

# **Central Coast Land and Coastal Land and Resource Management Plan**

## **Northern Plan Area Economic Opportunity and Barriers Study**

**Central Coast- Outer Coast- Hypermartime Zone  
Central Coast- Middle Coast- Maritime Zone  
Central Coast- Inner Coast-Submaritime Zone**

Researched and prepared by:  
Patricia McKim  
Box 186  
Bella Coola, British Columbia  
V0T 1C0  
250-982-2598  
Email: [patricia@centralcoastbc.com](mailto:patricia@centralcoastbc.com)

Disclaimer – this report does not necessarily reflect the official  
views or position of the Province of British Columbia or Agencies

Printing provided courtesy of the Land Use Coordination Office through funding  
from the Crown land Use Planning Enhancement Program of Forest Renewal B.C.



# Table of Contents

<b>Summary:</b>	<b>3</b>
<b>1. Outer Coast (Hecate Lowlands) Eco-section Overview:</b>	<b>13</b>
1.1 Communities within the Outer Coast (Hecate Lowlands):	13
1.2 The Evolution of Economic Development in the Hecate Lowlands:	15
1.3 Tourism: Outer Coast	16
1.4 Commercial Fishing: Outer Coast	19
1.5 Aquaculture: Outer Coast	20
1.6 Forestry: Outer Coast	22
1.7 Botanicals: Outer Coast	23
1.8 Minerals: Outer Coast	25
1.9 Water: Outer Coast	26
<b>Tables: Hecate Lowlands</b>	
Table 1A Tourism attributes and opportunities for the Hecate Lowland	28
Table 1B Commercial Fishing Opportunities & Barriers for Hecate Lowlands	31
Table 1C Potential Aquaculture Opportunities in the Hecate Lowland	33
Table 1D Forestry Opportunities and Barriers in the Hecate Lowlands	33
Table 1E Mineral Opportunities for the Hecate Lowlands	35
Table 1F Water Opportunities for the Hecate Lowlands	37
<b>2. Western Hemlock Middle Coast Eco-section Overview/</b>	<b>38</b>
2.1 Communities	39
2.2 Planning Unit Overview/ Economic Opportunities and Barriers	40
2.3 Tourism: Middle Coast	41
2.4 Commercial Fishing: Middle Coast – Western Hemlock Zone	43
2.5 Western Hemlock Zone: Middle Coast- Forestry:	44
2.6 Botanical Forest Products Western Hemlock Zone- Middle Coast	47
2.7 Water: Fresh Water / Bottling/ Export: Middle Coast	48
2.8 Minerals Western Hemlock Zone: Middle	49
<b>Tables: Western Hemlock Middle Coast</b>	
Table 2A - Tourism attributes and opportunities by planning unit	51
Table 2B Opportunities & Barriers Commercial Fishing- Middle Coast	57
Table 2D Western Hemlock Zone- Middle Coast- Forestry	58
Table 2E Botanical Overview	60
Table 2F Water Potential	63
Table 2G Western Hemlock Zone: Middle Coast -Minerals	64

### **3. Western Hemlock Inner Coast Eco-section Overview ..... 66**

3.1	Forestry; Inner Coast.....	67
3.2	Botanical Forest Products:Inner Coast.....	71
3.3	Agriculture: Bella Coola Valley.....	74
3.4	History of Commercial Fishing.....	76
3.5	Tourism Overview: Inner Coast.....	79
3.6	Mineral Development: Inner Coast.....	82
3.7	Water: Inner Coast .....	83

#### **Tables Western Hemlock Middle Coast**

Western Hemlock Inner Coast: Forest Cover Overview- .....	85
Botanical Forest Products: Inner Coast.....	102
Commercial Fishing Opportunities and Barriers: Inner Coast.....	103
Tourism: .....	106
Recreational Sports Fishing Opportunities (Salt Water Only).....	117
Western Hemlock Inner Coast: Mineral Rating.....	118
Water Development Opportunities: Inner Coast.....	121

### **4. Central Coast New Industry Overview**

4.1	Water: Overview of Industry.....	122
4.2	Mineral development: Overview of potential Central Coast industry: ...	124
4.3	Fish and wildlife inventory overview for commercial, recreational and guiding opportunities.....	130
4.4	Estuary and Terrestrial Birds: .....	133
4.5	Botanical Forest Products: Potential industry information and Central Coast inventory overview.....	138

[illegible]

Scale 1:1500000

## **Central Coast: Land & Coastal Land and Resource Management Plan Northern Plan Area Economic Development Opportunities and Barriers Study**

### **Summary:**

The Central Coast Land & Coastal Land and Resource Management Plan is perhaps the largest and most diverse area in the province and the most controversial.

The Northern Plan Area covers more than 30,000 square kilometers and has a population of roughly 5000 residents, which equates to 6 people per hectare.

The area is one that has been and will continue to be rich in natural resources, a diverse and wondrous landscape, and residents who rise to the call of the entrepreneurial spirit while working in harsh conditions. Economic development history over the past hundred years is a complicated and sad story of exploitation of resources while at the same time reducing local communities' ability to sustain themselves. During the 1950's and 1960's the centralization of product development occurred in the two key industries that had sustained the communities, forestry and fishing. Job loss was extreme and unemployment rose to high levels very quickly. In the 1970's statements were made by the BC Government that if regional development did not occur that the communities of the Central Coast would eventually fail with residents becoming unskilled and not having entry into the job market. Unemployment levels are now at the highest they have ever been in all communities with the exception of Oweekeno and Klemtu. 90% of forest related employment comes accrues to non-residents, the majority of commercial fishing boats that fish the area come from outside of the region and government related employment is now the highest employer in the region. This puts the residents of the Central Coast in a precarious position. The isolation of the area has prevented communities from developing good partnerships and tackling regional issues from a solidarity position. Better transportation and communication systems have allowed for more dialogue and information sharing to occur. All communities within the Central Coast have very similar economic development concerns, plans and a desire to be actively involved in resource management, employment and the direction of their own future.

The following document has been divided into three separate units which reflect the three distinct biogeoclimatic zones of the region. Hypermaritime of the Outer Coast, Maritime of the Middle Coast and Sub-maritime of the Inner Coast. Each zone tends to have its own distinct forest cover type, plant communities, fish and wildlife, tourism attributes, water potential and mineral occurrence. Some zones have been exploited for their resources more than others have. It is evident that the highest value forests are in young regeneration and that some fish resources have either disappeared or are in serious decline. There are new untapped opportunities available that may have value to explore.

Over the long term the prospects for integrated community economic development are very good. In the short term difficulties remain. There remain significant opportunities in all sectors, though in forestry and fishing there are fewer resources than in previous times. Wiser use of remaining resources may sustain communities on a permanent basis. The following information has been written for the communities and residents of the Central Coast, which may assist them in their future direction and endeavors.

#### Income Dependencies: Northern Plan Area

Sector	Employment Dependency			Risk
	1972	1994	2000	
Forestry	63%	27%	2.75%	High
Mining	0%	0%	0%	
Fishing / Trapping	25%	9%	5%	High
Agriculture	0.3%	2%	1%	Low
Tourism	0.2%	6%	6%	Growth
Public		33%	35%	Medium
Other	11.95	13%	14%	Medium
Pension		6%	6%	Low
UI/ Social/ Transfer Payment		17%	30.25%	High

#### Tourism: Northern Plan Area

Nearly 22 million overnight stays were recorded in British Columbia in 1999. Over 15 million passengers moved through the Vancouver Airport while 21 million passengers went on board BC Ferries vessels. Over 11 million dollars in revenue was spent on room revenue for fishing lodges and nearly one million passengers floated by the Central Coast via cruise ship to Alaska. The Jones Act prevents larger cruise ships from stopping in the plan area. Tourist numbers to the Central Coast seem evenly split between the inner and outer coast, while the middle coast has the lowest numbers. About 30,000 visitors reach Bella Coola by Highway 20 from Williams Lake, 30,000 travel by air throughout the Central Coast, about 10,000 per year travel on BC Ferries. Marine pleasure boat traffic is difficult to assess due to the remoteness of the area.

The majority of visitors are target specific related to sports fishing both fresh and salt water, with a large portion destined to the outer coast sports fishing lodges. The Dean River is also a target for steelhead and enjoys a steady clientele. The Bella Coola system also experiences a large number of anglers for the spring and coho season. Catch reductions are expected to occur for both species. Steelhead and cutthroat are non-retention.

The tourist season has traditionally been short, from late June to early September, with a small-extended season into the beginning of October for river coho fishing. Tourism room revenues have increased 75% between 1992 and 1997. Tourism accounts for about 10% of revenue generated. With the decline in the coho stock and fresh water fishing restrictions this clientele has been significantly reduced. Winter tourism visitors have



been non existent but recently the opportunity for extreme winter sports (snowboarding) in Tweedsmuir Park (Rainbow Range) have been tested with very good results using helicopter to transport clients. Snowmobiling in the area is world class but has not developed into a destination other than for local people and camperized traffic that stay on site. The ski hill is used by locals, as are the cross-country ski trails. Both have potential for increased use but locals are protective of the area and have tried to establish a code of ethic use.

Eco-tourism as a new promotion idea is gaining some interest with both the sportsfishing lodges and the guide outfitters. The sports fishery and eco tourism if generated towards remote lodges leaves little revenue in the communities and employs few if any local residents. The exceptions are found at Shearwater, the lodge at Ocean Falls, Bella Coola valley and the Dean River where local goods and services are purchased and local people are employed.

A recent study by the UN on eco tourism world wide noted that benefits to local workforce and revenue to communities shows an elitist track record of financial benefit only to the entrepreneur with few if any local employment opportunities or revenue flow. Eco tourism and recreational based fisheries directed from a local community base does indeed employ local resident and leaves benefits to local communities. This is not the norm for the Central Coast.

The typical eco-tourist in today's world is on average about 50 years old, they are interested in seeing new sights, being educated about historical and natural history and the outdoors. They are looking for safe adventure, upscale accommodation, exceptional service, meals and entertainment. They enjoy all the amenities and have a preference for comfort. The traditional sports fisherman, which has been the typical tourist traveler falls into two categories: a) comes by air and leaves by air, spending one to two weeks at sports fishing camps and b) comes by camper, is self contained, independent and goes home when he has reached his catch limit. Occasionally this is a family affair and is frequently more common. Expenditures are in fresh food and gas for the trip home. The Discovery Coast ferry is bringing more non-traditional tourists who appear to be spending more time in the area. Tour busses are also appearing whose clients do spend time in local stores and at tourist attractions. Tour bus clients tend to be more senior and not high activity oriented. The Discovery Coast Ferry route is expected to experience steady growth.

Kayaking and marine boating in the area is increasing. Goods and services are purchased and gas for the boaters.

A recent survey (1998) of tourist visitors to the Central Coast rated scenery the highest, food, accommodation second and the service industry moderate to low.

Infrastructure within all Central Coast communities is significantly lacking. The low tax base and small number of residents (30%) paying taxes makes down town beautification and amenity development nearly impossible. Maintenance of tourist sites is always very



difficult due to finances. Reduction in provincial budgets for recreation and road maintenance leaves the existing recreation sites permanence in question. Remoteness and lack of information about the area plus the inability for communities to attract tourism marketing dollars have and will result in slow but steady growth in this sector.

The attributes of tourism features for the Central Coast are extremely diverse and can attract a wide audience but without dollars for investment and infrastructure development in communities the benefits will remain low.

### **Fish and Fish Issues: Northern Plan Area**

In the year 2000, for the first time that anyone can remember, the ooligan did not return to the rivers of the Central Coast. In 1999, the Rivers Inlet sockeye run was in danger of being considered extinct. In 1998, the coho of the Central Coast were not allowed to be captured due to conservation measures. Cutthroat and steelhead stocks continue to be considered lower than historic levels. In the year 2000, the local Central Coast fishing fleet was at their lowest numbers in nearly 100 years of less than 50 boats.

Ocean warming, by-catch, increase in seal and sea lion populations, drift fishery, unknown inventory, weak level of some stock and logging of the massive watersheds of the Central Coast have all blamed for contributing to the decline of a once abundant resource. What is most likely is a portion of these episodes all have contributed to where we are now.

Central Coast commercial fishermen have been more dependent on fishing than most groups in British Columbia. Wages have been low with a higher than average dependence on UI to augment to high unemployment levels in the off season. Lack of alternate employment opportunities prevented year round employment. The hand log program under Ministry of Forests was originally designed to assist in alternative employment but changes to the program in the nineties and high stumpage forced many fishermen from this program.

Processing Central Coast fish has always been a challenge with the largest obstacle being cost of electricity, distance to markets, inability to maintain infrastructure, skill level and poor fishing seasons. Success has of late come in the form of roe on kelp, goeduck and sea urchin. This market is dependent on the Japanese appetite and economy for stability. Bella Bella still operates a fish processing plant and there is an interest by some Bella Coola fishermen to establish a small value added fish plant. Inability for accurately estimating future catch levels makes it difficult to prepare a business plan that will attract investment capital.

Many Central Coast fishermen have taken the buy out package over the past several years. The Central Coast fishing fleet finds difficulty in attracting and keeping fleet maintenance experts, welding services and marine ways. Boats are maintained less regularly, the fishermen are an aging population and few young people are being encouraged to join the fishing fleet. Licensing costs continue to escalate with poor profit margin on catch, increased cost in gear, gasoline, services plus added restrictions and

regulations make for buy out packages to be more attractive. It is more difficult to access the social safety net of UI for local fishermen. In the past several years some local fishermen no longer qualified for UI, as they did not get enough fishing time.

Overall the industry is expected to experience continued decline due to reduced and threatened stocks, weak prices for catch and competition from the salmon farming industry. It is expected that cost of licensing, reduced ability for cost effective boat repair and maintenance and an aging fleet will eventually result in fewer licenses at the community level and more at the corporate level.

If the political climate were to change there could be potential for smaller community based fisheries that specialize in underutilized species. Reduced salmon catches could be managed to add more value per pound to sustainable allocations that are fair and equitable for all residents involved in commercial and value added fish development. If community based fisheries becomes a reality the allocation of resources should be done thoughtfully.

There is uncertainty surrounding the existing salmon stocks that have been enhanced and the Wild Salmon policy. It is an unknown factor what the result of such a choice would be, since all salmon species have been enhanced in some way or another over many years. Existing hatcheries produce future stock, which are estimated to be about 30% of a run, with some years higher and some lower. This is a heavily debated issue and one that has been controversial for some time and will continue to be so.

The native food fishery and the recreational sports fishery continue on most river systems within the Central Coast. Determining recreational catch is done by creel census. Determining native food fishery is by net count. Combined numbers of native food fishery, recreational and commercial catches, estimate escapements. Coho sports fishing has a retention limit but numbers are unable to be determined as there are no recording methods on licenses.

Watershed and habitat restoration activities have been taking place on the Central Coast for several years. Successes have been noted. Watershed and habitat restoration projects are important for increasing spawning and rearing potential. Some water systems appear to be changing and are experiencing reduced water volumes due to consistently low snow pack or retreating glaciers. Improving habitat is a good thing but understanding other factors of the overall picture is important as well.

Projects have been funded through Habitat Restoration and Salmonid Enhancement Program, Forest Renewal, Pacific Salmon Foundation and more recently Fisheries Renewal. Future success of the provincially funded projects hinges more on politics and reallocating financial resources from crown corporations than from more sustainable financial measures.

Both the federal and provincial governments are supportive of aquaculture production to some degree. There are few locations on the Central Coast that are suitable for finfish

aquaculture with the majority occurring on the outer coast. Several aquaculture sites have been developed and are active at Klemtu. There is division amongst local communities regarding aquaculture on the Central Coast.

Atlantic salmon have been sited in some Central Coast watersheds and catches have occurred in salt water as well. This has become an unknown factor with regard to spawning behavior, displacement of indigenous species and overall long-term impacts. With current conditions of salmon species and the introduction of alien species the balances are unknown.

Overall, the conditions for a healthy community fishery are not promising for the next several years. Research and analysis of alternative fisheries should be encouraged as well as potential for small-scale value added plants that operate on the sustainability of the stock.

### **Forestry: Northern Plan Area**

In 1995 an analysis was done on benefits to regional tax base and benefits to the province from forest harvesting the Mid Coast.

#### **Benefits to the Province:**

Stumpage: 1995 Mid Coast:	\$90,000,000
Property taxes paid to the province:	<u>1,000,000</u>
Total benefit to the province:	91,000,000

### **Central Coast Regional District Revenue Sources:**

<b>Source</b>	<b>Amount</b>	<b>Percentage of Total Revenue</b>
Province:	\$227,800	31%
Federal	\$98,400	13%
Local sources ( taxation)	\$409,900	56%
<b>Total</b>	<b>\$735,000</b>	<b>100%</b>

Mid Coast stumpage to province	\$91,000,000	100%
Province to CCRD	\$227,800	0.25%
<b>Total benefit to province</b>	<b>\$90,772,200</b>	<b>98.75%</b>

With 91% of the AAC for the Mid Coast accruing to forest companies who do not have milling operations in the northern plan area and 89% of the workforce permanent residents of outside communities, it is difficult for local people to have meaningful, well paid, continued employment in the forest industry. In 1972 63% of the local workforce worked in the forest industry and today it is less than 20%. Further reductions are expected based on assumptions that the large portion of hemlock is not currently economically viable to harvest. The local workforce only has a guarantee of wood to the end of 2000, at which time, if markets do not rebound and export of raw logs is not permitted then they will be shut down. This will be a serious blow to the Central Coast

economy. There are approximately 50 local workers who contribute nearly 2.5 million in direct benefits to the communities. Outside work force that lives in other communities generate direct benefits to their communities. The high hemlock component, collapse of markets and environmental boycotts could have significant negative impacts on coastal communities and job loss.

Forestry opportunities for First Nations have a great deal of potential due to forest companies, government and environmentalists recognizing the lack of attention that has been given to Oweekeno, Kitasoo, Nuxalk and Heiltsuk communities. It is expected that through partnerships and transfer of AAC that regional development will happen for First Nations. Infrastructure is an issue for many communities. Lack of industrial space, distance to market, high cost of electricity on zone 2 industrial rates, training needs and investment in milling and value added capital requirements are considered barriers to rapid development. These barriers can be overcome.

Forest opportunities for community residents are more difficult as AAC is only accessible through the Small Business Program. Licensees will sell wood to local small manufacturers, but only at Howe Sound prices. Changes to the SBFEP program due to certification and new forestry systems may further limit opportunities.

First Nations and communities have all expressed an interest in community based forestry with Heiltsuk, Nuxalk and the Central Coast Regional District all making applications for community forests in 1999. None of the applications were successful due inability of the applicants to successfully work together to achieve a common goal.

Little Valley Forest Products is the largest value added mill on the Central Coast. This company has invested substantially in developing their capacity and is the first forest company to contribute in a meaningful way to the tax base. Once full investment has been achieved, the potential for over 50 jobs will exist with the ability to add 2500% value to the wood. The barriers to the success of this manufacturer are: chart areas not developed to allow for harvest of cut, hydro electric zone 2 industrial rates, increased cost of gasoline and distance to ship to market. Other problems are the collapse of some markets due to the environmental boycott, investment required to convert bee hive burners, stumpage, new SBFEP regulations and bridging loans on capital investment with only a five year wood supply.

There are several more serious value added manufacturers and product developers within the region that will move value added forward. All have trouble in accessing fibre to carry out their operations on a year round basis. Training programs in value added and saw milling have occurred in Bella Coola and Bella Bella that has increased the skill level and awareness of raw product demand. Accessing training dollars are very difficult, as those interested in the business do not qualify for FRBC or HRDC training dollars as they have always worked as independents. Rough cut dimensional green wood shipments are of interest to many outside value added industries, this product is in high demand. The quality of the wood is considered very good. There is a high level of interest in small-scale value added residents in working with good quality hemlock. Cottage industry in

wood product development is increasing. Most residents believe that value added products will be the way of the future. There has also been success in shipping house logs to the interior. Buyers are interested in first and second growth, pay FOB on site, the demand for this product is high and a good price per cubic metre is paid. There are several local people trained in house log building but have been unable to take this forward due to poor access to logs. Hydroelectric industrial rates, access to industrial land, and lack of wood supply, cost of high-risk loans and distance to markets are ever a barrier.

Species mix and quality is a key factor in determining the success of local forest product development. Through the TSA charting process, the majority of the more merchantable wood is in the hands of major licensees, such as fir, spruce and high quality cedar. The majority of the merchantable wood in the Bella Coola area is not available to the SBFEP.

#### Mid Coast Timber Supply Area Species Mix:

Species	1974	1991	2000
Fir	7%	5%	4%
Cedar	35%	39%	35%*
Hemlock	37%	53%	60%
Spruce	6%	3%	1%

*\*The cedar component is combined with outer coast small cedar and the inner coast larger cedar, also combined is the yellow cedar component. Yellow cedar and outer coast cedar have had minimal harvesting while very little inner coast large cedar remains in merchantable volumes.*

#### Bella Coola LRUP Area: Species Mix

Species	2000 Bella Coola TSA Component
<b>Fir:</b>	1.92%
<b>Cedar:</b>	20%
<b>Hemlock:</b>	77%
<b>Spruce:</b>	1%
<b>Spruce:</b>	1%

Within the context of current forestry legislation there are limited opportunities for communities and workforce to benefit to a large degree. It is apparent that the Central Coast communities have the same goals and objectives in becoming more involved in forest related regional development. How to get there together seems to be another matter. Overall the old days of doing business seem to be over and a new model is emerging, it can be expected that there will be considerable change. What that is will be anyone's guess.

Silviculture in planting occurs to a less degree than previous due to catch up on not sufficiently restocked lands and reduced harvesting due to economic constraints in logging. The majority of the new growing stock is in 0-20 years of age. Some pruning and thinning occurs. Planting crews generally come from outside the region. Pruning and thinning contracts are let at the local level. FRBC funding if reduced in the future

will impact Mid Coast silviculture activities as the Mid Coast is not considered a high priority for silviculture due to many of the areas in poor to medium growing sites.

### **Botanical Forest Products: Northern Plan Area**

This can be considered a potential new industry for the Central Coast. The interest in botanical forest products has risen dramatically over the past ten years. A growing popularity in alternative and traditional medicine, an aging population concerned with nutrition, a keen market for essential oils and a healthy floral industry is attracting more attention to the harvesting of fresh botanicals. There is currently one medicinal local product that is receiving attention for its properties.

The mushroom industry on the Central Coast is a significant generator of seasonal income for many residents with over \$2 million generated in 1999. This unregulated industry is increasingly in conflict with forest harvesting, ownership of the resource and park use. There are several local buyers for mushrooms with good connections to the Japanese markets, local pickers are also available and are knowledgeable about the industry.

Wholesale buyers and markets should be researched. Products that are not too costly to ship in bulk should be a key goal. This could be considered an alternative industry that would augment the mushroom picking industry. Potential barriers would be in the impact on target species, sustainability and marketing of the products.

### **Agriculture: Northern Plan Area**

The only Agricultural Land Reserve (ALR) occurs in the Bella Coola valley. ALR land is designated as such due to its growing capability and close proximity to human settlement. Other areas of the Central Coast may have growing potential but are not identified due to heavy forest cover and remoteness. Bella Coola was once a contributor to providing food for Central Coast communities. Today, much of the ALR land has reverted to small forest cover. Many existing operations produce hay for cattle and horse feed. There is a growing interest in larger, higher producing gardens and fruit production. There is an active farmers market that is very popular. Markets, unless very specialized will remain local due to distance to urban markets and competition from the larger lower mainland greenhouses. There is potential for organic products, but high production costs may prevent that from happening. There is increased potential to transport products to the outer coast communities if BC Ferries extended their season to coincide with the annual harvest. There is potential to deliver summer and fall products throughout the Chilcotin as their growing season is very short. Expect local markets to expand as markets emerge and the higher paying traditional forestry and fishing jobs decline.

### **Minerals: Northern Plan Area**

There has been interest in mineral development on the Central Coast since the late 1800's when the gold rush in the Cariboo began. The heavy forest cover, steep sided mountains and remoteness prevented any significant development other than the Surf Inlet gold mine. The Central Coast has excellent potential for development of some mineral resources. Demand for aggregate, crushed granite and dimensional stone for building is

increasing. Quality of these commodities is considered good to excellent and are relatively close to water transportation corridors. Clay and limestone also have some potential. There is currently an active limestone quarry, an inactive number of previously glacial clay deposits and a high-grade black granite claim within the area. There are also several sand and gravel deposits that are used locally, with a larger interest beginning an environmental review process. There is a resurgence of interest in taking advantage of the new provincial prospectors incentive program. Barriers to development include high cost of development, remoteness of some good deposits, inaccessibility, and conflict on environment target drainages. One downside to mineral development is lack of capital investment, which may equate to a minimal taxation base. Royalty sharing in lieu of taxation with the province between First Nations and Regional governments may have some potential.

#### **Gas and Oil: Northern Plan Area**

The gas and oil deposits occur outside of the Northern Plan area but close enough that some impacts could be felt and would possibly occur near to First Nations territorial area. It is noted here as having a future potential opportunities and barriers for outer coast residents.

#### **Water: Northern Plan Area**

Demand for fresh water for human consumption will continue to increase significantly from now on. Reduced aquifers and continue droughts in many countries and an increasing population will put high demands on Canadian water. The area has high water development potential. There is one water license that has potential for bulk water, several smaller bottling licenses and many domestic use licenses. There are currently no active operations in bottling or bulk exports.

Barriers to development are moratorium on bulk water, bottling size restrictions, current competition, remoteness of area, impact on fish and aquatic resources, lack capital investment for bottling plants and marine structures.



# ***Hecate Lowlands / Outer Coast***

## **Outer Coast (Hecate Lowlands) Eco-section Overview:**

The Hecate Lowland ecosystem is within the Northern Plan Area of the Central Coast. The elevation is generally below 2000 feet. The Hecate Lowlands was heavily glaciated and the topography is characterized by granite outcrops and muskeg. Tree cover with thin soils is sparse consisting of red/ yellow cedar, sitka spruce, lodgepole pine, true fir and hemlock.

The Hecate Lowland has a rich marine environment made up of many complex channels, bays, islands, islets and other unique ecological features. The Hecate Strait is a broad shallow channel that runs parallel to the adjacent mainland and consists primarily of a sand and gravel substrate.

There is a high concentration of Plankton on the eastern side of Hecate Strait. Zooplankton stocks within the strait have been noted to be generally poor due to physical instability and shallow depths. Copepods dominate in northern Hecate Strait. It is highly probable that Ichthyoplankton are found in the area.

Nearly 225 species of fish are found within the Hecate Lowland/ Hecate Strait area. All species play an important role in the marine food chain.

More than 86 species of birds are associated with marine habitat within the Hecate Lowlands. Approximately 20 species breed within the area and the remainder use the area for migration in spring and fall or as a wintering ground. Many species including the pelagic depend on healthy plankton communities.

Marine mammals also rely on the rich resource of the Hecate Lowlands. Nine species of whale and 4 species of dolphin are confirmed within the plan area, as are sea otter, seals and sea lions. Terrestrial birds, mammals and plants further contribute to the complexity. The Hecate Lowlands has a high percentage of red, blue and yellow listed species.

The Hecate Lowlands is beautiful and intricate. Sheltered bays, islands, safe harbours, beaches and investigative opportunities over a vast area exist with minimal disturbance have led to the area to be highly attractive to many users.

## **Communities within the Outer Coast (Hecate Lowlands):**

### **Klemtu:**

Klemtu is the only occupied village in Kitasoo/ Xai'xais territory and is located on the east side of Swindle Island. The people of Klemtu come from two distinct cultural linguistic groups. The Kitasoo component is of Tsimshian origin related to many Nations from the neighbouring north coast including Prince Rupert, Terrace, Port Simpson and

Hartley Bay. The Xais'xais are from the Kwa'kwala language group. There are 300 residents living at Klemtu

Klemtu is situated on a sheltered harbour safe from inclement weather. There is a fuel dock, a float, a well-stocked store, café and an excellent source of fresh water. Kitasoo generate hydroelectric power. Communication systems are up to date with electronic mail service, Internet access, telephone and fax links. There is BC Ferries service to this community.

The Kitasoo are involved in fish processing, hatchery, aquaculture and commercial fishing. Kitasoo people take an active role in all phases of forestry activity. Tourism to the area is increasing. Value-added opportunities in both fishing and forestry are being pursued, as are other small business developments. Transportation, goods and services are also economic generators for this community.

**Bella Bella:**

Waglisla, also known as Bella Bella is located on Campbell Island and is the largest settlement in the outercoast. It is the home of the Heiltsuk Nation with a population of approximately 1400 people. Heiltsuk people trace their lineage to one of five tribal groups. Employment opportunities are currently found in commercial fishing, fish processing, forest activity and value added. Partnerships with forest companies exist and growth in this area will bring new opportunities. Further employment is within band council offices, hospital and schools. There are a number of small business enterprises. Tourism and transportation in goods and services are increasing. Home based and cottage industries are also growing. Bella Bella has a well define infrastructure in hydro electricity (from Ocean Falls), water treatment, docks, fuel, store, merchandise, banking, RCMP and medical services. Telephone, electronic medium and other communication services are up to date. Campbell Island is a port of call for BC Ferries. A paved runway is also on Campbell Island with regular scheduled air service to Vancouver and Vancouver Island.

**Denny Island/ Shearwater:**

Denny Island is situated across from Campbell Island and is a non-native community under the Central Coast Regional District settlement areas. There is a population of approximately 120 residents. Employment opportunities are found in resort employment, tourism, beach combing and hand logging. There are two commercial fish boats and one dive boat. BC Ferries dock at Shearwater. Fish processing did occur but the plant has been closed for several years. There is some cottage industry and home based business occupations. Hydro is generated from Ocean Falls. Communication systems are up to date. A marine service and fuel station is located at Shearwater. Shearwater Marine is the main employer.

**Duncanby Landing:**

This small community is a service center for marine tourism and the commercial fisheries. Gas, diesel, propane, water, showers, laundry and groceries are available. There is also a satellite phone.

**Dawsons Landing:**

Here there is a public wharf with a DFO float. Post office and a well equipped general store. Charts, water, ice, gas, diesel and other products are available. It is a service center for marine tourism and the commercial fisheries.

**The Evolution of Economic Development in the Hecate Lowlands:**

Historically First Nation populations inhabited the Hecate Lowlands year round. The availability of food allowed native communities to remain stable and healthy. Villages were well established and evolved to accommodate food gathering and weather. Reserves were not designed to integrate the relationship to food gathering and seasonal communities.

The early 1900s brought the development of canneries to the Hecate Lowlands. This provided seasonal employment in both fishing and processing. By the 1970s larger boats with refrigeration units made it possible for fish processing to become centralized and coastal canneries closed. The closure of the canneries resulted in the collapse of central coast employment in many communities.

By the 1950s there was an increased interest in the area for sport fishing. Some old canneries were converted into sport fishing lodges, and with the help of American celebrities such as John Wayne the Hecate Strait was promoted as an ideal location for catching “trophy fish”. By the 1980s this area offered some of the best fishing in the world. These fishing lodges target a high-end clientele who pre-book holidays.

Community development and expansion into the service industry for the centralized fishing fleet, especially in marine repairs and fuel also brought an increase in marine tourism.

The economic value of forest harvesting in the Hecate Lowlands has been considered lower than other areas within the plan and there has been no commercial gathering of botanicals.

There are guide outfitters and trappers licensed in the Hecate Lowlands. The target species for the guide outfitters are black bear, grizzly bear, and goat. Local residents have historically trapped; however, it is on the decline.

Mineral exploration occurred in the 1930s, and a gold mine was opened at Surf Inlet, but operations ended with the start of World War II. Post war activity was limited to a limestone quarry, which provided flux to Ocean Falls. This was closed down when the Ocean Falls’ pulp mill closed. A limestone quarry on Aristazabal is becoming active. The only other mining activity in the Hecate Lowlands was for clay.

## **Tourism: Outer Coast**

### **Current Overview:**

As a result of remoteness, lack of road access and cost of travel to the Central Coast there does not appear to be enough people travelling to the area to allow for large economic gains in tourism. Having stated that, nearly 1 million people pass by the Hecate Lowlands on the Inside Passage heading to Alaska via cruise ships.

Fishing lodges are the most significant tourist related industry within the area. There are approximately 28 sports fishing lodges, both fixed and floating. Estimated assessed value of these resorts is approximately \$5 million. These lodges are the biggest generators of tax revenue within the north plan area. Most resorts are family run, but employ approximately 2% of the local population. Average estimated number of employees could be considered 10- direct jobs to the sports fishing about 250. This industry is dependent on a specific high-end clientele who pre-booked.

Changes to regulations and reduction in fish stocks have had an impact on some lodges. Government estimates state that the industry could face a 30% drop in revenue between 1995 and 2000. This may result in mobile lodges moving into other areas to recover clientele.

Kayaking is on the increase. The majority of kayakers arrive on the BC Ferry and disembark at Bella Bella. Although users are increasing, the area is so vast that impacts on the land base are expected to be minimal.

There is an increase in marine boater use, but statistics are not kept for such a remote area. Increased use may be attributed to the improved charts within the Smith Inlet and better-placed fuel stations.

There is one guide outfitter in the area; key species taken are goat, grizzly and black bear.

Refer to table 1A for an overview of tourism attributes and opportunities.

### **Strengths of the Outer Coast -Tourism:**

- The Hecate Lowlands has extremely high tourism values, and is probably one of the most diverse and intact ecosystems within the Central Coast.
- Marine related tourism is the highest economic generator in provincial tourism activity.
- Communities have marine related infrastructure in place (fuel depot, repairs, docks, wharves, groceries and services.)
- Current communication systems are in place.
- World renowned sport fishing lodges have positively identified this area as a holiday destination point
- Solid incremental growth and target clientele for sports fishing lodges
- Potential for increased areas of development

- Access to high quality attractions, interaction with the natural environment
- Abundance of opportunities for clients
- Few development restrictions ( i.e.: no building codes)
- Main salmon migratory corridor and routes for all species
- Key trout, lingcod, rockfish, pacific cod, halibut, other ground fish, crab, prawns, shrimp, urchin, octopus, clam and mussel
- Key marine wildlife viewing (humpback, killer, gray whales, doll porpoise, seal lion colonies, sea otter colonies)
- Key terrestrial wildlife viewing areas (Kermode bear)
- Key pelagic, migratory and nesting bird colonies for bird watching
- Caves, karst, islets, beaches, islands and a wealth of diverse landscape in which to explore offering many experiences for tourists
- Recreation areas, provincial parks offer stability of undisturbed landscapes
- Trophy fly fishing in many lakes for cutthroat, dolly varden, rainbow, kokanee
- River fly fishing for rainbow, dolly varden, cutthroat
- Inside passage = high visual quality retention
- Long recreational fishing season due to passage of fish on migratory route
- High values for kayak and yacht traffic due to close proximity to inside passage, safe harbours and main marine travel corridor
- Fiordland and Hakai Recreation areas key destination points
- Archipelago values and exposed outercoast shoreline
- Very high historical and cultural opportunities that have the potential to be shared (not exploited) with visitors for their values

**Tourism Opportunities: Outer Coast**

- consider target client (eco based specific lodge development)
- consider funding partnerships with target specific groups (agencies for lodge development)
- develop and deliver service oriented training programs that will increase local employment in the industry
- encourage existing lodges to hire a larger local component from communities
- develop and deliver eco tourism certified nature guide programs
- develop and deliver business management programs to ensure the entrepreneurs have the tools to run a successful business
- ensure government guaranteed loans are available for business startups
- ensure mentoring programs are in place to assist entrepreneur for a one year period
- Provincial government (Parks) and local communities work together to allow for park fees to be paid to local communities within the area

- ensure that opportunities exist for local nature tour operators ( For example this could be in existing parks with co-management agreements)
- develop relationships with existing lodges to offer nature guide services that are used as part of the target clientele package

**Barriers – Tourism Outer Coast**

- employment for local communities in existing tourism is minimal, approximately 2% of local people work in the tourism industry in this area
- difficulty in finding well trained local people for employment
- unwillingness to hire local people even if they are trained
- some lodge development restricts other users from beaches (past)
- difficulty in getting foreshore leases
- difficulty in getting financing for remote lodges
- break even is being considered success
- high costs of getting clients in and out
- government agencies need to provide information on time
- poorly timed announcements on closures can kill a business
- government not getting sufficient quantities of licenses to lodges in time for sales/ clients
- decline in traffic due to coast guard visitation fees
- uncertainty in coho fishing limits American visitors
- timing of the fish openings
- out of area travelers, including Americans only hear “ there are no fish left in BC”
- some local communities within the Hecate Lowlands do not have infrastructure in place to accommodate larger group staying longer than a ferry stop.
- some local communities have not determined how they want to fit into the tourism industry

**Threats: Tourism Outer Coast:**

- lack of inventory on marine fisheries that would determine sustainability of target stock
- lack of inventory on coastal birds and plants to determine visitor use impacts especially sea bird nesting colonies
- inability to monitor impact on sea otter, sea lion and other sea mammal colonies regarding human disturbance
- reluctance to share experience knowledge of historical/ culturally significant areas for fear of exploitation
- potential for exploitation of culture if communities do not determine how they want to operate

- potential for communities not to succeed in tourism if infrastructure does not meet the needs and demands of increased visitors
- industrial use could be detrimental to ecological uniqueness
- potential deterioration from overuse on sensitive areas depending on increase in visitor use in the future
- lack of park staff to determine impacts from visitor use
- government regulations and decisions on allocation, closures
- if recreation areas become parks there is potential to eliminate those areas from current guide outfitters ( i.e. licensed guiding opportunities)

## **Commercial Fishing: Outer Coast**

### **Current Overview:**

Within the Hecate Lowlands, the communities of Klemtu, Bella Bella and Denny Island are involved in the commercial fishery. This area falls under DFO's licensing areas 6, 7, 8, 9, and 10.

The commercial fleet at Bella Bella is approximately 40 boats. By 2000 it is probable that the fleet will reduce by 50% as a result of the federal buy back program. The Heiltsuk fishing fleet consists of about 20 gill net, five seine boats and 30 small punts.

There are licenses for the salmon, herring spawn on kelp and clam fisheries in Bella Bella. There is some involvement in cucumbers, urchin and geoduck. Bella Bella holds a communal herring license. During the commercial fishing season about 90 people are employed in icing, packing and preparing seafood, such as herring, spawn on kelp, geoduck and sea urchins. The clam industry seasonally employs about 50 diggers.

Coho, sockeye and chum salmon are enhanced at the local hatchery. A co-management department is responsible for all local fishing. The co-management agreement is between the Heiltsuk First Nations and the Department of Fisheries and Oceans.

There are no commercial fishing boats in Klemtu, however there are 15 herring license, six cucumber licenses and three urchin licenses. The high set up costs for this industry is a barrier for entry.

A hatchery that enhances chum and coho salmon is located at Klemtu. This facility employs three full time and six part-time workers over a three-week period. The Kitasoo are involved with aquaculture development. One farm is now operating and a second site is planned for the spring. The existing farm employs approximately four full time residents and expects to increase the employees by four in May 2000 and an additional three by November 2000.

There are three residents working in the fishing industry out of Shearwater; two commercial and one diver. Licenses are in halibut, salmon and cod. The fish plant has been closed for several years.



Refer to table 1B for an overview of potential opportunities for a commercial fishery in the Hecate Lowlands.

**Opportunities within the Commercial Fishing / Processing for Outer Coast Communities:**

- move to community based fishery (terminal fishery for communities)
- experimental fishery in non target and target species
- process and market unique value added products
- find mechanism to better access resource
- aquaculture in fin fish, shell fish, shrimp fishery and seaweed
- explain the terminal and community based fishery
- partnerships with aquaculture and value added processors
- profile central coast products to higher end market
- better training and management programs
- better training in productivity
- ensure longer seasons for fishery to stabilize localized service and maintenance industry ( a key point to continuing cost effective and well maintained fleet)
- move to smaller more regionalized processing and development
- develop partnerships between communities to potentially share resources, information and stock for value added opportunities

**Barriers: Commercial Fishing/ Processing- Outer Coast**

- significant reduction in Bella Bella / Klemtu commercial fleet
- reduction in commercial fleet impacts ability to have enough stock for value added plants
- local loss of boats and licenses prevents long term planning for value added production and investment
- employment options reduced with inability to remain in the industry due to high cost (infrastructure degradation and loss of goods and services to fleet)
- reduces opportunities for youth to stay in community

**Aquaculture: Outer Coast**

**Current Overview:**

Although aquaculture is dependent on several key factors, it is site specific. Water quality is essential for fish survival; therefore the depth, salinity, temperature, oxygen content and flushing action must meet specific targets. Protection from strong winds and open water is also important. Finally the facility must have financial support.

A number of areas have been identified within the Hecate Lowlands as having potential for aquaculture. Refer to table 1C for an overview of the operation type and site potential. Hecate Lowlands has highest Northern Plan area rating for aquaculture sites.

Communities have identified an interest in aquaculture development for the following species:

- fin fish in both indigenous and non indigenous stock
- goosdick
- mussels
- clams
- sea urchin
- seaweed
- partnerships with existing industry

The following species are presently being enhanced in the Hecate Lowlands.

- chum
- pink
- coho
- chinook
- sockeye

There are several clam beds that are seeded for commercial use.

**Opportunities: Aquaculture Outer Coast**

- higher employment levels in communities
- partnerships and expertise can be attracted to communities
- fish close to source
- new ventures will include local residents
- new ventures by local residents will control resource
- investment in plan area
- goods and services from plan area residents and businesses
- product development may be a potential

**Barriers: Aquaculture- Outer Coast**

- concern over health of natural resource
- want accurate picture of natural resource and inventory before proceeding
- want to know impacts
- fear of escapements of Atlantic's
- fear of spread of disease
- new science over short period of time
- division in attitude regarding wild vs. bred
- some communities want moratorium to continue

- some communities want better and increased access to natural resource rather than become involved in aquaculture
- fear that this new industry will not include local people

## **Forestry: Outer Coast**

### **Overview**

Harvesting operations within the Hecate Lowlands is minimal. This is a result of lower quality stands generally over 120 years old. Much of the forestland is outside the operable land base and is therefore considered non-productive. Pine, red and yellow cedar, hemlock and amabilis fir are found throughout the area. Harvest operations in this area will target specific species and quality.

The forested land base within the Hecate Lowlands has a large volume of trees that may not be economically viable, by today's standards, to harvest and produce forest products on a global market.

However some species that are perfectly good for product development are not merchantable at the current time due to changing global markets and high cost of production. Export of these species to Japan and other overseas markets indicate that the raw product is very much a market commodity- it just has lower value in British Columbia's economic climate.

As a result of low harvesting operations in this area, local communities have the unique opportunity to develop a high valued product while ensuring a sustainable cut. Communities should ensure they have access to the higher quality species as well as the underutilized species.

### **Forest Sector: Opportunities Outer Coast**

- First Nations will have access to wood supply
- non native residents may have access to small direct sales for cottage industry
- partnerships with licensees will access wood to First Nations communities
- willingness on part of government will put tenure up for First Nations communities
- First Nations communities have completed their forest sector strategies and are working to achieve these goals
- partnerships in training are readily available to First Nations if value added is part of their strategy
- Kitasoo generates their own hydro electric energy thereby potentially reducing costs
- partnerships within communities will assist in sharing resource and create good will

### **Forest Sector: Outer Coast Barriers**

- distance to markets and transportation costs may be a barrier if product is not high value

- may have to ship raw logs to generate revenue
- environmental boycott of Central Coast wood products may be a barrier
- Bella Bella and Denny Island on zone 2 hydro power rates which may be prohibitive to cost of product development
- target species such as cedar may be unavailable due to being in licensee chart area
- species available for communities may not be of sufficient quality or quantity for successful development
- non First Nations within the area do not have access to same opportunities as First Nations

Refer to Table 1D for an overview of forestry opportunities and barriers.

## **Botanicals: Outer Coast**

Hecate Lowlands are within the Central Very Wet Hypermaritime Coastal Western Hemlock Variant (CWHvh2) biogeoclimatic zone. The dominant vegetation is western red cedar, mountain and western hemlock and yellow cedar. True fir, lodgepole pine and sitka spruce are secondary species. The forest understory includes salal, Alaskan blueberry, false azalea, deer fern, step moss and lanky moss with minor amounts of fern-leaved gold thread, skunk cabbage and green sphagnum.

The adjacent biogeoclimatic zones are the CWHvh1, CWHvm1 and MHwh. The following compares the vegetation cover to that of the CWHvh2.

### **CWHvh1:**

- less yellow cedar and lodgepole pine, more true fir
- rare fern-leaved goldthread, skunk cabbage and green sphagnum
- evergreen huckleberry present

### **CWHvm1:**

- rare yellow cedar, lodgepole pine, fern-leaved goldthread, skunk cabbage and green sphagnum
- less red cedar and salal, more true fir
- some Douglas fir on dry south facing slopes

### **MHwh:**

- over 50% mountain hemlock with no salal.

In the past ten years the interest in forest botanicals has risen dramatically. The scientific acknowledgement and growing popularity of alternative and traditional medicine, an ageing population concerned with nutrition, the keen market for essential oils and a healthy floral industry is directing more attention to the harvesting of forest botanicals.

Presently no harvesting of forest botanicals exists in the Hecate Lowlands. The natural abundance and floral species of this region reveals strong potential for research and development of a forest botanical commerce. Of the 211 forest botanicals identified in British Columbia, at least a dozen are present in the Hecate Lowlands in sufficient quantity to warrant study for harvesting. For further information on botanicals in the central coast refer to the appendices at the end of report.

**Strengths: Botanicals- Outer Coast**

- an untenured, underused resource that can be exclusively used by the people of the Hecate Lowlands
- natural abundance and diversity of habitat in Hecate Lowlands offers good potential for some type of industry to occur
- employment base at Bella Bella, Shearwater, Klemtu and Ocean Falls
- cultural background in harvesting botanicals already exists and there is a willing labour pool
- buying stations and depots could be located within each community
- transportation infrastructure direct to Vancouver already exists
- barge and ferry transportation to other areas already exists
- botanical products for medicine in high demand world wide- niche markets could occur if communities wished to share their traditional products

**Opportunities: Botanicals- Outer Coast**

- key opportunity : salal
- community or individuals run buying stations & creates new industry
- new employment opportunities for isolated communities
- training would enhance profit and support the entrepreneur
- diversify the economy
- increase awareness of area for commercial production
- ability to ship direct to market
- cottage industry on finished products could occur with training programs

**Weaknesses: Botanicals- Outer Coast**

- no impact analysis of extraction
- current lack of knowledge about the industry within communities
- no local buyers at current time
- distance to market
- no liaison with botanical industry currently exists

**Threats: Botanicals- Outer Coast**

- uniqueness of ecosystem could be compromised if not done sustainably

- lack of scientific knowledge about impacts of commercial harvest on ecosystem
- conflict with timber harvesting

## **Minerals: Outer Coast**

### **Overview:**

The Hecate Lowlands have the highest mineral rating within the plan area. The geological evolution of the Hecate Lowlands indicates wide spread granite materials, with skarn deposits showing a prevalence of garnet, graphite, gemstones, magnetite, gold, copper, silver, zinc and molybdenum. Past explorations have identified a potential for extraction, but the overall specific inventories for the plan area are poor. The high cost of access to this region has prevented further exploration.

Limestone quarrying has occurred over the past fifty years. Crystallized limestone from the Hecate Lowlands has been used primarily as a whitener in the pulp process. The limestone/ marble is crushed. The crushed rock is also used in paint, plastics and as industrial filler. There is a demand for high quality limestone and marble cants for the dimension stone industry.

Granites are the most abundant rock in the area. A variety of colours are evident including a high quality black granite. Further exploration is needed to determine if this high quality vein is isolated or if it occurs with greater frequency.

Deposits located close to tide water can be barged with minimal development costs, making them the most economical area for development. However it is important that only the highest quality of stone is target in order to cover the high development and transportation costs.

The plan area has a wide variety of different types of stone. All of the rock that exists is quarried elsewhere in the world and imported into British Columbia for the use in stone projects.

### **Other Mineral Deposits: Outer Coast**

Many other opportunities exist within the marine placer environment of plan area but until prospecting, exploration, research and development occur, these opportunities may not be realized for some time

There is an interest in gas and oil exploration within Hecate Strait. Oil exploration has not occurred for the last 15 years as there has been a moratorium on oil and gas. Recently there has been discussion about lifting it. A portion of Milbanke Sound may be within the oil exploration area.

Refer to table 1E for an overview of potential mining opportunities in the Hecate Lowlands.

**Opportunities: Mineral development- Outer Coast**

- opportunity to develop overall inventory and plan for mining development
- new opportunities that have previously not existed
- prospecting opportunities are possible with education and training for local residents who may be interested in new ventures- new prospector program
- higher level of interest for opening up new areas both provincially and within the industry
- small scale cottage opportunities may exist in clay and gemstone industry
- larger investment and development would train and employ local residents
- joint ventures are possible between industry, government and communities in larger deposit development
- employment in the mining industry generates high income for workers

**Barriers: Mineral development- Outer Coast**

- lack of research and development dollars to identify growth potential
- communities may be opposed to mining development or removal of natural resource
- lack of inventory information available
- remoteness of area and geographical siting of mineral deposit may be prohibitive
- protection of areas would eliminate development

**Threats: Mineral development- Outer Coast**

- Hecate Lowland ecosystem may be compromised depending on type and scale of development
- outcome of LRMP may impact scale of development
- may be international opposition for development
- world wide markets may be saturated depending on mineral identified

**Water: Outer Coast**

**Overview:**

While much of the outer coast is muskeg and areas where there are fewer opportunities for fresh water, there are excellent opportunities within the larger lakes and river systems that have good marine access.

Opportunities for fresh water bottling at the current time ( due to bulk export moratorium) should be located close to communities that have a committed workforce, good hydro electrical capability and the ability to house a bottling plant.

Refer to table 1F for an overview of potential fresh water sites in the Hecate Lowlands.

**Water Potential Opportunities: Outer Coast**

- consistent water quality from larger lakes that have marine/ barge access



- potential to allow for larger export quantities with no bottling facility near source if bulk water moratorium is lifted
- develop process facility within communities that have infrastructure potential : Klemtu, Bella Bella and Denny Island ( must be located in close proximity to services)
- partnership development to assist with bottling / barging infrastructure

**Water Barriers: Hecate Lowland**

- moratorium on bulk water may prevent acquisition of investment dollars
- electrical capacity or cost within community may prevent production to be feasible
- current bottled water demand may be met by existing producers
- lack of information regarding development, production and marketing

**Table 1A Tourism attributes and opportunities for the Hecate Lowland**

Plan Unit	Attribute	Special Feature	Current Use	Potential Opportunities	Other
<b>N1 Princess Royal</b>	<ul style="list-style-type: none"> <li>• Bernard Harbour</li> <li>• Emily Carr</li> <li>• Laidlaw</li> <li>• Aitken Island</li> <li>• Racey Inlet</li> <li>• Smithers Island</li> </ul>	<ul style="list-style-type: none"> <li>• Wildlife</li> <li>• Safe Anchor</li> <li>• Kermode</li> <li>• Grizzly Bear</li> <li>• Red Blue Yellow</li> <li>• Listed Plants and Animals</li> <li>• Waterfalls</li> <li>• Estuaries</li> <li>• Rivers</li> <li>• Lakes</li> </ul>	<ul style="list-style-type: none"> <li>• Guided fishing</li> <li>• Kayak</li> <li>• Floating lodges</li> <li>• Boating</li> <li>• Eco tourism</li> </ul>	<ul style="list-style-type: none"> <li>• Unique guiding</li> <li>• Bird watching</li> <li>• Wildlife viewing</li> <li>• Exploring</li> <li>• Fly fishing</li> <li>• Culture</li> </ul>	<ul style="list-style-type: none"> <li>• High Visuals</li> <li>• Timber Values</li> <li>• Mining</li> </ul>
<b>N3 Swindle Price</b>	<ul style="list-style-type: none"> <li>• Cann Inlet</li> <li>• Goat Cove</li> <li>• Grant Anchor-age</li> <li>• Jackson Narrows</li> <li>• Fiordland</li> </ul>	<ul style="list-style-type: none"> <li>• Red Blue Yellow listed species</li> <li>• Migratory Bird Path</li> <li>• Grizzly</li> <li>• Boat Haven</li> <li>• Beaches</li> <li>• Reefs</li> <li>• Islets</li> <li>• Rivers</li> <li>• Lakes</li> <li>• Waterfalls</li> </ul>	<ul style="list-style-type: none"> <li>• Kayak</li> <li>• Lodges</li> <li>• Eco tourism</li> <li>• Camping</li> <li>• Boating</li> </ul>	<ul style="list-style-type: none"> <li>• Unique guiding</li> <li>• Bird watching</li> <li>• Plants</li> <li>• Wildlife viewing</li> <li>• Fishing</li> <li>• Sea otter</li> <li>• Diving excursions</li> <li>• Exploring</li> <li>• Culture</li> </ul>	<ul style="list-style-type: none"> <li>• High visuals</li> <li>• Klemtu</li> <li>• Goods &amp; services</li> <li>• Ferry</li> <li>• Fuel</li> <li>• High timber</li> </ul>
<b>N4 Don Yeo</b>	<ul style="list-style-type: none"> <li>• Inside Passage</li> <li>• Estuaries</li> <li>• Eilerslie Lake</li> <li>• Oliver Cove Marine Park</li> <li>• Cruise ship corridor</li> <li>• Islands Islets</li> <li>• Coves</li> <li>• Rivers</li> </ul>	<ul style="list-style-type: none"> <li>• Red Yellow Blue Listed species</li> <li>• Fish values</li> <li>• Grizzly</li> <li>• Lakes</li> <li>• Rivers</li> <li>• Beaches</li> <li>• Estuaries</li> </ul>	<ul style="list-style-type: none"> <li>• Fly fishing</li> <li>• Steelhead</li> <li>• Kokanee</li> <li>• Lake Fishing</li> <li>• Camping</li> <li>• Boating</li> <li>• Wildlife</li> <li>• Unique ecology</li> <li>• Exploring</li> </ul>	<ul style="list-style-type: none"> <li>• Unique guiding</li> <li>• Waterfalls</li> <li>• Trails</li> <li>• Exploring</li> <li>• Wildlife</li> <li>• Birds</li> <li>• Plants</li> <li>• Kayak</li> </ul>	<ul style="list-style-type: none"> <li>• High timber</li> <li>• High visual</li> <li>• Timber harvesting</li> </ul>

Plan Unit	Attribute	Special Feature	Current Use	Potential Opportunities	Other
<b>N8 Dufferin McMullen Group</b>	<ul style="list-style-type: none"> <li>• Portion in Hakai</li> <li>• McMullen Group</li> <li>• Archipelago values</li> <li>• Exposed outer coast</li> </ul>	<ul style="list-style-type: none"> <li>• Sea otter</li> <li>• Red Blue Yellow species</li> <li>• High pelagic bird values</li> <li>• Rare and endangered plants</li> <li>• Visuals</li> <li>• Salt water</li> <li>• Fish</li> <li>• Sea lions</li> </ul>	<ul style="list-style-type: none"> <li>• Kayak</li> <li>• Camping</li> <li>• Exploring</li> <li>• Unique guiding</li> <li>• Fishing</li> <li>• Boating</li> <li>• Culture</li> <li>• Historical</li> </ul>	<ul style="list-style-type: none"> <li>• Kayak-expert</li> <li>• Nature guiding</li> <li>• Storm watching</li> <li>• Beaches</li> <li>• Park use</li> <li>• Marine experience</li> </ul>	<ul style="list-style-type: none"> <li>• Lodges</li> <li>• Parks</li> <li>• High visual</li> </ul>
<b>N9  Bella Bella Denny Hunter</b>	<ul style="list-style-type: none"> <li>• Safe anchor</li> <li>• Beaches</li> <li>• Fresh Water Lakes</li> <li>• Hakai</li> <li>• Codville</li> <li>• Sagar Lake</li> <li>• Troop Passage</li> <li>• Complex channels</li> <li>• Kelp beds</li> </ul>	<ul style="list-style-type: none"> <li>• Trails</li> <li>• Steelhead</li> <li>• Cutthroat</li> <li>• Salt water fishing</li> <li>• Plants &amp; birds</li> <li>• Mammals</li> <li>• Sea life</li> <li>• Grizzly</li> </ul>	<ul style="list-style-type: none"> <li>• Historical</li> <li>• Cultural</li> <li>• WW2site</li> <li>• Lodges</li> <li>• Diving</li> <li>• Fly fishing</li> <li>• Marine cruising</li> </ul>	<ul style="list-style-type: none"> <li>• Service industry</li> <li>• Camping</li> <li>• Guiding</li> <li>• Cultural experience</li> <li>• Historical Tours</li> <li>• Products</li> <li>• Casino at Shearwater</li> </ul>	<ul style="list-style-type: none"> <li>• Bella Bella</li> <li>• Denny Island</li> <li>• Services</li> <li>• Marine repairs</li> <li>• Guiding</li> <li>• Lodge</li> <li>• Ferry terminals</li> <li>• High visual</li> </ul>
<b>N10  Nootum Koeye</b>	<ul style="list-style-type: none"> <li>• Cannery</li> <li>• Beaches</li> <li>• Lakes</li> <li>• Rivers</li> <li>• Islands</li> <li>• Estuaries</li> </ul>	<ul style="list-style-type: none"> <li>• Trails</li> <li>• Steelhead</li> <li>• Cutthroat</li> <li>• Salt water</li> <li>• Fishing</li> <li>• Red Blue</li> <li>• Yellow listed species</li> <li>• Mammals</li> </ul>	<ul style="list-style-type: none"> <li>• Historic</li> <li>• Cultural</li> <li>• Fly fishing</li> <li>• Marine Cruising</li> <li>• Boating</li> <li>• Exploring</li> </ul>	<ul style="list-style-type: none"> <li>• Unique guiding</li> <li>• Historical</li> <li>• Cultural</li> <li>• Eco viewing</li> </ul>	<ul style="list-style-type: none"> <li>• lodges</li> <li>• high timber</li> <li>• forest road</li> <li>• high visual</li> <li>• Hakai</li> </ul>
<b>N13 Calvert</b>	<ul style="list-style-type: none"> <li>• Beaches</li> <li>• Hakai Pass</li> <li>• Streams</li> <li>• Exposed Coast line</li> <li>• Islands</li> <li>• Inlets</li> </ul>	<ul style="list-style-type: none"> <li>• Whales</li> <li>• Red Blue Yellow listed species</li> <li>• Salt water fishing</li> <li>• Mammals</li> </ul>	<ul style="list-style-type: none"> <li>• Kayak</li> <li>• Marine</li> <li>• Boating</li> <li>• Exploring</li> <li>• Camping</li> <li>• Cultural</li> </ul>	<ul style="list-style-type: none"> <li>• Unique guiding</li> <li>• Eco tours</li> <li>• Beach</li> <li>• Storms</li> <li>• Whale watching</li> </ul>	<ul style="list-style-type: none"> <li>• Lodges</li> <li>• Hakai Pass</li> <li>• Low timber</li> <li>• High visual</li> </ul>

Plan Unit	Attribute	Special Feature	Current Use	Potential Opportunities	Other
	<ul style="list-style-type: none"> <li>Islets</li> </ul>				
<b>N16</b>  <b>Fish Egg</b>	<ul style="list-style-type: none"> <li>Beaches</li> <li>Exposed shoreline</li> <li>Islands</li> <li>Islets</li> </ul>	<ul style="list-style-type: none"> <li>Whales</li> <li>Red Yellow</li> <li>Blue listed species</li> <li>Salt water</li> <li>fishing</li> <li>Mammals</li> </ul>	<ul style="list-style-type: none"> <li>High lodge</li> <li>Kayak</li> <li>Beach use</li> <li>Cruise ships</li> <li>High tourism use</li> </ul>	<ul style="list-style-type: none"> <li>whale watching</li> <li>guided eco tours</li> <li>exposed coast guiding</li> </ul>	<ul style="list-style-type: none"> <li>Timber high medium and low values</li> <li>High visual</li> </ul>

**Table 1B Commercial Fishing Opportunities & Barriers for the Hecate Lowlands**

<b>SPECIES</b>	<b>AREA</b>	<b>OPPORTUNITIES</b>	<b>BARRIERS</b>	<b>OTHER</b>
Green Sea Urchin	6 7 8 10	Small potential	Inventory unknown Declining levels	
Purple Sea Urchin	6 7 8 10	Small potential	Inventory unknown Could impact if heavily commercially harvest	
Sea Cucumber	6 7 9 10	Potential	Inventory unknown Could impact numbers if heavily commercially harvested	
Dungeness Crab	6 7 8 9 10	Potential		Could be lack of suitable habitat
Shrimp & Prawn 7 varieties	6 7 8 9	Potential	Minimum escapements now occur	Populations could be exploited
Clam 4 species	7 8 9	Potential	No inventory Fish farms sediment harmful	Must ensure population size is good
Mussel	7 8	Possible Potential	No data	No data
Scallop	6 7 9 10	No data	No data	No data
Goeduck	Not available	Potential	No inventory Overharvest has reduced stocks	
Octopus	6 7	Potential	No estimates of abundance Sustainability not determined	Use of bleach negative to environment Used as bait numbers unknown
Herring	Area 6	Potential	Log storage	Abundance high
	Area 7		Habitat loss	Abundance low
	Area 8 9 10	Potential	Siltation causes problem	Abundance moderate
Pilchard	No info	Potential- future	Overfished to stock collapse	Stocks need to recover
Smelt 2 species	No info	Potential Unknown	No population numbers Abundance and distribution unknown Unknown impacts	
Rockfish 5 species	6 7 8 9 10	Potential Low to High	No current basis for sustainability set Some species stocks seem to be in decline Inventory poor	

**Table 1B Commercial Fishing Opportunities and Barriers**

<b>SPECIES</b>	<b>AREA</b>	<b>OPPORTUNITES</b>	<b>BARRIERS</b>	<b>OTHER</b>
			Highly susceptible to overfishing	
Halibut	6 7 8	Potential	Has suffered from overfishing	Bycatch of trawl fishery Growth of individual declining
Flatfish	6 8 9	Potential	Limited information In size and trends	Need better understanding of numbers
Pollock	No data	Potential good	No inventory information	
Pacific Cod	6 8 9	Potential	Fluctuations in stock numbers	Assessments difficult
Hake	Not yet evident	Potential off shore	Low stock resulting	High commercial fish Migratory path changes
Lingcod Lingcod	6 7 8 9	Potential	Stocks show decline No biological evidence of stock numbers	Protect from over fishing
Dog Fish	No data	Potential	No inventory data	
<b>SALMON</b>	<b>AREA</b>	<b>OPPORTUNITIES</b>	<b>BARRIERS</b>	<b>OTHER</b>
Pink	6 8 9 10	Potential stable	10 has low stocks	Enhanced stock
Sockeye	6 7 8 9 10	Predicted low returns Potential low	Poor escapement levels	Ocean survival Poor Expensive to enhance
Chum	7 8 9 10	Potential Stable Increase in trend predicted		Enhanced stock
Coho	7 8 9 10	Conservation Measures Overfished	Low stock	Enhanced stock
Chinook	6 8 9	Escapement level in area 8 stable	Lower escapement levels in area 6 9	Enhanced stock

**Table 1C Potential Aquaculture Opportunities in the Hecate Lowland**

PLANNING UNIT	TYPE OF OPERATION	SITE ( LOW-HIGH)
N1	Deep sea cages Reaches	Good to medium Good to medium
N3	Deep sea cages	Potential
N4	Deep sea cages Reaches	Potential Medium
N9	Deep sea cages	High to Medium
N10	Deep sea cages	Medium
N16	Deep sea cages	High to Medium

**There is one aquaculture development in planning unit N3**



**Table 1D Forestry Opportunities and Barriers in the Hecate Lowlands**

Planning Unit	Forest Cover	Site Index	Age Class	Height Class	Opportunities	Barriers	Other
<ul style="list-style-type: none"> <li>N1</li> </ul>	<ul style="list-style-type: none"> <li>Pine</li> <li>Cedar</li> <li>Hemlock</li> <li>True Fir</li> </ul>	<ul style="list-style-type: none"> <li>1-1.75</li> <li>17.6-27.5</li> <li>27.6+</li> </ul>	<ul style="list-style-type: none"> <li>5: 81-100</li> <li>6: 101-120</li> <li>7: 121-140</li> <li>8: 141-250</li> <li>9: 250+</li> </ul>	<ul style="list-style-type: none"> <li>0-19.4 max</li> <li>19.5-37.4</li> <li>37.5-64.5</li> </ul>	<ul style="list-style-type: none"> <li>Small scale forestry</li> <li>Value added</li> <li>Botanical</li> <li>Silviculture</li> <li>Partner-ships</li> </ul>	<ul style="list-style-type: none"> <li>Access</li> <li>Capacity</li> <li>Research</li> <li>Lack of investment</li> <li>Current tenure</li> <li>Boycotts</li> </ul>	<ul style="list-style-type: none"> <li>Study Area</li> <li>Salmon Streams</li> <li>Red</li> <li>Blue</li> <li>Yellow</li> <li>Listed Species</li> </ul>
<ul style="list-style-type: none"> <li>N3</li> </ul>	<ul style="list-style-type: none"> <li>Hemlock</li> <li>WRC</li> <li>Pine</li> <li>True Fir</li> <li>Yellow Cedar</li> <li>Sitka Spruce</li> <li>Alder</li> </ul>	<ul style="list-style-type: none"> <li>-1-17.5</li> <li>-17.7-27.5</li> <li>-27.6+</li> </ul>	<ul style="list-style-type: none"> <li>5/6/7/8/9/</li> </ul>	<ul style="list-style-type: none"> <li>0-19.4</li> <li>19.5-37.4</li> <li>37.5-64.5</li> </ul>	<ul style="list-style-type: none"> <li>Small scale forestry</li> <li>Cottage industry</li> <li>Small value added</li> <li>Speciality products</li> <li>Botanical</li> <li>Partnerships</li> </ul>	<ul style="list-style-type: none"> <li>Delicate environment</li> <li>Training</li> <li>Capital invest</li> <li>Management</li> <li>Boycotts</li> <li>Tenure</li> </ul>	<ul style="list-style-type: none"> <li>Red</li> <li>Blue</li> <li>Yellow</li> <li>Listed</li> <li>Species</li> <li>Plants &amp;</li> <li>Birds</li> <li>Higher timber values</li> <li>Protected areas</li> </ul>
<ul style="list-style-type: none"> <li>N4</li> </ul>	<ul style="list-style-type: none"> <li>Cedar</li> <li>Hemlock</li> <li>Pine</li> <li>True Fir</li> <li>Fir/</li> <li>Yellow Cedar</li> <li>Sitka</li> <li>Spruce</li> <li>Alder</li> <li>Cottonwood</li> </ul>	<ul style="list-style-type: none"> <li>-1-17.5</li> <li>-17.6-27.5</li> <li>-267.6+</li> </ul>	<ul style="list-style-type: none"> <li>5/6/7/8/9</li> </ul>	<ul style="list-style-type: none"> <li>19.5-37.4</li> <li>37.5-64.5</li> <li>1-19.4</li> </ul>	<ul style="list-style-type: none"> <li>Small Scale Forestry</li> <li>Value added</li> <li>Unique products</li> <li>Botanical</li> <li>Partnerships</li> <li>Cottage</li> <li>Artisan</li> <li>Innovation</li> <li>Silviculture</li> </ul>	<ul style="list-style-type: none"> <li>Access</li> <li>Delicate Eco-system</li> <li>Boycotts</li> <li>Tenure</li> </ul>	<ul style="list-style-type: none"> <li>Parks</li> <li>Study Areas</li> <li>Little Valley</li> <li>Value Added</li> <li>Tenure</li> <li>Timber Value moderate</li> </ul>

**Table 1B Forestry Opportunities and Barriers**

Planning Unit	Forest Cover	Site Index	Age Class	Height Class	Opportunities	Barriers	Other
<ul style="list-style-type: none"> <li>• <b>N8</b></li> </ul>	<ul style="list-style-type: none"> <li>• Cedar</li> <li>• Pine</li> <li>• Hemlock</li> <li>• Yellow Cedar</li> <li>• Alder</li> </ul>	<ul style="list-style-type: none"> <li>• -1-17.5</li> <li>• -17.6-27.6-</li> </ul>	<ul style="list-style-type: none"> <li>• 5/6/7/8/9</li> </ul>	<ul style="list-style-type: none"> <li>• 0-19.4</li> <li>• 19.5-37.4</li> </ul>	<ul style="list-style-type: none"> <li>• Cedar Red &amp; Yellow</li> <li>• Potential</li> <li>• Cottage</li> <li>• Arts</li> <li>• Botanical</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult terrain</li> <li>• Bogs/</li> <li>• Marginal</li> <li>• Forests</li> <li>• Access</li> </ul>	<ul style="list-style-type: none"> <li>• Low timber values</li> <li>• Red</li> <li>• Yellow</li> <li>• Blue</li> <li>• Listed</li> <li>• Species</li> </ul>
<ul style="list-style-type: none"> <li>• <b>N9</b></li> </ul>	<ul style="list-style-type: none"> <li>• Cedar</li> <li>• Pine</li> <li>• Hemlock</li> <li>• True Fir</li> <li>• Spruce</li> <li>• Yellow Cedar</li> <li>• Alder</li> </ul>	<ul style="list-style-type: none"> <li>• 1-17.5</li> <li>• 17.6-27.5</li> <li>• 27.6-</li> </ul>	<ul style="list-style-type: none"> <li>• 5/6/7/8/9</li> </ul>	<ul style="list-style-type: none"> <li>• 19.5-37.4</li> <li>• 0-19.4</li> <li>• 37.5-64.5</li> </ul>	<ul style="list-style-type: none"> <li>• Cedar</li> <li>• Red &amp; Yellow</li> <li>• Cottage</li> <li>• Botanical</li> <li>• Value added</li> <li>• Small Scale Forestry</li> </ul>	<ul style="list-style-type: none"> <li>• Low timber values</li> <li>• Access</li> <li>• Terrain</li> <li>• Tenure</li> <li>• Boycotts</li> </ul>	<ul style="list-style-type: none"> <li>• High visual</li> <li>• Red Blue</li> <li>• Yellow Listed Species</li> <li>• Study Areas</li> </ul>
<ul style="list-style-type: none"> <li>• <b>N10 only Hecate Lowland Portion</b></li> </ul>	<ul style="list-style-type: none"> <li>• Cedar</li> <li>• Hemlock</li> <li>• True Fir</li> <li>• Spruce</li> <li>• Pine</li> <li>• Yellow Cedar</li> <li>• Cotton-wood</li> <li>• Alder</li> </ul>	<ul style="list-style-type: none"> <li>• 17.6-27.5</li> <li>• 1-17.5</li> <li>• 27.6+</li> </ul>	<ul style="list-style-type: none"> <li>• 9/8/7/6/1</li> </ul>	<ul style="list-style-type: none"> <li>• 37.5-64.5</li> <li>• 19.5-37.5</li> <li>• 0-19.4</li> </ul>	<ul style="list-style-type: none"> <li>• Cottage</li> <li>• Botanical</li> <li>• Value Added</li> <li>• Small Scale Forestry</li> <li>• Silviculture</li> <li>• Partner-ships</li> </ul>	<ul style="list-style-type: none"> <li>• Tenure</li> <li>• Boycotts</li> </ul>	<ul style="list-style-type: none"> <li>• High timber values</li> <li>• High visual</li> <li>• Red Blue</li> <li>• Yellow Listed Species</li> <li>• Study Areas</li> </ul>
<ul style="list-style-type: none"> <li>• <b>N13</b></li> </ul>	<ul style="list-style-type: none"> <li>• Cedar</li> <li>• Pine</li> <li>• Hemlock</li> <li>• Yellow Cedar</li> </ul>	<ul style="list-style-type: none"> <li>• 1-17.5</li> <li>• 17.5-27.5</li> </ul>	<ul style="list-style-type: none"> <li>• 1/2/3//4/</li> <li>• 5/6/7/8/9</li> </ul>	<ul style="list-style-type: none"> <li>• 0.19.4</li> <li>• 19.5-37.4</li> <li>• 37.5-64.5</li> </ul>	<ul style="list-style-type: none"> <li>• Cottage</li> <li>• Botanical</li> <li>• Small Scale Value added</li> </ul>	<ul style="list-style-type: none"> <li>• Visual quality</li> <li>• Boycotts</li> <li>• Access</li> </ul>	<ul style="list-style-type: none"> <li>• Low timber values</li> </ul>
<ul style="list-style-type: none"> <li>• <b>N16</b></li> </ul>	<ul style="list-style-type: none"> <li>• Cedar</li> <li>• Hemlock</li> <li>• Pine</li> <li>• Yellow Cedar</li> </ul>	<ul style="list-style-type: none"> <li>• 1-17.5</li> <li>• 17.6-27.5</li> </ul>	<ul style="list-style-type: none"> <li>• 9/6/7/8/1</li> </ul>	<ul style="list-style-type: none"> <li>• 19.5-37.4</li> <li>• 0-19.4</li> <li>• 37.5-64.5</li> </ul>	<ul style="list-style-type: none"> <li>• Small scale forestry</li> <li>• Cottage</li> <li>• Small value added</li> <li>• Botanical</li> </ul>	<ul style="list-style-type: none"> <li>• Boycotts</li> <li>• Access</li> <li>• Visuals</li> </ul>	<ul style="list-style-type: none"> <li>• Low to high timber values</li> <li>• Visual quality</li> <li>• High</li> <li>• Red Blue</li> </ul>

**Table 1E Mineral Opportunities for the Hecate Lowlands**

Plan Unit	Mineral rating	Evidenced	Activity
N1	Highest/ high/ medium	<ul style="list-style-type: none"> <li>◆ Foliated quartz diorite</li> <li>◆ Foliated granodiorite</li> <li>◆ Purplish, massive diorite, pyroxene diorite, gabbro, norite</li> </ul>	<ul style="list-style-type: none"> <li>◆ past producer</li> <li>◆ showing</li> <li>◆ limestone</li> <li>◆ copper</li> <li>◆ gold/ silver</li> <li>◆ molybdenum</li> <li>◆ tungsten</li> <li>◆ tellurium</li> <li>◆ dimension stone</li> </ul>
N3	Highest to high	<ul style="list-style-type: none"> <li>◆ Foliated granodiorite</li> <li>◆ Foliated quartz diorite</li> <li>◆ Gneiss diorite/ massive diorite</li> <li>◆ Granite</li> <li>◆ Basaltic flows, scoriae/ashes</li> <li>◆ Purplish massive diorite, pyroxene diorite, gabbro, norite</li> <li>◆ Quartz monzonite</li> <li>◆ Metasediments, biotite, hornblende-garnet schist, biotite-garnet-sillimanite schist, metavolcanics, limestone, quartzite</li> </ul>	<ul style="list-style-type: none"> <li>◆ showing</li> <li>◆ prospect</li> <li>◆ copper</li> <li>◆ gold/ silver</li> <li>◆ molybdenum</li> <li>◆ limestone</li> </ul>
N4	High to Medium	<ul style="list-style-type: none"> <li>◆ Foliated granodiorite</li> <li>◆ Foliated quartz/diorite</li> <li>◆ Gneissic diorite-massive diorite</li> <li>◆ Metasediments, biotite-hornblende-garnet schist, biotite-garnet-sillimanite schist, metavolcanics, limestone, quartzite</li> <li>◆ Purplish massive diorite, pyroxene diorite, gabbro, norite</li> </ul>	<ul style="list-style-type: none"> <li>◆ showing</li> <li>◆ prospect</li> <li>◆ kyanite</li> <li>◆ zinc</li> <li>◆ copper</li> <li>◆ gold</li> <li>◆ silver</li> </ul>
N8/N9/N13	High to highest	<ul style="list-style-type: none"> <li>◆ Granite and syenite</li> <li>◆ Foliated granodiorite</li> <li>◆ Basaltic flows, scoriae and ashes</li> </ul>	<ul style="list-style-type: none"> <li>◆ Showing</li> <li>◆ Past producer</li> </ul> <p>N9</p>

**Table 1E Mineral Opportunities and Barriers**

Plan Unit	Mineral rating	Evidenced	Activity
		<ul style="list-style-type: none"> <li>◆ Foliated quartz diorite</li> <li>◆ Purplish, massive diorite, pyroxene diorite, gabbro, norite</li> </ul>	<ul style="list-style-type: none"> <li>◆ Limestone</li> <li>◆ Clay</li> <li>◆ Copper</li> </ul>
N10/N16			<p>N10</p> <ul style="list-style-type: none"> <li>◆ Limestone</li> <li>◆ Graphite</li> <li>◆ Molybdenum</li> </ul> <p>N16</p> <ul style="list-style-type: none"> <li>◆ Rhodonite</li> <li>◆ Limestone</li> </ul>

**Table 1F Water Opportunities for the Hecate Lowlands**

<b>Plan Unit</b>	<b>Water System Location</b>	<b>Type of System</b>	<b>Access</b>	<b>Other</b>
<b>N1</b>	Bernard Harbour	Lake/ river outlets	Unknown marine	Potential
	Chapel Inlet	Fresh water systems	Unknown marine	Potential
	Surf Inlet	Fresh water systems	Unknown marine	Potential
	Racey Inlet	Fresh water systems	Unknown marine	Potential
	Helmcken	Lakes system	Unknown marine	Potential
	Larado Inlet	Various fresh water systems	Unknown marine	Potential
<b>N3</b>	Alexander Inlet	Various fresh water systems	Unknown marine	Potential
	Wallace Lake	Various fresh water systems	Unknown marine	Potential
<b>N4</b>	Snaas Lake	Fresh water lake	Unknown marine	Potential
	Cheenish Lake	Fresh water lake	Unknown marine	Potential
	Walker Lake	Fresh water lake	Unknown marine	Potential
	Emily Lake	Fresh water lake	Unknown marine	Potential -license
<b>N9</b>	Webster Lake	Fresh water lake	Unknown marine	Potential
	Sa(u)gar Lake	Fresh water lake	Unknown marine	Potential
	Croil Lake Upper Lake Bishop Kwakiutl	Fresh water lake	Existing license Community drinking water	Unknown for bottling potential
<b>N10</b>	Koeye Lake/River	Fresh water system	Unknown marine	Potential
	Nootum River	Fresh water system	Unknown marine	Potential
	Draney Lake	Fresh water system	Unknown marine	Potential
	Elizabeth Lake	Fresh water system	Unknown marine	Potential
	Gildersleeve Lake	Fresh water system	Unknown marine	Potential
<b>N16</b>	Doris Lake	Fresh water system	Unknown marine	Potential
	Sandell System	Fresh water system	Unknown marine	Potential- existing processing license
	Hay Lake	Fresh water system	Unknown marine	Potential
	Caroline Lake	Fresh water system	Unknown marine	Potential
	Allard Lake	Fresh water system	Unknown marine	Potential
	Lockahart Creek	Fresh water system	Unknown marine	Potential

# ***Western Hemlock Transition Zone- Middle Coast***

## **Western Hemlock Middle Coast Eco-section Overview/ Economic Development History**

### **Planning Units:**

**N2/**

**Eastern Portion of N4/ Eastern Portion of N5/**

**Eastern Portion of N10/**

**Eastern Portion of N16/**

**Eastern Portion N14.**

### **Eco Section CWHvm1, CWHvm2, ESSFmw.**

The Western Hemlock ecosystem is within the northern plan area of the CCLCLRMP. The area has elevations ranging from 300 to 4500 feet, generally averaging 2500 feet. This area is covered by two mountain systems; to the north the Kitimat Range and to the south the Pacific Range. Lakes and rivers larger than those found in the Hecate Lowlands and the inner coast dominate this area. These large fjord like lakes were formed by glacial gouging. Well drained alluvial soils with deep organic layers make up the valley bottoms. Western hemlock, red cedar and Sitka spruce dominate the valley stands and balsam, true fir and yellow cedar are found at higher elevations. The climate is particularly cool and moist as pacific storms are forced to converge with the mountains. Rainfall is higher than in other parts of the plan area, with increased frequency of storms and heavier accumulations of snow and rain. The following shows the mean annual precipitation at five weather stations in the plan area:

Swanson's Bay	194 inches
Rivers Inlet	113 inches
Ocean Falls	172 inches
McInnes Island (west)	96 inches
Bella Coola (east)	60 inches

Fish are found in all rivers, streams and wet lands, except those descending from steep rock slopes. Commercial and recreational salt-water fishing; as well as, recreational fresh water fishing occurs in this zone. Many red, blue and yellow listed plant, bird, mammal and fish species are found throughout the area. The area has a high presence of black and grizzly bear plus the occurrence of the Kermode bear. Mountain goat, black tailed deer and some moose presence is evident. Interior and coastal migratory, resident and wintering birds use the western coastal hemlock zone. Marine tourism is more common than land based tourism, and there are opportunities for guide outfitters in eco tourism, fishing and hunting.

## Communities

There are two communities in the Western Hemlock area. *This area has overlapping First Nations claims; the outline here indicates community presence only and not territory.*

### Oweekeno:

Oweekeno is located at Rivers Inlet in the southern portion of the region and has a population less than 100. Oweekeno was the center of the region's fisheries with over 14 salmon canneries and a solid commercial fleet. Canneries developed in the area as a result of access to fresh water, proximity to the migratory path of salmon species and a close proximity to the market.

The Rivers Inlet / Oweekeno Lake sockeye run was considered one of the top producers in British Columbia. Today this system is on the endangered list, and sockeye populations are at a critical low and may be considered extinct.

Oweekeno was entirely dependent on the cannery industry for employment and with its collapse the community faced immediate high unemployment. The Oweekeno people have called for resource allocation measures and a fair return to all communities for more than thirty years and still call for agreements within communities not to disadvantage one over the other. In the past five years, some inroads have been made to increase employment in forestry, watershed restoration, fisheries enhancement and habitat restoration. Access to timber for community development through partnerships with licensees is now occurring. Oweekeno has a new school, and a much improved communication system. The high cost of transportation and delivery of goods and services to the community is a constant problem.

### Oceans Falls

Ocean Falls is located at the head of Cousins Inlet and has a population of less than 100. It was established as a sawmill and pulp mill town in 1909. At its height, Ocean Falls had a core population of 3000 people, although much of this was transient. Difficult and distance markets, access to fiber and an aging facility eroded the workforce over the years. In 1968 Crown Zellerbach closed the kraft and sulfite operation of the mill with the loss of 100 jobs. By 1969 discussion to shut down of the mill began, as did discussion about new consideration of timber rights. Crown Zellerbach was successful in an application to change timber licenses solely dedicated to Ocean Falls to joint licenses held by Ocean Falls and Elk Falls. In 1972 Crown Zellerbach announced that the Ocean Falls operation would be phased out by 1973. Ocean Falls wood supply was now directly attached to Elk Falls. The mill had been allowed to become obsolete and justification to shut down occurred. In 1973 Ocean Falls was purchased from Crown Zellerbach by the Provincial Government for \$1 million dollars, this also included the hydroelectric dam, and the Ocean Falls Corporation was formed. The Corporation did not have a wood supply and Crown Zellerbach was not willing to return the licenses to Ocean Falls. Crown Zellerbach did have an obligation to supply the mill until 1975. The Kimsquit drainage had crown licenses that were to expire and the Ocean Falls Corporation applied for the rights to harvest; however, the rights to the timber was given to Doman Industries who traditionally did not have a presence in the mid coast. Ocean Falls was obligated to buy logs on the open market. Although faced with an inefficient mill it was managing to become productive and held several lucrative contracts to supply paper. From

1976 to 1979 large operating costs resulted from weak markets, increased pulp, power and wood costs, machinery failures, increased interest rates on operating loans and a shortage of water. In 1980 the pulp mill was officially closed and on May 31, 1980, at 5:20 p.m. the last employee of Ocean Falls left the mill building.

Wood from the Kimsquit that was destined for regional development on the Central Coast was all shipped to Vancouver and Vancouver Island for milling.

Today there is a core of approximately 50 people at Ocean Falls. Some residents are original pulp mill workers while the rest are new comers looking for an alternative life style. In the summer months the population increases to over 150. The Ocean Falls Corporation no longer exists and the community is operated under an Improvement District. The power company is privately owned and provides power to Ocean Falls, Denny Island and Bella Bella. Employment is found in beach combing, tourism and with the power company. Cottage industry, accommodation, services for the commercial fishing and marine tourism. There is a superb power supply, access to large volumes of water, excellent deep-sea port, good communication systems, stores, post office and a yacht club. There is excellent potential for investment and large industrial use.

## **Planning Unit Overview/ Economic Opportunities and Barriers.**

Notation: N2 is outside the Mid Coast Forest District and the Central Coast Regional District boundaries. Provincial jurisdiction under Ministry of Forests is in the Prince Rupert Forest District and at the local government level under the Kitimat Stikeen Regional District. First Nation's associations within all planning units N2, N4, N5, N10, N14 & N16 are Haisla Nation, XaiXais Nation, Oweekeno Nation, Heiltsuk Nation and Tsimshain Nation.

### **Past Economic Activity:**

The northern part of this study area has a varied history of economic development. The first pulp mill in BC was located at Swanson's Bay. Cannery activity was located at Butedale; this abandoned cannery is now visited as a historic site by boaters. Approximately 15 canneries where in operation around Rivers Inlet. Mineral development and past showings also occurred due to the well-placed marine transportation corridor to Prince Rupert. Commercial fishing is limited to Carter Bay vicinity (N2 - Commercial fishing zone 6), in Burke Channel a portion of N5/ Commercial fishing zone 8, and in the south of N14/ Commercial fishing zone 9. The decline in mining, cannery and pulp mills was due to changes in technology, distance to market, and centralization.

The area has been heavily used as a tourism transportation corridor for many years. The Inside Passage is used by Cruise ships and the BC Ferry, on route to Prince Rupert. These vessels pass through the area without stopping. Pleasure boats and small cruise ships use the area extensively for exploration during the summer months. The area is also a destination for sea kayak but it is not as heavily used as the southern portion due to remoteness, lack of haul outs and rainfall. Charter operations from Vancouver Island use the area for bear viewing and tourism adventures. In the past several years, environmentalists have targeted much of the area for preservation. The kermode bear has attracted a great deal of interest in the area



## **Tourism: Middle Coast**

Like the Hecate Lowlands remoteness, lack of roaded access and cost of travel to the Central Coast prevent greater numbers of people from taking full advantage of the tourism attributes of the middle coast. Access is more difficult than the Hecate Lowlands, as a result of heavily forested mountains, steep sided granite cliffs and no marine fuel stops which prevents smaller boats from exploring too far inland compared to boat numbers in the Hecate Lowlands. Heaviest traffic use regarding travelling numbers are from BC Ferry Discovery Coast with one stop at Ocean Falls for several hours that allow for community historical tours. Lack of infrastructure at Oweekeno prevents visitor stay. Ocean Falls can accommodate small number of tourists.

The middle coast as a tourist destination has many diverse and spectacular attributes, but the cost of travelling to this remote region is high. Access to the area is either by boat or floatplane. Other than Ocean Falls there are no facilities that would allow for visitor stay. Wilderness kayak camping and live aboard vessels are the most common. These numbers are impossible to calculate other than expenditures at Ocean Falls for supplies. As a revenue generator, tourism at the present does not accrue to any degree to either Ocean Falls or Oweekeno.

Most sport fishing lodges are located in the Hecate Lowlands, but sportsfishing does occur in this area. Halibut, salmon, (coho was the main sports fishing target) and trout being the leading preferred sports fish. Decline in coho sports fishing will hurt the community of Ocean Falls. Diversity of fish species as compared to the Hecate Lowlands is considerably less. The large lakes within the entire area are noted for kokanee and rainbow species however with the exception of Link and Oweekeno Lakes access to lakes is expensive. Over fishing for salmon species has occurred in the river and lake systems near Oweekeno. Link Lake at Ocean Falls has exceptional trout fishing but has an existing barrier of floating log debris along the shorelines.

There is an existing guide outfitter in the area.

### **Tourism: Attributes and Opportunities:**

Please refer to table 2A for an overview of tourism attributes and opportunities by planning unit.

### **Strengths of the Middle Coast: Tourism**

- The middle coast has extremely high tourism values with even more diversity than the Hecate Lowlands although more of the area has been harvested through forest development.
- Marine access to areas of superb ecosystem diversity
- Marine access to remote unpopulated region with a wide variety of attributes that include high visual appeal, the largest fresh water lakes in BC, ocean, shoreline, a complex mix of marine and terrestrial transitional environment.
- Marine access to a vast system of complex natural fresh and saltwater estuaries

- Pristine lake and river fishing
- Ocean fishing for a wide variety of species

### **Barriers**

- The area is underutilized by the tourism industry due to lack of access, remoteness, lack of infrastructure, expensive transportation, and no marine repairs.
- The current population of the entire area (less than 200 residents), has traditionally high unemployment and lack of funding to build on the existing infrastructure that would attract more visitors

### **Ocean Falls Tourism Opportunities**

- Develop marine fuel facility at Ocean Falls
- Acquire abandoned cabins at Ocean Falls/ Link Lake from the Province to develop as Eco tourism rental units for tourism public
- Yacht Club development and acquisition of marine building for repairs
- Trail development along Martin River
- Re-open old trail system to ski lodge for viewing and hiking opportunities
- Attract the extreme sports enthusiast with competitions in climbing and kayaking
- Develop the first lake at Twin Lakes designated UREP
- Use knowledge of area regarding natural features to promote guided tours
- Take advantage of garnet deposits at Link Lake for alternative activity for tourist and special interest features
- Develop Ocean Falls as a center for diving expeditions
- Develop RV park and campground to accommodate RV ferry traffic and kayak campers
- Promote the historical aspect of Ocean Falls as destination experience
- Work in conjunction with First Nations if there are any cultural tour opportunities for visitors

### **Ocean Falls Tourism Barriers**

- Tourism season in the middle coast is shorter due to spring and fall storms and marine weather. Maximum visitor times are July and August when good weather is more predictable. Marine traffic is heaviest in July and August. Ferry traffic in the last two weeks of June and the first two weeks in September tend to be older touring groups
- Season is dictated by BC Ferries schedule from end of June till second week of September which can deter capital investment rationalization
- Present number of rooms available for accommodation prevents growth as destination
- Lack of camping facilities prevents RV traffic from disembarking from ferry
- Remoteness and distance to Ocean Falls may prevent return marine traffic
- Reduced diversity of fish species as compared to Hecate Lowlands prevents larger numbers of sports fishermen from coming into the area.
- High cost of fuel

### **Ocean Falls Tourism: Miscellaneous**

- Is the contamination on the industrial site owned by the Province an issue or prevention point for tourism development?

- Infrastructure development and investment loans need to be tied to secure ferry route and accurate planning regarding growth
- What other safety concerns are there regarding tourism development and local community infrastructure?
- Financing location for contamination removal has long been tossed around as to where it will come from and who will do the work. Nothing has happened due to the small nature of the budgets and the unknown extent of the contamination and to where it will be barged. This is a complex problem without a current solution.

### **Oweekeno: Tourism Opportunities**

Oweekeno is a small community located in a complex ecosystem of lakes and rivers. To date the community has not developed a tourism strategy for economic development nor is the community infrastructure conducive to accommodating the tourism public. The opportunities outlined in the attached tables are based on the physical attributes of the area.

Oweekeno has completed a traditional use study. In conjunction with this study and the defined attributes of the area, specific target opportunities regarding tourism development will emerge.

Oweekeno has the opportunity to develop extremely unique tourism capability. Their vast knowledge of their traditional lands, their unique art forms and their outlook on life in association with the diversity of the landscape may lend itself to sharing this with people from other regions.

## **Commercial Fishing: Middle Coast – Western Hemlock Zone**

### **Current Overview:**

Historically there were commercial fishing operators from Oweekeno and Ocean Falls. Today, there are no commercial fishers from either community.

The reader will note that the commercial fishing opportunities within this biogeoclimatic zone are significantly reduced compared to the Hecate Lowlands. There are opportunities for entrepreneurs within communities and or communities themselves to take advantage of commercial species that are evident in the area. Ocean Falls has an infrastructure that could be utilized. At the current time due to no commercial fleets in either community, raw product would have to be purchased from a commercial operator or through development of a community based terminal fishery.

Oweekeno has an egg take from the Wannock River for the enhancement of chinook and the Rivers Inlet /Hakai Pass Association enhances chinook from Kibella and Chuckwalla river systems. Some enhancement may occur on the Martin River at Ocean Falls.

There is potential for both Oweekeno and Ocean Falls to develop above ground aquaculture related fisheries. Ocean Falls industrial site is conducive to above ground activity; it is also a

deep-sea port with excellent ability to transport product easily. Oweekeno has fresh water rearing potential.

Oweekeno and Ocean Falls have relied upon a fishing resource to remain healthy but in two distinct ways. Oweekeno relied upon the River's Inlet run for their food fishery and ultimately community survival. Today, that system is considered endangered. Ocean Falls relied on commercial fishing fleet using the community extensively as a tie up between commercial fish openings, therefore generating revenue to the community. More recently Ocean Falls has been a destination for coho fishing, however this opportunity is reduced due to restrictions.

Refer to table 2B and 2C for an overview of the opportunities and barriers for commercial fishing, processing and aquaculture in the Western Hemlock outer coast eco-section.

**Opportunities: Fisheries- Middle Coast**

- opportunities for restoration and enhancement on river systems in chum/sockeye
- experimental community based fishery
- aquaculture partnerships with industry
- potential for value added products in small regionally based processing
- terminal fishery opportunity
- opportunity for hatchery/ aquaculture at Ocean Falls site with good hydro and water

**Barriers: Fisheries- Middle Coast**

- community residents may need training
- capacity in community may take time
- trained people often leave if work is not full time which can lead to project failure
- upgrades to the infrastructure in communities may be expensive - who pays
- partnerships with industry may take time to build trust levels
- growth must be in association with accommodation and community living capacity
- projects may be too numerous for approving agencies to handle- and funds available must be association with cost of travel to communities
- Oweekeno may not have electrical or water capacity to develop value added capacity, especially in refrigeration

**Western Hemlock Zone: Middle Coast- Forestry:**

The forests within the middle coast have been moderately modified. The terrain is rugged with steep walls and broad valleys. The forests are primarily western hemlock and amabilis fir, western red cedar, sitka spruce and yellow cedar at the higher elevations. It is anticipated that harvesting within the middle coast will increase in volume with the target being red cedar and sitka spruce. While the predominant species is western hemlock at this current writing it has significance on the export market. Forest companies have not kept pace with research and development regarding marketing hemlock on a global scale.

Opportunities for Oweekeno and Ocean Falls in the forestry industry exist. Oweekeno has several partnerships with forest companies to work in a variety of jobs that involve training, harvesting and silviculture. Recently an opportunity has arisen to acquire a portion of Western Forest Products AAC. Oweekeno has a small workforce of about 15 people; new housing may accommodate a larger workforce. Oweekeno does not have industrial capacity at this time, either in equipment or electrical capability.

Ocean Falls also has a small workforce of about 35 people and have a massive industrial space that is currently not utilized. Ocean Falls also has unlimited hydroelectric capability and water capacity. Ocean Falls has had difficulty in integration into the forest industry; they have expressed interest in deciduous species that are now currently being girdled. The community has the capability for value added due to its infrastructure. One small operator has been given permission to remove wood from Link Lake and is milling what is salvageable.

For an overview of the opportunities and barriers of forestry in the Western Hemlock Middle zone refer to table 2D.

### **Forestry: Opportunities: Western Hemlock Zone- Middle Coast**

Forest sector opportunities for communities within the Western Hemlock Eco system of the Central Coast must be carefully thought out due to the very nature of the species mix that has not yet been modified. Clearly, the majority of the forests are western hemlock and balsam. Areas in the southern portion of this ecosystem where douglas fir sitka spruce and western red cedar are indicated have already been modified to a 0-40 years age stands. This leaves a very clear path that the current stands of hemlock and cedar that may have commercial value will be the areas where economic growth could occur.

Hemlock over 250 years is often considered decadent. The quality is often lower making it desirable only for pulp. However, pulp imports from Alaska are currently cheaper than harvesting the local decadent hemlock stands, making it economically undesirable to harvest. Many of the drainages within this ecosystem are targets for preservation by American environmental groups. Hemlock of dimensional lumber quality only has commercial value if it is exported to other countries in raw log form. Hemlock may become a more valuable species once the pulp prices rebound to make it economically feasible to harvest.

Research and development into kiln drying of hemlock for the international market has a ways to go before the technology produces a superior product. It is assumed that the infrastructure and expense involved in a potentially new product will not occur within the Central Coast given cost involved in starting from scratch in a remote area. Raw logs will still be shipped to Vancouver Island. It is also assumed that First Nations who currently have partnership agreements with forest companies will be involved in the harvest of these stands.

Small-scale development in hemlock can occur if a market can be found for wet flitches. At the current time, only very clear wet hemlock flitches are purchased with a profit margin occurring quite close to plant source.

Small pockets of second growth cedar are found within the area. There is a market for second growth cedar house logs and poles. Providing the quality is good and volumes are adequate,

cost is FOB at source, then there is margin for a reasonable industry. Most of these volumes are in major licensee chart and are now being harvested for profit margin.

Douglas fir and spruce stands may have merchantable second growth but occur within what we now consider sensitive areas, nearer to wetlands and watersheds. Volumes or age class may not be adequate for consideration.

Areas where old growth, lower quality red cedar stands occur are now considered desirable and merchantable. There are opportunities within the SBFEP to access this wood. The bulk of the stands is in major licensee chart and is considered as the species to maintain the profit margin.

There are pockets of deciduous wood. Cottonwood, alder and to a degree, larger broad leaf maple are found throughout the area. Cottonwood has no market other than when large paper product producers such as Scott paper are looking for this species, which seems to occur about every five years. Since cottonwood grows close to wetlands and flood plain, it is not as likely to be harvested in the volumes once taken. Alder, while in demand for veneer is not currently economical due to the high coastal logging costs. The average coastal logging cost is between \$35.00 and \$50.00 per meter and alder logs are purchased at \$45.00 a meter. While the demand for alder is growing and there is an increased amount of attention given to it, the bulk of the good alder has and continues to be girdled. Broadleaf maple is in high demand but does not grow in pure stands and would generate a cottage industry only.

#### **Western Hemlock Zone Middle Coast Forestry Opportunities**

- ensure all products manufactured have a market and interested purchasers before development
- cedar logs for the log home market harvested and cut to manufacturers specifications- sell on the stump
- use unique attributes of cedar logs for show pieces for the specialty market such as “elephants feet” ( unique shapes from flare butts)
- cut for the specialty market alder and maple flitches for musical instruments
- cut for the specialty market clear cedar and spruce cants and flitches
- transportation, infrastructure, power and excess water at Ocean Falls make this area attractive to larger scale value added using underutilized species

#### **Western Hemlock Zone Middle Coast Forestry Barriers:**

- for Ocean Falls it is difficult to access a viable wood supply
- for Oweekeno it may be difficult to develop value added industry without adequate power
- is the skill set and workforce size available combined with access to wood to produce a high demand, high end product that will allow for value added to occur?
- government and industry unable to understand community development at its most basic level
- environmental organizations unable to understand community development at its most basic level

**Western Hemlock Zone Middle Coast –Other:**

- find specialty markets and product demand- stay small and smart in niche markets
- determine what community can handle in terms of volumes, species
- determine infrastructure needed to develop the products
- determine what training and information is needed to run the infrastructure and make the product while maintaining equipment and services
- find the wood supply either through direct awards, the SBFEP or partnerships with major licensees
- look for funds to invest in business plan product
- get the first shipment out

**Botanical Forest Products Western Hemlock Zone- Middle Coast**

Within the Western Hemlock Zone of the plan area there are four biogeoclimatic units: CWHvm, CWHvm1, CWHvm2, and ESSFmw. Note: plants within the plan area are noted by indicator species only and do not constitute a plant inventory of the area. Although plants and tree species have potential commercial value in the botanical industry many of the endangered plants are not noted due to lack of inventory. Refer to table 2E for a botanical overview.

For a list of plants that have botanical properties within the plan area please refer to the appendices section. Botanical forest products in forest transition zone Coast/ Chilcotin may not be noted in this inventory.

**Opportunities: Botanicals – Middle Coast**

- dried herbs and roots can be processed and shipped from communities
- landscape plants that are in abundance can be prepared and shipped to markets
- tinctures, cordials and syrups can be processed and shipped to markets
- jams and jellies can be processed and shipped from communities
- florals that have a large market demand and a longer shelf life can be processed and shipped to markets via air and sea transportation

**Barriers: Botanicals- Middle Coast**

- in order for fresh botanicals to arrive at market in time they must be within one hour travel time to buyer (more pertains to food and herb products)
- Oweekeno and Ocean Falls do not have daily scheduled air service or land based air ports thus making quick access for fresh products to market difficult
- refrigeration for fresh products and cheap power must be present
- markets must be sought and contracts solidified before harvest of fresh products occurs
- workforce must be dedicated and product available consistently
- sustainability and inventory of plant species not well known

## **Water:        Fresh Water / Bottling/ Export: Middle Coast**

The Western Hemlock zone of the Central Coast has the greatest potential for future fresh water bottling and bulk export within the plan area. Fresh water lakes are large, undeveloped and seemingly pristine. The mountainous area has heavy snow and rain fall with little glacial flour entering the water systems.

There are three bottled mineral water licenses within the area and one designated to marine export. At current writing there is no existing bottling or export infrastructure present.

Within the River's Inlet area where the majority of the canneries were situated there should be inactive water licenses as each cannery had a dedicated water license for processing fish. Usually these licenses were of large daily volumes. Each license is attached to a specific water system. If the land in question is private and still exists in private status, the license would still be attached to that parcel of land. If the land reverted back to the crown, the license may have reverted to no status or be owned by the crown. If a license has not been active for a period of time, one would have to look through the archives for the status of the license.

There should be historical information regarding water licenses for fish processing at Water Licensing Branch. Canneries in the area that should have had water licenses attached to them were:

- Beaver Cannery
- Wannock Cannery
- Ric Cannery
- Goose Bay Cannery
- Rivers Inlet Cannery
- Provincial Cannery
- Kidella Cannery
- Good Hope Cannery
- McTavish Cannery
- Brunswick Cannery
- Dom Gov Hatchery
- Strathcona Cannery
- Whadam's Cannery

When these licenses were let there were no environmental impacts done on the water system. There would have been little forethought on impacts to resident and migratory fish and their water needs. Volumes attached to old licenses may not be suitable to our more knowledgeable times.

Namu and Canadian Fish at Shearwater still have licenses and water volumes attached to those fish processing facilities.

Within the planning units of the Western Hemlock zone the following existing and future potential for bottle water may exist. Refer to table 2F for a list of potential water sources.

### **Opportunities: Water - Middle Coast**

- clean industry that appears to be sustainable
- good marine access to fresh water sources (must be quantity barged)
- more opportunities for communities with access to licenses to benefit once bulk water moratorium is lifted
- marketing of central coast products may be easier with international attention to area
- partnerships with existing Canadian water companies could occur to bottle water



(i.e. company could build plant and infrastructure for barging)

**Barriers: Water – Middle Coast**

- lack of capital infrastructure investment for transportation of product from source
- moratorium on bulk water export ( large volumes in bulk are more attractive in a remote area rather than small lot production plants- where infrastructure investment do not make it cost effective to bottle water)
- water systems that are suitable may become parks
- if only bottled water is accepted distance to markets & transportation cost may not allow for product to be viable
- Link Lake may no longer be suitable for bottled water industry due to wood waste contamination at the dam
- is the expertise available to determine quantity of water removed from water system before negative impacts on system occurs?
- what is the current saturation point of water into the market?
- what is current and future water demand forecast?

**Minerals Western Hemlock Zone: Middle**

**Overview:**

Mineral development in the middle coast area has been minimal. The steep sided mountains with nearly inaccessible terrain and remoteness have made it very difficult for prospecting to occur. The heavy forest cover, broken rock and alluvial deposits make prospecting difficult and expensive. Small prospecting and staking of claims has occurred within the area and overlapping plan units which has resulted in a wide variety of potential opportunities. Limestone was crushed and used as flux in the Ocean Falls pulp mill but has not been used since.

The Link Lake area garnet deposits may prove useful. Industrial garnet is used as an abrasive agent in many applications. Gem hunters are also attracted to the garnet deposits. Graphite flake and vein is associated with kyanite and garnet and has uses in refractors, lubricants, foundry moulds, pencils and other important applications.

Refer to mineral tables for an overview of occurrences.

**Opportunities: Mineral Development- Middle Coast**

- some Ocean Falls residents have a keen interest in prospecting and may take advantage of the Prospectors Assistant Grant Program 2000.
- garnet deposits at Ocean Falls may have potential
- larger opportunities exist for industrial building stone
- opportunities for exploration may develop due to prospector program
- exploration interest may be higher if province offers incentives
- existing forest service roads and forest harvesting may allow easier access for exploration to occur
- Ocean Falls has industrial space, water, hydro electricity and a deep sea port to establish a dimensional stone cutting industry

**Barriers: Mineral Development- Middle Coast**

- industrial mineral market demand may be low
- development costs in remote area may be too high depending on market
- communities may be opposed to mineral development
- environmental campaign may prevent mineral development
- new parks would prevent development

**Table 2A - Tourism attributes and opportunities at a glance by planning unit.**

Plan Unit	Attribute	Special Feature	Current Use	Potential Opportunities	Other	Barriers
N2 East End	Whalen Lake	<ul style="list-style-type: none"> <li>▪ Largest fresh water lake on PR Island</li> <li>▪ River systems</li> </ul>	<ul style="list-style-type: none"> <li>▪ Unknown</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inland lake</li> <li>▪ Red blue yellow listed bird, wildlife &amp; plant species.</li> <li>▪ Guiding potential/ cultural values</li> <li>▪ Bear Grizzly &amp; Black</li> <li>▪ Goat</li> <li>▪ Deer</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fresh water fishing fly in only</li> <li>▪ High visual</li> </ul>	<ul style="list-style-type: none"> <li>▪ Access poor</li> <li>▪ No inventory</li> </ul>
N2	Cornwall Inlet	<ul style="list-style-type: none"> <li>▪ Beautiful and well protected</li> <li>▪ River systems</li> <li>▪ Lakes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cruising</li> <li>▪ Small craft</li> <li>▪ kayak</li> <li>▪ Exploring</li> </ul>	<ul style="list-style-type: none"> <li>▪ Bear viewing</li> <li>▪ Red Blue Yellow listed species</li> <li>▪ Guiding/ Interpretative tours/ cultural values</li> <li>▪ Grizzly</li> <li>▪ Black</li> <li>▪ Deer</li> <li>▪ Goat</li> </ul>	<ul style="list-style-type: none"> <li>▪ Anchor</li> <li>▪ Sports fishing</li> <li>▪ High visual</li> </ul>	<ul style="list-style-type: none"> <li>▪ Poor inventory of features</li> </ul>
N2	Cornwall Estuary	<ul style="list-style-type: none"> <li>▪ Bird nesting</li> <li>▪ Migration</li> <li>▪ Corridor</li> <li>▪ Wetlands</li> </ul>	<ul style="list-style-type: none"> <li>▪ Small marine craft</li> <li>▪ Kayak</li> <li>▪ Exploring</li> </ul>	<ul style="list-style-type: none"> <li>▪ Bird, plant, mammal viewing</li> <li>▪ Important for larger collection of species for observation</li> <li>▪ Guiding</li> <li>▪ Interpretative tours/ cultural values</li> <li>▪ Deer</li> <li>▪ Black/Grizzly</li> </ul>	<ul style="list-style-type: none"> <li>▪ No data</li> <li>▪ High visual</li> </ul>	<ul style="list-style-type: none"> <li>▪ No inventory available</li> </ul>
N2	Butedale	<ul style="list-style-type: none"> <li>▪ Historic cannery site</li> <li>▪ Waterfall</li> <li>▪ River systems</li> <li>▪ Interior lake system</li> <li>▪ Estuaries</li> </ul>	<ul style="list-style-type: none"> <li>▪ Marine visitor use</li> </ul>	<ul style="list-style-type: none"> <li>▪ Historic tours</li> <li>▪ Historical society wants to restore for lodge</li> <li>▪ Guiding</li> <li>▪ Interpretative tours</li> </ul>	<ul style="list-style-type: none"> <li>▪ Sports fishing</li> <li>▪ Fresh and salt</li> <li>▪ Anchor</li> <li>▪ High visual</li> <li>▪ Care takers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cannery in disrepair</li> <li>▪ Poor inventory data</li> </ul>

Western Hemlock Middle Coast Eco-section  
Table 2A Tourism Attributes and Opportunities

Plan Unit	Attribute	Special Feature	Current Use	Potential Opportunities	Other	Barriers
				<ul style="list-style-type: none"> <li>Marine tourist development</li> <li>Cultural values</li> <li>Grizzly Black</li> <li>Goat</li> <li>Deer</li> </ul>	<ul style="list-style-type: none"> <li>Coffee</li> <li>Muffins</li> </ul>	
N2	Laredo Inlet northern reach	<ul style="list-style-type: none"> <li>Complex channels</li> <li>River outlets</li> <li>Estuaries</li> <li>Lakes</li> </ul>	<ul style="list-style-type: none"> <li>Marine traffic</li> <li>Enviros</li> <li>Scientists</li> </ul>	<ul style="list-style-type: none"> <li>Guided viewing</li> <li>Bird mammal plant observations</li> <li>Observatory and interpretative tours</li> <li>Cultural values</li> <li>Kermode</li> <li>Grizzly/ Black</li> <li>Goat</li> <li>Deer</li> </ul>	<ul style="list-style-type: none"> <li>Sports fishing</li> <li>Fresh and Salt</li> <li>Visuals</li> </ul>	<ul style="list-style-type: none"> <li>Over use potential re: the search for the kermode bear</li> <li>Poor inventory data</li> </ul>
	Klekane	<ul style="list-style-type: none"> <li>Thermal springs</li> <li>Rivers, Inlet</li> <li>Inside Passage</li> <li>Lakes</li> </ul>	<ul style="list-style-type: none"> <li>Marine traffic</li> </ul>	<ul style="list-style-type: none"> <li>Black Bear</li> <li>Goat</li> <li>Guided viewing/Bird/ Plant/ Mammal Communities</li> <li>Fishing/ salt and fresh</li> </ul>	<ul style="list-style-type: none"> <li>Sports fishing fresh and salt</li> <li>visuals</li> </ul>	<ul style="list-style-type: none"> <li>Poor inventory data</li> </ul>
	Aaltanhash	<ul style="list-style-type: none"> <li>Inside Passage</li> <li>Lakes</li> <li>Rivers</li> </ul>	<ul style="list-style-type: none"> <li>Marine traffic</li> </ul>	<ul style="list-style-type: none"> <li>Grizzly</li> <li>Black</li> <li>Deer</li> <li>Bird/ Plant/ Mammals</li> </ul>	<ul style="list-style-type: none"> <li>Sports fishing fresh and salt</li> </ul>	<ul style="list-style-type: none"> <li>Poor inventory data</li> </ul>
N2	Khutze	<ul style="list-style-type: none"> <li>Inlets</li> <li>Inside Passage</li> <li>Rivers</li> <li>Lakes</li> <li>Estuaries</li> <li>Wetlands</li> <li>Murrelet</li> <li>Historical</li> </ul>	<ul style="list-style-type: none"> <li>Marine traffic</li> <li>Kayak</li> </ul>	<ul style="list-style-type: none"> <li>Grizzly</li> <li>Black</li> <li>Deer/ Estuary/ Red/ blue/ yellow listed species viewing and guiding opportunity</li> <li>Historical and cultural interpretation</li> </ul>	<ul style="list-style-type: none"> <li>High visual</li> <li>Glacier</li> <li>Fish runs</li> <li>Fresh water and salt water fishing</li> <li>Mining exploration</li> </ul>	<ul style="list-style-type: none"> <li>Visitor disregard for highly sensitive area.</li> <li>Poor inventory data</li> </ul>

Western Hemlock Middle Coast Eco-section  
Table 2A Tourism Attributes and Opportunities

Plan Unit	Attribute	Special Feature	Current Use	Potential Opportunities	Other	Barriers
		<ul style="list-style-type: none"> <li>▪ Mining</li> <li>▪ Cultural values</li> <li>▪ Adjacent to Fjordland</li> <li>▪ Waterfall</li> <li>▪ Anchor</li> <li>▪ Hotspring</li> </ul>		<ul style="list-style-type: none"> <li>▪ Kayak touring</li> </ul>		
N2	Sheep Passage	<ul style="list-style-type: none"> <li>▪ North entrance to Fjordland</li> <li>▪ Lakes</li> <li>▪ Mussel Inlet</li> <li>▪ Poison Cove</li> <li>▪ Wetlands</li> <li>▪ Estuaries</li> <li>▪ Lakes</li> <li>▪ Rivers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Existing Guide outfitter in area</li> <li>▪ Marine traffic</li> <li>▪ Destination area</li> <li>▪ Exploring</li> <li>▪ Kayak</li> </ul>	<ul style="list-style-type: none"> <li>▪ Historical tours</li> <li>▪ Natural history</li> <li>▪ Red/ Blue/Yellow listed species</li> <li>▪ Kayak tours</li> <li>▪ Grizzly</li> <li>▪ Black</li> <li>▪ Deer</li> <li>▪ Goat</li> <li>▪ Murrelet</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fishing Salt and Fresh</li> <li>▪ Hunts</li> <li>▪ Captain Vancouver</li> <li>▪ Mussel</li> </ul>	<ul style="list-style-type: none"> <li>▪ Can die from eating mussels</li> <li>▪ Poor inventory data</li> </ul>
	Kynock	<ul style="list-style-type: none"> <li>▪ Inlet part of Fjordland</li> <li>▪ Cul-pepper Lagoon</li> <li>▪ Waterfall</li> <li>▪ Lakes</li> <li>▪ Rivers coves</li> </ul>	<ul style="list-style-type: none"> <li>▪ Marine traffic</li> <li>▪ Kayak</li> <li>▪ Existing Guide</li> <li>▪ Outfitter</li> </ul>	<ul style="list-style-type: none"> <li>▪ Red/ Yellow/ Blue Listed species/</li> <li>▪ Kayak tours</li> <li>▪ Grizzly</li> <li>▪ Black</li> <li>▪ Deer</li> <li>▪ Goat</li> <li>▪ Murrelet</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cabin</li> <li>▪ Tricky boating</li> <li>▪ High scenic values</li> <li>▪ Fishing</li> <li>▪ Salt and fresh.</li> <li>▪ Hunts</li> </ul>	
N4	Ellerslie Lake Harbour	<ul style="list-style-type: none"> <li>▪ Fjord Lake</li> <li>▪ Other lakes</li> <li>▪ Beaches</li> <li>▪ Tidal Lagoons</li> <li>▪ Waterfall</li> <li>▪ Safe Anchor</li> <li>▪ Outstanding scenery</li> <li>▪ Rivers</li> </ul>	<ul style="list-style-type: none"> <li>▪ First Nations</li> <li>▪ Low use by</li> <li>▪ Kayak</li> <li>▪ Marine Boaters</li> <li>▪ Guide</li> <li>▪ Outfitting</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fresh water sports fishing</li> <li>▪ Guiding for bird/ mammal/ plant features.</li> <li>▪ Marine based tourism</li> <li>▪ Heritage</li> <li>▪ Cultural</li> <li>▪ Grizzly Black</li> <li>▪ Deer/ Goat</li> </ul>	<ul style="list-style-type: none"> <li>▪ High fresh water fish values.</li> <li>▪ Very important to First Nations</li> <li>▪ Existing guide outfitter</li> <li>▪ Warm water swimming</li> </ul>	<ul style="list-style-type: none"> <li>▪ Charts may be off</li> <li>▪ Boaters going to the lagoon must have experience.</li> </ul>

Western Hemlock Middle Coast Eco-section  
Table 2A Tourism Attributes and Opportunities

Plan Unit	Attribute	Special Feature	Current Use	Potential Opportunities	Other	Barriers
	Roscoe Inlet	<ul style="list-style-type: none"> <li>Beaches</li> <li>Old trail to Ocean Falls</li> <li>High scenic</li> <li>Rivers</li> <li>Lakes</li> <li>Estuaries</li> </ul>	<ul style="list-style-type: none"> <li>First Nations</li> <li>Ocean Falls residents for recreation</li> <li>Marine traffic</li> <li>Hiking</li> <li>Guide</li> <li>Outfitter</li> </ul>	<ul style="list-style-type: none"> <li>High marine traffic potential</li> <li>Marine guiding in difficult water.</li> <li>Waterfowl, plants/ mammals.</li> <li>Heritage</li> <li>Cultural</li> <li>Grizzly/ Black</li> <li>Deer/ Goat</li> </ul>	<ul style="list-style-type: none"> <li>Kayak haul out at Clatse</li> <li>Bay</li> <li>High visuals</li> <li>Overall</li> <li>Quart-cha Bay anchor</li> <li>Existing guide outfitter</li> <li>Warm water swimming</li> </ul>	<ul style="list-style-type: none"> <li>Marine experience</li> <li>Important</li> </ul>
N5	Ocean Falls	<ul style="list-style-type: none"> <li>Settled Area</li> <li>Infrastructure</li> <li>Historic</li> <li>Pulp mill</li> <li>Trails</li> <li>Lakes</li> <li>Recreation</li> <li>Ferry dock</li> <li>Marine</li> <li>Industrial</li> <li>Historic community at Wallace Bay</li> <li>Waterfalls</li> </ul>	<ul style="list-style-type: none"> <li>Local resident</li> <li>Marine traffic</li> <li>Active guide outfitter</li> <li>Accommodation</li> <li>Meals</li> <li>Salt and fresh water fishing</li> </ul>	<ul style="list-style-type: none"> <li>Deep Sea Port</li> <li>Eco Tourism</li> <li>Kayak</li> <li>Mountaineering</li> <li>Bird/ Mammal/ Plant Guided Tours</li> <li>Goat/ Grizzly/ Black</li> <li>Deer</li> <li>Gems</li> <li>Murrelet</li> </ul>	<ul style="list-style-type: none"> <li>High visuals</li> <li>Exploring</li> </ul>	<ul style="list-style-type: none"> <li>Lack of \$ for improving infrastructure</li> </ul>

Western Hemlock Middle Coast Eco-section  
Table 2A Tourism Attributes and Opportunities

Plan Unit	Attribute	Special Feature	Current Use	Potential Opportunities	Other	Barriers
N10 East Portion Kwatna	Kwatna	<ul style="list-style-type: none"> <li>Estuary</li> <li>River</li> <li>Wetlands</li> <li>Wintering swans</li> <li>Bear viewing</li> <li>Anchor</li> <li>Mud flats</li> <li>Cathedral Point</li> </ul>	<ul style="list-style-type: none"> <li>Grizzly</li> <li>Black</li> <li>Deer</li> <li>Goat</li> <li>Nuxalk</li> <li>Activity in old logging camp</li> <li>Active Guide outfitter</li> <li>Fishing</li> <li>Hunting</li> <li>Marine traffic</li> <li>Ferry route</li> </ul>	<ul style="list-style-type: none"> <li>Bird watching</li> <li>Mammal viewing</li> <li>Plants &amp; other natural attributes for tours</li> <li>Mountain climbing</li> </ul>	<ul style="list-style-type: none"> <li>Watershed restoration Project</li> <li>Silviculture</li> <li>Cultural</li> <li>Rugged scenery</li> <li>Granite cliffs</li> <li>Entering into beginning of higher mountains with glaciers</li> </ul>	
N10	Quatlana	<ul style="list-style-type: none"> <li>Estuary River</li> <li>Wetlands</li> <li>Waterfalls</li> <li>Head of Kwatna Inlet</li> <li>Restoration Bay historic</li> <li>Name from Captain Vancouver</li> <li>Sandy beach</li> </ul>	<ul style="list-style-type: none"> <li>Grizzly</li> <li>Black</li> <li>Deer</li> <li>Goat</li> <li>Logging</li> <li>Active guide outfitter</li> <li>Fishing</li> <li>Hunting</li> </ul>	<ul style="list-style-type: none"> <li>Birding</li> <li>Mammal viewing</li> <li>Plants</li> <li>Tours</li> <li>Estuary</li> <li>Bear viewing</li> <li>Exploring</li> </ul>	<ul style="list-style-type: none"> <li>Waterfowl</li> <li>Nesting</li> <li>Migratory</li> <li>High scenic</li> </ul>	
N10	Clyak	<ul style="list-style-type: none"> <li>Head of Moses Inlet</li> <li>Estuary</li> <li>Wetlands</li> <li>River</li> <li>Higher mountains</li> <li>Small lakes</li> </ul>	<ul style="list-style-type: none"> <li>Salmon</li> <li>Bear</li> <li>Migratory</li> <li>Waterfowl</li> <li>Trumpeter</li> <li>Swan winter range</li> <li>Active guide</li> </ul>	<ul style="list-style-type: none"> <li>Wildlife viewing</li> <li>Grizzly bear</li> <li>Goat</li> <li>Deer</li> <li>Black</li> <li>Waterfowl</li> <li>Plants/ Birds</li> <li>All for viewing</li> </ul>	<ul style="list-style-type: none"> <li>Old logging facilities</li> <li>Visuals</li> <li>Log dump area</li> </ul>	<ul style="list-style-type: none"> <li>Some fishing restriction</li> </ul>

Western Hemlock Middle Coast Eco-section  
Table 2A Tourism Attributes and Opportunities

Plan Unit	Attribute	Special Feature	Current Use	Potential Opportunities	Other	Barriers
			<ul style="list-style-type: none"> <li>Outfitter</li> <li>Logging</li> <li>Kayak</li> </ul>	<ul style="list-style-type: none"> <li>Cultural tours</li> <li>Mountain climbing</li> </ul>		
N14	Kibella Chuck-walla	<ul style="list-style-type: none"> <li>Rivers</li> <li>Lakes</li> <li>Wetlands</li> <li>Estuary</li> <li>Higher mountains</li> <li>Oweekeno Largest fjord lake in BC</li> <li>Bays</li> <li>Rare plant community in Ashlum. Reeve, Upper Inziana</li> <li>Walkus Lake</li> <li>Logging roads</li> <li>Ice fields</li> </ul>	<ul style="list-style-type: none"> <li>Settlement</li> <li>Oweekeno</li> <li>Sports fishing</li> <li>Fresh water fishing</li> <li>Active guide outfitter</li> <li>Logging</li> <li>Marine use</li> <li>Kayak</li> <li>Grizzly denning areas</li> </ul>	<ul style="list-style-type: none"> <li>High bear use on estuaries/</li> <li>Grizzly/ Black</li> <li>Goat</li> <li>Deer/ Murrelet/ High use for waterfowl/ fall/ winter/ spring trumpeter swan</li> <li>Very high for wildlife viewing and guiding</li> <li>Exploring</li> <li>Cultural and Heritage values</li> <li>High red/blue/</li> <li>Yellow species</li> <li>Mountain climbing</li> </ul>	<ul style="list-style-type: none"> <li>Old cannery sites nearby</li> <li>Services at Oweekeno.</li> <li>Oweekeno Nation joint ventures.</li> </ul>	<ul style="list-style-type: none"> <li>River Inlet salmon stock on decline</li> <li>Overfished by river anglers in some watershed</li> </ul>



**Table 2B Opportunities & Barriers- Commercial Fishing- Middle Coast**

Species	Area DFO Statistical Area/ Plan Unit	Opportunities	Barriers	Other
Pink	Area 6/ N2 Area 7/N2 Area8/N5 Area8/N10 Area9/N14 Area9/N16	Stable potential		Enhanced stock
Chum	Area6/ N2 Area7/N2 Area8/N5 Area8/N10 Area9/N14 Area9/N16	Stable potential Increase in trend predicted		Enhanced stock
Sockeye	Area 6/ N2 Area7/N2 Area8/ N5 Area8/N10 Area9/N14 Area9/N16	Predicted low returns Potential low	Poor escapement levels	Ocean survival poor Expensive to enhance
Shrimp/ Prawn	Area 6/N2 Area7/N2 Area8/N5 Area8/N10 Area9/N15 Area9/N16	Potential	Minimum escapements now occur	Populations could be exploited

**Table 2C Aquaculture: Middle Coast-Identified areas regarding potential:**

Planning Unit	Type of Operation	Site ( Low- High) Deep Sea Cage
N2	Fin Fish Capability Deep Sea Cage	Medium Yes
N5	Fin Fish Capability Deep Sea Cage	Medium Yes
N10	Fin Fish Capability Deep Sea Cage	Poor No
N14	Fin Fish Capability Deep Sea Cage	Poor to Medium Yes
Planning Unit	Type of Operation	Site( Low-High)
N16	Fin Fish Capability Deep Sea Cage	Poor No data available

**Table 2D Western Hemlock Zone- Middle Coast- Forestry**

Planning Unit	Forest Cover by leading species	Site Index by leading species	Age Class by leading species	Height Class by leading species in meters	Opportunities	Barriers	Other
N2- North Middle Portion	True fir Cedar Hemlock Spruce	low medium good medium	251+ 251+/101-250 251+/101-250/0-40 0-40	0-19.4 19.5-37.4 37.5-64.5 0-19.4	Cedar Hemlock	Access Remoteness Markets Boycotts	Study area Red/Blue/Yellow listed species Sensitive areas
N2- South East Portion	Cedar Hemlock Spruce True fir Deciduous	low medium/high medium medium medium	251+/101-250 101-250/251 101-250 101-250 41-100	19.5- 37.5/37.5-64.5 37.5- 64.5/19.5-37.5 37.5-64.5 37.5-64.5 19.5-37.5	Cedar Hemlock Spruce Deciduous	Access Remoteness Markets Boycotts	Study area Red/Blue/Yellow Listed species Sensitive areas
N4-Ellerslie Lake	Cedar Hemlock Spruce True Fir Pine Deciduous	low low/med/high low low/ medium low low to medium	101-250 251+ 251+/101-250 251+ 101-250 41-100	19.5-37.4/0- 19.4/37+ 19.5- 37.4/37.5-64.5 37.5-64.5 1-19.4 19.5-37.4/0- 19.4 0-19.4	Cedar Hemlock Deciduous	Markets Boycotts Remoteness Access	Study area Red/Blue/ Yellow listed species Sensitive areas
N5-Ocean Falls	Hemlock Cedar True Fir Spruce	low to medium low to medium	250+/101-250/0-40 101-250/250+ 250+/101-	19.5- 37.4/37.5-64.5 19.5- 37.4/37.5-64.5	Cedar Hemlock	Wood quality Access Markets	Red/Blue/Yellow listed species Sensitive areas Visual corridor

Western Hemlock Middle Coast Eco-section  
Table 2D Forestry

Planning Unit	Forest Cover by leading species	Site Index by leading species	Age Class by leading species	Height Class by leading species in meters	Opportunities	Barriers	Other
	Pine Deciduous	low medium low medium to high	250/41-100 250+/101-250/41-100 101-250 0-40	19.5-37.5/37.5-64.5 37.5-64.5/19.5-37.4 19.5-37.4 19.5-37.4			
N10- Kwatna/Qualt ena	Hemlock Cedar True Fir Spruce Deciduous	low/medium/high low/medium/high low high to medium medium	250+/101-250/0-40 250+/101-250/0-40 250+/101-250/0-40/41-100 0-40	19-37/37-64.5/0-19 19-37/0-19/37.5-64.5/0-19.5 37.5-64.5/0-19.5 37.-64./0-19/19.-37.4 0-19.4	Spruce Cedar Hemlock	Better species cut over Wood quality Markets	Sensitive sites Red/Blue/Yellow listed species
N14 Oweekeno N16 Johnson Sandall	Hemlock Cedar Douglas Fir True Fir Spruce Deciduous	low to medium medium to high medium to high low to medium good to medium medium	250+/0-40/101-250/41-100 250+101-250/41-100/0-40 41-100/0-40/101-250 250+/101-250 0-40 0-40	0-19/19-37/37-65 19-37/0-19/37-65 0-19/19-37/37-65 19-37 0-19 0-19	Douglas Fir Spruce Cedar Hemlock	Better species over cut Wood quality Markets	Sensitive areas Wet lands Watersheds sensitive Red/ Yellow/ Blue species

**Table 2E Botanical Overview**

Plan Unit	Biogeoclimatic zone	Tree species	Vegetation Botanical	Potential	Other
N2/N4/N5/N10 N14/N16	CWHvm CWH vm1 CWHvm2	Sitka spruce Yellow cedar Douglas fir Western hemlock Western red cedar Amabilis fir Vine maple Douglas maple	Deer fern Fern-leafed goldthread False lily of the valley Salal Sword fern Trailing blackberry Vanilla leaf Dull oregon grape Flat moss False azalea Alaska blueberry Oak fern One sided winter green Five leafed bramble	Salal Deer and sword fern Oregon grape Alaska blueberry Oak fern	Cones and foliage from tree species Twigs from deciduous shrubs and trees Oil extracts from conifer trees and plants Salal, ferns and other for floral markets. Medicinals from many listed and high potential for unlisted species.
N2/N4/N5/N10 N14/N16	ESSF	Lodge pole pine Subalpine fir Engelmann Spruce Amabilis fir	Grouseberry Black huckleberry Five leafed bramble White-flowered rhododendron Sitka valerian Juniper Falsebox Gooseberry Lady fern Horsetail Pinegrass	Black huckleberry Sitka valerian Juniper Falsebox Ferns Horsetail	As above

Western Hemlock Middle Coast Eco-section  
Table 2D Forestry

Plan Unit	Biogeoclimatic zone	Tree species	Vegetation Botanical	Potential	Other
N16	MNmm2e	Yellow cedar Western hemlock Mountain hemlock Amabilis Fir	Rosy twisted stalk Mountain heather Oak fern Deer Cabbage Hellebore Sphagnum Skunk Cabbage Alaskan Blueberry Black huckleberry White flowered rhododendron	Yellow cedar Amabilis Fir Alaska Blueberry Black huckleberry White flowered rhododendron	As above

**TABLE 2F Water Potential**

Plan Unit	Water System	Existing license	Access	Other
N2	Whalen Lake	Yes ( 2)	Good marine	Marine export Undeveloped
	Carter Lake	No	Good marine	Potential
	David Lake	No	Good marine	Potential
	Yule Lake	No	Good marine	Potential
N4	Ingram	No	Good marine	Potential
	McPherson	No	Good marine	Potential
	Western	No	Good marine	Potential
N5	Moskt Lake	No	Good marine	Potential
	Nascall	Yes	Good access	Private/power
	Eucott	Yes (3)	Good access	Private land
	Ocean Falls	Yes	Good access	Private/power
	Ocean Falls	Yes	Good access	OFID/ processing
N10	Quatleena	No	Good access	Potential
	Clyak	No	Good access	Potential
	Kwatna	No	Good access	Potential
	Milton	Unknown	Good access	Potential
N14	Chuckwalla	Unknown	Good access	Potential
	Kibella	Unknown	Good access	Potential
	Doos	Unknown	Good access	Potential
	Oweekeno Lake	Unknown	Good access	Potential
	Shotbolt	Unknown	Good access	Potential
	Nicknaqueet	Unknown	Good access	Potential
N16	Johnson	Unknown	Good access	Potential
	Sandell	Yes	Good access	Processing

**Table 2G Western Hemlock Zone: Middle Coast -Minerals**

Plan Unit	Mineral Rating	Evidenced	Activity
N2	Medium high to high	<ul style="list-style-type: none"> <li>• foliated quartz diorite</li> <li>• gneissic diorite with metasediments and metavolcanics</li> <li>• quartz diorite</li> <li>• massive diorite</li> <li>• biotite-hornblende-garnet schist</li> <li>• biotite-garnet-sillimanite schist</li> <li>• metavolcanics, limestone, quartzite</li> <li>• foliated granodiorite</li> <li>• alluvial and glacial deposits</li> <li>• quartz monzonite</li> <li>• purplish, massive diorite, pyroxene diorite, gabbro, norite</li> </ul>	Past producer Showing Limestone Graphite Molybdenum Gold Geothermal Lead Zinc Copper Silver
N4	High	<ul style="list-style-type: none"> <li>• quartz monzonite</li> <li>• foliated granodiorite</li> <li>• foliated quartz diorite</li> <li>• purplish, massive diorite, pyroxene diorite, gabbro, norite</li> <li>• gneissic diorite with inclusions of metasediments, metavolcanics (massive diorite)</li> <li>• syenite</li> </ul>	Showing Kyanite Zinc Copper Silver Gold
N5	Highest/High/ Medium/ Medium Low	<ul style="list-style-type: none"> <li>• foliated quartz diorite</li> <li>• feldspar-quartz-biotite,garnet-biotite gneiss, amphibolite, banded gneiss, veined gneiss</li> <li>• foliated granodiorite</li> <li>• metasediments, biotite-hornblende, garnet schist, biotite, garnet-sillimanite schist, metavolcanics-limestone, quartzite</li> <li>• quartz monzonite</li> <li>• granodiorite</li> <li>• alluvial and glacial</li> </ul>	Showing Copper Molybdenum Graphite Geothermal
N10 <sup>1</sup>	Highest/high/ medium-low	<ul style="list-style-type: none"> <li>• foliated quartz diorite</li> <li>• feldspar-quartz-biotite gneiss,amphibolite, banded gneiss, veined gneiss</li> <li>• genetic diorite-massive diorite</li> <li>• foliated granodiorite</li> <li>• metasediments, biotite-hornblende-garnet schist, biotite-garnet-sillimanite schist, metavolcanics, limestone, quartzite</li> <li>• granite and syenite</li> <li>• rhyolite and quartz-feldspar porphyry</li> <li>• alluvial and glacial deposits</li> <li>• greenstone,chlorite schist, abundant andesitic dykes</li> </ul>	Prospect Graphite Limestone Molybdenum
N14 <sup>2</sup> .	Doos Dallery: highest Kibella/ Chuckwalla: high Doos Creek: low Machmell: low Neechantz: high <i>Above information is from lrmf mineral rating map sheet.</i>		Prospect Limestone

<sup>1</sup> Note: mapsheet that was used for information only went as far as Restoration Bay- but it could be assumed that the mineral overview listed here would continue to N14

<sup>2</sup> map sheets not available for evidenced information

**Table 2H: Minerals: Known Occurrence Middle Central Coast**

Plan Unit	Deposit Type	Commodity
N10		Limestone
		Graphite
		Molybdenum
N14		Limestone
N16		Limestone
		Rhodonite
N2		Limestone
		Graphite
		Geothermal
	Skarn	Copper
	Skarn	Silver
	Skarn	Gold
	Vein	Gold
		Lead
		Zinc
	Skarn	Molybdenum
N4	Skarn	Zinc
	Skarn	Copper
	Skarn	Silver
	Skarn	Gold
		Kyanite
N5		Copper
	Skarn	Molybdenum
		Graphite
		Alluvial Deposits
		Geothermal



## ***Inner Coast (Bella Coola)***

### **Central Coast**

### **Northern Plan Area**

## **Western Hemlock Inner Coast Eco-section Overview/ Economic Development History**

**Planning Units:**      **Eastern portion of N5/  
Eastern portion of N14/  
N6/  
N11/  
N12**

Larger watersheds dominated by mountains, which rise abruptly from sea level to over 8000 feet, characterize the inner coast. Deep irregular fiords penetrate into the mountains from the coast. The major valleys and fiords are in the Dean and Kimsquit, which extend through the Dean and Fisher Channel, and the Bella Coola, which extends through North Bentinck Arm and Burke Channel. The Dean has captured flow from the Chilcotin River basin and the Iltasyuko River from the Entiako system. The Bella Coola through its tributaries the Atnarko and Hotnarko, drains the interior plateau around Charlotte Lake.

The climate is generally drier than the Middle Coast, but still experiences long cool, wet summers and short mild wet winters. Further towards the interior plateau the summers are warmer and the winters cooler. Mean annual precipitation at Bella Coola 60.25 inches and at Stuie 29.75.

River systems, streams, wetlands and fiords all have fish presence. The Kimsquit, Dean and the Bella Coola rivers are critical spawning areas for a wide variety of species. The inner coast has a high percentage of bird and mammal communities that depend heavily on the salmon stocks, concentration of grizzly bear populations on all three river systems are higher than the provincial average. The area has supported a local fishing fleet that has been the second most important industry for the area. Land based tourism is of higher importance than marine. Land based tourism has evolved due to the superb presence of salmon and steelhead in the river systems. The area is very high in red, blue and yellow listed species of birds, mammals and plants. The estuaries are of critical importance for all fish species plus migratory, nesting and wintering waterfowl, including the Trumpeter Swan. Forest harvesting has played the major role in regional and provincial employment and revenue generated to the province. The Bella Coola, Dean and Kimsquit systems within the Douglas fir forest types are high producers of pine mushrooms that provides alternative employment for local residents.

The Bella Coola valley is the only settled area in the inner coast plan. Previous to the establishment of reserves there were aboriginal settlements or seasonal habitation at Kimsquit, Dean, Skowiltz, Kwatna, Taleomey, Smitley, South and North Bentinck, Sheemahant, Noosgulch, Burnt Bridge and Stuix. With the establishment of reserves, isolated aboriginal settlements were directed into the Bella Coola valley. Today, the families from these isolated communities make up the Nuxalk Nation of the Bella Coola valley and account for approximately 1100 members. Summer camps on the Kimsquit, Dean and Kwatna are still active. At Stuix, the Ulagatcho people from Anahim Lake occupy a summer camp. First Nation's seasonal habitation was related to food gathering and safety from seasonal flooding. The first settlers were of Norwegian descent and arrived in the Bella Coola valley in 1894 to farm, commercial fish and eventually log. Lands were allocated under crown grants, which were designed to stimulate regional economic development. Today, many descendants still live in the area and continue to earn a living in resource based activity. There are approximately 3000 total residents in the Bella Coola valley. (Combined native and settlement areas)

## **Forestry; Inner Coast**

### **Past History/ Current Status/ Opportunities/ Barriers**

Forest harvesting within the inner coast began about 1865 with early forms of tenure, such as crown grants, pulp and timber leases concentrated in the Dean, Kimsquit, Bella Coola area as well as the shoreline along the Dean, Burke, Fisher and Bentinck channels. These early tenures were designed to stimulate industrial activity throughout British Columbia. Within the plan area these tenures were to accommodate milling in the Bella Coola area and for the pulp mill at Ocean Falls. Timber licenses were designed to accommodate independent loggers and did not have a milling requirement attached to them. Timber licenses could be sold prior to harvesting and had an expiry date in which they had to log or they would revert back to the crown. All timber licenses are now held by large timber firms- they still can be sold prior to harvesting and no longer have an expiry date. The mill at Bella Coola primarily used fir and cedar although; hemlock was also milled for exterior construction. Ocean Falls used fir, spruce and hemlock. Cedar was used primarily as hog fuel by the pulp mill and was considered a weed species. Independent contractors holding timber licenses provided wood to both Ocean Falls and Bella Coola and exported fir and spruce to Vancouver. Wood from pulp leases was also sold to both Ocean Falls and Bella Coola.

In 1945 Public Sustained Yield Units (PSYU) were introduced to prevent over cutting in the better stands and to assure continued forest production and to supply long term raw material necessary for investment in new plants. The annual harvest for the inner coast or the Dean 2 PSYU was 74,000 cubic metres, with a species mix composed of:

Table 1 Species Mix Comparison 1974 and 1999

Year	% in Dean 2 PSYU	Species	Year	% Chart Area/ Inner	Species
1974	8%	Fir	1999	1%	Fir
	28%	Cedar		15%	Cedar
	38%	Hemlock		60%	Hemlock
	13%	Balsam		8%	Balsam
	8%	Spruce		1%	Spruce
	5%	Other		15%	Other

In the early 1980's the AAC of the Mid Coast was determined for the entire TSA and was no longer based within Public Sustained Yield Units. The AAC was recommended to be sustainable, but was doubled to meet the milling needs of plants outside the Central Coast. The three distinct mid coast areas, the outer coast, the middle coast and the inner coast were to be harvested over the entire species mosaic but in fact the greater percentage of the TSA was concentrated in the inner coast which had the highest percentage of fir/ spruce and cedar. This has resulted in many of the inner coast drainage's reaching fall down over the past five years. The most economically viable areas of the mid coast are now in early regeneration. The percentage of species mix remaining for the inner coast is reflected in the above table.

During the 1980's a timber license swap occurred, around the same time as the Ocean Falls pulp mill closed. The lesser quality timber from the outer and middle coast was traded for better quality stands in the inner coast. Today, the remaining better quality stands located in the inner coast are in timber licenses. Timber licenses are considered private land until they are logged, then they revert to the crown. Volume from Timber licenses are not included in the mid coast timber supply area's AAC.

There have always been a number of small mills in the Bella Coola valley. Northcop Logging was established in the 1930's with a wood supply attached to it. Rights to this timber were sold and the company bought wood from private landowners and from independent loggers. This mill supplied the building needs at the local level.

The mill has changed hands several times in the past 15 years, but without a wood supply attached to the facility operations have been intermittent. In the past six years, a new owner has operated under Little Valley Forest Products and has invested several millions of dollars in a new facility. New value added products are part of the long term plan for Little Valley, it is now the first mill since Ocean Falls that may allow regional investment on the Central Coast. Working within the confines of the SBFEP regulations, lack of support for investment dollars, distance from fibre source, stumpage fluctuations, and environmental boycotts make value added on the coast very difficult.

Major licensees operate within the inner coast. Downsizing, restructuring, loss of markets, species mix and boycotts have significantly impacted their operations. Further operating reductions will occur, which may reduce local employment levels. Any further reductions will have serious economic repercussions on the community of Bella Coola.

In 1973, 161 people made their living in the forest industry in the Bella Coola valley and contributed to 50% of the gross income. Today, about 50 people make their living in the forest industry and represents about 25% of gross income.

Overall employment for local residents actively involved in harvesting and manufacturing within the TSA represents less than 9%. The remaining 91% come from outside the area.

In 1990 residents of the Bella Coola valley took part in a Local Resource Use Planning (LRUP) committee that took six years to complete. The focus of this committee was to determine a reduced AAC that would continue to employ the local workforce over a longer period of time, while making sense of biodiversity over a maginalized landscape. Social and economic recommendations from the committee were excluded from the final document that was signed off by the forest service. The LRUP document has been used as a biodiversity guideline for harvesting within the area. The LRMP table members, is they so decide, will adopt the recommendations from the LRUP into their higher level plan.

For many years Nuxalk Nation has been lobbying for a forest license. For the past 10 years the local community has been working towards a community forest license. The Nuxalk are moving closer to attaining a wood supply. The local community does not feel their effort for a community-based license will be successful and have decided to put their support behind the SBFEP. Local communities have provided value-added training, skill development and support for new chart areas that may access wood for local entrepreneurs.

Within the Bella Coola Local Resource Use Plan area there are limited opportunities for major licensees, SBFEP participants, First Nations and communities. Maximum modification of preferred species, standing mature timber of lower quality prevents long term opportunities from occurring. There are too many players and not enough wood to allow for a healthy forest community.

### **Forestry: Inner Coast Opportunities**

- Opportunities by drainage are indicated in the attached tables
- Opportunity for Bella Coola communities to develop a solid long term harvesting plan that will increase employment and develop a strong sustainable industry
- Opportunities for First Nations are developing with partnerships between major licensees and MOF
- Continue to support Little Valley Forest Products as key industrial player within the community
- Support major licensees and encourage more inclusive regional partnerships
- Work smaller and smarter with less wood and develop products that have value on the open market
- Research and develop wider scope of markets utilizing hemlock
- Access to wood by local value added manufacturers either through the SBFEP or purchase partnerships with licensees

- Continue upgrading existing skill set of local value added entrepreneurs
- Encourage new value added enterprises that will increase number of local manufacturers
- Encourage increase in numbers of value added SBFEP sales to MOF
- Continue to find new markets and buyers for local products
- Encourage a higher AAC to be allocated to value added manufacturers
- Encourage partnerships between native and non native communities to share resources, training, infrastructure and marketing
- Increase forest related income to local communities
- Improve awareness of strategic plans and philosophies to environmental groups
- Potential for hemball market if pulp prices rise
- More value added products, house logs and raw logs should be redirected east and partnerships solidified with those entrepreneurs
- Silviculture will continue to be an opportunity but the work should be distributed evenly between First Nations and those who are not of native origin
- There is an excellent opportunity for a Central Coast nursery and further research and development in conjunction with local communities

#### **Forestry: Inner Coast Barriers**

- Majority of better quality wood gone
- 75% of key drainages put to bed or have poor opportunities ( 20 out of 28)
- Key drainages in the SBFEP that could provide opportunities are PAS or enviro target drainages
- High percentage of hemlock
- Distance to markets
- Higher cost of fuel regarding long transport hauls
- Zone 2 industrial rates for electricity
- Little support for regional development
- Contract workforce from outside region can reduced local work force year
- Percentage of local workforce unskilled
- Percentage of local workforce not productive
- Poor communication by local licensee to share information in a timely way regarding downsizing and lay-offs
- Immediate downsizing and poorly timed communication results in rapid loss of skill set, employment base, and glut of homes for sale on the market. This leaves communities unprepared to deal with the fall-out.
- No dialogue between licensees, environmentalists and communities regarding decisions being made as they pertain to economic impacts at the local level
- Environmental boycott of central coast wood and products
- Helicopter logging high grades better timber and reduces local employment levels
- Aerial fertilizer will eliminate silviculture pruning and thinning crews

**Community Forestry Opportunity- Inner Coast at a glance:**

<b>Drainage</b>	<b>Opportunity</b>	<b>Reason</b>
Upper Kimsquit	No	Deactivated
Lower Kimsquit	No	Deactivated
Dean	Good	
Sutslum	Medium but difficult	Enviro target/ Hemlock/Cultural differences
Skowquiltz	Good but difficult	Enviro target
Jump Across	Medium but difficult	Enviro target/ Hemlock
Nusash	Good but difficult	Enviro target
Hot Springs Creek	Good but difficult	Enviro target/ licensee
Laboucher	Medium	Second growth
Twin	Poor	High quality species gone
South Bentinck- West	Poor	High quality species gone
West side	Poor	High quality species gone
Clayton	Poor	High quality species gone Deactivated
South Bentinck	Poor	High quality species gone
Smitley	Poor	High quality species gone
Talleomey	Poor	High quality species gone Licensee
Asseek	Poor	High quality species gone
Noosessick	Poor	Timber License
Nemiamus	Poor	Timber License
Neeclitsconny	Medium	First Nations target?
Thorsen	Good	First Nations target ?
Nusatsum	Poor to medium	High quality species gone Hemlock
Salloompt	Poor	High quality species gone
Noeick	None	Glacial outburst
Noosgulch	Poor to medium	Past high cut level Biodiversity compromised?
Cahootin	Poor	Wood supply small
Noomst	Poor	Past cut level high
Talchako	None	Deactivation planned

**Botanical Forest Products: Inner Coast**

**The Pine Mushroom ( Tricholoma magnivelare) Matsutake**

The botanical forest industry on the inner coast has focused primarily on the Pine Mushroom (Tricholoma magnivelare) and is of increased commercial importance to the local economy. The Pine Mushroom is associated with old growth forests composed of lodgepole pine, douglas fir and hemlock. It occurs in Coastal Douglas Fir (CDF), Coastal Western Hemlock (CWH), Interior Douglas Fir (IDF) and Engelman Spruce-Subalpine fir (ESSF). It is also found in second growth stands of the above species that are over 100 years of age.

Within the inner coast plan area Pine Mushrooms are harvested from the Dean River and Channel, Bella Coola, Kimsquit Flat, Lonesome Lake, Talchako River, Turner Lake and Tweesmuir Park. Dean River pine mushrooms grow under second growth pine that has

been burned and not logged. The Kimsquit Flats is second growth pine and one of the best pine mushroom producing patches in BC. In Bella Coola pine mushrooms grown under old growth fir forest canopy

100 tonnes of Pine Mushrooms were air freighted from Bella Coola and Anahim Lake in 1999. 95 tonnes from Bella Coola and 5 tonnes from Anahim. An estimated wholesale value of \$2,000,000 from Bella Coola and \$100,000 from Anahim. There are four primary buying stations buying for 2 to 3 buyers. The product is shipped to Vancouver and then directly to Japan, where it can average retail up to \$300 per pound

The season begins in September and ends in November. 70% of pickers are First Nations. Since the majority of the pickers are local residents nearly 100% of revenue generated is directed into the local economy. Outside pickers use restaurants, hotels and local stores to purchase goods

### **Pine Mushroom: Opportunities**

- Will continue to be a valuable sustainable economic resource for the community
- Community generates revenue flow through goods and service purchases
- Revenue generated to pickers who are chronically unemployed- it helps get them through the winter
- An alternative to generating revenue on drainages that may become protected areas provided residents will be able to harvest mushrooms
- Education of pickers to increase value of product and protect the environment
- Second growth fir in some areas is reaching 100 years +- new areas may be available
- Regulated industry will allow harvesting changes to protect new sites

### **Pine Mushrooms: Barriers**

- Many mushroom sites are no longer productive due to past forest practices
- Outside pickers do not know how to take care of pine mushroom areas can rake an area and destroy it for many years
- New buyers are springing up without knowledge of the industry- may not know their mushrooms & dangerous specimens sold to public
- Higher cost for travel to remote sites as close proximity sites are no longer productive – pickers are now sent into remote camp situations by helicopter
- Regulation of the industry must be in consultation with all communities
- Government does not get revenue
- Unclaimed income source
- Bear conflicts
- Garbage as more ‘camp’ situations are set up in remote sites
- Forested areas where mushroom picking is best are slated to be logged

### **Issues and Concerns:**

- Protection wanted for mushroom habitat
- Uniform shelterwood, strip harvest or partial cuts will protect resource
- Concern over impact on forest ecosystem
- Potential conflict with grizzly and black bear

- Impact on mushroom areas by logging
- Debate as to whether industry should be strictly regulated
- Underground economy
- Picker's safety
- Clear-cutting and slash burning decrease mycorrhizal diversity and recolonization
- It is not recognized as a legitimate industry and therefore the land base is not protected
- More ecological research is needed on impact of forest ecosystem
- Resource ownership must be determined
- During lag time between research and implementation the mushroom resource and habitat must be protected and conserved
- Industry recognition, cooperation and dialogue must occur
- Concern from non-native pickers that as forests are harvested on crown land their ability to generate income is severely reduced. Non natives are not allowed to harvest in the park.

## **Inner Coast- Other Botanical Products**

### **Overview:**

It would be easy to dismiss the botanical forest industry because of its relatively low economic contribution. However, for those living a modest lifestyle the income generated from secondary forest products is sufficient to support them in their local communities. In today's world, efforts to support industry in rural communities may contribute to economic stability.

The greenery products industry would be an excellent partnership with the now popular mushroom business. The season starts in November conveniently following the peak mushroom harvesting times. A labour pool is available and experienced with the similar harvesting techniques. Local mushroom buyers would willingly extend their business to the business of buying greenery products. Refrigerated and empty transport trucks depart almost daily from Bella Coola, an established avenue for the shipping of these products. All the concerns stated in the mushroom summary apply to the harvesting of greenery products and need to be addressed.

For further information refer to appendices section.

### **Opportunities:**

- Opportunities for locally established buyers to try test buying depot for alternative products other than mushrooms
- Opportunities for mushroom pickers to augment their income with a new industry
- Opportunities for education and training in a new industry
- Opportunities for new local products to be manufactured and marketed from Bella Coola
- Excellent air time to Vancouver for perishable items
- Botanical products do well as cottage industry
- Specialty products can market easier if done well



**Barriers:**

- Price per pound or bundle will be lower than the average price of mushrooms
- Need higher volume to make money, so pickers may not be as keen as in mushroom season
- Type of product picked may not have a sustainable inventory
- Some species may be endangered
- Markets may be flooded

**Agriculture: Bella Coola Valley**

The Bella Coola valley is the only area within the Central Coast dedicated to agricultural development. Historically, agriculture played an important role in the development of the Bella Coola economy. Transportation of large vegetable and fruit crops was by steamship where the outercoast communities, canneries, pulp mill and logging camps were consistently supplied with fresh products. Further transportation of large tonnage of potato crops to Vancouver was also common. Norwegian settlers were the first to plant crops for sustenance and commercial purpose. Several events occurred that marked the decline of commercial agricultural crops from Bella Coola; the building of the road from Bella Coola to Williams Lake, the advent of the refrigerated truck, the fire that destroyed the Bella Coola dock, road improvements, cheap products that came by refrigerated truck, high employment, high income levels and other areas within the province further developing their agricultural capacity.

There is well over 10,000 acres of agricultural land within the Bella Coola valley. In 1974 approximately 3000 acres were managed for agriculture and today approximately 1800 acres are in production.

The area is described as being in the “Humid Temperate Climate Region”. The Koppen system of climate classification further characterizes the region based on temperature, precipitation, seasonal characteristics and the fact that the natural vegetation is the best available expression of regional climate. Koppen’s classifies this area as “humid, mild winter temperature climate, marine West Coast landscape. The climate is dominated by the flow of the Pacific airstreams and their moderating effects resulting in cool summers and moderate winters. Commonly marine climates and landscapes change abruptly to other markedly different climates within a short distance, humid to dry- Bella Coola to Anahim. Bella Coola is considered to be in climate zone 6.

<b>Location</b>	<b>Elevation</b>	<b>Frost-free days</b>	<b>Total precipitation</b>
Bella Coola	18m	161	1677m/66 inches

80% of total requirements are met by precipitation during the growing season.

The soil is termed “Podzolic”. It is associated with acidic parent material, high rainfall and dense coniferous forests. The structure and good drainage provide for an amendable base for soil development.

Considering the climate and soil the area is best suited for cool season crops like apple, pear, strawberry, lettuce, peas and root crops.

The Bella Coola valley is comprised of a small number of cow, calf operations, hay farms, and small market gardens. There are 3 nursery/ greenhouse businesses. There is also a growing and active farmer's market.

Total number of farms:	18
Total area of farms: acres	1829
hectares	742
Land in crop by acres:	412
Irrigation:	6
Tame hay fields:	378
Potato farm:	3
Fruit tree farm:	3
Vegetable farm:	1
Greenhouse:	1
Farm: Cattle	6
Farm: Dairy	1
Horse farms:	6

#### **Agriculture: Opportunities**

- Increased interest in agricultural development by local residents
- Development of successful farmers market
- Individual farmers giving consideration to expanding operations to meet greater market demand
- New varieties of crops able to stand greater cold, drought, maturing in shorter seasons readily available
- No major polluting industry to harm soil or water through contamination
- Opportunity for niche organic markets
- Opportunity for markets to the communities west of Bella Coola- excellent flight time, products to Klemtu, Oweekeno, Bella Bella, Denny Island, Ocean Falls and to outercoast sports fishing lodges could be delivered within hours of picking.
- Summer movement of fresh products to outercoast could also be delivered via BC Ferries
- Bella Coola products could be profiled on BC Ferries
- Markets exist to the east of Bella Coola at Anahim Lake, Nimpo and Tatla Lake, including First Nations communities and the variety of lodges throughout the Chilcotin
- Agricultural byproducts can be marketed to a wider audience than the above mentioned communities
- Large and small reefer trucks leave Bella Coola empty and would welcome return back haul freight
- Marketing plan could assist in finding buyers

- British Columbia is a net importer of agricultural products and is not yet capable of feeding its own people- so in the future there may be a larger demand for BC products than we currently have
- Lower mainland will double its population over the next 25 years, at the same time the agricultural land in the Fraser Valley is being developed for residential and industrial development

#### **Agriculture: Barriers**

- finding capital for development of unimproved arable land
- marketing products outside of the community is a current problem
- Part time farm is not a factor in family security as it once was
- Cost of clearing land for agriculture development is prohibitive while crop yields per acre are generally low
- Agriculture as a resource will only be a resource when it is in economic use or will be used in the foreseeable future
- Limited local demand due to local small population
- Increase of marketing and transportation cost due to distance
- Competition to cheaper products from outside
- Bears

### **History of Commercial Fishing Inner Coast**

The commercial fleet on the inner coast has always utilized Bella Coola as their homeport. Commercial fishery is an important occupation for the central coast population.

Commercial fishery within the area began as what we now consider a terminal fishery with the fleet attached to a cannery located close to the resource. The original fishery was concentrated at Rivers Inlet until a cannery was built near the mouth of the Bella Coola in 1900. This marked the beginning of a commercial fishery at Bella Coola. In 1902 this cannery was sold to BC Packers and was renamed the Bella Coola Cannery. It was destroyed by fire in 1930 but continued to operate until 1935 when it became a net-camp, which it still is today. A second cannery built in 1917 was called the Nieuwiamus Cannery and was eventually renamed the Tallheo Cannery which operated until 1947. From 1947 to 1978, Tallheo Cannery offered repairs, fuel and a store for the commercial fleet. Each cannery, at its peak employed over 100 workers. Both took advantage of the large number of salmon stocks returning to spawn. There was also a cannery at Kimsquit. The workforce from the Central Coast communities traveled by steamship to work during the canning season. Cannery operations were seasonal and employed many local people as well as migrant workers. Like the River Inlet area, once the canneries were closed the seasonal workforce was no longer employed.

The decline in the canneries also reflected a decline in the number of local boats. At its peak, Bella Coola had over 100 boats and remained stable for over fifty years. Buy back programs have reduced the Bella Bella fleet to about 20 boats and the Bella Coola fleet to

about 28 boats. Lower catch limits, an aging workforce, high maintenance or no maintenance opportunities within communities plus increased cost of licensing has reduced the Central Coast fleet considerably. In 1972 commercial fishing revenue represented 25% of the gross income to Bella Coola, in 1996 commercial fishing revenue represented 6% of the gross income to Bella Coola. . This outside competition has and continues to cause hardship on Central Coast communities.

Commercial fishing areas 8 & 9 produce the highest number of salmon species from the Dean, Kimsquit, Bella Coola, Chuckwalla and Oweekeno systems. These large watersheds are of critical importance to the commercial fishing industry. All of these important drainages have been logged. Impacts of harvesting have affected stocks differently, with some species being moderately affected, while others have been highly impacted. Stream reaches may be more damaged than main stem systems, thus impacting stocks. Harvesting methods, while slow to change, are more considerate of habitat. Watershed deactivation and restoration projects will eventually have a positive impact on stocks.

Watershed restoration projects have been ongoing on the Bella Coola river and its tributaries for the past four years. Road deactivation has occurred on the Kimsquit mainstem and many Bella Coola side drainages. Habitat restoration projects on the Bella Coola have restored habitat for coho, steelhead and cutthroat. In 1998 and 1999 coho returns to the Bella Coola due to commercial closures have increased and enhanced habitat has been utilized by all species.

Further fisheries closures related to decline in stock will further erode Bella Coola and Area 8/9 opportunities for community based fishermen.

### **Further Opportunities: Commercial Fishing**

#### **General & Value Added**

- Consideration should be given to fully support a value added fishing industry in Bella Coola
- Smaller plants are able to better adapt to declining stock levels
- Smaller plant in Bella Coola would be located closer to a species that may be of higher value if processed quickly
- Bella Coola entrepreneurs from the fishing industry want a value added plant in Bella Coola
- Bella Coola entrepreneurs are willing to invest time and money into developing plant
- Bella Coola has a well placed fishing fleet
- Bella Coola is one hour air time from Vancouver, Vancouver Island and the Interior
- Bella Coola has off loading and docking facilities
- Bella Coola is a short boat time from fishing grounds
- Bella Coola has empty reefer trucks returning to Vancouver and Edmonton
- Bella Coola has a road connection to Vancouver in less than 12 hours
- Bella Coola has a ferry terminal port access

- A terminal community based fishery must be supported by a value added and processing plant on a scale that is relevant to catch
- Infrastructure in repair and maintenance is better utilized and maintained by a local fleet working closer to home port

**Other Barriers: Commercial Fishing-  
Value added processing**

- Further buy backs of local boats may continue to erode Bella Coola fleet
- Further buy backs could erode opportunity to bring catch to Bella Coola for processing
- Banks and other funding agencies may not be willing to invest in regional fisheries development
- Stocks may continue to be depleted due to poor ocean survival and degraded habitat
- Stocks may decline in enough numbers that temporary or permanent closures occur
- Scientific information on stock assessment and poor returns not quantified as yet
- Computer modeling programs may be overly optimistic
- Continued loss of primary employment opportunities erodes the ability to keep the repair and boat maintenance experts within the community
- Reduced use of maintenance facilities erodes the ability to keep these facilities in good working order

There are few opportunities for aquaculture within the inner coast. The massive watersheds of the Dean, Kimsquit and the Bella Coola reduce salinity and decrease temperature. Wind, especially winter outflow winds, are prevalent which is also a barrier for successful aquaculture. Salinity, temperature and depth studies for Burke Channel and North Bentinck Arm have been done. Area 9/N14 may have some aquaculture potential.

- The western edge of planning unit of N5 and the eastern portion of N6 to Jump Across Creek on the Dean Channel are the only rated aquaculture sites on the inner coast and both of these are rated poor.
- Aquaculture for shellfish within the area is unknown at this time. Mussel, little neck and butter clam are found within the area.
- There is little known inventory on bivalve species. It may be that these mussel and clams are able to be cultured close to communities.
- Salinity, depth and temperature would be a factor in most of the inlets due to turbidity of watersheds and temperature fluctuations.
- Little neck and butter clam, green urchin, tanner and dungeness crab and mussel are species that could contribute to an alternative community fishery.
- Research and development of Area 8 fisheries potential should be conducted to create a sustainable business case.

## **Tourism Overview: Inner Coast**

Tourism in the Inner Coast Bella Coola, Kimsquit and the Dean began with the well-used marine travel corridor of the Union Steamship Company. There were no roads into Bella Coola until 1952- travel from the interior was by packhorse. Tommy Walker built the first tourist lodge in Stuie in 1937. This lodge was primarily a hunting lodge for bear and goat but was also recognized as a prime fishing area. The Dean River lodges began development in the late 40's and early 50's and were used both as hunting and fishing lodges. World record bear, goat, salmon and steelhead were common place during that time from the Bella Coola, the Dean and the Kimsquit. The clientele was and continues to be target specific around hunting and fishing. In the 1950's to late 1960's mountaineering was becoming popular and well known, by the 70's it had dropped off in favour of mountainous areas closer to urban centers. Improved airports, regular scheduled air service to Vancouver and improved road access to Williams Lake in the 70's brought more tourists into the area, they too were sports fishing target specific clients. Motels, hotels and campgrounds expanded to meet the needs of the travelling public. Fishing and hunting guides were readily available and worked hard at promoting the area to the world by offering them first class experiences. The Bella Coola and the Dean are world renowned by fishing and hunting enthusiasts.

The majority of tourist that come by road are camperized and are here to fish. Many have been coming for over thirty years. Their arrival marks the arrival of the fish entering the river to spawn, clearly they follow the same path. May to July for chinook and August to October for coho. The steelhead fishery was once a prime sportfishery on the Bella Coola and Dean, in more recent years steelhead numbers have fallen off so dramatically on the Bella Coola that this fishery is not an option at this time. Pinks, chum and cutthroat have never attracted a tourist sports fishing following, there is an increase in pinks for sportfishing over the past several years. Cutthroat have been catch and release for several years. The Dean River is primarily a steelhead, catch and release target fishery and is considered Classified Waters, with some portions limited entry.

There are 3 lodges related to the sportfishery on the Dean. These lodges provide employment for local people and purchase of goods and services from Bella Coola. There are two hotels in the Bella Coola valley, one large guest house, two motels, four private campgrounds, and 4 bed and breakfast, two Parks BC campgrounds, two Forest Service camp grounds, one historic lodge with cabins and a historic cannery revitalized to accommodate tourists.

In 1996 a BC Ferries terminal was built for the Discovery Coast service. The goal of this route was to provide summer transportation service as well as goods and service delivery to the outer coast and middle coast communities and to increase tourism to Bella Coola as a destination point.

Passenger numbers have increased the amount of tourists that come to Bella Coola and growth is expected to climb about 10% per year. Maximum passenger capacity on board the BC Ferries vessel is 325; accommodation in Bella Coola has a capacity of about 150 guests (not including campground). The Coast Discovery run has not yet realized full

capacity. Non ferry tourist traffic is approximately 15,000 per year. Marine traffic from the west to Bella Coola harbour is approximately 30 boats per year, vehicle traffic from the east destined for marine excursion from Bella Coola harbour is approximately 50 boats per year.

Tourist visitors are primarily from British Columbia, even with the new ferry service. The majority of visitors are here to fish and in a recent survey they stated they would not come back if there were fewer fishing opportunities. With the closure of the coho river fishing in 1998, there were fewer sports fishing tourists in September. There was a marked change in ferry traffic profiles from 1998 to 1999. In 1998 the American tourist was more prevalent due to the lower Canadian dollar, in 1999 there was an increase in German tourists as our dollar compared to the mark. For 2000 German tourists are canceling holidays planned in BC due to the mark against the dollar. Tourists often visit from Washington, Oregon and Alberta.

The tourist season begins in May with Chinook fishing and extends to July. BC Ferries service starts in mid June and ends in early September, coho fishing starts in September and ends in mid October. Although the season appears long, it is really broken into three distinct groups, each with small numbers of users.

There are few options for an extended season such as winter tourism as the mountain height prevents sunlight from entering the Bella Coola valley. The Dean is a summer season only and the lodges close for the winter. Tweedsmuir Park and the Rainbow range within the park offer high quality snow mobile alpine areas within a prescribed boundary. Cross-country and downhill skiing as well as snowboarding have excellent potential. There are more sunny hours in the winter in the higher country than at lower elevations. These opportunities are within a two-hour drive of the Bella Coola valley.

The Bella Coola valley has attributes similar to Banff, Jasper and Whistler with the added feature of the Pacific Ocean and what is contained west of the Bella Coola harbour. It is within one hours flight time from Vancouver. It is by road a long distance from a large urban center and a very long boat ride from Vancouver Island. It is internationally known for many qualities, but is yet undeveloped and seldom visited by the larger number of tourists who visit British Columbia.

The Discovery Coast ferry service to Bella Coola has resulted in new opportunities that previously have not existed. Highway 20 improvements have also contributed to vehicle traffic increase. There has been a noticeable increase in the type of tourist travelling to the area now that Highway 20 and particularly the hill, is considered safe for increased traffic. In the first two years of ferry service, RV's were not rented to tourists destined for Bella Coola travelling Highway 20, this is no longer the case. Rental RV numbers is increasing. The makeup of the travelling public is changing from the fisherman/ hunter to more family and senior travelers. Recent Bella Coola tourist survey results indicated the average age for visitors is 50+ who were looking for new scenery, they wanted to see much of the natural features, they were interested in native culture and historical information about the area. They were not overly concerned with shopping experiences or luxury hotels, they wanted to meet new people and to take pleasure in the rural slower

pace of the area, and many would be back. All were struck with the physical attributes of the area. Complaints registered were in the service industry, with high prices for restaurant food that wasn't particularly good and in the attitude of some local residents towards tourists.

In another recent survey from the accommodation sector, indications are that many owners are upgrading or expanding their current facilities. The survey also indicated that the majority of tourist operators have noted an increase of up to 30% in their business over the past five years. They noticed a decrease in their sportsfishing clientele. They indicated that ferry traffic has replaced lost revenue caused by a decrease in fishing and logging activity. Many had trouble accessing investment. It was also noted that there was a lack of local support and would appreciate more cooperation among local businesses. It was noted that it was difficult to find trained and experienced local staff. The existing guides and outfitters were becoming more interested in attracting eco-tour visitors and were planning on excursion type activity to expand their business. Residents with local knowledge about the area indicated they would like to share that knowledge through a guiding experience.

The tables attached to this document outline the features of the inner coast that have potential for increasing tourism activity, diversifying and attracting investment.

### **Tourism: Opportunities**

- There is a tremendous opportunity to promote the areas natural features to allow for diversifying clientele, increase seasonal business and visitor stay.
- There are clear opportunities to promote a wide variety of activities that can be taken advantage of by tour groups and individuals and promoted by entrepreneurs
- Bella Coola has the potential to be a “gateway” community to the Pacific Ocean and the Discovery Coast cruise route
- Local business has an opportunity to promote each other and the attributes, infrastructure of the area
- Very high potential to put outdoor packages together to attract target specific groups
- Develop good promotional products to promote the area
- Identify and contact the pocket cruise ship industry
- Search out niche tourist markets
- Well defined trail and parks system
- Ease to travel and short distance to highly regarded recreational features
- Many recreational activities that are compatible with the natural landscape are not taken advantage of or are extremely underutilized- but are highly sought after in other areas
- Short flight time from Vancouver Island, Vancouver and interior
- Promote good service by providing Super Host training to local business if they want it
- Develop local tourism market plan for Central Coast



### **Tourism: Barriers**

- Short tourist season prevents investment opportunities from being realized
- Accommodation over-capacity in peak season and severely under-capacity in off season
- Very low numbers of tourists compared to rest of British Columbia due to remoteness, cost of travel to region, time involved in travelling to region and lack of knowledge of the area
- Inability to find money to develop top notch market plan
- Community amenities need to be improved
- Ferry service still not secure and season is reduced due to low numbers
- High cost of tour guiding due to distance to attribute prevents the average tourist from taking advantage of experiencing the Central Coast
- Uncertainty surrounding crown land tenure and leases re: some existing lodges

### **Mineral Development: Inner Coast**

First Nations used stone extensively for tools, cooking vessels, weights for fishing nets, carving and ceremonial purposes. Trade for obsidian with the Ulgatcho was common. Obsidian was used as flints for arrows, spears and for cutting.

During the gold rush, prospectors used the Bella Coola/ Grease Trail to the interior and perhaps spent time in the area investigating the mineral potential. The Norwegian settlers in the Bella Coola valley were the first to stake mineral claims and develop small scale prospecting. In 1935 the Department of Mines recorded the following commodities from the Bella Coola region. \$9600 in limestone, \$909 in riprap and crushed rock and \$7,225 in sand and gravel. Mr. C. A. Brynildsen was the Gold Commissioner for Ocean Falls, Kimsquit and Bella Coola. No gold, silver, copper, lead or zinc was recorded from the area.

There were 16 Free Miner's Certificates active and 5 mineral claims recorded and total revenue of \$186.75 was collected by Department of Mines.

After the WW2 mining exploration and development decreased in favour of other industries. Nearer the Coast range prospecting and exploration was sporadic and mostly accomplished by local residents. Some exploration companies have prospected the area but remoteness, high elevation, rugged terrain, heavy timber and overburdens of soil, gravel and broken rock have made prospecting very difficult. It is safe to say that exploration has only progressed to the point of determining the size and quality of the ore body in comparison to capital investment and profit margin.

The small exploration that has occurred within the inner coast has revealed the presence of the following minerals, to date none of these claims has materialized actual processing: molybdenum, gold, silver, copper, lead, zinc, graphite, barium, palladium, asbestos. Structural materials have been identified as assorted granites, limestone, clay, sand and gravel. The structural materials have only been utilized locally. Limestone, used as crush in the pulp process was expected to be a large commodity but this has not

materialized, although significant deposits are found throughout the entire plan area. Sand and gravel deposits are the most plentiful within the inner coast and could present a larger opportunity than the current local demand.

### **Mining: Inner Coast Opportunities**

- Increased interest from local residents in new prospectors program
- Local knowledge and individual prospecting interests is noticeable
- Increased interest of the area on the part of Energy and Mines
- Large potential for dimension stone if markets are good
- Large potential for sand and gravel industry to develop as demand is high
- Exploration into local types of clay may offer some potential depending on results
- Increase in number of free miners permits being issued
- Interest from BC Yukon Chamber of Mines regarding the area
- Logging roads have opened up previously inaccessible areas

### **Mining: Inner Coast Barriers**

- High elevation prospecting
- Heavily forested canopy prevents ease of access to bedrock and intrusive rock
- Overburdens of broken rock, sand and gravel make exploration difficult
- Remoteness of area and distance to access increased development costs
- Remote area increases development and transportation cost of commodity
- Coast range a barrier to move ore cheaply
- Community divided on mining and other commodity development
- Prospecting is expensive and terrain can be difficult to explore
- Information base on the area is poor but improving

### **Water: Inner Coast**

The outer coast and middle coast have many large fresh water lakes with fair to good access to tide water. Massive river watersheds dominate the inner coast, high mountains, glaciers, heavy snow pack and frequent storms resulting in more turbid water in spring, summer and fall months. Kimsquit Lake is the largest lake to be found but is remote and inaccessible. High elevation, glacial lakes occur but are inaccessible. River systems that drain from the Nazko and West Chilcotin Uplands tend to be clearer, warmer and less turbid. Systems that drain from the Coast range experience heavy glacial siltation during the summer months. Selection of streams and rivers for drinking water consumption is possible but cost would increase due to filtration techniques and systems to accommodate sediments.

Within the inner coast there were three canneries, one at Kimsquit and two at Bella Coola. Two water licenses for processing are attached to Bella Coola and both are active licenses. The Kimsquit cannery license information could be available through the Water Licensing Branch in Victoria. Licenses for cannery processing were of larger volumes and could perhaps be converted to bottling licenses.

There are a variety of water licenses within the inner coast, most are for domestic and irrigation purpose. There is one active license for bottled water.

Refer to tables for an overview of potential opportunities.

**Water: Inner Coast Opportunities**

- Existing bottling license presents an opportunity to move Central Coast water into the open market
- Processing licenses could be converted to bottle water
- Areas identified as “geothermal” have mineral water potential as value added product
- Nearly all water systems are free on human generated contaminants ( the Bella Coola system could have sewerage and agricultural waste sediments)
- No industrial contaminants occur in any of the water systems
- Some systems have good access to local infrastructure ( port, hydro, transportation, human resources)
- Remote systems may be accessible once bulk export moratorium is removed
- Local area would be showcased as is known for its clean air and water

**Water: Inner Coast Barriers**

- Water quantity dropping in some areas over the past years could be barrier to consistent product
- Community could be divided on issue of bottled water
- Marketing from remote community could be a problem
- Cost of transportation may be too high
- Zone 2 electrical rates would increase cost of bottled water development
- Markets could already be flooded for bottled water
- Seasonal turbid water may prevent output at certain times
- Cost of filtration of turbid systems would increase cost of product

## Western Hemlock Inner Coast: Forest Cover Overview -

Please note that the forest cover information that has been used for the following table is to be considered ten years old. Significant modification from that point to the year 2000 has occurred.

### N6: Upper Kimsquit

Forest Cover ( by species)	Age Class ( by species in years according to total forest cover)	Site Index (refers to growing site as low-medium- high- low in these planning units is par with elevation)	Height Class (refers to height of overall forest cover in metres) presented here in order of greatest amount within plan unit not by species	Opportunities	Barriers	Other
Hemlock	0-40 41-100 100-250 250+	Low Medium Small amount of high	19.5-37.4 37.5-64.5 0-19.5	Silviculture	No harvest until a successful green up period has been reached from between 10 and 30 years.	Deactivated
True Fir	251+ 100-250 41-100			As above	As above	As above
Western Red Cedar	0-40 41-100			As above	As above	As above
Douglas Fir	0-41 41-100			As above	As above	As above
Spruce	0-41 41-100			As above	As above	As above
Deciduous	0-40			As above	As above	As above
Cottonwood	0-40 41-100			As above	As above	As above

**N6: Lower Kimsquit**

Forest Cover ( by species)	Age Class ( by species in years according to total forest cover)	Site Index (refers to growing site as low-medium- high- low in these planning units is par with elevation)	Height Class (refers to height of overall forest cover in metres) presented here in order of greatest amount within plan unit not by species	Opportunities	Barriers	Other
Lodgepole Pine	101-250	Medium Low High	19.5-37.4 0.0-19.4 37.5-64.5	As above	As above	As above
Spruce	41-100 101-250			As above	As above	As above
Douglas Fir	0-40 41-100 101-250			As above	As above	As above
Hemlock	0-41 41-100 101-250			As above	As above	As above
Western Red Cedar	0-41 41-100			As above	As above	As above
True Fir	250+ 101-250			As above	As above	As above
Cottonwood	0-40 41-100			As above	As above	As above
Deciduous	0-40 41-100			As above	As above	As above

**N6: Dean River**

Forest Cover ( by species)	Age Class ( by species in years according to total forest cover)	Site Index (refers to growing site as low-medium- high- low in these planning units is par with elevation)	Height Class (refers to height of overall forest cover in metres) presented here in order of greatest amount within plan unit not by species	Opportunities	Barriers	Other
Douglas Fir	0-40 41-100 250+	Medium Low High	19.5-37.5 0.0-19.4 37.5-64.5	Silviculture Harvest in all species	Key bridge out	One of few drainage's that may support Bella Coola community over long term
Western Red Cedar	250+ 101-250					
True Fir	250+ 101-250					
Spruce	250+ 41-100					
Hemlock	101-250 250+					
Poplar/ Cottonwood	0-40 41-100					
Deciduous	0-40					

**N6: Suttlesem**

**Skowquiltz**

Forest Cover ( by species)	Age Class ( by species in years according to total forest cover)	Site Index (refers to growing site as low-medium- high- low in these planning units is par with elevation)	Height Class (refers to height of overall forest cover in metres) presented here in order of greatest amount within plan unit not by species	Opportunities	Barriers	Other
Douglas Fir	0-40 41-100	Low Medium	19.5-37.4 37.5-64.5 0.0-19.4	Harvest opportunities Cedar in Skowquiltz	High percentage of hemlock Skowquiltz a target drainage by enviros	
Hemlock	250+ 101-250 41-100					
Western Red Cedar	250+ 101-250 41-100					
True Fir	250+					
Pine	41-100					
Spruce	250+					
Deciduous	0-40					

**N6: Jump Across**

Forest Cover ( by species)	Age Class ( by species in years according to total forest cover)	Site Index (refers to growing site as low-medium- high- low in these planning units is par with elevation)	Height Class (refers to height of overall forest cover in metres) presented here in order of greatest amount within plan unit not by species	Opportunities	Barriers	Other
Hemlock	250+ 101-250	Low Medium	19.5-37.4 37.5-64.5 0.0-19.4	Harvest opportunities	High % of hemlock Target drainage for enviros	
True Fir	250+ 101-250					
Cedar	0-40 41-100					
Spruce	250+					
Douglas Fir	0-40 41-100					



**N5: Laboucher- Bella Coola LRUP Area**

Forest Cover ( by species)	Age Class ( by species in years according to total forest cover)	Site Index (refers to growing site as low-medium- high- low in these planning units is par with elevation)	Height Class (refers to height of overall forest cover in metres) presented here in order of greatest amount within plan unit not by species	Opportunities	Barriers	Other
Western Red Cedar	41-100 250+	Low Medium High	19.5-37.5 37.5-64.5 0-19.4	Harvest opportunities Full range of species Modestly modified Second growth coming on	Nusash an enviro target drainage	Communities are interested in this area as community forest license SBFEP
Lodgepole Pine	41-100					
Spruce	250+					
Hemlock	250+ 41-100 101-250					
Cottonwood	0-40 41-100					
True Fir	250+					

**N11: Twin - South Bentinck - West side- Bella Coola LRUP Area**

Forest Cover ( by species)	Age Class ( by species in years according to total forest cover)	Site Index (refers to growing site as low-medium- high- low in these planning units is par with elevation)	Height Class (refers to height of overall forest cover in metres) presented here in order of greatest amount within plan unit not by species	Opportunities	Barriers	Other
Hemlock	250+ 0-40 41-100 101-250	Low Medium	19.5-37.4 0.0-19.4 37.5-64.5	Harvest opportunities	High% in hemlock Preferred species highly modified	Timber license Forest license SBFEP
Cedar	41-100 101-250 250+					
Spruce	0-40 250+					
Pine	41-100					
Douglas Fir	0-40 41-100 101-250 250+					
Cottonwood	0-40 41-250					
True Fir	250+					
Deciduous	0-41					

**N11: Twin - South Bentinck - West side- Bella Coola LRUP Area**

Forest Cover ( by species)	Age Class ( by species in years according to total forest cover)	Site Index (refers to growing site as low-medium-high- low in these planning units is par with elevation)	Height Class (refers to height of overall forest cover in metres) presented here in order of greatest amount within plan unit not by species	Opportunities	Barriers	Other
Hemlock	0-40 41-100 101-250 250+	Medium Low High	19.5-37.5 0.0-19.5 37.5-64.5			

**N11: Clayton - South Bentinck - East Side – Smitley – Noeick – Talleomey – Asseek – Bella Coola LRUP**

Forest Cover ( by species)	Age Class ( by species in years according to total forest cover)	Site Index (refers to growing site as low-medium-high- low in these planning units is par with elevation)	Height Class (refers to height of overall forest cover in metres) presented here in order of greatest amount within plan unit not by species	Opportunities	Barriers	Other
Douglas Fir	0-40 41-100		19.5-37.4 0.0-19.4 37.5-65.4	Silviculture Harvest in small amounts	High % in hemlock High % modified in best stands of fir / cedar/ spruce	Forest licenses Timber licenses
True Fir	250+					
Western Red Cedar	0-40 41-250					
Deciduous	0-40					
Cottonwood	0-40 41-100					
Spruce	0-40					
Pine	101-250 250+					

**N12: Bella Coola- Bella Coola LRUP**

Forest Cover ( by species)	Age Class ( by species in years according to total forest cover)	Site Index (refers to growing site as low-medium-high- low in these planning units is par with elevation)	Height Class (refers to height of overall forest cover in metres) presented here in order of greatest amount within plan unit not by species	Opportunities	Barriers	Other
Hemlock	0-40 41-100 101-250 250+	Medium Low High	19.5-37.4 0.0-19.4 37.5-64.5	Silviculture Harvest in small amounts	High % of hemlock High% modified in best stands of fir/ cedar Few opportunities	Forest licenses Timber licenses Many drainage's completed harvest and deactivated or in process of being so
True Fir	250+					
Douglas Fir	0-40 41-100					
Balsam	0-40 41-100 101-250 250+					
Spruce	0-40 41-100 101-250 250+					
Western Red Cedar	0-40 41-100 101-250					
Pine	0-40 41-100					
Cottonwood	0-40/41-100					
Deciduous	0-40 41-100					

**N15: Wash Wash – Sheemahant**

Forest Cover ( by species)	Age Class ( by species in years according to total forest cover)	Site Index (refers to growing site as low-medium-high- low in these planning units is par with elevation)	Height Class (refers to height of overall forest cover in metres) presented here in order of greatest amount within plan unit not by species	Opportunities	Barriers	Other
Hemlock	250+ 41-100 101-250	Medium Low High	19.4-37.5 0.0-19.4 37.5-64.5	Small harvest opportunities Silviculture Some second growth opportunities	Majority of preferred species harvested High% of hemlock remaining	Forest licenses
Douglas Fir	0-40 41-100 250+					
Red Cedar	0-40 41-100 100-250					
Spruce	0-40 41-100 250+					
True Fir	250+					
Deciduous	0-40					
Cottonwood	0-40 41-100					

**N14: Neechantz - Machmell**

Forest Cover ( by species)	Age Class ( by species in years according to total forest cover)	Site Index (refers to growing site as low-medium-high- low in these planning units is par with elevation)	Height Class (refers to height of overall forest cover in metres) presented here in order of greatest amount within plan unit not by species	Opportunities	Barriers	Other
Douglas Fir	0-40 41-100	Medium High Low	19.5-37.4 0.0-19.4 37.5-64.5	Silviculture Small harvest opportunities	High % of preferred species harvested High % of hemlock	Forest licenses
Cedar	0-40 41-100					
Spruce	0-40 41-100 250+					
Hemlock	250+ 101-250					
True Fir	250+					
Cottonwood	0-40 41-100					
Deciduous						

## Western Hemlock Inner Coast: Forest Opportunities & Barriers for Bella Coola Communities by Lead Drainage

### N6- Kimsquit LRUP

Drainage	Current Status	Other	Opportunities	Barriers
Upper Kimsquit	Deactivated Significantly harvested	No further harvest for 10 to 30 years Kimsquit LRUP Cultural	Silviculture Watershed restoration maintenance	No wood
Lower Kimsquit	Deactivated Significantly harvested	No further harvest for 10 to 30 years Kimsquit LRUP Cultural	Silviculture Watershed restoration maintenance	No wood
Dean River	Modified	Key bridge is out and needs to be replaced in order to access wood Large percentage of hemlock- products and markets must be good AAC should be over long rotation age while other key drainage's are growing to culmination age Cultural Sportfishing lodges	All species Significant opportunities for Bella Coola valley Communities Silviculture	Charted It will take a while for communities to find common ground
Sutslem Skowquiltz	Modified at front end only	Sutslem primarily hemlock Skowquiltz primarily hemlock but good component of cedar Fir/cedar component at front of drainage's may have second growth potential Cultural	Cedar/ Hemlock/ Spruce	Enviro target SBFEP target
Jump Across	Modified at front end only	Primarily hemlock With small cedar/fir component which has been modified Cultural	Hemlock with cedar/fir minor component	Enviro target



**N5- Bella Coola LRUP**

Drainage	Current Status	Other	Opportunities	Barriers
Laboucher	Modified but intact drainage's within the plan unit-second growth	Access to Nusash difficult Timber License Forest License Target area for community forest license Bella Coola LRUP Cultural	Good cedar stands Second growth fir coming on Close to communities Deciduous species Hemlock Silviculture	Nusash in enviro target drainage Tenure prevents communities access Communities are unable to work together

**N11- Bella Coola LRUP**

Drainage	Current Status	Other	Opportunities	Barriers
Twin	Modified	Preferred species have been significantly modified Forest license Timber license Cultural	Hemlock Cottonwood Deciduous Silviculture	Markets and products must be well thought out
South Bentinck West side	Modified	Preferred species have been significantly modified ( fir/ cedar) Forest license Timber license Bella Coola LRUP Cultural	Hemlock Cottonwood Deciduous Silviculture	Markets and products must be well thought out Hot springs creek target for enviro License holder would want compensation if communities became involved in harvest
Clayton	Modified Large portion of area deactivated	Preferred species have been significantly modified Forest license will revert Bella Coola LRUP Cultural	Some wood remaining at front of drainage Hemlock Spruce Silviculture	Quality may not be of high enough quality for harvest
South Bentinck East side	Modified	Preferred species have been significantly modified Timber license Forest license Bella Coola LRUP Cultural	Hemlock Few opportunities Silviculture	Few opportunities for communities
Smitley	Modified	Preferred species have been significantly modified Cultural	Hemlock Few opportunities Silviculture	Few opportunities for communities
Noeick	Blow out	Significantly modified due to glacial blow out from Ape Lake Cultural	Small opportunities	Small opportunities
Talleomey	Modified	Preferred species have been significantly modified- primary fir/ Forest license Cultural	Hemlock Deciduous Cottonwood Silviculture	Few opportunities for communities
Asseek	Modified	Preferred species have been harvested Cultural	Hemlock Silviculture	Quality poor Few opportunities

**N12- Bella Coola LRUP**

Drainage	Current Status	Other	Opportunities	Barriers
Nooseseck	Front modified	Timber license Target area for community forest license Bella Coola LRUP Cultural	Cedar Spruce Hemlock Cottonwood Deciduous Close to Bella Coola	License holder would want compensation if community tenure successful or SBFEP were to be in drainage
Neemiamus	Front modified	Timber license Target area for community forest license Bella Coola LRUP Cultural	Hemlock Small fir component Small cedar component Deciduous Close to Bella Coola	License holder would want compensation if community tenure or SBFEP went into drainage
Necleetsconnay	Modified	Preferred species have been harvested First Nations target area for forest license Bella Coola LRUP Cultural	Hemlock Cedar Fir Deciduous Cottonwood Silviculture	Bridge needs to be placed across Bella Coola river Good opportunity
Thorsen Creek	Modified	Fairly intact drainage with slight modification Was under SBFEP chart First Nations concerns re: to harvest or not Bella Coola LRUP Cultural	Hemlock Fir Spruce Silviculture	Potential opportunity for all communities
Nookliikonnik	Modified	Back end of drainage has not been harvested Bella Coola LRUP Cultural	Hemlock	Community water shed Small potential for SBFEP
Saloompt	Modified	Harvest of drainage nearly complete Under forest license with last fir component target for harvest in 2000 Probable deactivation in near future Bella Coola LRUP	Hemlock Possible salvage Silviculture	Few opportunities

**N12 cont...Bella Coola LRUP**

Drainage	Current Status	Other	Opportunities	Barriers
Nusatsum	Modified	Significant harvest of drainage Forest License SBFEP Wood lot Bella Coola LRUP Preferred species harvested Cultural	Hemlock Cedar Minor fir component Silviculture	Small scale opportunities SBFEP/Value added
Noosgulch	Modified	Significant harvest of drainage Partial deactivation Bella Coola LRUP Preferred species harvested Cultural	Fir Cedar Hemlock Silviculture	Small scale opportunities SBFEP/Value added
Cahootin	Modified	Small drainage nearly completed SBFEP Bella Coola LRUP Cultural	Fir Cedar Hemlock Silviculture	Small scale opportunities SBFEP/ Value added Short term opportunities
Noomst	Modified	Preferred species harvested Forest license Bella Coola LRUP Cultural	Deciduous Hemlock Spruce Cottonwood Silviculture	Small scale opportunities Short term
Talchako	Modified	Significantly modified Preferred species harvested Deactivation Forest license SBFEP Cultural	Hemlock Minor cedar remaining Silviculture	Few opportunities

## Botanical Forest Products: Inner Coast

### Biogeoclimatic Zone: Indicator Species by Planning Unit

Biogeoclimatic zone	Plan Units	Indicator Species ( Botanical potential in bold)
CWHws2	N5/N6/N11/N12 N14/N15	Western Hemlock, Western Red Cedar, Amabilis Fir, <b>Lanky Moss</b> , Step Moss, Red-stemmed Feather Moss, <b>Oak Fern</b> , Alaskan Blueberry, <b>Oval-leaved Blueberry</b> , <b>Salmonberry</b> , <b>False Azalea</b> , <b>Devil's Club</b> , Queen's Cup, One-sided Wintergreen,, Five-leaved Bramble, Skunk Cabbage, <b>Sphagnum</b> , <b>Kinnikinnick</b>
CWHms2	N5/N6/N11/N12N1 4/N15	<b>Douglas Fir</b> , Western Hemlock, Western Red Cedar, Amabilis Fir, <b>Red Osier Dogwood</b> , Step Moss, Red-stemmed Feather Moss, <b>Lanky Moss</b> , <b>Oak Fern</b> , <b>Devil's Club</b> , <b>Kinnikinnick</b> , <b>False Box</b> , One-sided Wintergreen, Queen's Cup, <b>Alaska Blueberry</b> , <b>Oval-leaved Blueberry</b> , <b>Bunchberry</b> , <b>False Azalea</b>
CWHds2	N6/N12	<b>Douglas Fir</b> , Western Hemlock, Western Red Cedar, Amabilis Fir, <b>Cottonwood</b> , <b>Douglas Maple</b> , <b>Willow</b> , Lanky Moss, Step Moss, Red-stemmed Feather Moss, Electrified Cat-tail Moss, <b>Alaska Blueberry</b> , <b>Oval-leaved Blueberry</b> , <b>Bunchberry</b> , <b>Kinnikinnick</b> , <b>False Azalea</b> , Queen's Cup, One-sided Wintergreen, <b>Devil's Club</b> , <b>False Box</b> , <b>Solomon's Seal</b> , Skunk Cabbage, <b>Sphagnum</b> , Prince's Pine, Fairy Bells
CWHvm1&2	N11	Western Hemlock, Western Red Cedar, Amabilis Fir, <b>Sitka Spruce</b> , <b>Cottonwood</b> , <b>Red Osier Dogwood</b> , <b>Devil's Club</b> , <b>Salal</b> , <b>False Azalea</b> , <b>Salmonberry</b> , <b>Alaskan Blueberry</b> , <b>Oval-leaved Blueberry</b> , <b>Bunchberry</b> , <b>Deer Fern</b> , <b>Swordfern</b> , Flat Moss, <b>Lanky Moss</b> , <b>Sphagnum</b> , Heart-leaved Twayblade, Cladina, Foam Flower, Goldthread, Skunk Cabbage
MHmm(2e)	N12	<b>Yellow cedar</b> , Western Hemlock, <b>Mountain Hemlock</b> , Amabilis Fir, <b>Salmonberry</b> , <b>Alaskan Blueberry</b> , <b>Black Huckleberry</b> , <b>Sphagnum</b> , Red-stemmed Feather Moss, <b>Lanky Moss</b> , Pipe-cleaner Moss, <b>Sword Fern</b> , <b>Deer Fern</b> , <b>Salal</b> , <b>White-flowered Rhododendron</b> , Foam Flower, Gold Thread, Rosy Twisted-stalk, Skunk Cabbage

For further information on botanical plants and some uses refer to botanical appendices.

### Commercial Fishing Opportunities and Barriers: Inner Coast

Species	DFO Statistical Area Plan Unit	Opportunities	Barriers	Other
<b>Pink</b>	Area 8/N5 Area8/N6 Area8/N11 Area8/N12 Area 9/N14	<ul style="list-style-type: none"> <li>Stable potential</li> <li>Develop value added market / Bella Coola</li> </ul>	<ul style="list-style-type: none"> <li>Would this fishery be stable if hatchery closed? What would trend be?</li> </ul>	Enhanced stock
<b>Chum</b>	Area8/N5 Area8/N6 Area8/N11 Area8/N12 Area9/N14	<ul style="list-style-type: none"> <li>Stable potential</li> <li>Increase in trend predicted</li> <li>Develop value added market/ Bella Coola</li> </ul>	<ul style="list-style-type: none"> <li>Would this fishery be stable if hatchery closed? What would trend be?</li> </ul>	Enhanced stock
<b>Sockeye</b>	Area8/N5 Area8/N6 Area8/N11 Area8/N12 Area9/N14	<ul style="list-style-type: none"> <li>Predicted low returns</li> <li>Potential low</li> <li>Fish less stock- value add more</li> </ul>	<ul style="list-style-type: none"> <li>Poor escapement levels</li> </ul>	Ocean survival poor Expensive to enhance
<b>Chinook</b>	Area8/N5 Area8/N6 Area8/N11 Area8/N12 Area9/N14	<ul style="list-style-type: none"> <li>Escapement level stable in Area 8</li> </ul>	<ul style="list-style-type: none"> <li>Low escapement in Area 9</li> </ul>	Enhanced stock
<b>Coho</b>	Area8.N5 Area8/N6 Area8/N11 Area8/N12 Area9/N14	<ul style="list-style-type: none"> <li>Conservation measures</li> <li>Overfished</li> </ul>	<ul style="list-style-type: none"> <li>Low stock</li> </ul>	Enhanced stock
<b>Herring</b>	Area8/N5 Area8/N6 Area8/11 Area8/N12 Area9/N14	<ul style="list-style-type: none"> <li>Potential</li> </ul>	<ul style="list-style-type: none"> <li>Log storage detrimental</li> </ul>	Abundance high
<b>Rockfish</b>	Area8/N5 Area8/N6 Area8/N11	<ul style="list-style-type: none"> <li>Potential low to high dependent on area</li> </ul>	<ul style="list-style-type: none"> <li>No current basis for sustainability set</li> <li>Some species in decline</li> </ul>	

*Western Hemlock – Inner Coast Table*  
*Commercial Fishing Opportunities and Barriers*

<b>Species</b>	<b>DFO Statistical Area Plan Unit</b>	<b>Opportunities</b>	<b>Barriers</b>	<b>Other</b>
	Area8/N12 Area9/N14		<ul style="list-style-type: none"> <li>• Inventory poor/overfishing</li> </ul>	
<b>Halibut</b>	Area8/N5 Area8/N6 Area8/N11 Area8/N12 Area9/N14	<ul style="list-style-type: none"> <li>• Potential</li> </ul>	<ul style="list-style-type: none"> <li>• Has suffered from overfishing</li> </ul>	<ul style="list-style-type: none"> <li>• Bycatch of trawl fishery</li> <li>• Size declining</li> </ul>
<b>Flatfish</b>	Area8/N5 Area8/N6 Area8/N11 Area8/N12 Area9/N14	<ul style="list-style-type: none"> <li>• Potential</li> </ul>	<ul style="list-style-type: none"> <li>• Limited information in size and trends</li> </ul>	<ul style="list-style-type: none"> <li>• Need better understanding of numbers</li> </ul>
<b>Pacific Cod</b>	Area8/N5 Area8/N6 Area8/N11 Area8/N12 Area9/N14	<ul style="list-style-type: none"> <li>• Potential</li> </ul>	<ul style="list-style-type: none"> <li>• Fluctuations in stock numbers</li> </ul>	<ul style="list-style-type: none"> <li>• Assessments difficult</li> </ul>
<b>Lingcod</b>	Area8/N5 Area8/N6 Area8/N11 Area8/N12 Area9/N14	<ul style="list-style-type: none"> <li>• Small Potential</li> </ul>	<ul style="list-style-type: none"> <li>• No biological evidence of stock numbers</li> <li>• Stocks show decline</li> </ul>	<ul style="list-style-type: none"> <li>• Protect from overfishing</li> </ul>

*Western Hemlock – Inner Coast Table*  
*Commercial Fishing Opportunities and Barriers*

<b>Species</b>	<b>DFO Statistical Area Plan Unit</b>	<b>Opportunities</b>	<b>Barriers</b>	<b>Other</b>
<b>Dungeness Crab</b>	Area 8/ N5 Area8/ N6 Area 8/ N11 Area 8/ N12 Area 9/ N14	<ul style="list-style-type: none"> <li>• Potential</li> <li>• Test fishery for communities</li> <li>• Develop value added market in Bella Coola</li> </ul>		Could be lack of suitable habitat
<b>Tanner</b>	Area 8/ N 5 Area 8/ N 6 Area 8/ N11 Area 8/ N12 Area 9/ N14	<ul style="list-style-type: none"> <li>• Potential</li> <li>• Test fishery for communities</li> <li>• Value added market in Bella Coola</li> </ul>		Little information
<b>Green Urchin</b>	Area8/N5 Area8/N6 Area 8/ N11 Area 8/ N12 Area 9/N14	<ul style="list-style-type: none"> <li>• Potential</li> <li>• Test fishery for communities</li> <li>• Develop value added market in Bella Coola</li> </ul>		Little information
<b>Mussel</b>	Area 8/ N5 Area8/ N6 Area 8/ N11 Area 8/ N12 Area 9/ N14	<ul style="list-style-type: none"> <li>• Potential</li> <li>• Test fishery for communities</li> <li>• Develop value added market in Bella Coola</li> </ul>		Little information
<b>Shrimp/Prawn</b>	Area 8/ N5 Area 8/ N6 Area 8/N11 Area 8/ N12 Area 9/ N14	<ul style="list-style-type: none"> <li>• Potential</li> <li>• Value added market in Bella Coola- could expand?</li> </ul>	Minimum escapements now occur	Population could be exploited
<b>Little Neck/ Butter Clams</b>	<b>Area 8/ N5</b> <b>Area 8/ N6</b> Area8/ N11 Area 8/ N12 Area 9/ N14	<ul style="list-style-type: none"> <li>• Potential</li> <li>• Test fishery for communities</li> <li>• Develop value added market in Bella Coola</li> </ul>	No inventory	Must ensure population size is adequate for commercial use



**Tourism:  
Attributes and Opportunities  
Inner Coast by Planning Unit**

**Landscape Unit N6:**

**Kimsquit**

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>• Upper Kimsquit</li> <li>• Kimsquit Lake</li> <li>• Lower Kimsquit</li> <li>• Kimsquit Estuary</li> </ul>	<ul style="list-style-type: none"> <li>• Marine and fresh water estuaries</li> <li>• High scenic values</li> <li>• High sports fishing values-fresh and salt</li> <li>• High grizzly values</li> <li>• Black bear, deer, goat and all listed terrestrial birds and mammals</li> <li>• Marine birds and mammals</li> <li>• Interior bird species in transition zone</li> <li>• Historic trail system to Gardner Canal</li> <li>• Mountains</li> </ul>	<ul style="list-style-type: none"> <li>• First Nations</li> <li>• Hunting</li> <li>• Marine traffic</li> <li>• Fresh/ salt recreational fishery</li> </ul>	<ul style="list-style-type: none"> <li>• Mountain climbing</li> <li>• Kayaking</li> <li>• Canoeing</li> <li>• Rafting</li> <li>• Wildlife viewing</li> <li>• Fresh water fishing</li> <li>• Eco Tourism</li> <li>• Cultural Tourism</li> <li>• Bear viewing</li> </ul>	<ul style="list-style-type: none"> <li>• Historic and cultural values</li> <li>• Anchor</li> <li>• Existing guide outfitter</li> <li>• Jet Boat access</li> <li>• Logging roads deactivated</li> <li>• Connection to Kitlope Park</li> <li>• Air strip</li> </ul>

## Dean

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Dean River</li> <li>Dean River Estuary</li> </ul>	<ul style="list-style-type: none"> <li>Internationally renown for steelhead</li> <li>High scenic values</li> <li>Marine estuary</li> <li>Grizzly, black, deer, moose, goat, sheep, all listed terrestrial birds and mammals</li> <li>Marine birds and mammals</li> <li>Mountains</li> <li>Red, Yellow, Blue listed plants, birds and mammals</li> </ul>	<ul style="list-style-type: none"> <li>First Nations</li> <li>River and salt fishing</li> <li>Hunting</li> <li>Camping</li> <li>Marine tourist</li> <li>Fly in tourist</li> </ul>	<ul style="list-style-type: none"> <li>What is saturation point re: recreational fishery?</li> <li>Eco tourism</li> <li>Kayak</li> <li>Canoe</li> <li>Drifting</li> <li>Rafting</li> <li>Mountain Climbing</li> <li>Hiking</li> <li>Bird and Wildlife Viewing</li> <li>Marine tourism</li> </ul>	<ul style="list-style-type: none"> <li>Air strip</li> <li>Boat access</li> <li>4 lodges for river fishing</li> <li>Important to Bella Coola for employment and goods and service delivery</li> <li>Roaded areas</li> <li>Connection to Tweedsmuir Park</li> <li>Existing guide</li> <li>Regulated river system</li> </ul>

## Sutlsem / Skowquiltz

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>River systems</li> <li>Estuary</li> <li>High visuals</li> </ul>	<ul style="list-style-type: none"> <li>Waterfalls</li> <li>Red Blue Yellow listed plants, birds and mammals both terrestrial and marine</li> <li>Marine estuary</li> <li>Carlson Inlet</li> </ul>	<ul style="list-style-type: none"> <li>First Nations</li> <li>Marine travel corridor</li> <li>Temporary anchor</li> <li>Marine Sports Fishing</li> <li>Winter range for trumpeter swan</li> <li>Limited tourism use</li> </ul>	<ul style="list-style-type: none"> <li>Eco tourism</li> <li>Marine traffic increase use</li> </ul>	<ul style="list-style-type: none"> <li>Marine or float plane access only</li> <li>Enviro target for Skowquiltz</li> <li>Skowquiltz unmodified</li> <li>Travel corridor for marine traffic</li> </ul>

## Jump Across

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Water/creek system</li> <li>Visual</li> </ul>	<ul style="list-style-type: none"> <li>Rocks and petroglyphs</li> <li>Red, Blue, Yellow listed plants, birds and mammals both marine and terrestrial</li> </ul>	<ul style="list-style-type: none"> <li>Marine travel corridor</li> <li>Limited tourist use</li> <li>First Nations</li> </ul>	<ul style="list-style-type: none"> <li>Eco tourism</li> <li>Marine traffic may increase use</li> </ul>	<ul style="list-style-type: none"> <li>Marine or float plane access only</li> <li>Some attention given through National Geographic Magazine</li> </ul>

## Landscape Unit N5

### Laboucher

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Estuary values</li> <li>Small lakes</li> <li>River systems</li> <li>Estuary values</li> <li>Visual corridor for Burke/Dean and Laboucher Channels</li> </ul>	<ul style="list-style-type: none"> <li>Red, Blue, Yellow listed plants, birds and mammals both terrestrial and marine</li> <li>Marine estuary</li> <li>High visuals</li> </ul>	<ul style="list-style-type: none"> <li>Marine travel corridor</li> <li>Limited tourism use</li> <li>First Nations</li> </ul>	<ul style="list-style-type: none"> <li>Marine traffic may increase use</li> </ul>	<ul style="list-style-type: none"> <li>Marine or float plane access only</li> </ul>

### Landscape Unit N12 Bella Coola Valley

#### Camp II Bay (under N11)

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Estuary</li> <li>Biggest cedar in BC</li> </ul>	<ul style="list-style-type: none"> <li>Marine access to Big Tree Forest Service Recreation Site</li> <li>Trails</li> <li>Camping (not designated)</li> <li>High visuals</li> </ul>	<ul style="list-style-type: none"> <li>Marine only</li> <li>First Nations</li> </ul>	<ul style="list-style-type: none"> <li>expect less visitors as higher numbers came by road now deactivated</li> <li>potential for marine camp ground and use site</li> </ul>	<ul style="list-style-type: none"> <li>Area once end of forest service road from Bella Coola- deactivated in 1999, now marine access only</li> </ul>

**Clayton Falls /Blue Jay Lake**

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>• Water falls</li> <li>• Mountain Lakes</li> <li>• Mountain views</li> <li>• Blue Jay Lake</li> <li>• Gray Jay Lake</li> <li>• M Gurr Lake</li> </ul>	<ul style="list-style-type: none"> <li>• Trail to Clayton Falls</li> <li>• Estuary park for day use</li> <li>• High mountain road</li> <li>• Bogs with sun-dew plants</li> <li>• Look out</li> <li>• Board walk over bog areas</li> <li>• Trails</li> <li>• Forest service recreation site</li> <li>• Marine mammals</li> <li>• Terrestrial mammals</li> <li>• Marine birds</li> <li>• Terrestrial birds</li> <li>• Rare and endangered plants</li> <li>• Marbled Murrelet</li> </ul>	<ul style="list-style-type: none"> <li>• Camping at Blue Jay</li> <li>• Picnic spots</li> <li>• High local use</li> <li>• High tourism use</li> <li>• Snow mobile use in winter</li> <li>• One of few fresh water lakes</li> <li>• Trout fishing in lake</li> <li>• Swimming</li> <li>• Canoeing</li> <li>• River fishing</li> <li>• Estuary fishing</li> <li>• First Nations</li> </ul>	<ul style="list-style-type: none"> <li>• Tours</li> <li>• Increase tourist stay by promoting attributes of area</li> <li>• May have potential to significantly increase winter recreational activity</li> </ul>	<ul style="list-style-type: none"> <li>• PAS area at Blue Jay lakes</li> <li>• Forest harvesting nearly complete, road may be deactivated eliminating this High use recreational area</li> <li>• Road access form Highway 20</li> </ul>

### Bella Coola Harbour / Tallheo

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Two historic canneries</li> <li>Marine harbour</li> <li>Bella Coola Ferry terminal</li> </ul>	<ul style="list-style-type: none"> <li>Trails at Tallheo</li> <li>Trails along Bella Coola side of estuary</li> <li>Marine mammals and birds</li> <li>Cultural values at both sites</li> <li>Historic values at both sites</li> <li>Partially restored historic cannery village</li> <li>Operating net loft and repair</li> <li>Historic buildings- housed Chinese and transient workers during cannery days</li> </ul>	<ul style="list-style-type: none"> <li>Harbour</li> <li>Marine fuel</li> <li>Marine ways</li> <li>Bella Coola ferry terminal</li> <li>Boating</li> <li>Kayaking</li> <li>Salt &amp; fresh water fishing</li> <li>Hiking</li> <li>First Nations</li> </ul>	<ul style="list-style-type: none"> <li>complete restoration at both canneries for tourist attraction</li> <li>develop long term plan for harbour to attract increase marine boaters</li> <li>improve services to marine boaters</li> <li>increase parking lot size</li> <li>develop better marine trail system on Bella Coola side</li> <li>develop kayak camp site</li> </ul>	<p>Bella Cola Harbour: Marine access, float plane or via Highway 20.</p> <p>Tallheo: Marine access or float plane only</p> <p><i>Problem: vandalism/garbage/ lack of signage Lack of money to achieve goals</i></p>

### Bella Coola Estuary

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>ranked highest estuary on Central Coast for preservation</li> </ul>	<ul style="list-style-type: none"> <li>close proximity to Bella Coola town-site</li> <li>rated high for red/blue/yellow listed birds, plants and mammals- marine and terrestrial</li> <li>rated high for fish habitat</li> <li>rated high for migratory/nesting and wintering areas for birds</li> <li>trails with good access to estuary</li> <li>cultural and historic values</li> </ul>	<ul style="list-style-type: none"> <li>local residents</li> <li>some tourist use</li> <li>hunting</li> <li>tidal fishing</li> <li>hiking</li> <li>birdwatching</li> <li>kayaking</li> <li>canoeing</li> <li>birdwatching</li> <li>First Nations</li> </ul>	<ul style="list-style-type: none"> <li>development of boardwalk and interpretive trail system to educate public and prevent damage to habitat</li> <li>development of interpretive center</li> </ul>	<ul style="list-style-type: none"> <li>private land</li> <li>find money for purchase</li> <li>access via Highway 20 or by canoe/kayak</li> </ul> <p><i>Problem: vandalism/ illegal shooting of Migratory birds/ lack of funding to acquire and/or maintain</i></p>

### Highway 20 Bridges / Creeks

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Visual for watching fish spawn</li> </ul>	<ul style="list-style-type: none"> <li>Spawning salmon- pink, coho, chum</li> </ul>	<ul style="list-style-type: none"> <li>First Nations</li> <li>Local residents</li> <li>Tourist</li> </ul>	<ul style="list-style-type: none"> <li>Promote unique opportunity to watch spawning salmon</li> <li>Education of public on protection of redds and spawning fish</li> </ul>	<ul style="list-style-type: none"> <li>Promote certain creeks for fish watching by signage and educational material</li> <li>Access via Highway 20</li> </ul> <p><i>Problem: vandalism and lack of dollars to maintain promotional materials</i></p>

### Walker Island Regional Park

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Local government park</li> </ul>	<ul style="list-style-type: none"> <li>Rodeo/stampede grounds</li> <li>Ball park</li> <li>Trails with culturally modified trees</li> <li>Horse trails</li> <li>Unique wet lands</li> <li>Close proximity to river</li> <li>BBQ pits/ picnic area</li> <li>Playground</li> <li>Gazebo and lookout</li> <li>Red/Blue/Yellow listed birds, mammals and plants</li> </ul>	<ul style="list-style-type: none"> <li>First Nations</li> <li>Local users</li> <li>Stampede tourists</li> <li>Birders</li> <li>Hikers</li> <li>Riding club</li> <li>Mountain bikers</li> <li>Canoeists</li> <li>Campers during rodeo</li> <li>Fishing</li> <li>River access for boaters</li> </ul>	<ul style="list-style-type: none"> <li>Increase visitor stay by promoting area as tourist attraction</li> <li>Develop further trail network</li> <li>Potential for camp ground development in the future</li> </ul>	<ul style="list-style-type: none"> <li>Develop visitor information</li> <li>Develop what to see brochures</li> <li>Access via Highway 20</li> </ul> <p>Problem: vandalism, maintenance/lack of dollars</p>

### Snooka Recreational Area

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Forest service rec site</li> </ul>	<ul style="list-style-type: none"> <li>Mountain trail</li> <li>Unique features</li> <li>View of valley</li> <li>Starting point to back country alpine</li> </ul>	<ul style="list-style-type: none"> <li>First Nations</li> <li>Local users</li> <li>Mountain bikers</li> <li>Hikers</li> <li>Some tourist use</li> </ul>	<ul style="list-style-type: none"> <li>Promote area for increase visitor use</li> </ul>	<ul style="list-style-type: none"> <li>Return MOF budget to maintain recreation sites</li> <li>Access via Highway 20</li> </ul>

### Salloompt

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Local park</li> </ul>	<ul style="list-style-type: none"> <li>Interpretive trail through old growth forest</li> <li>Picnic and day use area</li> <li>River frontage</li> <li>Scenic views</li> <li>Red/Blue/Yellow listed birds, plants and mammals</li> </ul>	<ul style="list-style-type: none"> <li>First Nations</li> <li>Local users</li> <li>Mountain bikers</li> <li>Hikers</li> <li>Tourists</li> <li>Fishing access</li> <li>School children</li> </ul>	<ul style="list-style-type: none"> <li>Promote area for increased visitor use</li> </ul>	<ul style="list-style-type: none"> <li>Access via Highway 20</li> </ul> <p><i>Problem: vandalism and maintenance</i></p>

### Salloompt / Lost Lake

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Forest Service Rec site</li> <li>Roaded access to back country</li> </ul>	<ul style="list-style-type: none"> <li>Small lake</li> <li>Picnic area</li> <li>Good view of surrounding mountains</li> </ul>	<ul style="list-style-type: none"> <li>First Nations</li> <li>Local users</li> <li>Hikers</li> <li>Tourists</li> <li>Fishing</li> <li>Hunting</li> <li>Exploring</li> </ul>	<ul style="list-style-type: none"> <li>Increase visitor stay by promoting area</li> <li>Alpine access</li> <li>Access to mountaineering opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Access via Highway 20</li> <li>Inactive logging road</li> <li>Potential access to back country/ alpine and mountains</li> </ul>

### Nusatsum

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Back country</li> <li>Roaded access to remote area</li> <li>Forest service rec sites</li> </ul>	<ul style="list-style-type: none"> <li>Waterfalls</li> <li>Picnic areas</li> <li>Camping areas</li> <li>Access to alpine trails</li> <li>Access to mountains and glaciers</li> </ul>	<ul style="list-style-type: none"> <li>First Nations</li> <li>Local users</li> <li>Hikers</li> <li>Mountaineering</li> <li>Alpine skiing</li> <li>Tourists</li> </ul>	<ul style="list-style-type: none"> <li>Increase visitor stay by promotional signage and attributes of area</li> </ul>	<ul style="list-style-type: none"> <li>Access via Highway 20</li> <li>Remote logging road</li> <li>Logged area</li> </ul> <p><i>Problem: MOF may deactivate to recreational Area thereby eliminating high end tourist experience MOF recreational budget may continue to be eliminated this vandalism and garbage would be problem</i></p>

## Cahootin

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Forest service road</li> </ul>	<ul style="list-style-type: none"> <li>River canyon</li> <li>Access point to five back country glaciers</li> <li>Visual</li> </ul>	<ul style="list-style-type: none"> <li>First Nations</li> <li>Local users</li> <li>Hiking</li> <li>Mountain biking</li> <li>Mountaineering</li> </ul>	<ul style="list-style-type: none"> <li>Increase use of this area for tourist potential</li> <li>Use as day site</li> </ul>	<ul style="list-style-type: none"> <li>Access via Highway 20</li> <li>remote logging road</li> <li>logged area</li> </ul> <p><i>Note: underused area that is quick to get to, and could promote jump off point for mountaineering</i></p>

## Tweedsmuir Park

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Provincial Park</li> <li>Atnarko River</li> </ul>	<ul style="list-style-type: none"> <li>Trails</li> <li>Campground</li> <li>Historical and cultural values</li> <li>Lakes&amp; rivers</li> <li>Waterfalls</li> <li>Day use parks- picnic areas</li> <li>Red/blue/yellow listed birds, plants and animals</li> <li>High grizzly bear population</li> <li>Historic lodge</li> <li>Mountains</li> <li>Jump off point for back country and alpine</li> <li>Heritage river</li> <li>Cultural and historic values</li> <li>Look outs and view points</li> </ul>	<ul style="list-style-type: none"> <li>First Nations</li> <li>Local users</li> <li>Tourists</li> <li>Hiking</li> <li>Mountaineering</li> <li>Fishing</li> <li>Mountain biking</li> <li>Camping</li> <li>Snowmobiling in high country</li> <li>Cross country skiing</li> <li>Swimming</li> <li>River boat drifting</li> <li>Kayak</li> <li>Canoeing</li> </ul>	<ul style="list-style-type: none"> <li>Increase visitor use</li> <li>Promote park more than is current</li> <li>Promote park as user friendly</li> </ul>	<ul style="list-style-type: none"> <li>Access via Highway 20, helicopter or float plane or by foot</li> <li>park underutilized by visitors</li> <li>deactivation of Tote road will eliminate user opportunities</li> <li>does parks have promotion budget</li> </ul> <p><i>Problem:</i></p> <ul style="list-style-type: none"> <li><i>Camp grounds could be phased out, due to bear populations</i></li> <li><i>Forest harvest as Tsini-Tsini on Talchako could be detrimental to viewscape for park and lodge users</i></li> </ul>



## **Talchako**

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>• Forest Service Road</li> <li>• Forest Service Rec site</li> </ul>	<ul style="list-style-type: none"> <li>• Campground</li> <li>• River confluence</li> <li>• Day use and picnic areas</li> <li>• Logging roads</li> <li>• Back access to Ape and Monarch</li> <li>• Spectacular views from forest service roads</li> <li>• Red/Blue/Yellow listed bird, plant/mammals</li> <li>• High for grizzly/ black/goat</li> <li>• High elevation bird species</li> <li>• Glaciers</li> <li>• Mountain streams</li> </ul>	<ul style="list-style-type: none"> <li>• First Nations</li> <li>• Local users</li> <li>• Fishing</li> <li>• Small tourism</li> <li>• Hunting</li> </ul>	<ul style="list-style-type: none"> <li>• Potential for new and larger campground at Noomst to accommodate Tweedsmuir park campers if parks closes campground</li> </ul>	<ul style="list-style-type: none"> <li>• Access via Highway 20</li> <li>• Forest service road will be deactivated Within next two years.</li> <li>• McCall Flats campground underutilized - should be moved to less isolated area such as the Noomst</li> <li>• MOF may not have recreation budget to maintain campground</li> <li>• MOF &amp; MELP should work with local community to combine budgets and areas for increased camp ground spaces, budgets and maintenance</li> <li>• Logged area</li> </ul>

## Landscape Unit N11

### Twin / South Bentinck West

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Hot Springs Creek</li> <li>South Bentinck Arm</li> </ul>	<ul style="list-style-type: none"> <li>Hot springs</li> <li>Mountainous area</li> <li>Glaciers</li> <li>Views</li> <li>Unique plants near hot springs</li> </ul> Red/blue/yellow listed birds/ plants/ mammals	<ul style="list-style-type: none"> <li>First Nations</li> <li>Local users</li> <li>Salt water fishing</li> <li>Tourists who know where hot springs are</li> <li>Tour guides</li> <li>Marine cruising</li> </ul>	<ul style="list-style-type: none"> <li>large numbers of users could damage hot springs area</li> <li>travel corridor to estuaries and for mountain viewsapes probable only opportunity</li> </ul>	<ul style="list-style-type: none"> <li>access by boat or plane (fixed/float)</li> <li>existing guide outfitter in area</li> </ul>

### Asseek/ Ickna/Taleomey/Noeick

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>Taleomey river &amp; estuary</li> <li>Noeick river &amp; estuary</li> <li>Ickna river &amp; estuary</li> <li>Asseek river &amp; estuary</li> </ul>	<ul style="list-style-type: none"> <li>Red/Blue/Yellow listed birds, plants, mammals</li> <li>Migratory, nesting and wintering birds</li> <li>Trumpeter swan wintering area</li> <li>Grizzly and black</li> <li>Most listed terrestrial mammals would be evident</li> <li>Most listed terrestrial birds would be evident</li> <li>High mountains</li> <li>Ice fields</li> <li>Glaciers</li> <li>Wetlands</li> <li>Fresh and salt water fishing</li> <li>Cultural values</li> <li>Hunting</li> </ul>	<ul style="list-style-type: none"> <li>First Nations</li> <li>Local users</li> <li>Hunting</li> <li>Fishing</li> <li>Boating</li> </ul>	<ul style="list-style-type: none"> <li>Promotion of wild life viewing and birding during migratory times</li> <li>Promotion of area as viewscape experience</li> <li>Eco tourism</li> </ul>	<ul style="list-style-type: none"> <li>Access via air</li> <li>Fairly remote area with few visitors</li> <li>Marine or air travel only</li> <li>Roaded areas from logging</li> <li>Logging camp</li> <li>Air strip at Taleomey</li> <li>Road deactivation schedule</li> <li>Heavily harvested, some areas not greened up yet</li> <li>Existing guide outfitter in area</li> </ul>

## Landscape Unit N15

### Wash Wash / Sheemahant

Attribute	Special Feature	Current Use	Potential Opportunities	Other
<ul style="list-style-type: none"> <li>• Inziana river</li> <li>• Tzeo River</li> <li>• Sheemahant River</li> <li>• Third Narrows of Oweekeno Lake</li> </ul>	<ul style="list-style-type: none"> <li>• Extensive wetlands</li> <li>• Extensive freshwater river systems</li> <li>• High mountains</li> <li>• Ice fields</li> <li>• Cultural values</li> <li>• High recreational fresh water fishing values- high sockeye</li> <li>• Grizzly &amp; black bear values high</li> <li>• Goat</li> <li>• Red/ Blue/ Yellow listed species for plants, birds and mammals</li> <li>• Extensive wetland system used by waterfowl migratory and nesting</li> </ul>	<ul style="list-style-type: none"> <li>• First Nations</li> <li>• Hunting /remote</li> <li>• Fishing/remote</li> <li>• Little other tourist use currently</li> </ul>	<ul style="list-style-type: none"> <li>• Slow growth unless First Nations develop eco-based tourism</li> <li>• Birding and bear viewing have potential</li> </ul>	<ul style="list-style-type: none"> <li>• Coho river fishing may be curtailed</li> <li>• Sports fishing for sockeye may be curtailed</li> <li>• Existing guide outfitter in area</li> </ul>

**Inner Coast**  
**Recreational Sports Fishing Opportunities (Salt Water Only)**  
**By planning unit for DFO Fishing Areas 8 & 9**  
**Plan Unit: N5/N6/N11/N12= DFO Fishing Area 8**  
**Plan Unit: N14=DFO Fishing Area 9**

Species	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Chinook	8					9	8/9	8/9	9	9		
Coho							8?/ 9?	8?/ 9				
Pink							8/9	8/9				
Lingcod						9		8/9				
Rockfish					8	9	8/9	8	9			
Pacific Cod		9		9	9	8	8	8	9	9	9	
Halibut							8	8				
Herring							8					
Dungeness Crab	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9
Prawn	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9
Shrimp	9	9	9	9	9	9	9	9	9	9	9	9
Sea Urchin						9	9					
Butter Clam	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9
Little Neck Clam	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9
Manila Clam	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9
Mussel	8	8	8	8	8	8	8	8	8	8	8	8
Scallop	9	9	9	9	9	9	9	9	9	9	9	9

## Central Coast Northern Plan Area

### Western Hemlock Inner Coast: Mineral Rating

**Planning Units:** Eastern portion of N5/ Eastern portion of N14/ N6/N11/N12

#### N5

Area	Mineral Rating	Evidence	Past Activity
<b>Laboucher</b>	Medium	<ul style="list-style-type: none"> <li>Quartz mon-zonite</li> <li>alluvial glacial deposits</li> <li>granodiorite</li> <li>foliated quartz diorite</li> <li>foliated chloritized quartz diorite</li> <li>greenstone chlorite schist abundant andesitic dykes</li> <li>quartz diorite, diorite,</li> <li>metasediments, biotite, hornblend,,garnet schist, biotite,, garnet sillinanite schist, metavolcanics-limestone, quartzite</li> <li>gneissic diorite with inclusions of metasediments and metavolcanics</li> <li>black slate and agrillite</li> <li>agmatite</li> </ul>	Showings
<b>Kimsquit</b>	Lowest Low High to Medium	<ul style="list-style-type: none"> <li>greenstone-chlorite schist with abundant andesitic dykes/probable eruptive neck</li> <li>quartz monzonite</li> <li>andesitic volcanic rocks, minor sediments</li> <li>foliated, chloritized quartz diorite</li> <li>foliated chloritized granodiorite</li> <li>alluvial and glacial deposits</li> <li>black slate and argillite</li> <li>gneissic diorite with metasediments and meta volcanics</li> </ul>	Three showings

*Western Hemlock – Inner Coast Table  
Mineral Ratings*

Area N6	Mineral Rating	Evidence	Past Activity
<b>Jump Across Crag</b>	Low to medium low	<ul style="list-style-type: none"> <li>• greenstone chlorite schist with abundant andesitic dykes</li> <li>• black slate with argillite</li> <li>• foliated chloritized granodiorite</li> <li>• andesitic volcanic rock with minor sediments</li> <li>• quartz monzonite</li> <li>• foliated chloritized granodiorite</li> <li>• copper</li> <li>• molybdenum</li> <li>• lead</li> <li>• silver</li> <li>• zinc</li> </ul>	Three showings
<b>Sutslum Skowlitz</b>  <b>N6 Sutslum Skowquiltz</b>	Low to medium	<ul style="list-style-type: none"> <li>• black slate with argillite</li> <li>• foliated chloritized quartz diorite</li> <li>• gneissic diorite with metasediments and metavolcanics</li> <li>• granodiorite</li> <li>• andesitic volcanic rocks with minor sediments (Bella Bella formation)</li> <li>• quartz monzonite</li> <li>• alluvial and glacial deposits</li> <li>• greenstone chlorite schist with abundant andesitic dykes</li> <li>• metasediments, biotite-hornblende-garnet schist, biotite-garnet-sillimanite schist, metavolcanics, limestone, quartzite</li> <li>• agmatite</li> <li>• iron</li> </ul>	One past producer
<b>N6 Dean</b>	Medium high to low	<ul style="list-style-type: none"> <li>• foliated chloritized quartz</li> <li>• andesitic volcanic rocks, minor sediments</li> <li>• quartz monzonite</li> <li>• greenstone chlorite schist with abundant andesitic dykes</li> <li>• alluvial and glacial deposits</li> <li>• agmatite</li> <li>• copper</li> <li>• molybdenum</li> </ul>	Three showings
<b>Twin/ South Bentinck</b>	High to highest	<ul style="list-style-type: none"> <li>• greenstone, chlorite schist, abundant andesitic dykes</li> <li>• foliated quartz diorite</li> <li>• feldspar-quartz-biotite gneiss garnet-biotite gneiss, amphibolite, banded gneiss, veined gneiss</li> <li>• foliated granodiorite</li> <li>• metasediments, biotite-hornblende-garnet schist, biotite-garnet-sillimanite schist, metavolcanics, limestone, quartzite</li> <li>• gneissic diorite</li> </ul>	One showing One prospect

*Western Hemlock – Inner Coast Table*  
*Mineral Ratings*

Area N11	Mineral Rating	Evidence	Past Activity
<b>Clayton Smitley Noeick Taleomey Asseek</b>	Low with small portion on South Bentinck as high	<ul style="list-style-type: none"> <li>• foliated, chloritized quartz diorite</li> <li>• metasediments, biotite-hornblende-garnet schist, biotite,-garnet-sillimanite schist, metavolcanics, limestone, quartzite</li> <li>• greenstone, chlorite schist with abundant andesitic dykes</li> <li>• foliated chloritized granodiorite</li> <li>• quartz monzonite</li> <li>• foliated granodiorite</li> <li>• alluvial and glacial deposits</li> <li>• granodiorite</li> </ul>	Three showings One prospect

Area N12	Mineral Rating	Evidence	Past Activity
<b>Bella Coola Salloompt Nusatsum</b>	Medium	<ul style="list-style-type: none"> <li>• greenstone, chlorite schist, abundant andesitic dykes</li> <li>• alluvial and glacial deposits</li> <li>• granodiorite</li> <li>• black slate and argillite</li> <li>• andesitic volcanic rocks, minor sediments</li> <li>• quartz monzonite</li> <li>• andesitic volcanic rocks (Bella Bella formation)</li> <li>• gneissic diorite-massive diorite</li> </ul>	Five showings
<b>Talchako Gillenspetz Ape</b>	Lowest	<ul style="list-style-type: none"> <li>• greenstone, chlorite schist, abundant andesitic dykes</li> <li>• foliated granodiorite</li> <li>• granodiorite</li> <li>• foliated chloritized granodiorite</li> <li>• andesitic lava</li> <li>• black slates</li> </ul>	None recorded

**N14**

Area	Mineral Rating	Evidence	Past Activity
<b>Machmell Killipi</b>	<b>High, medium, low</b>	<b>No information available</b>	<b>N/A</b>

**N15**

Area	Mineral Rating	Evidence	Past Activity
<b>Sumquartz Wash Wash</b>	<b>High, low Lowest</b>	<b>No information available</b>	<b>N/A</b>

## Water Development Opportunities: Inner Coast

The following table overviews the potential of water development on the inner coast.

Plan Unit	Water System	Type of system	Access	Other
N6	Kimsquit	Lake	Poor	Potential bulk
	Kimsquit	River	Fair	Previous cannery license? Bulk?
	Dean	River	Fair	Potential bulk?
	Sutslum	River	Unknown	Unknown-bulk
	Skowquiltz	River	Unknown	Unknown-bulk
	Swallop	River	Unknown	Unknown-bulk
	Jump Across	River	Unknown	Unknown-bulk
N5	Noosesseck	River	Fair	Unknown-bulk
	Nusash	River	Unknown	Unknown-bulk
N11	Clayton	Creek	Good	Power license Processing license Work Camp license
	Twin	Creek	Unknown	Unknown
	Hotsprings	Creek	Poor	Mineral water
N12	Thorsen	Creek	Good	Potential
	Nieumiamus	Creek	Good	Processing license
	Necleetsconnay	River	Fair	Potential
	Saloomt	River	Fair	Potential
	Nookliclonick	Creek	Good	Potential
	Tatsquan	Creek	Good	Potential/ Local watershed
	Snootli	Creek	Good	Potential/ Local watershed



## **Water: Overview of Industry**

### **Water: General Overview**

Canada has one fifth of the world's fresh water. This equates to 9% of the globe's renewable water supply. As a country we are facing pressure to export water into US and Mexico under the Free Trade Agreement. Five countries with a total population of 500 million do not have access to safe drinking water, 35 countries have decreased access to water in urban and rural areas. By 2050 nearly 2 billion people will be living in water stressed areas.

In 1999 the House of Commons unanimously adopted a motion to ban any water exports. The BC Government also has a moratorium on bulk water export. It was agreed that water will be an extremely important commodity in the future and that as Canadians we need to be very cautious about large extractions.

### **Bottled Water:**

Bottled water is becoming one of the fastest growing commodities around the world.

Bottled water in British Columbia is a growing business, but water must be bottled at the source and a water license for bottling is required. Water can be bottled and shipped up to a maximum of 5-gallon containers.

The demand for pure drinking water is increasing with climate change, population growth, drought conditions, polluted water courses, increased use and reduced water levels continues to occur.

Demand for bottled water over the past ten years has increased significantly. In 1976 US bottle water consumption was at 317 million gallons, in 1995 consumption grew to 2.9 billion gallons and dollar figures for the industry was \$3.1 billion dollars with an estimated prediction to reach \$6 billion by the year 2001. Still water has replaced mineral water as the highest demand product. Canada is a dominant importer to the US in water.

The reason for such a large increase in demand can be attributed to an increase in health concerns, emergency use and concern about the quality of tap water throughout North America. Better testing and analysis of domestic drinking water has raised concerns about local quality. Many communities need to have treatment facilities to ensure better quality water; these capital items will be immense. Consumers are turning to a quicker solution in the consumption of bottled water. Many consumers prefer the taste of bottled water to treated tap water. One in three Californians drink bottled water. Growth per annum in bottled water consumption is expected to increase between 8 and 15% over the next several years. It seems to be a sustainable industry.

Although bottled water is in high demand, recent studies have shown that not all bottled water products were pure. These studies have resulted in water product standards being more stringent.

**Bottled water comes from several sources for commercial sale:**

- surface water: comes from directly from streams and rivers or extracted from lakes. Ice and snow are also included and are used in mineral water.
- ground water: there is more ground water in underground storage than in all the lakes and streams combined. Ground water is found in fully saturated soils and geological formations. Aquifers occur in packed material such as sand, gravel and bedrock.

**Water: Overview of Potential Central Coast Industry**

Bedrock and sand/ gravel aquifers, rivers and lakes may prove to be of benefit in water sources being identified. Those lakes and rivers that are not heavily silted by glacial run off may be of interest to communities interested in researching bottled water.

Contaminants can enter natural water systems, even those that are relatively pristine, through siltation, acid rain, giardia (beaver fever), waste water from septic systems, land fills, buried storage tanks, accidental spills and leaks, bacteria, algae, mining activity, natural mineral concentrations, petroleum explorations, salt water encroachment.

The bottled water industry has developed a variety of different filtration systems that remove most contaminants that may occur naturally. Filtration systems are not cheap if they are to do the job. Distillation is also an effective means of producing cleaner water.

Due to the laws of BC regarding bottling water at source, a bottling plant has to be in place. Ideally the plant is located in close proximity to the water source. Water can be pumped to the source; cost would increase depending on distance. Full turnkey operation can be purchased and installed. Cost of licensing, directing water from the source to the plant, plant and infrastructure development, filtration systems, getting product to market can make the undertaking a high cost. Remoteness of the area and cost of transportation add to potential barriers. Marketing strategies and partnerships with distributors/ suppliers would possibly offset costs if high value competitive product could be produced.

Water potential for the Central Coast has been identified in tables that are found in the Hecate Lowland- Outercoast, Western Hemlock- Middle Coast and Western Hemlock- Inner Coast documents.

## **Mineral development: Overview of potential Central Coast industry:**

### **Sand and Gravel:**

Demand for natural aggregates throughout North America has increased significantly over the past 25 years. Of the total aggregate produced in this century, over half was produced and consumed in the last 25 years. The demand for crushed stone will increase by 20% while sand and gravel demand will increase 14%. The demand for these products will have to come from sources not yet identified.

The Northern Plan area has significant deposits of sand and gravel plus areas where limestone and marble are available for crushing. Deposits should be close to barge access and shoreline. They should also be large enough and of sufficient quality to be economically feasible.

Production and values of sand and gravel aggregates in British Columbia remains strong:

	1996		1997		1998	
Unit	Production	<i>Value</i>	Production	Value	Production	Value
T	35,674,079	149,740,610	32,988,642	151,868,671	31,344,892	146,222,674

Experts within the private sector in British Columbia aggregate expect significant shortages for conventional aggregate materials over the next ten years.

### **Dimension Stone Industry:**

Although there is a large provincial endowment of deposits suitable for dimension stone production, builders have had to rely on imports for building purpose, as the building stone industry in British Columbia has been stagnant for some time. The Central Coast has high potential for dimensional stone production.

Dimension stone can be defined as any rock that has been removed from site for use in the construction industry. Granites, marble and limestone are the common stones for industrial use. Colour, texture, quality and quantity are all factors in a successful quarry operation. Due to distance to market from the Central Coast, quality would be the highest consideration.

Abandoned quarry sites in the Hecate Lowlands were productive for use in the pulping process. Research of use for dimensional stone from the area is unknown. Flux made from crushing limestone for whitening in pulp seems to be the only use for past quarry's to exist. There is a current interest in one abandoned limestone quarry within the plan area.

Recently a large black granite deposit within the plan area has been claimed under the Mineral Act. This deposit is close to tide water and therefore ease of barging material and its quality make it an especially attractive operation.

Black Granite is considered to be the most marketable stone. The quality and colour must be superb. This granite commands the highest price and has a large world market.

Blue Granite is also considered desirable but does not have a high market demand. Medium and blue-white granite are well received.

Green Granites are highly requested and is becoming fashionable. It has good market potential overseas, as this colour is more acceptable in interior and exterior applications. Good quality green granite will command a high price and enjoy an international market.

Grey Granite often brings the lowest price and is used extensively in the building industry. Recent trends to “blend” in with landscapes have created an increased use with a variety of warmer grey granites.

Pink granite is very popular and is one that is important in terms of volume. Pink attracts a high price and is very marketable throughout the world- it is indicated that this market may be too competitive for BC to enter.

	1996		1997		1998	
Unit	Production	<i>Value</i>	Production	Value	Production	Value
T	6,050,340	39,482,567	6,266,090	43,496,600	6,124,707	47,065,899

In 1998 United States use of granite was 37% of the dimension stone industry, followed by limestone at 33%, sandstone at 16%, quartzite at 4%, slate at 6%, marble at 4% and misc. at 4%. A total domestic production tonnage in 1998 for dimension stone stood at 1.13 million metric tons, valued at \$224 million.

Demand for dimension stone is expected to grow due to improved technology, the variety of the product and an increase in alternative construction material costs. Expect an increased use in interior and exterior building stone. Japan continues to be a target market for the high quality and rarer colours.

Crushed stone industry in BC continues to show growth. High quality crushed limestone; granites and dolomites is a valuable commodity for the cement industry. Sources should be close to transportation corridor and be of sufficient volumes to be economically viable for market production.

**Clay Industry:**

The clay industry production in British Columbia and Canada is not as advanced as the US. Clay is hydrous silicates composed of silica, alumina and water; other properties include iron, alkalis and alkaline earth.

Clay deposits within the plan area occur but there is no current inventory of the type of clay or where they are located, with the exception of two previous claims that are now inactive.

Commercially there are several types of clay in use today. It is not known which types of clay occur within the plan area. Geological formation association and further study could bring some results to this.

Ball clay is used in floor and wall tiles, for sanitary ware and pottery. Consumption is on the increase. Value per metric ton reported by US producers was \$45.22. Export clay at \$70.43 per ton.

Bentonite clay is used in drilling mud, foundry sand, iron ore pelletizing and pet waste absorbents and for clarifying oils and greases. The latter two showed an increase in demand. Average value reported by producers was \$46.07. Exported benonite was \$100.73 per ton.

Common clay and shale is used in manufacture of heavy clay products such as building brick, liners, drain tile, aggregate, cement, sewer pipe, and terra cotta. Average value reported by producers was \$5.92 per ton.

Fire clay is used in refractory products such as brick, refractory mortars and mixes and for brick and pottery. Average value for fire clay by producers was \$18.34 per ton. Export fire clay was \$115.48 per ton.

Fuller's Earth is used in pet waste absorbent, oil and grease absorbents, pesticide carriers and in animal feed, paper coating. Average value reported by producers per ton was \$113. Exported fullers earth value per ton was \$161.16

Kaolin clay is used in paper coating, fillers, refractories, fiberglass, paint, rubber, catalyst and brick. Average value reported by producers per tone was \$111.11. Export value per ton \$161.41.

Canada is one of the largest importers of US produced clay. Canada imports all types of clay.

Ball clay: Canada is the top importer at 65 thousand metric tons with a purchase value of 5,500,000.

Bentonine clay: Canada is the top importer at 206 thousand metric tons with a purchase value of 17,800,000.

Fire clay: Canada is the 4<sup>th</sup> highest importer from US, at 7 thousand metric tons with a purchase value of 1,280,000.

Fuller's earth: Canada is the 3rd highest importer from US, at 44 thousand metric tons with a purchase value of 6,710,000.

Kaolin clay: Canada is the 2<sup>nd</sup> highest importer from US, at 763 thousand metric tons with a purchase value of 82,100,000.

Canada is not on the list of any world producers in the clay industry. Opportunities may be available in some of the above areas if the deposits exist in any quantity.

Glacial cosmetic clay: Two past producers of glacial clay have occurred within the plan area. Both deposits were from estuarine clay and were of high quality. Several factors were involved in the claims not remaining active. Markets had been established in one known deposit. Work had progressed to remove any bacterial growth that occurred during shelf life. It would appear that this product had potential.

Over the past ten years glacial clay has been used for cosmetic purpose including clay therapy, healing and facial masks. Different colour clays have different properties. The most sought after colours are white, red, green and pink. Clay is reputed to draw impurities from the skin, promote healing and restore youthfulness to the countenance.

Demand for pure cosmetic clay is growing and use has increased for spas, facial and beauty salons and home use.

#### **Other Mineral Deposits:**

Many other opportunities exist within the marine placer environment of the plan area but until prospecting, exploration, research and development occur, these opportunities may not be realized for some time.

#### **Central Coast Northern Plan Area- Mineral Occurrences**

<b>Plan Unit</b>	<b>Deposit Type</b>	<b>Commodity</b>
N1		Limestone
	Vein	Copper
	Vein	Gold
	Vein	Silver
		Molybdenum
	Vein	Tellurium
		Tungsten
		Dimensional stone
N2		Limestone
		Graphite
		Geothermal
N2	Skarn	Copper
	Skarn	Silver
	Skarn	Gold
	Vein	Gold
		Lead
		Zinc

*Central Coast New Industry Overview*  
*Minerals: Overview of industry and potential for Central Coast*

Plan Unit	Deposit Type	Commodity
	Skarn	Molybdenum
N3	Skarn	Molybdenum
	Skarn	Gold
	Skarn	Copper
	Skarn	Silver
		Limestone
N4	Skarn	Zinc
	Skarn	Copper
N4	Skarn	Silver
	Skarn	Gold
		Kyanite
N5		Copper
	Skarn	Molybdenum
		Graphite
		Alluvial deposits
		Geothermal
N6	Porphyry	Molybdenum
		Copper
	Skarn	Magnetite
		Alluvial deposits
		Kyanite
	Massive sulphide	Zinc/copper
N7		Copper
		Molybdenum
		Gold
		Lead
N9		Limestone
		Perlite
		Tungsten
		Clay
N10		Limestone
		Graphite
		Molybdenum
N11		Molybdenum
		Gold
		Silver
		Copper
		Lead
		Zinc
		Graphite
		Alluvial deposits
		Geothermal
N12	Massive Sulphide	Silver
	Massive Sulphide	Gold
	Massive Sulphide	Copper
	Massive Sulphide	Zinc
	Massive Sulphide	Barium
	Massive Sulphide	Palladium
		Alluvial deposits
		Asbestos
N14		Limestone
N16		Limestone
		Rhodonite

**Opportunities: Mineral development**

- opportunity to develop overall inventory and plan for mining development
- new opportunities that have previously not existed
- prospecting opportunities are possible with education and training for local residents who may be interested in new ventures
- higher level of interest for opening up new areas both provincially and within the industry
- small scale cottage opportunities may exist in clay and gemstone industry
- larger investment and development would train and employ local residents
- joint ventures are possible between industry, government and communities in larger deposit development
- employment in the mining industry generates high income for workers

**Barriers: Mineral development**

- lack of research and development dollars to identify growth potential
- communities may be opposed to mining development or removal of natural resource
- lack of inventory information available
- remoteness of area and geographical siting of mineral deposit may be prohibitive
- protection of areas would eliminate development

**Threats: Mineral development**

- Hecate Lowland ecosystem may be compromised depending on type and scale of development
- outcome of LRMP may impact scale of development
- may be international opposition for development
- Worldwide markets may be saturated in some sectors.



## Fish and wildlife inventory overview for commercial, recreational and guiding opportunities

### Fish

#### Marine fish:

Spiny dog fish	Pacific herring	Pink salmon	Chum salmon
Coho salmon	Sockeye salmon	Chinook salmon	Steelhead trout
Eulachon	Pacific cod	Walleye pollock	Rougeye rockfish
Pacific ocean perch	Silvergrey rockfish	Redbanded rockfish	Yellowtail rockfish
Bocaccio	Canary rockfish	Redstripe rockfish	Yellowmouth rockfish
Sablefish	Lingcod	Turbot	Rex sole
Pacific halibut	Butter sole	Rock sole	Dover sole
English sole	Starry flounder		

#### Groundfish:

Pacific electric ray	Deepsea skate	Big skate	Black skate
Longnose skate	skate	Ratfish	Wolf-eel
Prowfish	Sablefish	Skilfish	Padded sculpin
Soft sculpin	Bigmouth sculpin	Northern sculpin	Thornback sculpin(rare)
Threadfin sculpin	Spotfin sculpin	Thorny sculpin (rare)	Blackfin sculpin
Smallsail sculpin	Dusky sculpin	Tadpole sculpin	Slim sculpin
Darter sculpin (rare)	Gray starsnout	Spinycheek starsnout	Bigeye poacher
Blackfin poacher	Smalldisc snailfish	Blacktail snailfish	Abyssal snailfish
Tadpole snailfish	Prickly snailfish		

#### Flatfish:

Black hagfish	Pacific hagfish	White shark	Basking shark
Salmon shark	Soupin shark	Blue shark	Crossthorat sawpalate
Spaced snipe eel	Closespine eel	Slender snipe eel	Bluethroat argentine
Barreleye	Veiled anglemouth	Longfin dragonfish	Pacific viperfish
Shining tubeshoulder	Longnose lancetfish	Daggertooth	Northern pearleye
Slender barracudina	Scaly wearyfish	Ragfish	Pinpont lampfish
Patchwork lampfish	Bigeye lanternfish	Northern lampfish	Bigfin lanternfish
Blue lanternfish	Spiny dreamer	Bulbous dreamer	Pacific flatnose
Cuskpout	Roughscale rattail	Smoothscale rattail	Bearded rattail
Pectoral rattail	Pacific saury	Highsnout meamphid	Crested melamphid
Opah	King-of-the-salmon	Jack mackerel	Pacific pomfret
Manefish	Pelagic barracuda	Quillfish	Chub mackerel
Albacore	Bluefin tuna	Medusafish	California headlightfish

#### In Shore Water Fish:

Plainfin midshipman	Northern clingfish	Red brotula	Tube-snout
Threespine stickleback	Bay pipefish	White seabass	Shiner perch
Striped seaperch	Kelp perch	Pile perch	Pacific sandfish
Alaskan ronquil	Searcher	Northern ronquil	Pricklebacks
Gunnels	Wrymouths	Graveldivers	Sand lances
Gobies	Greenlings	Sculpins	Poachers
Lumpfish	Snailfish	Lefteye flounders	Righteye flounders

#### Rare and Endemic Fish Species:

Cuskpouts	Smoothscale rattail	Filamented rattail	Alaskan ronquil
Arctic shanny	Dusky rockfish	Leister sculpin	Armorhead sculpin

*Central Coast New Industry Overview*  
*Fish and wildlife inventory overview for commercial, recreational and guiding opportunities*

Bigmouth sculpin	Horny sculpin	Masked greenling	Pixie poacher
------------------	---------------	------------------	---------------

**Benthic invertebrates: Depending on temperature/ depth/ salinity.**

Barnacle	Limpet	Periwinkle	Mussel
Starfish	Goose-neck barnacle	Chiton	Isopodes
Snail	Purple urchin	Sponge	Anemone
Keyhole limpet	Hermit crab	Shore crab	Amphiopods
Boring clam	Giant barnacle	Spider crab	Green sea urchin
Octopuses	Sea cucumber	Butter clam	Steamer clam
Blood worms	Razor clam	Dungeness crab	Hairy hermit crab
Ghost shrimp	Mud shrimp	Goeduck	Northern abalone
Oysters	Weathervane scallop	Rock scallop	Pink scallop
Spiny scallop	Native littleneck clam	Manila clam	Opal squid
Nail squid	Flying squid	Great pacific octopus	Tanner crab
Red king crab	Pink shrimp	Prawn	Constripe shrimp

**Fishing/ Fresh:**

Kokanee, cutthroat, dolly, rainbow, steelhead. Fly in fishing, fly-fishing in both lakes and rivers. Steelhead numbers not strong enough for high catch levels.

## Mammals

### Marine mammal:

Very high in most planning units include sea lion haul outs, whales, sea otter.

Giant Beaked whale	Stejneger's whale	Goose-beaked whale
Sperm whale	Pacific white-side dolphin	Killer whale
Pacific pilot whale	Harbour porpoise	Dall's porpoise
Grey whale	Fin whale	Sei whale
Minke whale	Blue whale	Humpback whale
Right whale	Weasels	Mink
River otter	Sea otter	Northern sea lion
Northern fur seal	Pacific harbour seal	Northern elephant seal

### Terrestrial Mammals

Grizzly bear	Black bear	Mountain goat
Cinereus shrew	Dusky shrew	Navigator shrew
Big brown bat	Silver-haired bat	California myotis
Long-eared myotis	Keen myotis	Little myotis
Yuma myotis	Rocky mountain pika	Snowshoe hare brown
Marmot	Hoary marmot	Red squirrel
Chickaree (Douglas squirrel)	Northern flying squirrel	American beaver
Deer mouse	Bushy-tailed wood rat	Northern bog-lemming
Mountain heather-vole	Boreal redback vole	Meadow vole
Muskrat	Meadow jumping mouse	Western jumping mouse
Porcupine	Coyote	Wolf
Red fox	Marten	Fisher
Short-tailed weasel	Long-tailed weasel	Mink
Wolverine	Canadian river otter	Cougar
Bobcat	Lynx	Blacktailed deer
Mule deer	British Columbia moose	Mountain cariboo
Mountain goat		

## Birds

### Marine Birds:

#### Pelagic

Blackfooted Albatross	Laysan Albatross	Northern Fulmar
Pink-footed Shearwater	Snooty Shearwater	Short-tailed Shearwater
Fork-tailed storm Petrel	Leach's storm Petrel	Red-necked Phalarope
Long-tailed Jaeger	Pomarine Jaeger	Parasitic Jaeger
Great Sku	Black-legged Kittiwake	Horned Puffin
Tufted Puffin	Cassin's Auklet	Rhinoceros Auklet

#### Marine/ terrestrial.

Arctic Loon	Common Loon	Yellow-billed Loon
Horned Grebe	Red-Necked Grebe	Western Grebe
Brandt's Cormorant	Pelagic Cormorant	Double crested Cormorant
Tundra Swan	Trumpeter Swan	Great blue Heron
Brandt	Canada Goose	White-fronted Goose
Green-winged Teal	Mallard	Wood Duck
Northern Shoveler	American Widgeon	Northern Pintail
Greater Scaup	Lesser Scaup	Canvas Back
Old Squaw	Black Scoter	Harlequin Duck
White-winged Scoter	Common Goldeneye	Surf Scoter
Bufflehead	Hooded Merganser	Barrow's Goldeneye
Red-breasted Merganser	Osprey	Common Merganser
Peregrine Falcon	Sandhill Crane	Bald Eagle
American black Oystercatcher	Spotted Sandpiper	Black-bellied Plover
Black Turnstone	Rock Sandpiper	Ruddy Turnstone
Red-necked Phalarope	Western Sandpiper	Bonaparte's Gull
Mew Gull	California Gull	Herring Gull
Thayer's Gull	Glaucous Gull	Arctic Tern
Sabine's Gull	Common Tern	Marbled Murrelet
Common Murrelet	Ancient Murrelet	Pigeon Guillemot
Northern Crow	Ring-billed gull	Western Gull
Glaucous-winged Gull	Ivory Gull (a)	Surf Bird

### Estuary and Terrestrial Birds:

#### Ducks and Geese:

Bufflehead	Barrows Goldeneye	Common Goldeneye
Canada Goose	Mallard	Common Merganser
Hooded Merganser	Red-breasted Merganser	Northern Pintail
Greater Scaup	Surf Scoter (B)	Trumpeter Swan (B)
Northern Shoveler	Blue-winged Teal	Green-winged Teal
American Widgeon	Gadwall	Cinnamon Teal
Wood Duck	Canvasback	Lesser Scaup
Black Scoter	White-winged Scoter	Harlequin Duck
Old Squaw		

### **Gulls and Terns**

Bonaparte's Gull	Glaucous-winged Gull	Glaucous Gull
Herring Gull	Mew Gull	Black-legged Kittiwake
Ring-billed Gull	California Gull	Black Tern

### **Hérons/ Cranes**

Great Blue Heron	Black crowned Night Heron
American Bittern	Sand Hill Crane
Common Crane ( Eurasian #a)	

### **Sandpipers/Phalaropes/Dowitchers**

Dunlin	Least Sandpiper	Pectoral Sandpiper
Solitary Sandpiper	Spotted Sandpiper	Western Sandpiper
Common Snipe	Greater Yellowlegs	Lesser Yellowlegs
Wilson's Phalarope	Short-billed Dowitcher	Black Turnstone
Surfbird	Rock Sandpiper	Dunlin
Sanderling	Curlew Sandpiper	

### **Plovers**

Killdeer	Semipalmated Plover	Lesser Golden-Plover
----------	---------------------	----------------------

### **Pipits**

Water Pipit
-------------

### **Dippers**

American Dipper
-----------------

### **Grebes**

Western Grebe	Eared Grebe
Horned Grebe	Red-necked Grebe
Pied-Billed Grebe	

### **Loons**

Common Loon
Arctic Loon
Yellow-billed Loon
Red-throated Loon

### **Auks**

Marble Murrelet
-----------------

### **Grouse/Ptarmigans**

Blue Grouse	Ruffed Grouse
Spruce Grouse	White-tailed Ptarmigan
Rock Ptarmigan	Willow Ptarmigan

### **Hawks/Eagles/Falcons**

Bald Eagle	Northern Goshawk	Northern Harrier
Osprey	Golden Eagle	Sharp-shinned Hawk
Red-tailed Hawk	Swainson's Hawk	Rough-legged Hawk
American Kestrel	Merlin	Peregrine Falcon

### **Owls**

Short-eared Owl	Great Horned Owl	Barred Owl
Great Gray Owl	Snowy Owl (A)	Western Screech
Northern Pygmy-Owl	Northern Saw-whet Owl	Boreal Owl

### **Nightjars**

Common Nighthawk
------------------

### **Swifts:**

Black Swift
-------------

### **King Fishers**

Belted Kingfisher
-------------------

### **Pigeons and Doves**

Rock Dove	Band-tailed Pigeon
-----------	--------------------

### **Hummingbirds**

Rufous Hummingbird
Anna's Hummingbird ( A)

### **Woodpeckers**

Northern Flicker	Red-breasted Sapsucker	Hairy Woodpecker
Downy Woodpecker	Pileated Woodpecker	Three-toed Woodpecker

### **Swallows**

Barn Swallow	Cliff Swallow	Tree Swallow
Violet-green Swallow	Northern rough-winged Swallow	Bank Swallow

### **Flycatchers and Kingbirds**

Alder Flycatcher	Dusky Flycatcher	Hammond's Flycatcher
Olive-sided Flycatcher	Pacific-sloped Flycatcher	Willow Flycatcher
Western Kingbird	Western Wood-Pewee	Western Flycatcher

### **Larks**

Horned Lark
-------------

### **Crows, Ravens and Jays**

American Crow	Northwestern Crow	Stellars Jay
---------------	-------------------	--------------

Common Raven	Gray Jay	Clark's Nutcracker
--------------	----------	--------------------

### Chickadees

Black-capped Chickadee	Boreal Chickadee	Chestnut-backed Chickadee
------------------------	------------------	---------------------------

### Nuthatches

Red-breasted Nuthatch
-----------------------

### Creepers

Brown Creeper
---------------

### Wrens

House Wren	Winter Wren	Marsh Wren
------------	-------------	------------

### Dippers

American Dipper
-----------------

### Starlings

European Starling
-------------------

### Waxwings

Cedar Waxwing	Bohemian Waxwing
---------------	------------------

### Thrushes

Ruby-crowned Kinglet	Golden-crowned Kinglet	Hermit Thrush
Swainson's Thrush	Varied Thrush	American Robin
Veery	Mountain Bluebird	Townsend's Solitaire

### Shrikes

Northern Shrike
-----------------

### Mimic Thrushes

Gray Catbird
--------------

### Vireos

Hutton's Vireo (B)	Solitary Vireo	Warbling Vireo
Red-eyed Vireo		

### Finches/Grosbeaks

Red-Crossbill	Purple Finch	Evening Grosbeak
Pine Siskin	White-winged Crossbill	Pine Grosbeak
Common Redpoll	Rosy Finch	Black-headed Grosbeak
Hoary Redpoll		

### Warblers

Yellow-breasted Chat	Common Yellowthroat	Yellow-rumped Warbler
----------------------	---------------------	-----------------------

Townsend's Warbler	American Redstart	Yellow Warbler
MacGullivray's Warbler	Orange-crowned Warbler	Northern Waterthrush
Wilson's Warbler	Blackpoll Warbler	Tennessee Warbler

**Sparrows**

Fox Sparrow	Dark-eyed Junco	Song Sparrow
Savannah Sparrow	Golden-crowned Sparrow	Lincoln's Sparrow
Rufous-sided Towhee	Vesper Sparrow	Chipping Sparrow
White-crowned Sparrow	Golden-crowned Sparrow	Snow Bunting

**Blackbirds and Orioles**

Yellow-headed Blackbird	Red-winged Blackbird	Brewer's Blackbird
Brown-headed Cowbird	Western Tanager	



## Botanical Forest Products: Potential industry information and Central Coast inventory overview

### Potential Forest Botanicals: Overview

#### Examples of wholesale costs.

Tree Layer	Use	Est. Wholesale Price
Western red cedar	greenery/oil	4.90 bundle
Yellow cedar	greenery	
Lodgepole pine	greenery	2.40/bunch: bunch is 5 stems
Amabilis fir	greenery	

- bunch is five stems/ 24-36 “ long

Shrub Layer	Use	Est. Wholesale Price
Salal	Greenery	7.84 bundle/ is 25 stems
Red huckleberry	wild berry Greenery	2.20 per pound 3.85 bundle
Alaskan blueberry	Wildcrafting berries	3.85 bundle

- salal major understory in Central Coast- ( check percentage of cover) and was most valuable crop in Pacific Northwest with a total of \$13.1 million paid do harvesters.
- Burnaby Flower Auction sells 1000 bunches of salal per week

Herb Layer	Use	Est. Wholesale Price
Deer fern	Greenery landscape product	4.90 bundle
Lanky moss	greenery	4.00 bunch
Oregon beaked moss	greenery	4.00 bunch (CWHvh1)
Maidenhair fern	greenery	\$5.60 bundle
Ladyfern	Greenery	\$5.25 bundle

\* mosses are “hot item” per pillow sized bundle- dried preferred – all types

Above botanicals have sufficient coverage to warrant potential as commercial harvest. Botanicals can be picked at many different times of the year. Alternative botanical harvest can supplement mushroom picking income. Mushroom buyers are already experience and set up to work the distribution component. Education of pickers would be an issue.

## **Botanical Product Potential: Central Coast**

Products suited to the botanical non forestry timber products are mushrooms, vegetables, fruit, nuts, berries, root crops, herbs, flowers, medicinals, floral greenery and landscape plants.

By products of the above can be in the form of fresh, frozen, dried, cordials, tinctures, infusions, jams, jellies and other preserved items.

Timber related products for cottage industry include musical instrument blanks in spruce, maple and alder; high quality and unique soft and hardwoods for carving; twigs for furniture and floral arrangements.

Grasses, rushes and willows are used in basketry and other woven products.

Native plants such as grasses, trees, shrubs and herbs can be used as landscape plants.

Plants can be used as vegetables and in seasonings.

Wild berries can be picked and delivered fresh. Often they are used in baked goods or made into jams, jellies, wine and other beverages.

Bark and medicinal plants are often dried and used in pharmaceuticals.

Floral greenery products are high in demand and demand for a variety of plants and trees to enhance floral arrangements are high. This includes mosses and lichens as well.

Boughs from trees are in demand seasonally. Cones and dried products are also in demand.

A wide variety of foliage from both conifers and deciduous species are purchased. Oils are also extracted for scent and additives to other oils. The aromatherapy industry is growing and demand for unique scents is well known.

## **Species Description: Botanical Uses**

### **Western Red Cedar:**

Dominant tree species in the region. Most sites show a prominence of medium to high frequency, given this percentage of cover it is likely a strong candidate for commercial harvest. The dual end products of cedar leaf oil and floral greenery enhance its marketability.

Cedar Leaf oil has been on the market for over 100 years. It is a common ingredient in room sprays, talcs, insecticides, perfumes, shoe polish and soaps. The oil is used in medicinal preparation. In 1991, in the Nelson Forest Region, 1,800 tones of cedar boughs were harvested to produce 9000 kg. of oil. The harvest of western cedar foliage has been allowed under Section 58 of the Forest Act. It takes one ton of cedar heartwood to produce one pound of oil

Plants that have deep green colour and long lasting properties are in demand by the floral and botanical industry. Western Red Cedar has these characteristics and is used in producing Christmas decorations and floral arrangements. In the US, conifer boughs have become the most widely sold botanical forest products. In 1989 wholesalers in the Pacific Northwest region purchased \$9.6 million worth of conifer boughs. Dry cedar powder is also available as an effective flea control product. 24:cedar wreaths can cost as much as \$23.00.

### **Balsam: Grand or True Fir:**

Used as medicinal as well as extraction for the essential aromatic oils. Popular as a floral greenery. Balsam wreaths sell as high as \$60.00.

### **Lodgepole Pine:**

Lodgepole pine is also prized as greenery but not as extensive as Red Cedar. Pine oil has traditional uses for the making of turpentine, tar and resins- but probably not this species. Pine oil also has medicinal value as a salve in treating both humans and animals

### **Yellow Cedar (Cypress):**

A sought after tree for it's carving ability, medicinal properties. Other uses include boat building and furniture. Although not rare, it grows slowly and growing sites are within a small portion of the province. It is not heavily used as greenery as it is unpleasant to the touch due to the sharp leaf tips.

### **Mountain Hemlock:**

Does not appear to be sought after as a botanical for greenery. Some medicinal properties as well as a food source. Needles can be made into tea. Pitch can be used as an astringent and oils have used for veterinary purposes.

### **Sitka Spruce:**

Valued during the war for airplane construction. Previously valued for roots as rope and for basketry. Medicinal use for coughs. Highly valued for sound boards in musical instruments but trees have to be select.

**Alder:**

As botanical greenery alder is attractive for twigs in large bouquet arrangements but only the tops appear to be used.

Alder has an excellent reputation for furniture making; it has also been used for piles as it does well under water. Bark has been used by many cultures as a dye, which yields a variety of colours depending on what part of the tree is used.

**Black Cottonwood:**

Not evident as a botanical. Used as aromatic with the early buds. Used as glue and ointment that comes off the sticky buds. Under-utilized species, taken as pulp but dries hard and is durable as a building material. Once used to make boxes and used in barn floors due to absorbent properties. May have cottage industry potential.

**Cascara:**

Once enjoyed widespread use as a medicinal for laxative purpose. No longer sought after as a medicinal- occurs along the mainland into Bella Coola. May have other properties. Powdered bark has been used for getting rid of vermin.

**Willow:**

Willow twigs are used in floral arrangements. Bark has medicinal qualities. Used in basketry and other artistic products. Wholesale up to \$2.40 per stem. Willow twigs are in high demand for garden furniture.

**Western Yew:**

Yew should be evident within the plan area. Yew is valued as a medicinal in the treatment of cancer. Taxol, the derivative of yew is being synthesized and the demand for taxol will soon be reduced. The seeds and fruit of the yew are poisonous. Yew has been highly prized for its hardness in the making of bows and tools. It resists water and was used extensively before iron tools were plentiful. Yew axes were used in tree cutting. Salves made from yew are sold at about \$14.00 for 2 oz.

**Salal:**

Major understory species in the region. Salal forms a continuous shrub layer some wet coniferous forests. It is very popular as an evergreen and was considered the most popular crop with a total of \$13.1 million paid to harvesters in the Pacific Northwest in 1989. The Burnaby Flower Auction sells 1000 bunches of salal per week, year round, and wholesaling at \$2.00 per bunch or \$7.00 a bundle. Salal can be picked year round and can be considered a year round crop managed sustainably. Logging and development can shut down sites. With greater urban and industrial development on Vancouver Island, there may be entry into this market. Pickers need to be trained in order to pick the required pieces that ensure solid stable prices.

**Ferns:**

Sword Fern and Oak Fern occur within the area. Sword Fern is sought after for floral arrangements and other greenery uses. Oak Fern may have some use in floral arrangements. Over the centuries, ferns have had many uses in medicines, commercial and as a food source. Ferns for botanicals can wholesale up to \$5.00 a bundle.

**Devils Club:**

Used as a medicinal and has recently been taken for research on its properties. It is also used as a garden ornamental.

**Sphagnum Moss:**

Used in gardening as peat moss. Have a variety of medicinal properties and has been used by many cultures. Extracts from this moss were once highly sought after. Experiments in making cloth with sphagnum have been successful as well as extraction of alcohol has been developed. Sells wholesale at about \$61.00 per bale approx. 25 lbs. Sphagnum considered as peat represents about 25% of the US market. Canada exported about 850,000 tons into the US market in 1998.

**Mushrooms:**

Pacific Golden Chanterelles can colonize both old growth and second growth forests but peak productivity is related to younger stands. Coastal habitats with Western hemlock and Sitka spruce are common habitats. It is possible that the Pacific Chanterelle is to be found within the Hecate Lowlands. Further study should verify its coverage and whether the species has potential as a commercial forest botanical. Chanterelles have a lower value than pine mushrooms and therefore a larger volume is needed for a profit to occur.

**Mushrooms:**

Within the plan area the following commercially sought after mushrooms are evident or should be evident by climatic zones:

Pine mushrooms	<i>Tricholoma magnivelare</i>
White chanterelle	<i>Cantharellus subalbidus</i>
Black chanterelle	<i>Cantharellus</i>
Pacific golden chanterelle	<i>Cantharellus formosus</i>
Rainbow chanterelle	<i>Cantharellus subalbidus</i>
King bolete	<i>Boletus edulis</i>
Cauliflower mushroom	<i>Sparassis herbstii</i>
Black morel	<i>Morchella elata</i>
Yellow morel	<i>Morchella esculenta</i>

## Central Coast Plant List of Botanical, Medicinal, Edible, Oil and Floral Properties

*Note: Endangered and species that are not conducive to harvesting are not listed here.*

### Trees

#### Coniferous

Common Name	Scientific Name
Douglas-fir	<i>Pseudotsuga menziesii</i>
Sitka spruce	<i>Picea sitchensis</i>
Western hemlock	<i>Tsuga heterophylla</i>
Western red cedar	<i>Thuja plicata</i>
Amabilis fir	<i>Abies amabilis</i>
Sitka spruce	<i>Picea sitchensis</i>
Yellow cedar	<i>Chamaecyparis nootkatensis</i>
Subalpine Fir	<i>Abies lasiocarpa</i>
Lodge pine	<i>Pinus contorta</i>
Western yew	<i>Taxus brevifolia</i>

#### Deciduous

Common Name	Scientific Name
Black cottonwood	<i>Populus balsamifera ssp.</i>
Pacific crab apple	<i>Malus fusca</i>
Paper birch	<i>Betula papyrifera</i>
Red alder	<i>Alnus rubra</i>
Sitka alder	<i>Alnus crispa ssp. Sinuata</i>
Bitter Cherry	<i>Prunus emarginata</i>
Cascara	<i>Rhamnus purshiana</i>
Western white birch	<i>Betula papyrifera</i>
Broadleaf maple	<i>Acer macrophyllum</i>

**Shrubs**

<b>Common Name</b>	<b>Scientific Name</b>
Black gooseberry	<i>Ribes lacustre</i>
Black twinberry	<i>Lonicera involucrata</i>
Devil's club	<i>Oplopanax horridus</i>
Douglas maple	<i>Acer glabrum</i>
False azalea	<i>Menziesia ferruginea</i>
Hardhack	<i>Spiraea douglasii</i> ssp. <i>Douglasii</i>
Nootka rose	<i>Rosa nutkana</i>
Oval-leaved blueberry	<i>Vaccinium ovalifolium</i>
Pacific ninebark	<i>Physocarpus capitatus</i>
Red elderberry	<i>Sambucus racemosa</i>
Red huckleberry	<i>Vaccinium parvifolium</i>
Red-osier dogwood	<i>Cornus stolonifera</i>
Red raspberry	<i>Rubus idaeus</i>
Salmonberry	<i>Rubus spectabilis</i>
Saskatoon berry	<i>Amelanchier alnifolia</i>
Sweet gale	<i>Myrica gale</i>
Thimbleberry	<i>Rubus parviflorus</i>
Western mountain-ash	<i>Sorbus scopulina</i>
Willow ssp.	<i>Salix</i> ssp.
Alaskan blueberry	<i>Vaccinium alaskaense</i>
Dwarf blueberry	<i>Vaccinium caespitosum</i>
Black huckleberry	<i>Vaccinium membranaceum</i>
Bog blueberry	<i>Vaccinium uliginosum</i>
Bog Cranberry	<i>Oxycoccus oxycoccos</i>
Copperbush	<i>Cladothamnus pyroliflorus</i>
White-flowered rhododendron	<i>Rhododendron albiflorum</i>
White mountain-heather	<i>Cassiope mertensiana</i>
Alaska mountain-heather	<i>Cassiope stelleriana</i>
Pink mountain-heather	<i>Phyllodoce empetriformis</i>
Yellow mountain-heather	<i>Phyllodoce glanduliflora</i>
Crowberry	<i>Empetrum nigrum</i>
Alpine-azalea	<i>Loiseleuria procumbens</i>
Western bog-laurel	<i>Kalmia microphylla</i>
Bog rosemary	<i>Andromeda polifolia</i>
Labrador tea	<i>Ledum groenlandicum</i>
Kinnikinnick	<i>Arctostaphylos uva-ursi</i>
Twinflower	<i>Linnaea borealis</i>
Highbush-cranberry	<i>Viburnum edule</i>
Western trumpet honeysuckle	<i>Lonicera cilosa</i>
Common snowberry	<i>Symphoricarpos albus</i>
Sitka mountain-ash	<i>Sorbus sitchensis</i>
Salmonberry	<i>Rubus spectabilis</i>

Common Name	Scientific Name
Five leaved bramble	<i>Rubus pedatus</i>
Black raspberry	<i>Rubus leucodermis</i>
Stink currant	<i>Ribes bracteosum</i>
Trailing black currant	<i>Ribes laxiflorum</i>
Arctic willow	<i>Salix arctica</i>
Pacific willow	<i>Salix lucida</i>
Scouler's willow	<i>Salix scouleriana</i>
Sitka willow	<i>Salix sitchensis</i>
Cascara	<i>Rhamnus pushiana</i>
Vine maple	<i>Acer circinatum</i>
Douglas maple	<i>Acer glabrum</i>
Common juniper	<i>Juniperus communis</i>
False box	<i>Pachistima myrsinites</i>
Dull Oregon-grape	<i>Mahonia nervosa</i>

## **Wildflowers**

### ***Apiaceae* – Carrot Family**

Common Name	Scientific Name
Cow-parsnip	<i>Heracleum lanatum</i>
Douglas water-hemlock	<i>Cicuta douglasii</i>
Pacific hemlock-parsley	<i>Conioselinum pacificum</i>
Pacific water-parsley	<i>Oenanthe sarmentosa</i>
Sea-watch	<i>Angelica lucida</i>
Water-parsnip	<i>Sium suave</i>

### ***Araceae* – Arum or Calla-lily Family**

Common Name	Scientific Name
Skunk cabbage	<i>Lysichiton americanum</i>

### ***Asteraceae* – Sunflower Family**

Common Name	Scientific Name
Brass buttons	<i>Cotula coronopifolia</i>
Canada goldenrod	<i>Solidago canadensis</i>
Common dandelion	<i>Taraxacum officinale</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Palmate coltsfoot	<i>Petasites palmatus</i>
Pearly everlasting	<i>Anaphalis margaritacea</i>
Perennial sow-thistle	<i>Sonchus arvensis</i>
Pineapple weed	<i>Matricaria discoidea</i>
Yarrow	<i>Achillea millefolium</i>



### ***Convolvulaceae* – Morning-glory Family**

Common Name	Scientific Name
Field bindweed	<i>Convolvulus arvensis</i>

### ***Fabaceae* – Pea Family**

Common Name	Scientific Name
Red clover	<i>Trifolium pratense</i>
Seashore lupine	<i>Lupinus littoralis</i>
Springbank clover	<i>Trifolium worms kjoldii</i>
White clover	<i>Trifolium repens</i>
Beach pea	<i>Lathyrus japonicus</i>
Giant vetch	<i>Vicia gigantea</i>
Nootka sound	<i>Lupinus nootkatensis</i>
Large leaved lupine	<i>Lupinus polyphyllus</i>

### ***Juncaginaceae* – Arrow-grass Family**

Common Name	Scientific Name
Sea arrow-grass	<i>Triglochin maritimum</i>

### ***Lamiaceae* – Mint Family**

Common Name	Scientific Name
Field mint	<i>Mentha arvensis</i>
Hemp-nettle	<i>Galeopsis tetrahit</i>
Self-heal	<i>Prunella vulgaris</i>

### ***Onagraceae* – Evening-primrose Family**

Common Name	Scientific Name
Fireweed	<i>Epilobium angustifolium</i>

### ***Plantaginaceae* - Plantain Family**

Common Name	Scientific Name
Alaska plantain	<i>Plantago macrocarpa</i>
Common plantain	<i>Plantago major</i>
Sea plantain	<i>Plantago maritima</i> ssp. <i>Juncoides</i>

**Polygonaceae – Buckwheat Family**

Common Name	Scientific Name
Curled dock	<i>Rumex crispus</i>
Japanese knotweed	<i>Polygonum cuspidatum</i>
Mountain sorrel	<i>Oxyria digyna</i>
Sheep sorrel	<i>Rumex acetosella</i>
Western dock	<i>Rumex occidentalis</i>

**Pyrolaceae – Wintergreen Family**

Common Name	Scientific Name
One-sided wintergreen	<i>Orthilia secunda</i>
Single delight	<i>Moneses uniflora</i>
Pink wintergreen	<i>Pyrola asarifolia</i>
Prince's pine	<i>Chimaphila umbellata</i>
Menzie's pipsissewa	<i>Chimaphila menziesii</i>

**Rosaceae – Rose Family**

Common Name	Scientific Name
Goat'sbeard	<i>Aruncus dioicus</i>
Large-leaved avens	<i>Geum macrophyllum</i>
Silverweed	<i>Potentilla anserina</i> ssp. <i>Pacifica</i>
Sitka burnet	<i>Sanguisorba canadensis</i> ssp. <i>Latifolia</i>
Coastal strawberry	<i>Fragaria chiloensis</i>
Yellow mountain avens	<i>Dryas drummondii</i>

**Scrophulariaceae – Figwort & Lousewort Family**

Common Name	Scientific Name
Common Foxglove	<i>Digitalis purpurea</i>
American brooklime	<i>Veronica beccabunga</i>
Alpine speedwell	<i>Veronica wormskjoldii</i>

**Urticaceae – Nettle Family**

Common Name	Scientific Name
Stinging nettle	<i>Urtica dioica</i>

**Aquatics**

Common Name	Scientific Name
Water smartweed	<i>Polygonum amphibium</i>
Common eel-grass	<i>Zostera marina</i>
Yellow pond-lily	<i>Nuphar polysepalum</i>

## **Ferns and Fern Allies**

### **Ferns**

<b>Common Name</b>	<b>Scientific Name</b>
Bracken fern	<i>Pteridium aquilinum</i>
Lady fern	<i>Athyrium filix-femina</i>
Oak fern	<i>Gymnocarpium dryopteris</i>
Spiny wood fern	<i>Dryopteris expansa</i>
Sword fern	<i>Polystichum munitum</i>
Licorice fern	<i>Polypodium glycyrrhiza</i>
Deer fern	<i>Blechnum spicant</i>
Maidenhair fern	<i>Adiantum pedatum</i>
Parsley fern	<i>Cryptogramma crispa</i>

### **Club Mosses**

<b>Common Name</b>	<b>Scientific Name</b>
Fir clubmoss	<i>Lycopodium selago</i>
Stiff clubmoss	<i>Lycopodium annotinum</i>
Running clubmoss	<i>Lycopodium clavatum</i>
Alpine clubmoss	<i>Lycopodium alpinum</i>

### **True Mosses**

<b>Common Name</b>	<b>Scientific Name</b>
Menzie's tree moss	<i>Leucolepis acanthoneuron</i>

### **Horsetails**

<b>Common Name</b>	<b>Scientific Name</b>
Common horsetail	<i>Equisetum arvense</i>
Swamp horsetail	<i>Equisetum fluviatile</i>
Scouring rush	<i>Equisetum hyemale</i>
Giant horsetail	<i>Equisetum telmateia</i>

**Poaceae – Grass Family**

Common Name	Scientific Name
Dunegrass	<i>Elymus mollis</i>
Hair bentgrass	<i>Agrostis scabra</i>
Meadow barley	<i>Hordeum brachyantherum</i>
Perennial ryegrass	<i>Lolium perenne</i>
Timothy	<i>Phleum pratense</i>
Tufted hairgrass	<i>Deschampsia cespitosa ssp. Beringensis</i>
Perennial rye grass	<i>Lolium perenne</i>
Blue wild rye	<i>Elymus glaucus</i>
Bluejoint	<i>Calamagrostis canadensis</i>
Nootka red grass	<i>Calamagrostis nutkaensis</i>
Spike bentgrass	<i>Agrostis exarata</i>
Hair bentgrass	<i>Agrostis scabra</i>
Alaska bentgrass	<i>Agrostis aequivallis</i>
Colonial bentgrass	<i>Agrostis capillaris</i>
Timothy	<i>Phleum pratense</i>
Shortawn foxtail	<i>Alopecurus aequalis</i>
Wood reedgrass	<i>Cinna latifolia</i>
Common sweetgrass	<i>Hierochloa adorata</i>
Reed canary grass	<i>Phalaris arundinacea</i>
Orchard grass	<i>Dactylis glomerata</i>
Alaska brome	<i>Bromus sitchensis</i>
Western fescue	<i>Festuca occidentalis</i>
Red fescue	<i>Festuca rubra</i>
Annual bluegrass	<i>Poa annua</i>
Kentucky bluegrass	<i>Poa pratensis</i>
Fowl bluegrass	<i>Poa palustris</i>
Arctic bluegrass	<i>Poa arctica</i>
Northern mannagrass	<i>Glyceria borealis</i>
Weak alkali grass	<i>Torreyochloa pauciflora</i>
Alaska alkali grass	<i>Puccinellia nutkaensis</i>
Nodding trisetum	<i>Trisetum cernum</i>
Spike trisetum	<i>Trisetum spicatum</i>
Tufted hairgrass	<i>Deschampsia cespitosa</i>
Mountain hairgrass	<i>Vahlodea atropurpurea</i>

## **Sedges**

### ***Cyperaceae* – Sedge Family**

<b>Common Name</b>	<b>Scientific Name</b>
Lyngby's sedge	<i>Carex lyngbyei</i>
Small-flowered bulrush	<i>Scirpus microcarpus</i>
Slough sedge	<i>Carex obnupta</i>
Hard stemmed bulrush	<i>Scirpus lacustris</i>
American bulrush	<i>Scripus americanus</i>

### **Other Families:**

<b>Common Name</b>	<b>Scientific Name</b>
Orache	<i>Atriplex patula</i>
American glasswort	<i>Salicornia virginica</i>
Lamb's quarters	<i>Chenopodium album</i>
Vanilla leaf deer foot	<i>Achlys triphylla</i>
Herb robert	<i>Geranium robertianum</i>
Northern geranium	<i>Geranium erianthum</i>
Wild ginger	<i>Asarum caudatum</i>
Western St. John's wort	<i>Hypericum formosum</i>
Broad-leaved starflower	<i>Trientalis latifolia</i>
Deer cabbage	<i>Fauria crista-galli</i>
Ribwort	<i>Plantago lanceolata</i>
Cleavers	<i>Galium aparine</i>
Sweet-scented bedstraw	<i>Galium triflorum</i>
Northern wild licorice	<i>Galium kamtschaticum</i>
Small bedstraw	<i>Galium trifidum</i>
Wild sarsaparilla	<i>Aralia nudicaulis</i>
Broad-leaved willowherb	<i>Epilobium latifolium</i>
Round-leaved sundew	<i>Drosera rotundifolia</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>
Field chickweed	<i>Cerastium arvense</i>

### **Opportunities: Communities**

- dried herbs and roots can be processed and shipped from communities
- landscape plants that are in abundance can be prepared and shipped to markets
- tinctures, cordials and syrups can be processed and shipped to markets
- jams and jellies can be processed and shipped from communities
- florals that have a large market demand and a longer shelf life can be processed and shipped to markets via air and sea transportation

### **Barriers: Communities**

- in order for fresh botanicals to arrive at market in time they must be within one hour travel time to buyer ( more pertains to food and herb products)

- refrigeration for fresh products and cheap power must be present
- markets must be sought and contracts solidified before harvest of fresh products occurs
- workforce must be dedicated and product available consistently

**Other: Botanicals - Communities**

- some plants may be considered endangered and may be exploited
- regulations not in place regarding botanicals
- sustainability and inventory of plant species not well known