scene to see any of this fern paste bread.

[p. 204] Scouring rush. The Indians of the coast dig the rootstocks of this rush and eat them. They have a sweetish, not bad taste and are considered a great delicacy by them. They also dry them for future use. They also gather them to be eaten during several of their medicine ceremonies as they are said to be "good medicine."

Selaginella oregano. It might also not be out of place to mention that the fern is the weed of the region and in the prairie sections is one of the hardest weed pests to get rid of. It is about an equal of the Canadian and Russian thistles. The bracken fern is the harder fern to eradicate. At Quillayute Prairie ferns have taken whole farms.

[p. 211] Skunk cabbage. A plant resembling a cabbage somewhat; but with larger leaves and no "head."... In the spring the bear feeds on this plant. The Indians also use its leaves. When roasting the cammas (La cammas, as the Indians call it), they cover the cammas heap, which they have collected with layers of leaves of this plant. This they cover with a light layer of dirt and then over all they pile considerable wood. This they ignite and keep burning till the cammas is cooked beneath it. Sometimes a pit is used for this baking process. The natives say that the cabbage leaves give a good flavor to the cammas fruit; but a white man would hardly think so. The natives also wrap red elderberries in leaves of this cabbage when preparing them by the native baking process. They also wrap fruits, usually cooked fruits, in the leaves of this plant and then bury the whole in the muck of some swampy region. This was their way of "canning" fruit. The old people told the writer that it would "keep."

[p. 212] Camas. Called by the Indians la camas, pronounced as one word with the accent on the first syllable. Common wherever there is an open area, most abundant in the "prairies," especially Quillayute Prairie. Scilla fraseri is also another plant from which the Indians use the bulb roots and call "Lacamas," as has been previously mentioned. The bulbs are very similar to those of the Quamasia and are prepared in the same way. The Indians have many myths about this plant.

[p. 215] Nettle. Common everywhere in clearings, prairies and along the seacoast region. Where it grows the thickest, the squaws pull up the roots by hand and there make their best gardens. The roots are twisted into ropes by the natives and in the old time were woven into cloth and mats and made into baskets. Both the whites and Indians of the region use the tops for greens.

Reagan, Albert B. [1934] *Plants Used by the Hoh and Quileute Indians*. (Transactions of the Kansas Academy of Science) Vol. 37, pp. 55-70.

[p. 55] While in charge of different tribes of West Coast Indians from 1905 to 1909 and in 1928 the writer made a study of the plants used by them. This included a study of the plants they used for food and medicine and those used in making baskets, mats, in house building, etc. The use of more than eighty plants are given, their descriptions, and uses to which the Indian put them....These Indians were great users of the plants of the region in the old days, and still do use some of them.

[p. 56] Fern Family. Bracken Fern. Indian name: kakwaput, kah-a-kwa, wot-tsa-a-balk. This fern grows in the "prairies" of the region and burned-over places, especially in the middle upland regions. It is the fern of Forks and Quillayute prairies. It has been carried to the beach with feed and appears in the old graveyard near where the old (Mr. Wesley Smith) schoolhouse used to be at LaPush-Quillayute Indian village. At Forks prairie it grows as high as a horse. The burning of this fern year by year was what kept up the "prairies" of the peninsula and extended their area. The Indians burned the ferns for the purpose of clearing out the prairies so they could shoot the deer and elk when they come to feed on the young fern sprouts. They also dug the roots of these ferns, pounded them to a pulp, dried the pulp, mixed it into a sort of dough and baked bread from it, which then claim was pretty good bread. Unluckily, the writer appeared on the scene too late to see any of this fern-paste bread. The Indians have many myths about the ferns, but space will not permit relating them here.

[p. 57] Scouring Rush. The Indians of the coast dig the rootstocks of these two scouring rushes and eat them. They consider them a great delicacy. They also gather them to be eaten during several of their medicine ceremonies. They are said to be "good medicine. They are also eaten during the puberty ceremonies. They have a sweetish taste, not a bad taste. The writer has seen them dried in food preparation.

[p. 59] Camas (Quamasia, Quamash). Most abundant wherever there is an open area, though most abundant in the "prairies," especially at Quillayute and Forks prairies. The bulb of this plant is used as food by the Indians of the whole coast. In preparing this food, a pit is dug in which a fire is built. On the fuel cobbles are piled, which, when heated to red heat, are covered over with wet leaves, brush or grass. On

this the bulbs are piled and over all wet leaves are spread to the thickness of, say, seven inches. Then over all, clay, earth or sand is heaped. Just before completing the covering over with earth, a quantity of water is poured on the cooking product and then when the covering is completed a small hole is left through the dirt-layer for the escape of steam. The cooking is then permitted to continue for about twenty-four hours. The product is removed through a hole dug through the top of the pit. The earth mound is left and the shifting sand fills up the hole from which the baked articles have been taken. The mound is then complete, a puzzle for future archaeologists (clams and fruits were also prepared by the oven process). Oven mounds are scattered throughout the region and northward to the Fraser River country. The Indians have many myths about the camas plant, but space will not permit relating them here.

[p. 61] Red Alder. In the old times the Indians placed the canoes of the dead, canoes containing corpses, up in alder trees among the leafy branches, where they tied them securely with spruce-root ropes. The writer saw several such "burials." The Indians seemed to prefer the alder to other trees for such interment.

[p. 64] Crabapple (and various prairie berries). Indian name for crabapple: tse-yo-yo'k-ke-day-put ("put" equals shrub [actually 'plant']). Common from the head of the Hoh River, especially along its western branch, to the coast. At LaPush it grows in a semiswampy region to the east of the old Wesley Smith schoolhouse site. There are also several patches of the species growing at Quillayute prairie, the largest covering about two acres, two miles east of the Quillayute post office. The Indians eat the fruit of this plant, except currants and gooseberries it is almost the only sour thing which the writer knows they eat. They also use the bark of its roots as medicine, the bark of its limbs and trunk also sometimes being used. Crabapple tea is also given as a remedy for gonorrhoea.

[p. 69] (Elderberry use and preservation techniques)

Reagan, Albert B. [1934b] Some Notes on the Hypnotic Ceremonies of Indians. Utah Academy of Arts, Sciences and Letters. Vol. XI, pp. 65-71.

[p. 66-7] Prairies in the Quileute underworld. The West Coast Indians have three kinds of doctors, principal among whom is the witch-hypnotic type, commonly known as tomanawis doctor....At one of the medicine ceremonies which the writer attended, the old medicine man, on coming out of the trance, gave an account of his journey after the fleeing soul to his credulous listeners, as follows: "I followed the soul on its journey to the land of after-breath-has-left-the-body; the spirit of a person looks just like a person, only very small. The road we were on was crooked and stony. The raspberry bushes were only about six

inches high and the berries and crowberries were also very small, as were the strawberries along the way; and the ferns of the prairie were only two fingers high. I saw many people gathering berries and fern roots, the latter to be made into bread. These people were not a finger-length high."

At another time another medicine man, who was doctoring a patient that recovered, gave an account of his journey to those present, on coming out of the trance, as follows: "I passed over the river of the dead to its other side. The people I saw there were large, strong and happy, and the trees were all large. The berries were larger than I ever saw here, and all the bushes were heavily loaded with fruit. There were also plenty of game in the prairies and fern roots for bread; and there were feasts and dances every day in that happy land."

Pettitt, George A. [1950] *The Quileute of La Push, 1775-1945*. *Anthropological Records*, Vol. 14:1,

George Pettitt spent World War II in LaPush in the Coast Guard. After the war, he attended the University of California at Los Angeles and went back to the Quileute to gather information for this community history. As far as the Quileute recall, he never returned to LaPush after finishing his fieldwork among them. His dissertation was, essentially, a community history and sociological study of Quileute acculturation. Unexplainably, he neither mentions the importance of prairie resources in tribal pre-contact economics, nor does he mention the reasons for their decline in maintenance and usage.

[p. 1] *Quileute Territory* Their territory, starting some thirty miles south of cape Flattery, extends approximately thirty miles south along the Pacific coast and thirty miles inland. Except for a few meadows and prairies of limited size along the rivers, the country is rough and mountainous and covered by a dense tangle of trees and brush... The brush, particularly along the edges of prairies, stream, and roads, contains a high percentage of wild berries, black, elder, salal, salmon, thimble, etc.

[p. 28] *Conflicts with Whites*. There was some friction as land was homesteaded and the Indians found it expedient to move out of the back country and congregate at the mouths of the rivers, but it never came to a dangerous break because very little of the homesteaded land could be cleared and cultivated—it was held for the timber on it and could still be used for hunting, and hunting land animals was a minor part of Quileute food economy in any case. [earlier] Morton Penn recalls that when his family moved from its upper river home to LaPush, the farmer on whose land they found themselves was loath to have them move and several times invited them to move back. Because the prairie areas were not completely settled, there were still areas available for foraging, and quickly the Quileute appetite for traditional roots was replaced with potatoes and other root vegetables traded or received in payment for work on farms, or increasingly grown in the Quileutes' own garden plots.

[p. 29] Land ownership. In 1915 the Quileute absorbed more knowledge concerning the difference between white ownership of property and the traditional Indian concept that ownership continued only as long as the property was used. For several years a number of the Quileute had been planting vegetables on a piece of riverbottom land within the area belonging to Mr. Harvey Smith. When Mr. Smith fenced his land and evicted the Indians for this gardening area, the Indians felt that they were wronged because the land was not in use when they took it over. The matter was explained, but not their satisfaction. [p. 42] Under the old Indian system of land ownership no one questioned ownership so long as the land was in use, and there has never been a shortage of building sites. Ownership of houses has been of more concern than ownership of the land on which they were built...one gathers that the Indians see no particular reason for a piece of paper to prove land ownership. Everybody knows who owns what anyway.

[p. 50] Agriculture and stock raising. As early as 1862, the Superintendent for Wash. Terr. expressed the opinion that attempts to introduce agriculture on coastal reservation would not succeed because of the great labor required to clear land and pull stumps. He estimated that it cost \$150 an acre to prepare land for planting. The country was not very suitable for grazing either, except the prairies, which were not part of the reserves and had been first choice lands for homesteaders....It was probable that there was no interest in agricultural pursuits among the Quileute until after 1890, aside from gardening instruction given to the young people at the school starting in 1881. [p. 51] For nutritional and economic reasons, the government has made a number of attempts to introduce the raising of truck crops. A few years ago [i.e. early '30s] the Indian Agent organized a community garden lot. The govt. paid the Indians to clear other ground for it, and provided the seed. A group of five Indians agreed to operate it. For a season or two the program was reasonably successful, but then interest began to wane. Crops did not grow as well as they had the first year under got. Supervision and cattle or horses or deer managed to get in one way or another. Mark Williams has continued to raise a little corn and a few potatoes because he is an old man and, as others explain it, he has nothing to do but watch them grow. Tyler Hobucket also cultivated a garden for a number of years, but now doesn't attempt much because he is still sick at heart over what happened in 1937 [a horse ate his garden in a night and precipitated a continuing community disagreement].... Back of the Quileutes' lack of sustained interest in agriculture, of course, lies a long history of dependence on what nature provided in the way of plant and animal food by her own unaided efforts. The Quileute were never expected to feed elk or deer, or cultivate the wild berries or plow the prairies, which produced and still produce heavy crops of fern roots or camas. What advantage is there in substituting plants and animals, which require so much labor to keep alive.

Howeattle, Mattie [1961], as quoted in the Seattle Times, Apr. 18, 1961, "Schools Needed Says Oldest Quinault." Mattie Howeattle was born on the Hoh River of a Hoh mother and Quileute father. She lived in later years in Taholah, but held a potlatch in LaPush during the 1940s.

The Indians knew how to kill an elk, light the fires and go home while the meat cooked. The Indians knew how to handle fire and it never got away.

Singh, Ram Raj Prasad [1966]. *Aboriginal Economic System of the Olympic Peninsula Indians – Western Washington*. The Sacramento Anthropological Society (Sacramento State College, Calif.).

Ram Singh was a student at the University of Washington and undertook fieldwork on the traditional economic patterns of the Olympic tribal groups (Quileute, Quinault and Makah-speaking groups). At the suggestion of Erna Gunther, with some supervision by Verne Ray, Mel Jacobs and Bill Elmendorf, he conducted fieldwork during 1954-5. His Quileute informants were Mary Ward, Anna Williams, Esau Penn, Mark Williams, Jack Ward, Billy Hudson and Big and Little Bill Penn (p. 8). Although Singh makes numerous mentions of prairies and prairie resources, in his summary initial description of the peninsula he makes no mention at all of this important aspect of the landscape.

[p. 24] Land Resources. Some elk come to the large prairies to feed, and a few herds live in the valleys, the quality of the latter being regarded as inferior...were economically important for the Quinault and Quileute, Every part was used—the meat, fat, hide, antlers, and bone. Chisels and other tools were made out of the horn. Arrowheads were made from bone. Women used bone marrow as cosmetic.

[p. 25] Vegetable Foods. In prairies there are camas and ferns with edible roots. There are a few prairies in Quileute and Quinault country; the Makah had none. The Ozette used one prairie but it was only slightly productive. Camas and ferns grew profusely in these prairies; the former were economically important and the amount produced did not meet the demand. It was so highly valued that it was one of the few items purchased by the Makah and Ozette from the Quileute and Quinault. Camas had a special place at feasts and potlatches.

Prairies played an important role in the life of the Indians. Entire families went to the prairies nearest the villages, usually with other families of the tribe. Each family had an "occupancy right" in a great prairie such as O'took Prairie or Quileute Prairie. The family burned over its part of the prairie in the spring so that dead ferns would be destroyed, giving way to camas. Generally no outsider would trespass unless he received permission from the family which "owned" the site. Such a request however was always granted. The trail to a prairie was kept up by the people who used it. In the prairie dwelling families did some hunting and also collected cedar bark to make garments, rope and baskets [along the edges]. Men hunted elk, deer, and smaller animals. Women dug roots and collected grass and cedar bark. Berries grow in abundance in various areas, but particularly in prairies, open spaces and river bottoms. If a forest fire or high wind clears a site, berries and vegetables grow profusely. Each patch of important berries

such as salmon-berries and blackberries was utilized by a single family. A family might remain near such a patch for several days. Mountain blueberries, preferred by Indians because they were sweeter than valley berries, were picked during elk hunting expeditions. Men hunted while women picked berries.

[p. 27] Nettles, whose fiber was used for nets, grow in abundance in open spaces. The Indians dried the nettles in the sun or, when there was no sun, put them under a mat to dry by the heat of the house. When they were half dry the Indians struck them against the wall or logs to separate fibers.

[p. 29] Rational Actions. The danger of excessive exploitation of food resources seems to have been recognized for only a few species. The restriction of hunting or gathering food in a particular territory to the members of one's own group or family was at least partly motivated by the realization that production by outsiders would diminish the available supply. The Indians who dug roots in prairies burned over such sites in order to give useful roots a chance to grow instead of weeds and ferns. They took precautions not to burn the surrounding trees and bushes, and burned the prairies section by section. Their methods of fire control were so effective that in the Olympic Peninsula, except for a small area of forest near Little Prairie, none of the forest surrounding a prairie shows any sign of fire.

[p. 42] Land mammal hunting. Elk, principally mountain elk, were hunted with bow and arrow. Cow elk were usually hunted in prairies and valleys with the help of dogs to chase them. Deer were also hunted in that manner. But they and bears were also caught in traps. [p. 43] Super-natural means of production....Elk hunters among the Quileute and Quinault were believed to require the help of particularly strong spirits. In order to obtain a spirit power the young prospective elk hunter prayed, bathed in a prescribed manner, and subjected himself to severe discipline and hardship....When he got the power, he was able to lead a party to hunt elk. Indians often hunted elk in the lower valleys and prairies, often without having elk power.

[p. 49] Food Preservation. Camas, fernroots were put in baskets and washed in running water. They were preserved without other processing. Camas were treated immediately after digging. The Indians baked camas and roots if they wanted to keep them for their own use. They did not process roots, which they wanted to use for trade or exchange...When hunters killed many elk far from their temporary camps, they smoked the meat on the spot. Smoked meat was easy to carry, and there was less of it. But it took almost two days and two nights to smoke elk properly.... Preservation of elderberries required a good deal of labor. When the Indians had collected a few baskets of elderberries, a circular hole was dug in the ground or sand about one foot deep, and lined on the bottom and sides with rocks. On these rocks a fire was built and into it more rocks were put. When the stones were hot, the wood was taken away and the fire was permitted to die out. On top of the ash, wide strips of alder bark were laid and kept dirt-free

with skunk cabbage leaves. The Indians laid berries on these leaves and covered them with additional layers of skunk cabbage leaves sprinkled with water to produce steam. Next morning the berries were uncovered and pounded with the bottoms of wooden spoons. Then they were put into baskets, generally of hemlock bark. The Quileute called such baskets po'ooq. They covered the berries with leaves of soft vine maple and stored the baskets in the mud of a shallow creek, which had very cold water. Huckleberries and blackberries were not cooked like elderberries but were mashed in a basket and made into oblong cakes about three inches thick. These cakes dried slowly inside the house near the fire. When dried, they were stored. They lasted indefinitely. Such cakes were precious. Salalberries were mashed fresh and then put into a watertight basket, which was set in a ditch, which was maintained by a cold spring.

[p. 53] Camas and Roots Preservation. Camas bulbs could be preserved without processing but they had to be prepared and cooked before eating. The Indians prepared them so as to avoid labor at mealtime. They were aware that processed camas lasted a long time. They prepared camas for preservation using the technique employed for elderberries; however, they used leaves of salalberries rather than skunk cabbage. Camas roots then taste like baked sweet potato. They were preserved by being pressed into loaves which, when eaten, were cut in slices like pudding. There was another consideration in the preservation of camas. Camas were dug in prairies in September and October and again from March to April. Although it was easy to dig camas from March to April, they did not keep well. Camas dug in September and October could be kept for a long time. Fern roots were treated in much the same manner as camas. They were rolled and dried across two or more poles in the house. The Indians dried other roots by laying them on the ground and exposing them to the rays of the sun.

[p. 54] The Organization of Labor. The economic units of production were the nuclear family and the group of families who lived under the same roof. These families were mostly of brothers, but sometimes distant relations or family friends lived together. The nuclear family unit and the group of families who live together carried on the important food collecting, food preservation and consumption activities... people from a village generally went together to dig camas and other roots. Each household erected a temporary hut where they stayed until they had secured the items that they wanted. The work was done on a family basis. Women dug the roots and the men sometimes helped them if the ground were hard. Women washed the roots and put them in baskets. Men hunted elk and deer on the prairies, and the women smoked the meat. Men peeled the bark off cedars; women dried it and kept it for spare time work in winter when dresses and other objects were made from it....Members of extended families rarely participated in productive activities.

[p. 55] The collection of vegetables, berries and herbs was the work of women. Men accompanied them if the supply were distant and if there were danger from timber wolves. Women from several families went

together to one place. (If they went by canoe to collect shellfish, the men took them because it was too dangerous for women to handle canoes.) Men did little work while the women were picking berries or sprouts. They watched what the women were doing or tried to hunt. They occasionally helped women pick berries or collect sprouts. [p. 56] People from different families hunted elk under the leadership of a hunter, and the kill was divided among the participating groups/hunters.

[p. 57] Labor may be classified into specialized, ceremonial and common labor. Fishing, picking berries and digging roots could be done by everyone. Specialized labor like canoe-making, elk-hunting, shamanism was carried on by a few who claimed the spirit power to engage in such tasks. Ceremonial labor was done only by those who were so entitled by exceptional spirit help or by hereditary entitlement....Upriver people among the Quileute were expert in all types of hunting....Most elk hunters with elk hunting power lived in upriver communities.

[p. 58] Labor was also organized along lines of sex, age and status. Women prepared food, hides and furs; they wove mats and baskets, gathered and stored food, collected roots, picked berries and herbs and firewood, and carried burdens. Men rarely did women's work. If they did and were caught at it, they became a laughing stock. Men worked nettle fibers into nets, Women performed every activity in weaving baskets and mats, from obtaining the raw materials to making the basket or mat. Men made rope of spruce roots, withes, cedar bark or whale sinew. A few activities such as digging roots were performed jointly...During each season, a person had many choices of work. He could select fishing, hunting berry picking, root digging, preservation activities, foraging for manufacturing materials, etc. His decision depended upon (1) what was available or in season, (2) comparative yields, (3) his special ritual power, and (4) the needs of his family.... Myths and stories indicate that skill rather than hard work warranted pride. But the reputation of being a hard worker was useful....Because of abundant resources the tribes had much leisure time beyond economic activities. They did not have to work the year round, and their productive activities did not exhaust their waking hours. There was no great difference between rich, poor and slave in food and living standards.

[p. 61] Capital. Capital is conceived here as a factor of production. It has value and may yield income to its owner or users. Capital includes equipment, tools, and other agencies of production. Through the use of capital, the Indians were able to produce commodities...Another form of capital included knowledge of tools and natural resources and potencies conferred by spirits. [p. 63] Capital was owned by the individual, family, or village. Ownership depended upon the nature of the capital goods. Weirs...canoes... Helpers were given shares of the product. He never employed a person for wages...Slaves and dogs were inherited, not killed. Sons received all the slaves and daughters inherited wool-producing dogs. [p. 64] Seasonal Economic Activities. Intensive economic activity followed periods of relaxation and

social activities. The year was divided in eight or more phases or months named according to food supplied such as "salmon-berry days." [p. 70] Spring: many varieties of roots were collected in the prairies, principally by Quileute and Quinault. Roots were boiled, dried and stored for the winter. Cedar bark was peeled off for baskets, mats, raiment, etc. On such expeditions Indians lived in temporary shelters of hemlock bark or mats. Bark for such abodes was cut on the spot, but sometimes the Indians carried mats woven of cedarbark. [p. 71] Summer: Some people traded or bartered. Mountain and valley elk were fat in July and August and Indians hunted them in the mountains. Hunters built brush shelters at convenient places for a few nights only. Often they carried along skins for shelter roofs if they had many left from previously hunted elk or deer.

Late in summer (August) storage activities started again. Women went out for berries and sometimes stayed away for several days. The berries were put into large baskets and some of these containers were sunk in the cold spring bed, which kept the berries fresh for a long time. The Indians ate such preserved berries when there were no fresh berries in winter. [p. 71] Fall. At the end of summer, the Indians were anxiously looking forward to fall fish....The Indians were as interested in a variety as in an abundance of food. For instance when they were producing fish substantially but estimated that they had more than enough for consumption, they went berry picking although it might not be equally productive. As one Quileute informant told me, "The Indians did not want all fish or all whale, but liked to get some of everything which they wanted to eat. An Indian did not care if he could catch more fish than he could dig camas." Choice in production gave the Indians a freedom unknown to most hunting tribes the world over. [p. 74] An equilibrium had been established between production and social requirements. Indians had never heard of "full production." They did not need it. They wanted enough to eat, of course, but they never thought in terms of maximum utilization of natural resources. Competition played a part in production. Boasting about ability was a cultural feature. Quantity and efficiency of production were both well regarded.

[p. 76] Exchange. Exchange is simply customs and institutions which transfer ownership of goods and services from one individual to another. Potlatches...baskets of camas were a common gift at potlatches. Trade...intertribal exchange of surpluses. Quileute exchanged (material from the prairies: camas and other roots, elk meat and fat, elk and deer hides, cedarbark and articles thereof, and bear grass.

[p. 89] Consumption. Consumption in its broadest sense means the destruction of commodities through various activities including eating, using and trading away goods as needs are satisfied...taboos...rituals...secret societies and initiations, feasts, potlatches...

[p. 110] Property. The study of the mode of control of things, land or customary property relationships and wealth. The winter household as the most clearly distinguishable large unit. The winter house was

capable of holding four or more families. The hunting and fishing grounds were owned by the family or by the household. [p. 112] There were some other kinds of property which were owned by the individual family. The prairies were such examples. The private ownership of prairies was based on the principle that a person owned whatever he had made or improved by means of labor. Each family had a part of a prairie where its members could go to dig roots. The prairies were burnt and weeds were kept under control by means of fire. All of these acts involved labor. Hunting grounds (except in the prairies) usually consisted of the watershed of the streams of valleys well-enclosed by hills or high mountains. The Indians knew that nobody owned the land, but it was their property in the sense that they had knowledge about it.

Hazel Bright [1969] The last Quileute monolingual speaker, Hazel spoke very little English. She was in her 90s in 1969. Speaking of when she was a small girl through her daughter, who interpreted.

When I was a girl (1870s & '80s), we used to spend a lot of time in the prairies. Then, it stopped all of a sudden.

William (Big Bill) Penn [1971] Big Bill Penn was born in 1888. He was called "Big Bill" to distinguish him from his bother, William E. Penn, Little Bill. He was for many years the last member of the Sibaxwolayo, Quileute whalers' secret society called the "oily voiced song"; and claimed to be the last person alive that had been part of a successful traditional whaling crew.

(Description paraphrased from oral description by Penn, p.519, J. Powell Quileute Notebook #4, 1970; taken down as part of the discussion of Quileute placenames that served as the basis for Placenames of the Quileute Indians by J.V. Powell, William Penn and others, Pacific Northwest Quarterly, Vol. 63:3, pp. 105-112.)

When Bill was young (c1895?), he remembers his family spent time during the summer (hot berry time, August?) camped up on Forks Prairie, qit'layaqwoqw. There were whiteman houses up in the prairie already and a number of Quileute families lived up there in old t'icik'als (smokehouses) along the Qalo'wa and Boq'wac'hi'l Rivers. They camped, fixed up a bark hut shelter that they had used before (Loq'wati). They lived off the land: elk, deer, buried bread (a ground bracken root paste loaf wrapped in skunk cabbage leaves put in the ashes under live coals), berries. There was a drying rack for meat, big one. (Bill) Thought they were going to burn the prairie because his father talked about it a lot and he was excited and a little scared about a big fire, but there was no fire. They didn't burn it that year. The whitemen didn't like them setting fires in the prairies. Later he saw them burning part of Sat'ayaqw (Quileute Prairie), but they only burned a small area, burned when the grass was damp and it didn't make a big fire.

Everybody worked hard. Must've been there for two weeks.

Big Bill remembers lots of the names and stories about his ancestors because they talked about the old people when he was young. The old people put aside food for the ancestors and would burn it, especially up in the prairies because that would keep the ghosts up there making things go right. Food that you burned for the dead was multiplied and kept the ghosts eating well (J. Powell, NB. 1978, #1, p. 61).

Harold (Hal, Hallie B.) George [1978, notes in various Quileute notebooks, esp. J. Powell Quileute Notebook 1978:#1] – Quileute & Makah born Aug 15, 1894, along the Fraser River in B.C., although his parents were Makah and Quileute. “Hal was born up on the Fraser River. They used to go there fishing every year, certain time of the year—the Makahs and from LaPush. There’s an Indian village there and that’s where they went. There weren’t any doctors and she (Hal’s mother) bled to death. It was her first baby. So that’s why Hal’s aunt and grandmother (Quileute extended kinship categories) raised him. Sally Payne Oby (usually Obi, 1st husband, Yashik Oby) Brown (2nd husband, Tommy Brown) had no children and raised Hal along with Mrs. Old Man Gray, who also had no children [Verne Ray, random notes c 1954]. Hal met Frachtenberg at Chemawa School and served, while a youth, as ethnographic informant, later working with numerous other anthropologists, as well, and finally Jay Powell in 1978. Powell’s notes on Hal are written in NB 1978.1 and on facing pages of a xerox copy of Frachtenberg’s Quil. field-notes which George and Powell reviewed and annotated liberally in 1978-9.

I heard (that around 1890) women used to be put to work for quarreling by the police, e.g. putting in the road from LaPush to Mora, so many days punching the road for an offense. In those days there was no Thunder Road trail, it was swampy back there and to get to Mora you took a canoe from the basin. Men were put to work ringing the trees, the village area was still overgrown [note in Fr. NB 1.3].

A trail led from old Mora to Sat’ayaqw and as far as “little Prairie.” It was burned every fall to encourage further growth. Mark Williams was trying to burn the prairie (hokwalillowot, “burning the prairie) and get matches from a Whiteman. Kwadis was a black bulb, peeled and cooked by steaming and eaten. Kwala, “camas,” and t’obiya, “strawberry” were picked in the prairies. Katil (“medicine”) crabapple bark was used for a spring tonic mixed with licorice from the alder and bearberry bark. q’aq’wa’, a type of fern roots (p.44).

They think that it was easy, but we had to work hard. Sure, the talaykila pots’oqw (old people) just gathered what the great nature provided. They’d say, “T’siq’ati, t’siq’ati, t’siq’ati” (It’s the nature spirit, nature spirit, nature spirit) when they were picking or eating food. But, we needed lots of food to get through the winter and sometimes even more because winter was the time when there were potlatches and meant

we'd have to have enough put up to feed hayoqwqwa (guests) for days, a week (NB 1978. 1, p. 68).

Women stopped digging roots and much else in terms of aboriginal economic patterns when the use of fish traps was declared illegal. This forced the people to move to LaPush for a living or take jobs working for the whiteman, which allowed purchase of groceries rather than digging. In Hal's youth, the women still used a digging stick (k'woyo'), but had made it out of a steel bar (p. 70).

Now, the old people said bitsatsqal yix t'siq'ati (the land takes care of itself) and that means everything. They didn't plant gardens or build fences to keep deer out. They didn't make la'wqwol or lotlqwli (roads/trails or bridges), never chopped down trees to make bridges over the rivers (p. 71).

Royal Pullen [Feb. 1980, an interview transcribed by Heather Hennum in 2002] – Royal Pullen was the son of Dan Pullen and Harriet Smith Pullen. Harriet was the oldest daughter of A.J. Smith (the brother of A.W. Smith, first schoolmaster at LaPush, starting in c1883). A.J. Smith moved to Neah Bay from New Brunswick, following their son A.W. Harriet, their oldest daughter married Dan Pullen (trader at LaPush), and stayed there until the fire of 1889 (which various historical sources concur was set arson started by Dan Pullen in order to support his homestead claim that the area at the mouth of the Quil-layute River was no longer an inhabited Indian village). Harriet moved to Skagway at the time of the Klondike gold rush and built Pullen House, a famous hostelry, the fireplace of which is still standing with PULLEN visible in inset pebbles...Harriet's grave is 100 yard away along the White Pass RR tracks. Dan Pullen moved to Port Townsend and Royal and his two brothers, Chester and David, shuffled back and forth between the parents and finally set out on his own, ending up in rest home in California.

Female Voice: [p. 2] When your father came in, did he help them learn to farm a bit?

Royal Pullen: Oh, yes. Well he didn't teach them to farm. They never farmed. The Indians wouldn't farm. But my father would plant a crop. He went up to the Little Prairie and he plowed it all up and planted it with potatoes. See potatoes were their big food. And the Indians would come up and harvest it. And he would give them Indians half the crop for picking them and sacking them and bringing them down to LaPush. See, they would take the boats up the river to Balch's place. I don't know what they call it now. They call it something else. But Balch used to have a store up there and that was the landing place...

FV: You told me once about going to visit your mother's family, the Smiths, at the Little Prairie and coming home sometimes at night and it was kind of scary?

RP: Oh, that was the Big Prairie. The Smiths were all in the Big Prairie. And my father and Mark owned the Little Prairie. And we ran cattle on it all the time...And hay and oats. We grew an awful lot of oats. In that country the fern is awful bad...It's kind of a bush fern. And he plowed it all up and he kept plow-

ing it up until he got it killed and then he put [p. 3] in pasture and oats and hay. We had a big hay barn over there. But the potato was the thing that intrigued me. He would plant the potatoes and the Indians...and they would plow up the potatoes when they were ripe. And then the Indians had to sack them and carry them down to the wagons and load them in . And then he would take them down to Balch's place and load them onto canoes. The Indians did all of that...

FV: [p. 5] You were telling about the Indians keeping the Little Prairie, a prairie, by burning it.

RP: Yes, they used to burn both prairies so they could get the little bulbs at the bottom like onions. They would come up after the burn you see and burning (sic). But the principle reason they burned them was to get the rabbits and things that lived around in this tall grass. They would drive them out...[p. 6] They would drive them out and then they would get them. Catch them. And that would give them a lot of meat all the time. Easy meat. They didn't have the money for that.

FV: And I expect there wasn't a great danger for a forest fire because the trees were up. There wasn't any brush because the trees were up.

RP: No, no brush under there to speak of. Even if they did have a forest fire that didn't mean anything to the Indians.

FV. Well, I know but it might have burned down their houses and so forth if it got out of hand over there I would think.

RP: Well, there were no houses there. There was nothing here...See the Little Prairie and the Big Prairie; there wasn't anything there. And then of course when the whites came they cleared off the area and there wasn't any danger of burning then. But they quit that after the whites came you see because the whites settle then you see. Just as soon as the government laid out the land and sold it, well then the whites took over you see. And of course the Indians were more or less nomads. They didn't go anywhere. They didn't care. But father got them to settle around there for trading purposes you see And he would buy their seals and they would buy clothing and things like that from father. So he did a pretty good business. He made pretty good money.

Sarah Ward Woodruff Hines [1980, Jay Powell Notebook 1978-82, p. 75] – Sarah was a Quileute born 1906, married to Fred “Old Man Woody” Woodruff, daughter of Sixtis & Mary Ward, traditional owners of Dixwodachtada (Dickey River).

[Source: J. Powell fieldnotes, (June 1980) Notebook 1978 - #1, p. 75]

One time, I remember, a bunch of us went up to Sa'tayaqw , Quillayute Prairie. At the top of Thunder Road. The kids got ferried across the (Quillayute) River to Mora in the morning by J.E.L. James (or James Rudolph, only some kids went over there to school), but we went from the village in a canoe. You could walk up to the prairie in about 45 minutes. There was a road when I (she) was a girl. We went up there, my mother (Mary Ward) and sister (Effie, later Gray) and a bunch of ladies, girls. A few had

baxuwis (pack baskets) and hak'waqstil (forehead tumplines), gunny sacks. Maybe 12 of us. Walked fast. I sometimes run to keep up.

There were already old farms in sat'ayaqw (Quil Prairie) and on the way up there. They had plowed up some of the prairie and fenced some of it. We weren't allowed to burn it anymore. The old ladies told stories about it, old days. People still came there a lot. Even walked to Forks along the path in dry weather, so the River was low to cross Cullitt's ford across the Sol Duc (la'watkwal latol) to get to qet'layaqwoqw (Forks Prairie) but we usually got a ride. Never saw them burn the prairie. Old man Sixtis said they burned them on dry days when it was going to rain. They could tell when it was going to rain. I never heard of a fire getting out of control, burning the woods. None of the prairies had burned trees around the edge back then. The old man told how prairies were formed by whales flopping around to get away from Tist'ilal (Thunderbird).

We got there early 6:30, 7:00. Aubrey and Henry Taylor took us over in a big canoe to above K'i'il (Rialto Beach). Worked, too. We were all barefoot except Ida Taylor, who carried her shoes. Some had digging sticks. Mary had a bunch of K'wuyokws in her baxwuy that weren't sticks, they were cut off elk horn tips. It was easy to dig if you stuck it down in the right place. We mostly dug t'sikwi' (bracken and sword fern roots) and La'it'ay (clover roots). Effie (sister, Eli Ward's wife) couldn't dig t'sikwi' because she was pregnant. Everybody laughed. I don't think they really believed it would hurt the baby. But they thought t'siq'ati didn't like it, so she just went and dug more la'it'ay. The baskets got real heavy. We left them and went to K'wadiyaqw (Little Quil Pr.) and dug camas for 3 hours. We went home about 3:00. Got a ride in the gas boat at Mora. Mary had a baxwuy and a gunny sack (that she was) carrying. No lunch.

This was in summer, I guess. In springtime you could sometimes get camas easier when they plowed up there, plowed new places.. No digging. Just pick it up when they plow. In summer the kwala is bigger and tougher. Lacamas them old men said. Sunny and hot.

[source: transcribed interview identified only as "by Dori," March 9, 1984, in Quileute tribal archives. Pp3-4.]

...My aunt used to take a tent out there and camp for two or three days and just dig. Just dig all day those little bulbs. It takes a long time. She'd come back with a whole bunch and tell everybody to come and eat in the big lodge, everybody. She was a great one for that."

Jackson, Johnny. (Johnny Jackson was a Quileute, born of a Quileute woman who married a Nuuchahn-ulth (Nootka) man from Port Alberni. John was raised in Port Alberni, where he is remembered by elders as XXX. His mother died there, and John moved back to LaPush in his teens. [source: transcribed inter-

view identified only as "by Dori," March 9, 1984, in Quileute tribal archives. p.1]

.....they camp overnight, them old ladies, three or four of them old ladies used to camp over there and get some of this. Lacamas. Then everybody had big eats when they come home, invite everybody... Yeah, and I know they used to have some kind of seal oil, too, they dig, you know, when they eat it, some of them use it, they use that seal oil for it...and us, we used to dip it in the sugar. We used sugar to make it sweet...I bet it'd be good with syrup. Dip it in the syrup...

Wahlgren, Iva Hosack [n.d.] "Memories of a Quillayute and Sol Duc Country Pioneer," unpub. interview notes prepared by the Forks Logging Museum staff.

Iva tells of moving to the old log cabin on the west end of the Quillayute Prairie (probably in the 1870s), and of the Indian women gathering camas there when she was young; she also mentions cow parsnips and horsetail (scouring rush) and the way they were prepared by Quileute in traditional cookery.

This was the homestead cabin of John Hagadorn on the west end of Quillayute Prairie. The walls had so much ivy growing on them they couldn't fall down. There was no window or door and no floor. I don't know if it ever had a floor in it or not. There were several bushy trees close by and several vines of little white roses, which I call the Old Homestead rose, and a row of gooseberry bushes....

We used to enjoy watching the Indian women gather camas bulbs in the spring. When the farmers plowed, there would be five or six women follow behind picking up and digging out the camas bulbs, which are not much bigger than onion sets. The soil on Quillayute Prairie is black loam and the little white bulbs were easy to see.

They worked all day and would get, I would guess, twelve or fifteen pounds apiece. Then they had to walk back to Mora and from there they took their canoe down the Quillayute River to LaPush.

The Camas blooms in May and June around here and have from 10 to 30 flowers on a stem like a hyacinth. They open from the bottom and only have four or five open flowers at one time. Most of them are blue, but you may find a white one once in awhile. They like damp ground but flourish on the prairie in the West End. They are also thick in the peat moss bogs between Forks and the Hoh River. In the earlier days the Indians used the camas in place of bread. They dug a little pit and lined it with flat stone(s) and made a fire in it. When the stones were red hot, they took the fire out, then lined the hole with a special kind of grass they gathered in the mountains. Then, they put in the camas bulbs and put more grass over the bulbs. Then they covered it up tight with hot sand and built a fire on top. They had to keep the fire going steady for about 36 hours. They couldn't open the pit before the bulbs were done or they would be spoiled. I suppose they would go flat like a dumpling goes when you take the lid off before they are

done.

They also boiled the camas with a few fish eggs or whale oil. In later years when the Indians had sugar, they cooked them like pudding and put sugar and cream on. The camas bulb must have a thickening substance in it, as it is also called sago.

Another food we watched the Indians gather was the cow parsnips or *Heracleum canatum* and the horsetail blossom. Mrs. Tommy Payne showed me how they ate the cow parsnips. She gathered the new blossom stalks before they bloomed. Then she stripped the skin off, which comes off like the skin of rhubarb, and started eating on one end like a stick of celery. I didn't like the flavor. The blossom of the horsetail is light yellow and brown, about six or seven inches high when they gather it. It is cooked like asparagus and the herb books say it is high in Vitamin A. It is a shame that civilization has made the Indians feel embarrassed to be caught gathering some of these wild foods. I have seen some stop along the highway and run to the bank and grab a couple of handfuls and then run for their car before anyone caught them.....

Powell's Bibliography:

Daugherty, Richard D. (1948-9) Notebooks #1-4; unpublished ms notes on the Quileute and Hoh, taken at Lower Hoh River.

Farrand, Livingston. (1919) "Quileute Tales," Vol 32. *Journal of American Folklore*, p.251-79.

Frachtenberg, Leo (1916) Unpublished ms notebooks on the Quileute in the American Philosophical Library, Philadelphia.

Gunther, Erna (1973) *Ethnobotany of Western Washington* (Rev. Ed. with Appendix by J.V. Powell and Fred Woodruff) UWPress: Seattle).

Pettitt, George A. (1955) *The Quileute of LaPush: 1775-1945*. Vol 14:1 *Anthropological records*.

Powell, Jay V. (1969-present). Quileute ethnographic and linguistic notes, taken in LaPush.

_____ (1997), "Don't Waste the Environment" QTS Cultural Enrichment Big Book.

_____ and Fred Woodruff (1976) "Quileute Dictionary." *Northwest Anthropological Research Notes*, Vol 10:1.

_____ and Dell Hymes (1993) "Don't Waste the Environment – An Interpretive Re-consideration of a Quileute Discourse on the Natural World," unpub paper given at 25th ICSL, Vancouver.

_____ and Lillian Pullen (1989) "Conversations with Nature" QTS Cultural Enrichment Big Book.

Pullen, Royal (1980) an unpub. interview transcribed by Heather Henum in 2002.

Ray, Verne F. (c1954). Quileute Ms Notes (random notes in author's archival files made while preparing the Quileute case for the Indian Court of Claims; reviewed by Powell in 1988) c1954.

Reagan, Albert B.(1935) "Some Myths of the Hoh and Quillayute Indians," *Transactions of the Kansas*

Academy of Sciences.

_____ and L.V.W. Walters (1933). "Tales from the Hoh and Quileute." *Journal of American folk-lore*, Vol. 46, No. 182, October-December, 1933.

Singh, Ram Raj Prasad (1966) *Aboriginal Economic System of the Olympic Peninsula Indians*, Western Washington. Sacramento Anthr. Soc: Sacramento.

Swan, James G. (1861). A cruise in the Sarah Newton (July 18-August 24, 1861), *Washington Standard*, 5 & 12 October, 1861. Reprinted in *Almost out of the World*, William A Katz, ed., Wash. St. Hist. Soc. [1971].

_____ (1879). Documents and notes from a meeting held August 20-1, 1879, in the village at the mouth of the Quillayute River between Chas. Willoughby (U.S. Indian Agent), James G. Swan (interpreter and clerk) and the chiefs and sub-chiefs of the Quileute.

Wahlgren, Iva Hosack (n.d.) "Memories of a Quillayute and Sol Duc Country Pioneer," unpub. interview notes prepared by the Forks Logging Museum staff.