Final Report to the Lummi Nation at September 14, 2004

A GUIDE FOR ANALYSIS OF PROJECT IMPACTS ON THE LUMMI NATION

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A Guide for Analysis of Project Impacts Affecting the Lummi Nation

I. Executive Summary.

This guide will assist persons, corporations and government entities considering projects that may impact the resources and people of the Lummi Indian Nation. Past failure to understand Lummi circumstances and Treaty guarantees, and to properly consider project effects on the Lummi, has often led to project delay, unwarranted conflict, or pre-emption of a project entirely. Such pre-emption may forgo benefits for proponents, for neighbors and for the Lummi people.

The intent of this guide is to facilitate a cooperative relationship, or even partnering, between the Lummi Nation and potential project developers at project outset. In this spirit, the Lummi Nation will welcome projects that incorporate positive effects for their tribal people. To make such a determination, the Lummi will seek adequate detailing of expected project related changes to tribal resources and activities – as well as a committed discussion of avoidance, mitigation and compensation where expected impacts are adverse.

The guide summarizes the present circumstances of the Lummi, and *points project proponents toward consideration of selected key impact issues* important to the Lummi Nation. The guide does not outline methods to complete a full Environmental Impact Statement (EIS). Rather, it will assist project proponents and assessors of impacts in *getting started* – and in targeting further impact work that may be required.

II. Introduction to the Guide.

The Lummi people have depended on natural and cultural resources since time immemorial – harvesting, hunting, gathering and conducting cultural activities in marine waters, along shores and lowlands, and in upland areas. They continue to carry out these activities today. Over time, abundances of many of the resources they depend on have been substantially reduced, leaving the Lummi with limited economic opportunity, low incomes, high levels of poverty and unemployment, and an associated decline in social and cultural well-being. These losses have not only affected resource harvesters, but reverberate throughout the Lummi community.

In consequence, today the Lummi Nation considers all further impacts – of whatever magnitude – *significant*, and has developed a policy of *no further net loss* when project impacts, associated mitigation, and compensation are considered together. Similarly, the Lummi Nation is seeking benefit enhancement through project participation – wherever that is considered appropriate.

Section III of this guide identifies the geographic extent of impact concerns of the Lummi Nation – to ensure that initial impact scoping has sufficient geographic breadth to include a full range of potential tribal effects.

Section IV identifies selected *Lummi Impact Issues* that project proponents and evaluators should consider in assessing project effects on Lummi resources, activities and peoples. This list does not provide comprehensive coverage of all potential project effects on the Lummi Nation. However, consideration of these *issues* will provide a useful indication of a project's expected benefits and costs to the Lummi and of additional impact assessment that may be required.

Section V discusses the subsisting circumstances of the Lummi Nation – historically and today – in order to identify *linkages* between Lummi resources, activities and values that must be considered in determining the necessary *scope* of impact assessment process.

Contact information for Lummi Nation experts – who can provide more detailed biophysical, economic and cultural information and assistance – is provided at the end of each sub-section in this report.

III. Extent of the Lummi Nation.

1. Location.

The present homeland of the Lummi Nation consists of approximately 19,500 acres, 7,000 of which are tidelands – located on the Lummi Reservation 8 miles west of Bellingham, Washington (Figure 1)[1].

The upland portion of the Reservation consists of a peninsula which forms Lummi Bay on the west and Bellingham Bay on the east; a smaller peninsula, Sandy Point, to the northwest; and 1,000 acres of Portage Island, off the tip of the larger peninsula. The Reservation has 38 miles of productive marine shoreline.[2] The Nooksack River flows through the eastern edge of the Reservation.

2. Usual and Accustomed Fishing Area.

The *Treaty of Point Elliot*, negotiated between Governor Stevens for the United States and ancestors of the Lummi people and adjacent tribes in 1855, ceded vast areas of Lummi traditional territory to the United States. Article 5 of the Treaty, reserved to the Indians the right to continue to fish at *usual and accustomed grounds and stations* – as well as the right to hunt and gather roots and berries on public lands.

> The right of taking fish at usual and accustomed grounds and stations is further secured to said Indians in common with all citizens of the Territory, and of erecting temporary houses for the purpose of curing, together with the privilege of hunting and gathering roots and berries on

[1] Lummi Indian Business Council, 2004. **Lummi Nation Multi-Hazard Mitigation Plan**. Lummi Natural Resources Department.
[2] **Supra**.

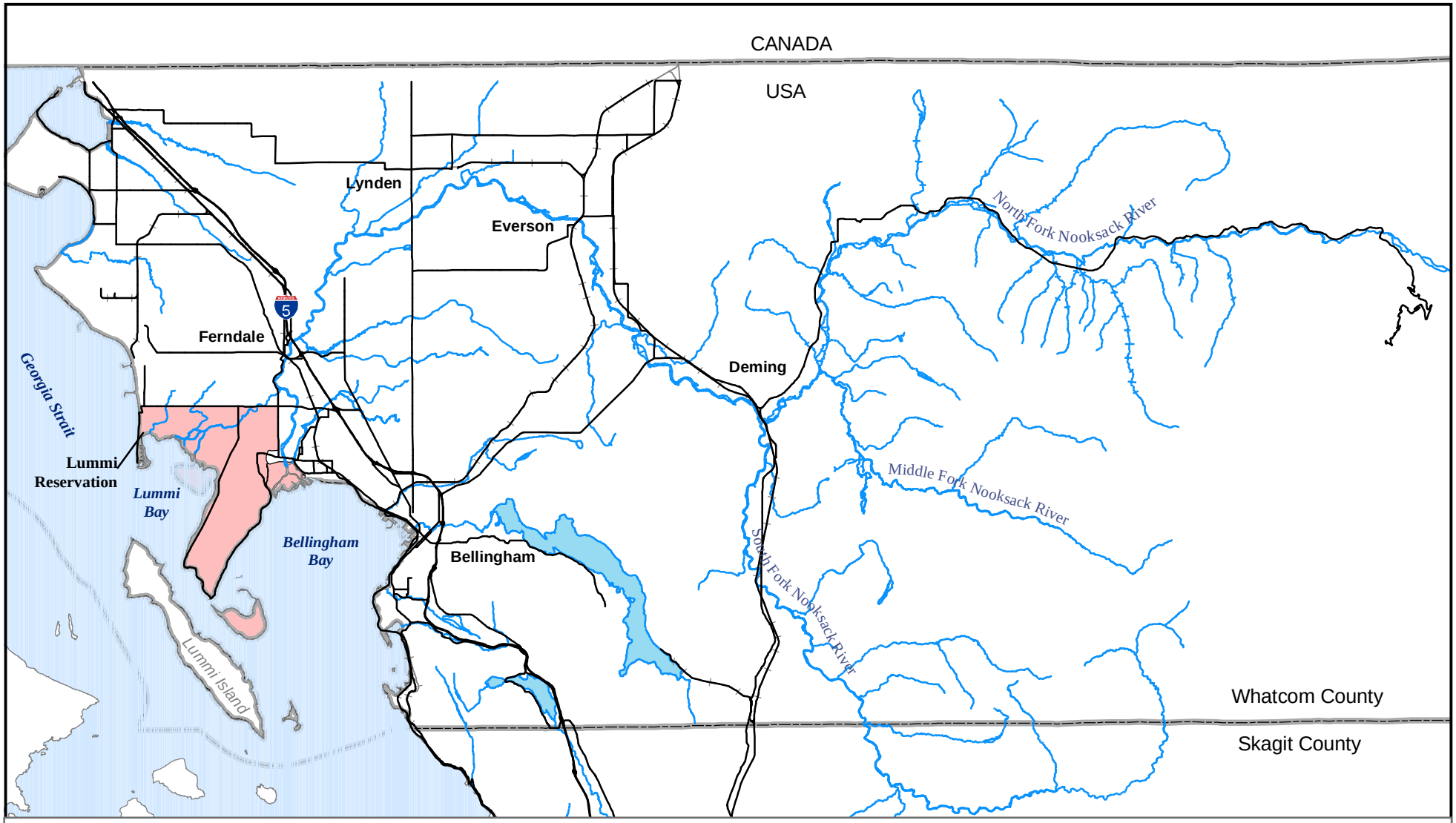

Figure 1 - Regional Location of the Lummi Indian Reservation

> open and unclaimed lands. Provided, however, That they shall not take shell-fish from any beds staked or cultivated by citizens.[3]

Subsequent decisions by federal courts have affirmed that *in common* requires management of fisheries within tribal *usual and accustomed* (U&A) *areas* so that treaty fishing tribes obtain a 50 percent share of total tribal and non-tribal harvest of fish within or passing through each tribal U&A area[4] - and that *fish* refers to all species of fish, including shellfish[5]. The Treaty tribes assert that these Treaty-based rights also require appropriate stewardship of fish-related habitat by co-management agencies. Definition of the specific nature of these obligations is presently in process in federal court.

The Lummi Nation's Treaty-protected U&A fishing area extends beyond the boundaries of the Lummi Reservation – following the United States/ Canada boundary line westward from Blaine, then southward to encompass the northern San Juan Islands – entering Puget Sound through Admiralty Inlet – extending southward along the mainland shore to the southern extent of Padilla Bay, and then further southward along the west side of Whidbey Island to approximately Edwards Point (Figure 2).

This Lummi fishing area incorporates shorelines and waters surrounding Lummi, Sucia, Orcas, San Juan, Lopez, Sinclair, Cypress and Guemes Islands – as well as the waters and smaller islands between[6].

3. Ceded Area of the Lummi Nation.

Article 1 of the Treaty of Point Elliot states that Lummi ancestors and other tribal representatives *ceded* lands to the United States[7]. The term *ceded* reflects circumstances at Treaty times where aboriginal title to valuable land and resources was transferred from the tribes to the United States Government – with the tribes reserving valuable assets and related activities not so transferred to themselves (including those associated with fishing, hunting and gathering). Lands *ceded* by the Lummi and other tribal participants in the Treaty of Point Elliot are many times the size of the present-day Lummi Reservation. These ceded lands extend southward from the Canadian border to approximately Mt. Rainier – eastward to the top of the Cascade Range – and westward to incorporate islands within the Lummi U&A area (Figure 2).

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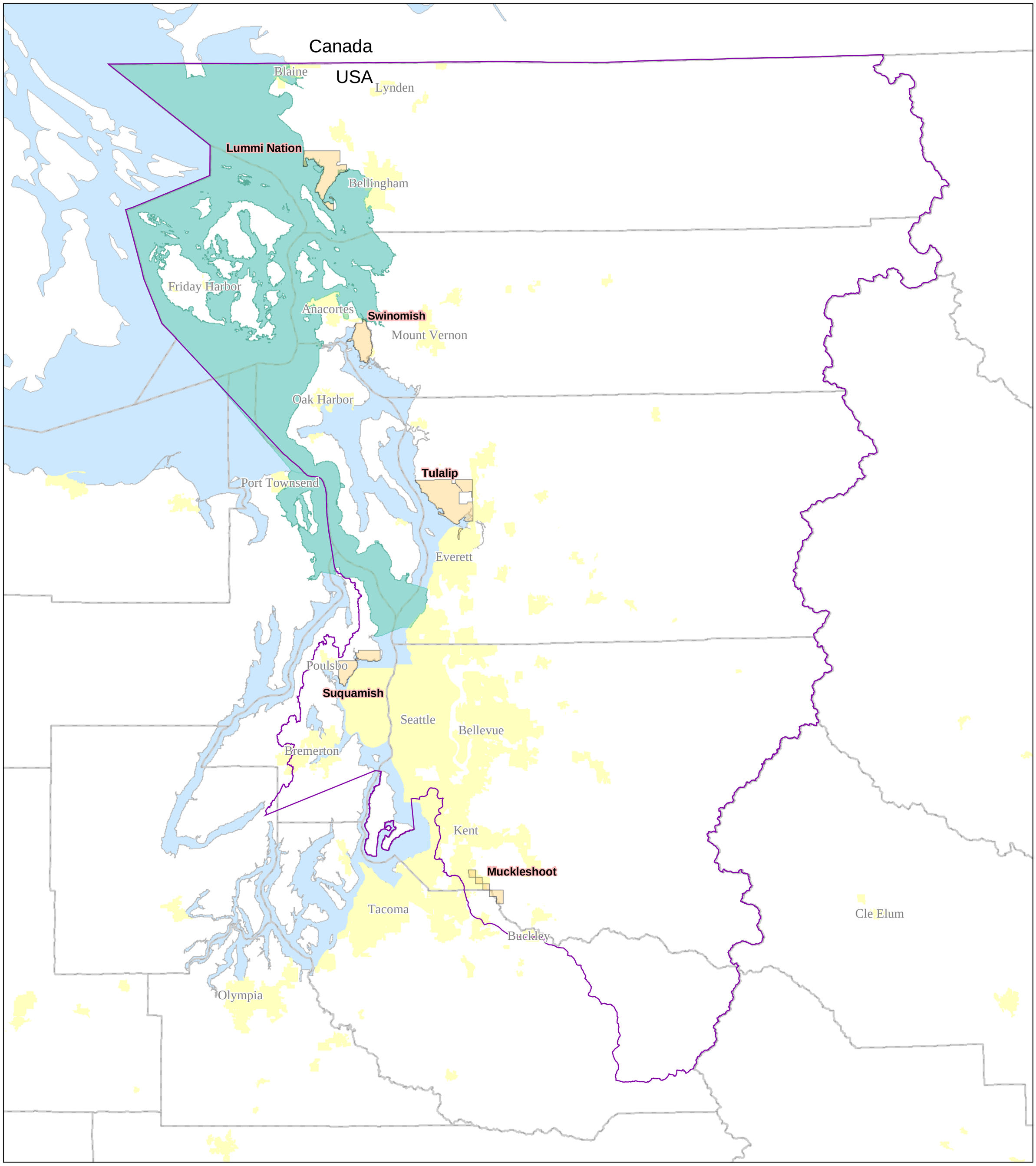
[3] *Treaty Concluded at Point Elliot*, 1855. Ratified March 8, 1859, in, Swindell, Edward G., 1942. **Report on Source, Nature and Extent of the Fishing, Hunting and Miscellaneous Related Rights of Certain Indian Tribes in Washington and Oregon, Together with Affidavits Showing Locations of a Number of Usual and Accustomed Fishing Grounds and Stations.** U.S. Department of the Interior, p. 461.

[4] i.e. United States v. Washington, 384 F.Supp.312 (W.D. Wash. 1974), *affirmed* 520 F.2d 676 (9th Cir. 1975, *cert. Denied* 423 U.S. 1086; *aff'd sub nomen Washington v. Washington State Commercial Passenger Fishing Vessel Assn.,* 433 U.S. 658 (1979).

[5] *United States v. Washington,* 873 F.Supp. 1422 at 1430 (W.D. Wash.); that principal *aff'd* at 157 F.3d 630, 643-644 (9th Cir. 1997).

[6] Information provided by Lummi Natural Resources Department.

[7] Swindell, Edward G. 1942. **Supra**.



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Data Source:
Ecology "Tribal" Coverage
WDFW DFW_Medi Coverage

Map Projection:
UTM Zone 10 NAD 27

Lummi Nation - Puget Sound Area
Usual & Accustomed Area Fishing Area
&
Ceded Lands
Treaty of Point Elliot

Legend

- Point Elliott Treaty Reservations
- Point Elliot Treaty Ceded Lands (WDFW)
- Ocean
- County Boundaries
- Cities and Towns
- Lummi Primary Fishing U & A

0 20 40
Miles

Under Article 5 of the Treaty, Lummi fishing, hunting and gathering[8] activities on public and unclaimed lands in this ceded area are Treaty-protected – and must receive particular attention during project impact assessment.

4. Distribution of Lummi Peoples.

Enrolled Lummi members live within the Lummi Reservation, the Lummi U&A area, the Lummi ceded area, and throughout the state of Washington and the United States. Proximity to the Lummi Reservation, U&A area and ceded area may affect the immediacy of effects from impacts on Lummi areas and resources. However, all enrolled Lummi members, wherever resident, retain interest and Treaty rights regarding Lummi resources – and can be affected beneficially or adversely by projects.

IV. Selected Project Impacts Important to the Lummi Nation.

This section identifies selected potential project impacts on Lummi resources, circumstances and values - and provides a baseline summary for each. This selection does not provide a comprehensive listing of all impacts that may need to be considered by a particular project. However, each *impact* selected here is considered important by the Lummi Nation – and is representative of a broader grouping of resources, activities and Lummi circumstances. Consequently, review of this set of potential impacts will give project evaluators a good start in considering effects of their particular proposal on the people and resources of the Lummi Nation.

Information provided here incorporates quantitative and qualitative measures considered most appropriate by Lummi experts. Measures may vary, impact to impact. The full range of *impact issues* identified here will not necessarily require assessment for each project, depending on particular project-by-project characteristics.

Assessment of potential impacts on these selected Lummi resources, activities and values will enable project proponents and Lummi decision makers to identify key impact issues – effectively target any further research into impacts that may be required - enter into mitigation and compensation discussions, as necessary – and get a good read on whether the project appears mutually beneficial or not.

Whether such assessment will also provide sufficient information for a full EIS will likely depend on the location, size and duration of the project; the expected magnitude and/or complexity of project impacts; on findings from initial analysis; and on the degree of agreement concerning any required mitigation and/or compensation identified.

Table 1 identifies present circumstances for selected Lummi resources and activities. A summary description for each selected resource or activity follows. Definitions provided on the following page(s) are designed to provide consistency during actual project impact analysis.

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[8] Traditionally, Lummis gathered roots, berries and other natural materials throughout their territory for ceremonies, food, medicine and creation of shelter, clothing and artefacts.

Status of Populations, Areas and Activities:

Healthy population, area or activity (H): A population, area or activity experiencing present production or activity levels consistent with the full extent of Treaty-based habitat and access available - and within natural variations in survival for that population, activity or area. Activities include those for Lummi cultural purposes.

Reduced population, area or activity (R): A population, area or activity experiencing present production or activity levels lower than those guaranteed by Treaty – due to habitat loss or from other longer term causes.

Severely Depressed population, area or activity (SD): A population, area or activity reduced to levels where the Lummi Nation is presently able to obtain negligible or zero harvest for food, income or community purposes and/or negligible cultural benefit due to adverse prior effects.

Treaty or Tribal Trust Status:

Treaty protected population, area or activity (T): A population, area or activity protected by the Treaty of Point Elliot. This status particularly applies to habitat, resources and activities associated with fishing, hunting and gathering.

Tribal Trust population, area or activity (TT): A population, area or activity protected under federal tribal trust obligations and/or by other federal statute. Federal tribal trust obligations apply broadly to tribal well-being – including the protection of tribal cultural resources and activities.

Levels of Potential Project Impact:

No direct effect: No change in availability of, access to, or competition for Lummi resources. No change in Lummi food, ceremonial, social, or economic activities.

No linked effect: No positive or negative effect on the availability of, access to, or competition for other *linked* Lummi resources, activities or values. (*Linkages* are described in following Section V).

Low effects: Small and infrequent effect on the availability of, access to, or competition for, Lummi resources and activities. These effects are expected to result in no longer-term changes in Lummi resource or activity levels.

Significant effects: Direct effects, which may change resource or activity levels moderately – but will not enhance or adversely affect other *linked* Lummi resources or activities.

Substantial effects: Effects that will considerably modify Lummi ceremonial, subsistence or economic resources and activities – and that may affect Lummi people *linked* to directly affected resources or activities.

Table 1

Selected Resources and Activities Important to Lummi Impact Analysis

Table 1a: Lummi Fishing & Shellfish Harvesting

Resource/Activity	Status	Present Circumstances
Salmon	**R : T**	: Harvest reduced by 80-90% since 1985. : Spring Chinook salmon listed as *threatened* under the federal Endangered Species Act. : Fishing areas obstructed by piers, docks and vessel traffic. : Protection of Nooksack and Lummi Rivers, and harvesting across north Puget Sound and Fraser River approaches remains very important.
Dungeness Crab	**H : T**	: Harvests presently at healthy levels. : Protection of resources and activity focuses on ocean bottom habitat, water quality and near-shore pollution re. juveniles, and interruption of fishing operations and loss of gear due to transiting vessel traffic.
Clams	**R : T**	: Harvests of Manila clams remain viable. Native Littleneck clam harvest much reduced. : Pollution (fecal coliform/P.S.P. toxins) from upland a continuing threat. Harvest areas in Portage Bay and Drayton Harbor (partially) closed due to fecal coliform count.
Herring	**SD : T**	: Historically, an important element of Lummi seasonal rounds. Eelgrass is an important habitat for herring. Roe on kelp was taken for commercial sale up to 1995. Today, no harvest due to sharp declines in biomass and efforts to rebuild stocks. Vulnerable to dock overshadowing and vessel activities at Cherry Point - and to temperature, water quality and toxin problems.
Oysters	**R : T**	: Harvested traditionally, especially from Portage Bay on the Lummi Reservation. Not much harvest today, except occasionally in Drayton Harbor.
Geoduck Clams	**H : T**	: Some harvest by divers. Potential across the Lummi U&A area not fully known.
Shrimp	**T**	: Significant commercial harvest from 100 to 300 feet of depth in swift marine currents. Near-shore juvenile areas vulnerable to pollution.

Sea Urchins	**T**	: Commercial harvest by trawl and diving, over rocky areas from 20 to 200 feet in depth. : Pollution and fishery impedance concerns.
Sea Cucumber	**T**	: Significant commercial harvest by divers and by trawl. Pollution concerns in Dyes Inlet – and fishery impedance concerns.
Scallops	**T**	: Taken for personal use, particularly off Cherry Point. Provides food and shells for ceremonies.

Table 1b: Lummi Hunting

Resource/Activity	Status	Present Circumstances
Hunting for Deer and Other Land-Based Species	**R : T**	: Deer were traditionally hunted by the Lummi to supplement their fishing foods, and for ceremonies. They still are today – along with other species such as elk, mountain goat and bear. : The Lummi maintain their Treaty right to hunt on public lands throughout their ceded area. These hunting opportunities are shared with other tribes whose ancestors were signatories to the Treaty of Point Elliot. : Abundances are greatly diminished due to population growth in Western Washington. Tribal access to hunting is reduced due to expansion of private properties. Rebuilding elk herds in the Nooksack drainage is a particular concern.
Brant and Other Waterfowl Hunting	**R : T**	: Ducks and other waterfowl were traditionally hunted by the Lummi, and still are today - with brant and black ducks favored species. : Stocks of waterfowl are significantly diminished – but hunting continues year round along shorelines within the Lummi ceded and U&A areas. The Lummi also hunt for food for Lummi ceremonies.

Table 1c: Cultural & Archaeological Resources

Resource/Activity	Status	Present Circumstances
Traditional Cultural Properties (TCP's)	**R:TT/T**	*Lummi TCP's* can be found throughout the Lummi Reservation, ceded area and U&A area. Over time, they have declined due to expanded development, timber harvest, and curtailment of access through private lands. Remaining TCP's require maximum protection under Treaty – and federal, state and tribal law. Some TCP's are recorded; some unrecorded; others not yet known.

Traditional Named Places	**R: TT**	*Lummi Traditional Named Places* can be found throughout the Lummi Reservation, ceded area and U&A area. They can identify an historic event, a ceremonial site, a point of cultural reference, and so on. Over time, some Lummi traditional places have been obliterated or damaged – and Lummi access to others has been impeded. The Lummi seek maximum protection for remaining *Traditionally Named Places*.
Village Sites	**R: TT**	*Traditional Village Sites* are *TCP's* of particular importance to the Lummi. They are also registered with the State Historic Preservation Office (SHPO). Over time, several Lummi sites have been adversely impacted due to construction projects and expanded human activity. The Lummi require project avoidance and protection of remaining *Village Sites.*
Fishing Sites/Areas	**R:T/TT**	Ceremonial, subsistence and commercial fishing is a key element of Lummi life – and is protected by Treaty. Fishing sites exist in both river and marine waters – and their protection is a Lummi priority. Reef net sites are a particular Lummi priority.
Hunting Sites/Areas	**R:T/TT**	The Lummi continue to hunt throughout their ceded area and on shorelines and islands within their U&A area. The Lummi seek continued protection of this Treaty right – including assurance of abundance; access to targeted species such as deer, elk and brant; and access for other cultural purposes.
Gathering Sites for Food/Medicine/ Materials	**R:T/TT**	The Lummi gather a wide variety of roots, berries, tree products, plants and marine products to obtain foods, medicines and work materials. These treaty-protected activities take place on-Reservation, on public lands within the Lummi ceded area and along shorelines in the Lummi U&A area. Abundances and access to gathering areas are substantially diminished from historic times. The Lummi seek to protect remaining resources, and access to them. Particular concerns include construction projects, chemical brush control and timber clearing and harvesting.
Cedar	**R:T/TT**	Cedar was the most important tree for the Lummi – and remains so today. Its wood and bark were used for structures, canoes, carved monuments, clothes, and to craft a wide variety of everyday implements and ceremonial objects. Today, the forests that produced these trees are diminished – but the Lummi continue to protect, utilize and highly value cedar trees where they exist within the Lummi Reservation and the Point Elliot Treaty ceded area.

Spiritual Sites/Areas	**R:TT**	The Lummi continue to use areas – usually within forests and along rivers or shorelines - for ceremony and individual spiritual contemplation. These areas are often kept confidential by the Lummi and are essential to Lummi cultural practice. The number of these areas left undisturbed by human activity has declined over time. The Lummi Nation places a high value on protecting the cultural integrity of, and Lummi access to, the sites and areas that remain.

Table 1d: Economic & Community Well-being

Resource/Activity	Status	Present Circumstances
Marine Revenue from Lummi Commercial Fishing	**R/SD:T**	Lummi marine resources have declined substantially over the past decade. They presently provide approximately $5 million annually to Lummi commercial harvesters and continue to be one of the main revenue sources for the Lummi. Dungeness crab, salmon and clams are the most significant present-day commercial fisheries.
Lummi Commercial Fishers	**R : T**	Today, approximately 500 Lummi participate in tribal commercial fisheries. Additional non-licensed Lummis assist in these activities. As marine resources have declined, so has fishing activity – but fishing continues as an economic mainstay of the Lummi Nation.
Per Capita Income	**R**	Lummi per capita income is 47% lower than for Washington residents as a whole.
Employment/ Unemployment	**R**	The Lummi unemployment rate is 4 times higher than the rate for Washington residents as a whole.
Poverty	**R**	Lummi poverty levels are 3 times greater than for Washington State families as a whole.
Equity/Justice	**R:TT**	The socio-economic circumstances of the people of the Lummi Nation identify that federally mandated *Environmental Justice* analysis should be conducted for any project that may have impacts within the Lummi Reservation, U&A area or ceded area.

1. Lummi Fish and Shellfish Resources and Activities

a. Salmon

Salmon has been the major focus of Lummi existence since pre-historic times. Lummi fishers were ideally located to intercept runs of sockeye and pink salmon returning to the Fraser River – and of Chinook, coho and chum salmon returning to Puget Sound rivers. The Nooksack River which flows through the eastern edge

of the present Reservation has traditionally provided both marine and in-river fishing opportunity for the harvest of Chinook, coho, pinks and steelhead.

The Lummis sought their salmon harvests throughout their U&A area. They paid particular attention to the in-stream and marine areas of the Nooksack River – and to the migration pathways of Fraser River sockeye and pinks. Harvests began in the spring, and continued into late fall – fishing each returning salmon stock at the most advantageous times and locations.

The salmon continue to play a major role in Lummi cultural affairs – commencing with the *First Salmon Ceremony* – designed to celebrate *Salmon's* return, to reinforce tribal respect for and stewardship of *Salmon* and its habitat, and to ensure abundant returns in present and future years.

Taken together with other marine species, and with animals, roots and berries, the salmon reportedly enabled the Lummis to *live well* in pre-contact times. Salmon also provided the first substantial wage income for Lummis in the late 1800's, as Lummi fishermen sold salmon to canneries, and Lummi women were employed as canners. The canneries are now gone – and sales of salmon have diminished sharply in recent years. However, salmon continue to provide important revenue for Lummis. Recent data are provided in Table 2.

Table 2

Lummi Commercial Salmon Harvest – Selected Years

	----------Numbers of Salmon----------					Revenue ($'000)
Year	**Sockeye**	**Pinks***	**Chinook**	**Coho**	**Chum**	**All Species****
1990	667,498	16	41,804	128,985	78,998	8,917
1991	432,090	1,025,625	21,278	82,848	61,502	4,648
1992	171,716	51	15,143	71,695	108,690	3,053
1993	829,976	655,601	14,277	39,923	40,626	4,740
1994	563,380	10	12,213	39,141	61,649	5,140
1995	137,086	522,637	11,043	28,520	27,544	1,427
1996	140,593	0	13,668	30,819	7,847	1,626
1997	419,888	640,224	24,088	10,035	10,765	2,963
1998	143,677	170	10,692	15,574	33,351	1,418
1999	14 (?)	2,210	23,491	37,382	18,016	478
2000	146,574	194	16,916	45,961	992	1,361
2001	62,570	72,506	29,455	57,915	8,063	636
2002						1,077

*Pink salmon return only in odd years.

**Includes sales of salmon eggs and steelhead.

Source: Northwest Indian Fisheries Commission Database.

Principal impact concerns with respect to proposed projects in the Cherry Point area focus on maintaining and restoring suitable water quality, stream temperature and habitat for salmon in the Nooksack river and estuary - including the salmon prey base (e.g. herring, surf smelt, sand lance). Maintaining unimpeded Lummi *access* to fish salmon throughout Lummi U&A areas is also a priority.

The Nooksack drainage provides the current water supply for Cherry Point industries.

b. Dungeness crab

Dungeness crab have traditionally played a role in the resource rounds of the Lummi (see Section V). In early years, with salmon, herring and various species of clams available in abundance, Dungeness crab was not harvested in large volume. More recently, as abundances of some historic species have decreased – and with tribal access to shellfish affirmed by federal Court – commercial markets for tribally caught Dungeness crab have improved, and the Dungeness crab has played an increasing role in sustaining Lummi fishers. Harvests and revenues between 1990 and 2002 are presented in Table 3.

Table 3

Lummi Commercial Dungeness Crab Harvest – 1990-2002

Year	Harvest (in pounds)	Revenue (in dollars)
1990	256,929	414,564
1991	195,209	304,158
1992	356,553	437,014
1993	427,824	516,915
1994	775,485	1,202,636
1995	1,641,959	2,508,259
1996	1,893,252	2,890,670
1997	1,644,172	3,416,412
1998	1,694,059	3,611,787
1999	1,576,996	3,740,090
2000	1,600,990	3,222,359
2001	1,894,492	3,893,127
2002		2,926,947

Source: Northwest Indian Fisheries Commission Database.

Dungeness crab may be found on almost any type of bottom – and are present in shallow intertidal waters and at greater ocean depths, where harvests have been recorded up to 150 fathoms. Harvesters avoid the mid-April through mid-June period, where Dungeness crabs are in molt, yielding low meat yields until their new shells harden.

Impact concerns focus on direct damage to Dungeness crab population areas – including near-shore areas utilized by juveniles; drift of sediment and/or other pollutants into areas frequented by crabs (i.e. from the Bellingham Bay spoil disposal site); elevated temperatures in associated marine waters; loss of gear due to transiting vessels; and disruption of Lummi fishers on Dungeness crab fishing grounds[9].

c. Clams

Harvest of clams has provided a mainstay for Lummi peoples since earliest times. Harvesting occurs along the mainland shoreline adjacent to the Lummi Reservation, and throughout the islands incorporated in the Lummi U&A area. Clams are harvested at low tide along flat sandy beaches and can be taken throughout the year. Harvests are generally limited from mid-June to October, when toxic algae blooms that cause *Paralytic Shellfish Poisoning (PSP)* – commonly known as *red tide* – are more prevalent. Harvest effort is highest in spring and early summer, due to low daytime tides – but harvest occurs in other months of the year as well. Harvesting can occur throughout the Lummi U&A area – with particular attention to Bellingham Bay and to Lummi Bay – both adjacent to the Lummi Reservation.

In recent years, commercial harvests of Manila clams have held steady – and continue to provide dollar income for a significant number of Lummi harvesters. Harvest of Native Littleneck clams, the other species of commercial interest for the Lummi, has almost ceased – due to a combination of polluted clamming areas and poor prices. Lummi harvests and commercial revenue from these two species between 1990 and 2002 are presented in Table 4.

Horse clams, butter clams and steamer clams are also important to Lummi subsistence harvesters.

[9] Impedance by abandoned/derelict gear is also a concern.

Table 4

Lummi Commercial Manila and Native Littleneck Clam Harvests
- Selected Years –

	----Manila Clams----		---Native Littleneck Clams---	
Year	**Harvest (lbs)**	**Revenue ($)**	**Harvest (lbs)**	**Revenue ($)**
1990	115,170	161,690	4,119	2,854
1991	87,189	113,883	156	73
1992	121,847	146,751	14,634	10,122
1993	183,406	236,393	4,589	3,590
1994	129,395	140,429	1,276	1,511
1995	160,120	224,531	89	77
1996	275,028	405,437	371	301
1997	246,143	374,049	10,815	7,546
1998	266,972	376,259	---	---
1999	270,296	376,707	---	---
2000	296,539	418,015	---	---
2001	238,878	307,272	4	3
2002		549,626		

Source: Northwest Indian Fisheries Commission Database

Impact concerns focus on direct damage to clam beds, pollution of beds from terrestrial discharges, temperature elevation in associated estuarine/tidal waters and interference with the activities of Lummi clam diggers.

d. Herring

Herring and herring roe provided an important element of the Lummi's seasonal rounds[10]. Both resources have traditionally been harvested from the Cherry Point area from mid-March to early June. The Cherry Point herring spawning biomass – historically found in near-shore waters (between +3 and –10 feet, Mean Lower Low Water) from Bellingham Bay to the Canadian border - was estimated at 15,000 tons in 1973, the highest density in the State. It has subsequently declined sharply – to an estimated 1330 tons in 2002.

Herring provide a food source for many species upon which the Lummi depend. These include Chinook salmon, coho salmon, pacific cod and lingcod. There has been no recorded commercial take of herring by Lummi fishermen over the past several years.

[10] *Seasonal rounds* describe the manner in which Lummi peoples moved from location to location and resource to resource, taking advantage of each sustaining opportunity in its appropriate time and season. Near the beginning of the 20th Century, wage income began to play a role in these rounds of economic opportunity.

Principal impact concerns relate to preservation of remaining spawning areas (eel grass beds, kelp beds and rocky bottom turf-algae beds); protection from pollution caused by oil spills, tank flushing and effluent outfall discharges; maintenance of appropriate temperature gradients in spawning areas; and restoration of spawning areas that have previously been degraded.

e. Pacific Oysters

Like clams, oysters have been harvested by Lummi peoples since earliest times. In 1990, Lummi harvesters reported a harvest of 9,879 pounds worth $148,000. Today, the Lummi harvest oysters primarily for subsistence purposes

f. Geoducks

Significant harvests of geoduck clams have been taken (primarily) by tribal divers – starting in inter-tidal zones, and presently proceeding seaward to 70 feet of depth in central and southern Puget Sound. Lummis harvest a moderate amount of this resource – but the ultimate commercial potential for geoduck within the Lummi U&A fishing area is unknown at this time. Lummi subsistence harvesters take some inter-tidal geoduck.

g. Shrimp

Shrimp are harvested by trawl gear in marine areas with swift flowing currents – usually along sloped-bank ledges between 100 and 300 feet of depth. Juvenile shrimp utilize near-shore waters. Lummi commercial harvest has varied significantly year-to-year, with a high harvest worth $191,000 in 2001, declining to $80,000 in 2002. Fishing usually occurs between mid-April and mid-October.

As far as is known, stocks are relatively healthy at this time. Lummi impact concerns focus primarily on pollution of near-shore areas utilized by juveniles and impedance of tribal fishing operations.

h. Sea Cucumbers

Sea cucumbers are harvested by trawl and by Lummi divers – generally in depths between 20 and 200 feet on hard bottoms. Stocks are considered to be healthy at this time, although there are pollution concerns in Dyes Inlet. Lummi harvesters earned $194,000 from selling sea cucumbers in 2001, and $101,000 in 2002.

Principal Lummi concerns are pollution and disruption of tribal harvest operations.

i. Sea Urchins

Lummi fishermen harvest (primarily red) sea urchins by trawl and by diving over rocky areas in depths between 20 and 200 feet. Lummi commercial harvest revenue peaked at $81,000 in 1996, but has declined significantly since that time.

Impact concern focus on health of stocks and on disruption of tribal fishing operations.

Overall, Lummi fishermen harvested eighteen species of fish and shellfish for commercial sale during 2002 – and additional species for subsistence purposes.

Contact Information:

The following Departments of the Lummi Nation can provide further detail and reference guidance with respect to Lummi fish resources and their economic utilization.

Director,
Natural Resources Department
Lummi Nation
2616 Kwina Road
Bellingham, WA 98226
(360) 384-2225

Director,
Economic Development Department
Lummi Nation
2616 Kwina Road
Bellingham, WA 98226
(360) 384-7134

2. Lummi Hunting Resources and Activities

a. Deer and Other Land-Based Species

The Lummi have hunted throughout the Treaty of Point Elliot ceded territory for a broad variety of animals and birds from time immemorial. The Treaty guarantees tribal opportunity to harvest animals and birds on non-private lands throughout the Lummi ceded and U&A areas. This right is shared with other tribes whose ancestors were signatories to the Treaty of Point Elliot.

Today, stocks of animals and birds are diminished. However, hunting continues to play an important ceremonial and subsistence role for the Lummi, and hunting skills are passed down from grandparent to parent to son or daughter.

Deer are the species most commonly sought today by the Lummi. They are generally hunted from September through February. Elk, mountain goat and bear are among other species still taken by Lummi hunters – subject to protection measures for depleted herds. The Lummi are particularly concerned about the level of elk populations in the Nooksack drainage, and are working with cooperating parties to rebuild them.

b. Brant and Other Waterfowl

An extensive array of ducks and other waterfowl were traditionally hunted by the Lummi. As with other hunting resources, these activities continue under Treaty protection. Today, flocks are diminished. However Lummi hunting continues year-round for ceremonial and subsistence purposes.

Brant and black ducks are favored in the present day and can be found along the shorelines and over marine areas within Lummi ceded and U&A areas. Duck provides food for Lummi families and for ceremonies. A cultural renewal initiative is currently being considered to teach young Lummis traditional ways of harvesting waterfowl.

<u>Contact Information</u>:

The following Department of the Lummi Nation can provide further detail and reference guidance with respect to Lummi hunting resources and activities.

Director,
Natural Resources Department
Lummi Nation
2616 Kwina Road
Bellingham, WA 98226
(360) 384-4737

3. Lummi Cultural and Archaeological Resources and Activities

a. Traditional Cultural Properties

The Lummi view *their culture* as their *Sche'lang'en* or *way of life.*

> Our beliefs, spirituality, language, how we are trained, what we eat, how we live, everyday activities, attitudes toward each other, our togetherness, our system of education, our values passed down in legends, story telling and our respect for the deceased, are in part, what we call our "Sche'lang'en".

> Cultural Practice is: An intangible aspect of our *Sche'lang'en* which is especially valued by our people. Although intangible by nature, cultural practices may be associated with, or dependent upon, cultural resources. They include language and oral traditions, ideology, family life, subsistence techniques, graphic arts, handicrafts, music and dance, among others.[11]

A *Traditional Cultural Property* (TCP) is a Lummi property associated with *Xwlemi* or other Native American peoples' cultural practices, customs and/or beliefs that are rooted in Lummi collective history and that is important in maintaining unique Lummi traditional and cultural identity. These are inherent properties passed down from ancestors for the use and protection of present-day Lummi people – and for the education of future Lummi generations.

Over time, the TCP areas of the Lummi Nation have declined due to expansion of urban and suburban development, timber harvest management practices and curtailment of tribal access through privately owned non-tribal lands. Remaining TCP areas, where Lummis can still practice their traditional life ways are highly valued. They are dispersed through the full range of the Lummi Nation's Reservation, ceded area and U&A area – and must be afforded the maximum protection available under Treaty, and federal, state and tribal law.

b. Traditional Named Places

Lummi ancestors gave particular places of Lummi historic and cultural significance specific names. These names could locate and/or describe an historic event, a ceremonial site, a point of cultural reference, a location associated with ancestors, a navigating marker, etc. The historic Lummi trading place in the Gooseberry Point marine area provides an example. These *places* range across the full extent of the Lummi Reservation, ceded area and U&A area.

Over time, some of these places have been obliterated or damaged, while Lummi access to others has been impeded – often by non-tribal land ownership. Consequently, remaining Traditional Named Places are carefully protected – and tribal access to these places will be an important issue during impact analysis.

c. Village Sites

Traditional village sites are TCP's of particular importance to the Lummi Nation. Over time, several Lummi village sites have been adversely impacted due to construction projects and expanded human activity.

Protection from damage, and assurance of Lummi access to such sites will be issues of paramount importance during project evaluation.

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[11] Lummi Nation, 2004. **Code of Laws**. Title 15.01.

d. Fishing Sites and Areas

The Lummi are a *fishing people.* Their ancestors took particular care to ensure their continuing access to harvests of fish and shellfish in the *Treaty of Point Elliot.* Such harvests are taken for ceremonial, subsistence and commercial purposes – with all components playing a key role in the life ways of the Lummi.

Lummi fishing sites and areas – along with tribal access to them - have received continuing adverse pressure from non-tribal fishery managers, project developers and private landowners for more than a century. Among these actions has been the forcing of Lummi off some historic weir and reef net areas. Habitat losses and declining fish populations have reduced the capability of other sites. Yet the Lummi continue to strongly defend these sites, and access to them – and these defensive actions have been affirmed time and again by federal courts.

Lummi fishing sites and areas occur in both marine and river waters. Effects on fish stocks, fishing operations and access to fishing areas will be central to any project impact assessment affecting the Lummi Nation.

e. Hunting Sites/Areas

Traditionally, the Lummi hunted for deer, elk, bear, mountain goat and other animals in the forests of their (now) Reservation and ceded area. Many kinds of ducks were hunted along the river and lakeshores within these areas. The Lummi also hunted along the ocean shores within their U&A area.

The opportunity to hunt on lands not privately owned by non-Indians is protected by the Treaty of Point Elliot. Lummi hunters continue this traditional activity throughout the Lummi ceded and U&A areas to the present.

Tribal access to Lummi hunting sites has been eroded over time – principally due to the expanding scope of private non-tribal property. Populations of favored species, such as mule deer, elk, brant and black ducks are similarly diminished.

Despite these circumstances, the continued expectation of the Lummi Nation is that projects will not further reduce animal and bird populations – nor further restrict Lummi access to them.

f. Gathering Sites for Foods and Medicines and Materials

Traditionally, the Lummi people have gathered roots, berries and other natural materials for food, medicine and other cultural purposes. Foods gathered include apples, prunes, wild crab-apples, blackberries, black caps, mountain blueberries, huckleberries, gooseberries, cranberries, thimbleberries, elderberries, soapberries, salal, fern roots and fern leaves for tea, wild onions and camas.

Among the Lummi bark medicines are white fir, white pine, maple, alder, hemlock, elderberry, crab-apple, wild cherry, liquorice, cascara and spruce. Yarrow, mullein roots and leaves, nettle roots, blackberry vines and leaves, Oregon grape, black caps, wild rose leaves, and a broad assortment of other flora are also used for medicine.

These roots, berries, plants and barks – and a wide range of other Lummi natural materials - occur throughout the Lummi's Reservation, ceded area and U&A area. They continue to play a role in the present-day seasonal round of Lummi peoples. Gathering activities occur along shorelines, on islands, in marshes and fields, within river corridors, in forested areas and on the slopes of hills and mountains.

As with hunting, conduct of these activities on non-private lands is protected by the Treaty of Point Elliot. However, opportunities are greatly diminished from historic times. Some areas no longer exist. Others have been degraded due to construction projects, chemical brush control, timber harvest, and projects associated with the expansion of human activity in general.

As with their other Treaty-protected resources and activities, the Lummi Nation continues to pay close attention to prospective impacts on traditional gathering sites during contemporary impact assessment processes – seeking to retain the quality and productivity of the gathering areas that remain.

g. Cedar Trees

In ancient times, the Lummi and other northwest coastal tribes possessed a highly developed woodworking technology[12] - based on a variety of tree species. For the Lummi, cedar, fir and hemlock – together with willow and plant vines were particularly important. Cedar wood and bark was the most sought after among these.

> Western red cedar provided the preferred wood, whenever it was available, for house planks, posts, and beams, carved monuments, canoes, boxes, and a wide variety of implements and ceremonial paraphernalia. [13]

> They had smokehouses, great big ones, made out of cedar. They made canoes out of cedar. Cedar tree. That's an important tree. The most important tree. The Indians used it for everything. [14] [15]

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[12] Suttles, Wayne, 1990. "Introduction" in, **Handbook of North American Indians: Northwest Coast.** Vol. 7. The Smithsonian Institution, Washington, D.C. p. 4.

[13] Suttles, Wayne, 1990. "Environment" in, **Handbook of North American Indians: Northwest Coast. Supra** at 24.

[14] Solomon, Dora Williams, "Cedar", 1999, published in **Lummi Elders Speak Supra** (Ann Nugent, ed.) Blaine: Pelican Press, p. 17.

[15] Among the products crafted historically, and today, are cedar roots for baskets, cedar boughs for ceremonies, cedar for hats, fishing nets and fishhooks, and many other artefacts.

Today, forested areas are diminished. But the Lummi continue to value cedar trees highly and seek to protect those still left within their Reservation and ceded area.

h. Spiritual Sites and Areas

The Lummi Nation today maintains *private places for ceremony, education in Lummi ways, and private spiritual practice* associated with maintenance of Lummi culture and identity. The following quote - from Lummi Healer Isadore Tom, born in 1904 - provides a glimpse of the importance of such places.

> Indian people were always concerned about educating children. Learn about mother nature. Learn what mother earth has created such as different kinds of medicine. Things that grow out in the woods….We learned through a vision that a certain plant was good for healing. We were told by a spirit to go out and get certain types of leaves. A spirit comes from mother nature. Health food all comes from mother nature. Berries and all the seafood comes from mother nature.
>
> The gift of healing was one gift. The gift of medicine….Spirits will heal you. Indian people went outside to receive the spirit. You sleep, fast, swim and live in the woods all alone until you meet the spirit who speaks to you.[16]

Such areas are often not revealed to non-Lummis. They require privacy, including separation from sight-lines, noise and other adverse impacts that may be associated with projects or other human activity. As the human footprint has expanded in northwest Washington, the extent of such secluded areas has declined and/or become increasingly inaccessible to Lummi people.

Today, the Lummi Nation strives to protect remaining spiritual areas within its Reservation, ceded area and U&A area and to assure Lummi access to remaining sites.

Contact Information:

The following Department of the Lummi Nation can provide further detail and reference guidance with respect to Lummi cultural resources, areas and practices.

Director
Schelangen Department
Lummi Nation
2616 Kwina Road
Bellingham, WA 98226
(360) 384-1489

[16] Isadore Tom, "Health and Medicine", published in **Lummi Elders Speak. Supra** at 87-88.

4. Lummi Indicators of Economic and Community Well-being

Tribal government and the Silver Reef Casino make significant contributions to Lummi employment and income – as well as to the economy of adjacent Whatcom County. Construction has also provided jobs and income for some Lummi in recent years[17]. However, the people of the Lummi Nation are experiencing inordinately low incomes, high unemployment and excessive poverty compared to residents of the State of Washington (Table 5).

Table 5

Indicators of Lummi Socio-Economic Status

Indicator	Lummi Nation	Residents of Washington
Per Capita Income ($)	$12,240	$22,973
Families in Poverty (%)	23%	7.3%
Unemployed (%)	26%	6.2%

Sources: U.S. Bureau of the Census, 2000 Census. U.S. Bureau of Indian Affairs, 2001.

In these adverse times, the people of the Lummi Nation continue to depend heavily on fishing – as they have since time immemorial. Initially, marine and other resources harvested by the Lummis provided the basis for subsistence, and for barter with other tribal members and with neighboring tribal peoples.

Revenue from salmon sales was likely the first cash income injected into the Lummi seasonal rounds in historic times. Three quarters of a century later, from the 1970's through the early 1990's, fishing still provided income to almost all Lummi households[18]. Over the past several decades marine harvests have declined – species by species and year by year. Herring were first, then salmon, and more recently clams. In 1995, the Lummi fished with 278 registered vessels. By 2001, this number had dropped substantially to 195 vessels[19]. Yet fishing continues as an important income source. Dungeness crab, salmon and clams are presently the most important revenue producers (Table 6).

[17] Lummi Indian Business Council, 2003. **Comprehensive Economic Development Strategy**. Lummi Economic Development Department, p. 31.
[18] Lummi Indian Nation, 2002. *Lummi Displaced Fishermen Grant Application.* p. 2.
[19] **Supra.**

Table 6

Commercial Revenue from Marine Resources of the Lummi Nation
- Selected Years (in $'000) –

Year	Salmon	Dungeness Crab	Clams	All Species
1995	1,427	2,508	225	4,168
1996	1,626	2,891	406	4,981
1997	2,963	3,416	382	6,859
1998	1,418	3,612	376	5,583
1999	478	3,740	377	4,766
2000	1,361	3,222	418	5,338
2001	636	3,893	307	5,248
2002	1,077	2,927	550	4,834

Source: Northwest Indian Fisheries Commission Database.

The number of Lummi fishermen licensed by the tribe to fish commercially between 1995 and 2003 are identified in Table 7. Most licensed fishermen participate in the salmon fisheries. Crabbers and clammers – the other two most prevalent fishing subgroups are broken out separately. As noted, these data substantially understate the full effects of fishing on the Lummi community.

Table 7

Commercial Fishermen Licensed by the Lummi Nation – 1995 to 2003
- Selected Fisheries -

Year	General/Salmon	Dungeness Crab	Clams
1995	575	95	179
1996	510	134	172
1997	590	144	211
1998	512	173	168
1999	475	154	175
2000	619	151	188
2001	562	151	211
2002	584	144	215
2003	458	145	141

Source: Lummi Nation Department of Natural Resources.

The data confirm that the people of the Lummi Nation today face difficult circumstances. These circumstances result, in significant part, from *cumulative destruction* of the resource and related activity base which was guaranteed by the Treaty of Point Elliot – and upon which the Lummi Nation depends.

No single project proponent can be held responsible for the prior adverse acts of others. However the resulting adverse circumstances and narrowing tribal opportunity base indicated here make it clear that Lummi evaluators will consider further change of any magnitude in their resource and activity base, to be *significant.*

The Lummi Nation will therefore seek adequate detailing of expected project-related changes to tribal resources and activities – will welcome positive project effects – and will require committed discussion of avoidance, mitigation and compensation where expected impacts are adverse.

Tribal history and present circumstances also identify that project assessment must incorporate an *Environmental Justice* analysis, such as that identified by federal guidelines, where Lummi resources, activities or values may be significantly impacted.

Contact Information:

The following Department of the Lummi Nation can provide further detail and reference guidance with respect to Lummi economic circumstances and community infrastructure.

Director
Department of Economic Development
Lummi Nation
2616 Kwina Road
Bellingham, WA 98226
(360) 384-7134

5. Environmental Factors Upon Which Lummi Resources and Activities Depend.

Lummi peoples, resources and activities are often affected by projects through impacts on underlying *environmental factors.* Tables 8 and 9 provide guidance with respect to some of the principal environmental impacts, and related human effects, the Lummi Nation has had to deal with over time.

Table 8 presents a framework to begin consideration of *environmental factors* – by identifying selected impacts important to the Lummi over a range of environmental categories. Table 9 broadly relates some of these impacts to generalized project types that have affected the Lummi Nation in the past.

These displays are not comprehensive – and may contain insufficient detail to support full environmental assessment. Rather, they are intended to orient the impact assessor to issues that are important by the Lummi Nation – and to improve the focus and comprehensiveness of impact assessment work that may be additionally required. Lummi contact information to provide further detail and reference guidance for impact assessment is again provided at the end of this section.

Table 8
Environmental Circumstances Potentially Relevant to Proposed Projects Affecting the Lummi Nation

Indicator	Present Circumstances
Marine Waters	Treaty requirement for adequate water quality conditions for fishing and shellfishing.
Coastal Zone	Treaty requirement for adequate water quality and habitat for fish and shellfish throughout the Lummi U&A area. Extensive prior modification of shorelines resulting in physical and biological impacts – including degradation of *herring, surf smelt, sand lance* and *waterfowl populations.*
Estuarine	Treaty requirement for adequate water quality and habitat for fishing and shellfishing throughout the Lummi U&A fishing area. Extensive prior degradation or elimination of estuaries and adjacent habitats (e.g. grass lands, mixed woodlands and flood plain forests).
Wetlands	Treaty requirement for adequate water quality and habitat for fishing, shellfishing, bird-hunting and gathering of foods, medicines and traditional materials throughout the Lummi U&A fishing and ceded areas. Nearly 500 fish and wildlife species rely on wetlands for part or all of their life cycles.
River and Riparian Areas	Treaty requirement for adequate water quality and habitat for fishing, hunting and gathering food, medicines and traditional materials throughout the Lummi ceded area, with particular attention to the Nooksack and Lummi river corridors. Spawning habitat is particularly important for salmon. As much as 85 percent of Washington's wildlife relies on streamside habitat. Extensive prior modification and/or loss of riparian habitat – channelization and degradation of substrate composition and bank-side ecosystems. The channel length of the Nooksack River has been reduced by 35 percent in some areas. Substantial reduction in productive woody debris in rivers.
Air quality	Air quality is fairly good on and near the Reservation. Air quality is more adverse at and adjacent to Cherry Point – and across some parts of the Lummi ceded area where human populations and/or industry are concentrated.
Water quality	Treaty requirement of adequate quality for people and Treaty resources. Currently, a significant number of fresh and marine waters within the Lummi U&A fishing area and ceded area are listed by the State of Washington as *impaired*. Elevated fecal coliform levels have resulted in periodic closures of some tribal shellfish beds. Elevated water temperatures and reduced levels of dissolved oxygen periodically occur, and degrade fish and shellfish habitat.
Water quantity	Treaty requirement for adequate quantity to support a permanent viable Lummi homeland and sustainable fishing, hunting and gathering. Prior surface water diversions and groundwater withdrawals by non-tribal users have significantly reduced water supplies required for these purposes.
Forest lands	Forests are important to Lummi fishing, hunting, gathering and other cultural pursuits. Much of the previously forested area in the lowlands of the Nooksack River Basin has been converted to agriculture and other uses. Important forest lands within the Lummi ceded area have also been removed by logging – or contaminated by chemical applications.

Table 9

A Selected Typology of Project Impacts Relevant to Assessment of Lummi Impacts

Project Action	Selected Impacts
Waterfront Bulkheads.	**:***Construction* can degrade or eliminate Lummi fish, shellfish and waterfowl resources – and can impact Lummi activities. **:***Tribal Access* to tribal tidelands can be affected by bulkheads.
Docks & Related Infrastructure.	**:**Create *barriers* to near-shore currents and sediment transport, which can impact tidelands, fish/shellfish habitat, herring, & other near-shore dependent fish, shellfish or shore-bird species. **:**Near-shore *prop wash* and *sediment disturbances* from vessels can have the same effects as above. **:***Vessel traffic* may interfere with fishing operations and cause loss of fishing gear. **:***Spills* of petroleum or *hazardous materials* – from dock or shore facilities or from vessels - may impact Lummi resources and activities. **:***Point & non-point* discharges can have pollution and temperature effects on Lummi resources. **:***Construction* can destroy or degrade habitat for fish, shellfish and shorebirds – and pre-empt Lummi activities. **:**May affect Lummi access to resources and shoreline areas.
Refineries and Heavy Industries.	**:**Product s*pills* can impact Lummi resources and activities. **:***Construction* can damage or eliminate Lummi resources and pre-empt Lummi activities. **:***Stack emissions* can affect air quality. **:***Point and non-point discharges* can have pollution and temperature effects on Lummi resources. **:***Industrial and traffic noise* can affect Lummi cultural areas. **:***Access* to Lummi areas may be affected.
Pipelines.	**:***Construction* can impact Lummi resources, activities and cultural areas – in terrestrial, river and marine areas. **:***Access* to Lummi areas and activities may be affected. :*Spills* can pollute Lummi resources and cultural areas - and impede Lummi activities.

Industrial & Commercial Projects.	**:***Construction* can impact Lummi resources, activities and cultural areas – throughout the Lummi ceded territory. **:***Noise and Traffic* may impede Lummi use of cultural areas. **:***Point and non-point discharges* may impact Lummi resources, activities and areas. **:***Accidents* may impact the Lummi environmental base.
Gravel Mining/ Gravel Scalping.	**:**Removal or degrading of *spawning gravels* can adversely affect fish and shellfish. **:**Gravel removal can exacerbate in-water *sediment problems*. **:**Gravel removal can exacerbate storm run-off. **:**Operational noise can degrade Lummi cultural areas.
Waste Deposition & Dredge Spoil Disposal.	**:***Dredging* may destroy habitat of Lummi resources. **:**Deposition may destroy or pollute Lummi resources. **:**Marine Dredging and Deposition may result in *sediment transport* problems for Lummi resources external to the deposition site due to tides and currents.

Consideration of these potential impacts is necessary – but may not be sufficient – in gauging project effects on environmental resources that support activities, protected areas and life-ways of the Lummi Nation.

<u>Contact Information</u>:

Further detail and reference guidance with respect to Lummi environmental issues can be obtained by contacting:

Director
Natural Resources Department
Lummi Nation
2616 Kwina Road
Bellingham, WA 98226
(360) 384-2225

V. Links Between Particular Project Actions and the Broader Range of Lummi Resources, Activities and Values.

This section provides information on why project actions occurring at a particular location and in a particular time period may impact the Lummi Nation across a significantly broader range of Lummi resources and activities. Such information is important in determining the *scope* of project impact enquiry.

1. Relationships between Resources and the Lummi Peoples.

Impacts from projects may directly affect Lummi peoples. For example: an oil spill may pre-empt fishing by tribal members - a project may provide enhanced tribal employment and revenue – or a project may disrupt a Lummi ceremonial area.

At the same time, projects that occur at a particular time and location, or over longer time frames, may have impacts across time periods and between locations – resulting in a broader range of total cumulative effects on Lummi activity and values.

Resource variability has always been a primary element affecting Lummi well-being.

> The environmental setting of native culture was characterized by four significant features: 1) *variety of types of food,* including sprouts, roots, berries, shellfish, fishes, waterfowl, land and sea mammals; 2) *local variation* in the occurrence of these types, due to irregular shore lines, broken topography, differences between fresh and salt water, local differences in temperature and precipitation; 3) *seasonal variation*, especially in vegetable foods and in anadromous fishes; 4) *fluctuations from year to year*, in part due to regular cycles of the different populations of fish, in part due to less predictable changes, as in weather.
>
> The first three of these four environmental features are no doubt closely related to the clearly patterned yearly round of subsistence activities. In the spring the different families occupying the sections of a big house left the community, perhaps separately, to spend a good part of the year moving from place to place accumulating stores of food. But this food quest was not all a random movement. People knew quite well where and when they were likely to find what food and so they generally exploited a certain place at a certain time for a certain thing. Their choice was determined largely by the first three of the environmental features just mentioned… But the fourth of the environmental features, fluctuation from year to year, must have demanded versatility and adaptability. [20]

Acquisition of food played the key role in the adaptive life ways of Lummi ancestors – both as an element of direct survival, and as a means of accumulating wealth.

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[20] Suttles, Wayne, 1987. **Coast Salish Essays**. Seattle: University of Washington Press. pp. 22-23.

> Wealth has been accumulated by various means – producing it within one's own household, receiving it for services, receiving it as gifts validating the status of donors at previous potlatches, and receiving it in thanks for food taken to one's in-laws in other communities. Since wealth is indirectly or directly obtainable through food, then inequalities in food production will be translated into inequalities in wealth. [21]

The Lummi's annual food rounds focussed on fish and shellfish[22] – and depended on a variety of resources, as abundances varied from season to season, and from year to year.

> Most of the vegetable foods could be harvested only in season – green sprouts in the early spring, camas bulbs in May when the blue little flowers showed where they could be dug, berries of the different species from early summer to fall. Herring, smelt, eulachon, and most of the salmons could be taken only during spawning season, which might be of short duration. Some waterfowl, seals, and bears adjust their movements as well to those of the fish. Many of the waterfowl too are migratory… .
>
> Besides seasonal differences in availability or abundance there are also, for some species, seasonal differences in desirability. Clams, it is said, could be dug more easily and were best at the times of the lowest tides in summer…. With deer; bucks are fattest and best in spring while does are best in fall. The different species of salmon and even different races of the same species do not preserve equally well; weather and fat content may be determinants.
>
> … The various species and races of salmon also varied greatly in quantity year to year. The most spectacular fluctuations were in sockeye and pink runs. …It can be predicted…that pinks will arrive in great numbers in odd-numbered years and in even-numbered years not at all. …(E)very fourth year there is a run of sockeye several times larger than in any of the other three years (of the four-year cycle). [23]

These circumstances provided the context within which the ancestors of present-day Lummis survived and prospered – moving from resource to resource and location to location – depending on relative abundances available season to season and year to year.

2. Evolution of Lummi Circumstances to a "Food and Cash" Subsisting Economy.

Over time, Lummi circumstances have been modified. Following contact with settlers, the harvest rounds continued – but as non-Indians moved into the area, cash wages joined trade in salmon and other foodstuffs as an element of the subsistence round, and as a source of income for the Lummi family.

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[21] **Supra** at 23-24.
[22] Boxberger, Daniel L. 2000. **To Fish in Common: The Ethnohistory of Lummi Indian Salmon Fishing**. Seattle: University of Washington Press, p. 13.
[23] Suttles, Wayne, 1987. **Supra** at 34-35.

> …(F)or peoples of the coast…salmon were a central foodstuff and had a place among the many spiritually powerful beings. Still, salmon was not the only source of sustenance in either the secular or spiritual world of the region's aboriginal inhabitants. With the capitalist transformation of the region that followed European American settlement, Native Americans found themselves wages laborers in the berry fields, hop yards, logging camps, and salmon canneries in the region.[24]

At the close of the 19th century, salmon was still the most important resource of the Lummi people[25], and selling to and working in salmon canneries were perhaps the most important of the new cash wage opportunities.

.

> …(T)he emergence of work for women and men in the canned-salmon industry subtly but significantly altered Indian approaches to salmon. Canners often hired Indian women and children in the processing plants as "extras"…. Their wages were an important source of seasonal income for the family economy as were those of men who fished for the canneries.[26]

Lummi circumstances worsened over following decades.

> Between the turn of the century and the mid-1930's, the Lummis came to be almost totally excluded from the commercial salmon fishing industry. …
>
> …Unable to compete in the commercial fishery, Indian labor found it was no longer needed in canneries as other ethnic groups became more readily available. Many Lummis subsisted by travelling to Eastern Washington or the Fraser Valley to work as migrant farm laborers, as they had done in the late 1800's. Logging and local agriculture also provided some employment, but for the most part this period was one when the Lummis were destitute. They continued to fish, although fishing was limited to reservation waters, and even there they suffered harassment from state officials. …
>
> The combined result of state and local regulation, decreased fishing opportunities, and the unwillingness of the Bureau of Indian Affairs to support any viable alternatives was that the Lummi fishery was debilitated, making 1901 to 1935 one of the worst periods of destitution in Lummi history.[27]

Subsequent to World War II, the fortunes of Lummi fishermen waxed and then waned – as pressure from State of Washington regulators and non-tribal fishers held Lummi catch shares at low levels. But in 1974, Judge Boldt affirmed the Treaty rights of the Lummi Nation (and other treaty fishing tribes) in federal court – and set tribal allocation of

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[24] Boxberger, Daniel L. 2000. **Supra** at viii.
[25] **Supra** at 47.
[26] **Supra** at ix.
[27] **Supra** at 61-62.

salmon harvests at 50 percent. Following the ruling, Lummi harvest of all salmon rose from 190,000 fish in 1975, to 2.6 million salmon in 1985.[28]

Beset by continuing adverse impacts on habitat, declining prices[29], and less favourable environmental conditions, Lummi commercial salmon harvest has declined since 1985 - to approximately 230,000 salmon by 2001[30]. Herring near Cherry Point – another traditional mainstay of the Lummi harvest round, have also declined – from an estimated spawning biomass in 1973 of 14,998 tons, to 4009 tons in 1992, and 1330 tons in 2002[31].

Despite these difficulties, Lummi fishermen still pursue their fisheries – taking twenty different species of fish and shellfish, each at appropriate times and locations during 2001. Dungeness crab is presently the most commercially valuable species[32].

Within the Reservation economy, in 2003, tribally owned governmental activities, gaming and construction provided 73% of total wage jobs and income for the Lummi economy. Fishing (15%) and post-secondary education (12%)[33] provided the remainder[34]. These *cash wage/revenue* impacts continue to be important to the Lummi community, but at the 2000 Census, Lummi per capita income was still only half of that for non-tribal residents of Washington State – and 23 percent of Lummi families were living in poverty[35]. For those Lummis who are engaged in commercial fishing, 50% have no other source of income – while 85% need help paying their everyday bills[36].

Today, the people of the Lummi Nation continue the economic rounds of their ancestors – albeit in altered form. They still consider themselves, first and foremost, *a fishing people.* They seek fish for food – for ceremony - and also for income. For many, no other sustaining option exists. Where abundance of one species, or at one location, declines, they look to other species and locations – as their ancestors did before them. They have thousands of years of experience – right to the present day – with broad swings in year-to-year resource abundance, and are skilled in making adjustments away from scarcer resources and toward resources that are more plentiful. But today, under pressure of expanding development and attendant adverse impacts on stocks, resource downturns have too often not been followed by upswings, or the provision for alternative economic opportunity in subsequent years.

The Lummi also continue to seek additional cash income. As noted, tribally funded jobs in government, gaming and construction dominate the non-fishing job market for Lummi peoples. For some, such wage-based employment provides year-round income. However

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[28] **Supra** at 170.
[29] Primarily due to increased production and marketing of farmed fish.
[30] Northwest Indian Fisheries Commission Data Base.
[31] Center for Biological Diversity, et al. 2004. **Petition** to list the Cherry Point population of Pacific herring. 2004. Submitted to National Marine Fisheries Service. p. 8.
[32] Northwest Indian Fisheries Commission. **Supra**.
[33] A post-secondary institution to train Native Americans is located on the Lummi Reservation.
[34] Lummi Indian Business Council, 2003. **Supra** at 31.
[35] U.S. Bureau of the Census.
[36] Lummi Indian Business Council, 2003. **Supra** at 32.

most still move back and forth between species harvests and wage job opportunities - within seasons and between years - following limited economic opportunity and according to cultural preference. Further, those with permanent wage jobs still say; "If I need extra money, or lose this job, I can still go back to fishing or clamming."

Today, many Lummi, if not a majority, remain near subsistence levels – face limited economic opportunity, particularly off Reservation - and are socio-economically distressed. An understanding of these circumstances, and of the resources base that underlies Lummi hope for future recovery, is critical for appropriate assessment of the potential effects of any project that may be proposed.

3. Implications for Assessing Project Impacts on the Lummi Nation.

a. Lummi Subsistence and Economic Rounds connect impacts from projects occurring at different locations and times.

As the Lummi people follow their present-day **tribal economic rounds** - seeking wages and marine resources – *moving back and forth between natural resource harvests and wage opportunities* – from day to night, from weekday to weekend, from tide to tide, from season to season, and from year to year – **they connect the resources of the Lummi Nation all together**.

Declines in salmon and herring abundances focus more tribal attention – and greater fishing pressure - on other species such as Dungeness crab and clams[37] which may occur at different locations and in different time periods. Loss of natural resource-based incomes may put additional pressure on the already-limited financial resources of the Lummi tribal government – either to provide direct replacement jobs, or social assistance, or both. Loss of income in one season may "punch a hole" in a Lummi's *economic round* – reducing his or her ability to participate in some other economic activity in a subsequent period or subsequent year. For example, enhancement of income from harvesting of clams may allow a Lummi to save money to finance further education, or to accumulate the capital for a down payment on a fish boat.

Additionally, the history of the Lummi people teaches that *abundances fluctuate widely* – and that where abundances are low, retention and/or restoration of appropriate survival conditions (e.g. habitat, water quality) will see fish, shellfish and other Lummi resources return in greater abundance in future years. Lummis often describe this approach to management of their natural resources as *stewardship.*

Consequently, effects from a particular project impact at a particular location during a particular season in a particular year will often extend through other locations, seasons and years – and impacts on Lummi resources and values, together with associated discussion of mitigation and/or compensation, will need to be assessed with such broader interests and interconnections in mind.

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[37] The transfer of attention and fishing pressure from less abundant to more abundant species is also characteristic of some non-tribal fisheries as well.

These interconnections created by the movement of Lummi peoples between locations, time periods, resources and activities – and are reinforced at two other levels.

First, nature provides obvious interconnections between locations, time periods and peoples. The movement of air and of tides, the flow of river and ocean currents, the ranging of species, create interconnections that are recognized by standard environmental impact assessment procedures[38].

Interconnections are also emphasized by Lummi perspective regarding cultural life ways.

> The elders from time immemorial have harmoniously gathered and harvested natural resource materials. Cultural ritual, ceremony, customary practices gave us true meaning. These materials gathered and utilized were an integral part of sustaining the relationship with all the things created. These resources were given to our ancestors to be taken care of and used as materials for our survival and to enrich our life ways.[39]

Such cultural pronouncements may not be entirely understandable by non-Lummis, and will require consultation with Lummi cultural experts. On their face, however, they reinforce the need of impact analysts to recognize a high level of connectedness between Lummi time periods, activities, locations and values.

b. Measurement Scales for assessing Lummi impacts.

Loss of a salmon, or 100 pounds of Dungeness crab, by a person who is living on the edge of poverty, and has few or no alternative economic opportunities, will have a much greater impact than the same loss to a person who is making $50,000 or $60,000 or $100,000 annually[40]. As already noted, many Lummi harvesters of marine resources are faced with adverse circumstances – living under or near the poverty line.

Analysts are consequently enjoined from simply *adding up harvest numbers* or *revenue* of *salmon, crab, etc.* – comparing those results to far larger numbers associated with projects – and concluding that *impacts on the Lummi are small.* The correct context for assessment of project impacts on the Lummi is <u>not</u> the circumstances and scale of a particular project – but the circumstances of the Lummi people. Measurement scale must reflect these Lummi circumstances and values to be meaningful.

c. Assessment of *Cumulative Effects* is of Particular Importance to the Lummi Nation.

The subsistence base of the Lummi Nation is narrow – consisting of Treaty-protected marine and other natural resources, and limited economic activities that are most likely to prove sustainable when conducted on or near the Lummi Reservation. As also discussed,

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[38] Following federal guidelines, the term *environmental* is taken to include biophysical and human effects.
[39] Lummi Schelangen Department. Pamphlet.
[40] Economists describe such differences as *distributive issues.*

the Lummi resource base is under ongoing pressure. Consequently, identification of *cumulative effects* from a proposed project considered together with impacts from other projects or trends initiated in the past - or concurrently - will provide important insight in understanding the dynamics of Lummi present circumstances and future expectations.

Given past adverse impacts, and present Lummi circumstances, the Lummi Nation must take care to avoid further adverse impacts *of any magnitude* on the resource foundations to their material and cultural world. They must further assure that fully adequate alternative measures are implemented if/when such adverse impacts cannot be avoided.

Consequently, information on cumulative trends and effects will strongly influence the perspective of the Lummi Nation with respect to project-related cooperation and co-development actions – and respecting reasonable measures for benefit sharing, avoidance of adverse effects, mitigation and compensation associated with a proposed project.

VI. Assessing Project Impacts on the Lummi Nation – A Summary.

This guide is intended to assist project proponents in understanding the socio-economic circumstances, cultural perspectives and legal status of the Lummi Nation. The Lummi maintain a *government-to-government relationship* with the United States – and are protected from a broad range of adverse project effects by the Treaty of Point Elliot, by the tribal trust obligations of the federal government, and by a variety of other laws. Consequently, improved understanding of *Lummi perspective* concerning potential projects and their impacts will increase the likelihood of success for project managers and impact analysts.

The Lummi are an ancient people, with patterns of material and spiritual activity that have evolved over many centuries. Today, the base for sustaining Lummi economic, social and cultural well-being has narrowed – and the Lummi Nation takes great care in examining the potential effects of projects that may benefit or harm their people.

In this spirit, the Lummi Nation seeks a cooperative relationship, or even partnering, with potential developers at project outset – and will welcome projects that incorporate positive effects for their tribal people.

To make such a determination, the Lummi will seek adequate detailing of expected project-related changes to tribal resources and activities – as well as committed discussion of avoidance, mitigation and compensation where expected impacts are adverse.