

KEATS ISLAND COMMUNITY PROFILE

**Keats Island
Official Community Plan Review
2000-2001**

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INTRODUCTION

Official Community Plan (OCP)

The Keats Island Official Community Plan is a document prepared and adopted, in accordance with the *Local Government Act* and the *Islands Trust Act*, by the locally elected land use authority for Keats Island, the Gambier Island Local Trust Committee. The purpose of the Plan is to define general objectives and more detailed policies with respect to land use on Keats Island and the smaller surrounding islets. The Community Plan is developed in consultation with Keats Islanders, other citizens and relevant government agencies concerned with the island's future. The OCP becomes "official" when it is adopted by bylaw, in accordance with statutory procedures. This process requires a public hearing and the approval of the Minister of Municipal Affairs. Once adopted, the OCP guides the decisions of the Local Trust Committee on all land use matters and, particularly, the form and character of future land use patterns on Keats and surrounding islets, including uses of surrounding foreshore.

The plan also ensures that decisions of the Committee are compatible with the *Islands Trust Act* and *Islands Trust Policy Statement*, as well as legislation and policies established by various other levels of government. The legislated Object of the Islands Trust is to:

"...preserve and protect the Trust Area and its unique amenities and environment for the benefit of the residents of the Trust Area and of the British Columbia generally, in cooperation with municipalities, regional districts, improvement districts, other persons and organizations and the government of British Columbia."

Local Trust Committee (LTC)

Keats Island and surrounding smaller islands, such as Preston Island on the south, Home Island on the west and Shelter Island on the northwest, are part of the Gambier Local Trust Area, and hence within jurisdiction of the Gambier Island Local Trust Committee. Little Shelter Islet is categorized as an Indian Reserve (IR) and is excluded (because it is so close to Keats Island, however, some data will be included in this Profile). The Gambier Island Local Trust Area, of which Gambier is the principal island, also includes North and South Thormanby Islands, Anvil, Trail and Pasley groups, Woolridge and other small islands in the Howe Sound^{2,3} (Appendix 1). The Gambier Island Local Trust Committee is composed of three members: two locally elected Trustees, who each serve a three-year term, and one appointed member of the Island Trust Executive Committee to act as Chairperson. One of the current Local Trustees is from Keats Island and the other is from Gambier Island. The current Chairperson is from Saturna Island.

¹ Islands Trust Council. *Islands Trust Policy Statement, Bylaw No. 17, As Amended by Islands Trust Council Bylaw No. 42*. Islands Trust. June 1994. p. 5

² Bennie, Rob. B.C. Ferry Corporation, Dogwood Princess II, Launch Operator. *Keats & Gambier Islands: A Social Profile*. Roberts Creek, BC. ca 1998-99. p. 11.

³ Islands Trust. Map, Schedule A -- *Local Trust Area Boundaries*. 1:125 000. no date

Length of Coastline for Keats Island and Area (m)		
Keats Island		14,149
Home Island		343
Preston Island		526
Shelter Island		465
Little Shelter Islet		247
Total coastline		15,730

Figure 1

Source: Islands Trust Cadastral
Maps, 2000

The LTC possesses similar land use powers and authority to that of a Regional District. On Keats Island, as part of the Gambier group of islands, the LTC also submits bylaws to the Island Trust Executive Committee for approval and enforces and regulates development. In addition, the LTC makes recommendations to government agencies concerning initiatives affecting the Local Trust Area in order to ensure that activities are consistent with objectives and goals of the community and the Islands Trust, as outlined in the Keats Island Official Community Plan, the *Islands Trust Act*, and the *Islands Trust Policy Statement*.

What Is A Community Profile?

The Keats Island Community Profile was commissioned by the Gambier Island Local Trust Committee and will serve as a reference tool for land use planning on Keats Island. It examines a variety of general and statistical information, both current and historical, in an effort to delineate trends within the community. This information will aid in the Planning Review process by providing insight into the community's unique and evolving nature and provide the basis for future projections. The majority of statistics presented in this document has been obtained from outside agencies, thereby dating the information. The Community Profile will be updated when new data are available.

PHYSICAL ENVIRONMENT

Location

Keats Island is one of the non-designated "associated" islands within the Islands Trust Area. It is located in Howe sound flanked by Bowen Island and the city of Vancouver to the south east, Gambier to the northeast, the Sunshine Coast and the town of Gibsons to the west and Georgia Strait and smaller islets to the south. It has the appearance of an ankle boot with the 'toe' pointing southwest, the 'heel' facing north and the 'instep' southeast. The total land area of Keats Island is about 600 hectares (1500 acres), not including the surrounding smaller islands. (see Appendix 2)

Physical Characteristics

The Keats Island coastline is 14,149 metres (46,409 feet) in length (Figure 1). This represents about one fifth, or less, of the Local Trust Area's total coastline length. The remaining "associated" islands and islets have a combined coastline length of 1581 metres (5186 feet).

A number of unique features make up the coastline of Keats Island. The shoreline consists of rocky bluffs with pockets of small sandy to gravely beaches in between, such as Sandy Beach, Hard-to-Come-By Cove and Pebble Beach. Eastbourne has six beaches starting from the north to south with Wreck, East, Maple, Laurel, and West Beach, with Andy's Beach on the western outskirts. Salmon Rock, on the 'toe' of the island has granitic outcrops. The south and east

shores of the island are poorly protected from winds and offer limited anchorage. There is a scenic lookout bluff over Pebble Beach. Most year-round moorage is available on the northwest side of the island at Keats Camp, Plumper Cove Provincial Marine Park and Melody Point area. The northeast side of the island, from Barnabas Camp, downward to the east side at Eastbourne, and along the southern side of Keats Island are suitable for seasonal moorage, but not for year round moorage.

Keats Island is a rugged hilly island. It rises to a central ridge along its length and has maximum elevations of an average of about 200 metres (656 feet) at its summits with minimum elevation occurring at sea level. Carmichael Peak, on the northwest quarter of the island, is the highest at 220 metres (720 feet) followed by an unnamed peak at 200 metres and Stony Hill at 189 metres (620 feet), both located centre-southeast. The rocky outcrops associated with these peaks are mainly composed of volcanic material.

Climate

Temperature and precipitation on Keats Island is typical of the southern West Coast of Canada. Figure 2 shows the rainfall and temperature patterns on the island. These were mainly obtained from the climate station at Gower Point (34 m elevation) directly 3 km southwest of Gibsons (about 6 km from the center of Keats Island) as there is no station on the island itself. Other nearby stations are at Gambier Harbour (53m elev.) on Gambier Island and Arbutus Bay on the southeast side of Bowen Island, 3 km and 10 km, respectively, from the center of Keats Island. Precipitation and temperature data were available from Gower Point, and precipitation only from Gambier Harbour⁴. Temperatures are not likely to be significantly different between the two stations, however, precipitation records are higher for Gambier Harbour by about 80 mm in the winter months and 20 mm in the summer months. This is likely due to Gambier Island's relatively mountainous topography (e.g. Mt. Killam, 823m or 2700 ft; Mt. Liddell 894 m or 2930 ft*; Mt. Artaban 595m or 1950 ft⁵)* and air masses coming from the southwest forced to rise and release moisture.

*Elevations in the Keats & Gambier Islands: A Social Profile by Rob Bennie (Dogwood Princess II, B.C. Ferry Corp.), p.1, are given as 851 m (2790 ft) and 621 m (2030 ft), respectively.

**No summer temperature data for Gibsons were available and none at all for other stations nearby (Gambier Harbour, Arbutus Bay on Bowen Island, Texada Island, or Sechelt area), thus the July and August temperatures for Hornby Island were used (Hornby Island Community Profile).

⁴Environment Canada. Canadian Climate Normals, 1961-1990 for Gambier Harbour, BC, and Gibsons (Gower Point), BC. February 2001. (www.cmc.ec.gc.ca/climate/normals/BCG005.HTM)

⁵Geological Survey of Canada. Map 1152A, Geology-Vancouver North (BC). Scale 1:63,360 (accompanying GSC Memoir 335 by Roddick, J.A. 1984)

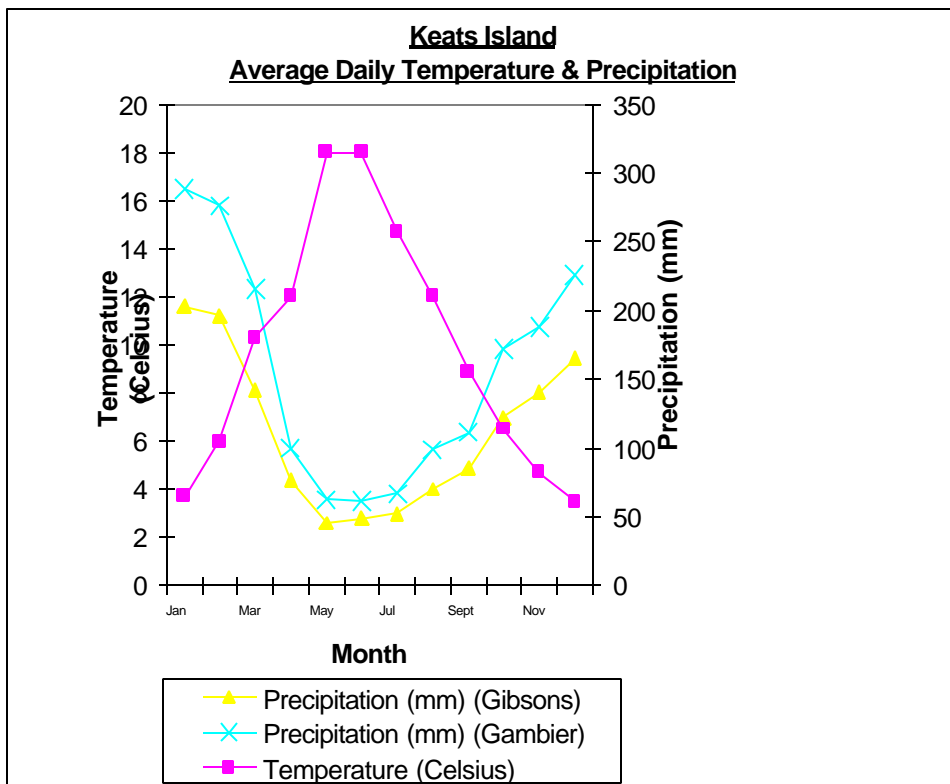


Figure 2

Source: Canadian Climate Normals, 1961-1990

The average daily temperature for Keats Island reaches a maximum of over 17° - 19°C during July and August**, and a minimum average of less than 3.5°C in December and January. Temperature is inversely related to precipitation with the maximum total monthly precipitation occurring in December (about 200mm) and minimum occurring in August (about 45mm). Precipitation on Keats Island may be slightly higher than what is recorded at Gower Point and less than that recorded at Gambier Harbour.

Watersheds

As indicated above, Keats Island has a low level of water recharge during the summer months, at which time there is an increased demand for water due to the seasonal increase in population. It is necessary to minimize the strain on water resources generated by heavy seasonal use. It is important to promote conservation and preservation of freshwater areas.

The Ministry of Environment, Lands and Parks has not identified any lakes or significant watersheds on the island, however, there are a few minor creeks with intermittent flow. These are: Bonner Creek; Resort Spring; Alderson Spring; Brown Spring; Meek Creek; and Park Brook and two others that are unnamed. These must be considered for protection to ensure the quality and quantity of surface water is not compromised.

The creeks and small waterways occur mainly around the perimeter of Keats Island. **Bonner Creek** flows from the south boundary of the Community Park on the western edge of the Eastbourne subdivision and is approximately 320 metres long (some maps show it originating from the wetland area in the northeast corner of the Community Park which would make it about 1200 m long). A report authored by two engineering firms, Dayton & Knight Ltd. and Piteau Associates states the 45 ha Bonner Creek watershed is estimated to have runoff rate of 300,000 to 450,000 cubic metres per year⁶.

Resort and Eureka Springs occur on the north corner of the Keats Camp property, south of the Plumper Cove Subdivision and are approximately 60m and 30m long, respectively.

Alderson and Brown Springs are located on the west side of the Plumper Cove Small Subdivision (Melody Point) and are approximately 200 m and 100 m in length, respectively.

⁶Dayton & Knight Ltd. and Piteau Associates. Sunshine Coast Regional District, Keats Island Water Supply Study. West Vancouver, BC. February 1994. p. 2.

Park Brook is in Plumper Cove Provincial Park flowing in a north easterly direction and is about 220 m long.

Meek Creek is located in the north part of the Plumper Cove Subdivision and flows west. It is about 170 m long.

What appears to be a creek and is unnamed flows north through the middle of the Corkum Farm/Barnabas Family Ministries' property (District Lot 1469) and is approximately 880 m long. Another unnamed creek flows northeast in the subdivision on the east side of the 'Barnabas' property and is about 400 m long.

Geology

Bedrock on Keats Island is composed of the Bowen Island group and the Coast Plutonic Rocks. The Bowen Island group was formed during the early Mesozoic (Triassic period) or possibly late Palaeozoic era (Permian period), approximately 245 million years ago (just for reference--we are now in the Cenozoic era which began 66 million years ago). It has been hard to get more exact dating by geologists due to the lack of presence of identifiable fossils⁷. It is composed of metamorphosed volcanic and lesser interbedded sedimentary rocks. This formation is contiguous and covers about three quarters of the island in the middle with a narrow sliver on the northwest shore. Depth of this formation has not been established, but It is thought to be at least 1525 m (5000 feet) thick⁸.

The Coast Plutonic Rocks are granitic and cover the remainder of the island. They occur on the 'Keats Camp' peninsula (District Lot 696) and in a wide band along the northwest shore. Plutonic rocks are igneous bodies that are underground, magmatic (molten rock) intrusions into surrounding rock. They are a more recent occurrence than the Bowen Island Group by about 60 million years (Upper Jurassic period)⁹.

⁷Roddick, J.A. Geological Survey of Canada, Dept. of Mines and Technical Surveys. Vancouver North, Coquitlam, and Pitt Lake Map Areas, British Columbia with special emphasis on the evolution of the plutonic rocks, Memoir 335. Minister of Supply and Services Canada, 1984. p. 33.

⁸ibid. p. 32.

⁹ibid. p. 13, 33.

Soils

Soils on Keats Island are not suitable for any significant form of agriculture and there is no land designated in the provincial Agricultural Land Reserve. However, through manipulation by irrigation and stone picking some areas can sustain minor agricultural activities, such as gardening and animal grazing, for example. The dominant soil types on the island are the Cannell, Bose and Buntzen soils followed by the Capilano and Sunshine soils^{10,11}. These soils have originated mainly by marine and glacial deposition.

The **Cannell** soils cover much of Keats Island, particularly the southwest, south, east and middle, and is strongly associated with rock outcrops. It occupies strongly to very steeply sloping or moderately rolling to hilly gradients. It is a moderately coarse textured soil with well to rapid drainage. Its origins are colluvial (material that has been deposited as a direct result of gravity) and glacial (till deposited by the movement of glacier ice). Soil depth ranges commonly from 10 to 50 centimetres, but can be up to 1 metre. Associated vegetation is second-growth forest; mainly Douglas fir and western hemlock with a thin ericaceous understory (heathlike shrubs) and moss on the soil surface. The soil underneath the needles and moss tends to have a thin sandy layer, about 6 cm, followed by red to dark red-brown gravelly sand with stones. The soil is strongly to extremely acidic. Because of its shallow and stony tendencies and occurrence on steep topography, areas covered with this soil are unsuitable for agricultural activities.

The **Bose** soils also cover much of the island and are associated with Cannell soils in some locations. It occurs on the west, north, east and middle of the island on a variety of slope gradients from gently to steeply sloping. Bose soils are derived from marine and glaciofluvial deposits and range from sandy loam to gravel that can also be quite stony. They can be up to 1.6 metres thick. The Bose soil profile is topped by a layer of forest litter, up to 10 cm followed by a layer less than 4 cm of pale grey sand. This is underlain by a dark brown-reddish brown, loose and gravelly 60 cm layer that grades into a 20 cm yellow-brown gravel layer. Abruptly underlying this is a cemented, sandy, platy layer, 80 to 130 cm below the surface, followed by compact, unweathered glacial till. Bose soils are moderately well to well drained and readily absorb water in the upper layers. However, they have poor water retention capabilities. Associated vegetation includes second growth coast Douglas fir, western red cedar, western hemlock, red alder, vine and big-leaf maple, some birches and willow.

¹⁰Luttmerding, H.A. MELP Assessment and Planning Division. Soils of the Langley-Vancouver Map Area Report No. 15, British Columbia Soil Survey, Vol. 2 Soil Maps and Legend, Southern Sunshine Coast and Southern Coast Mountains (Scale 1:50 000), RAB Bulletin 18. Kelowna, BC 1980.

¹¹Soils are described in: Luttmerding, H.A. MELP Assessment and Planning Div. Soils of the Langley-Vancouver Map Area Report No. 15, British Columbia Soil Survey, Vol. 3, Description of the Soils, RAB Bulletin 18. Kelowna, BC. 1981.

The understory includes salal, Oregon grape, thimbleberry and bracken. Soil pH ranges from strongly acidic near the surface to moderately acidic in the subsoil. With soil treatment such as fertilization, irrigation and stonepicking, some agricultural activities are possible, such as fruit orchards and small-scale livestock raising. The Corkum Farm/Barnabas camp property, one of the areas where this soil occurs, has 2 orchards and pigs and sheep livestock raising. A 10-acre lot near Eastbourne also containing the Bose soil type has a small Llama farm.

On Keats Island the **Buntzen** soils are associated with the Cannell and Bose soil series. Buntzen soils originate from coarse to medium textured glacial till and can be up to about 1.5 metres thick. They are similar in profile to the Bose soils with a 10 cm humus layer and 4 cm grey sand below. This is followed by 75 cm of dark red-brown loam grading down to yellow-brown, with about 6 to 12 percent organic matter and some stones. Below this, to a depth of about 120 to 150 cm, occurs a dark grey-brown, platy, dense to cemented sandy loam layer with many yellow-red and dark red mottles. Buntzen soils are moderately well drained and their water holding capacity is moderate. Associated vegetation is similar to the Bose soils; second-growth Douglas fir, western hemlock, western red cedar, vine maple and red alder, with ferns and shrubs making up the understory and moss covering the soil surface. This soil type is very acidic. Buntzen soils are acceptable for foraging and as pasture in some areas.

The **Capilano and Sunshine** soils are both associated with the Bose soils on Keats Island. The Bose-Capilano soils occur in a pocket on the north part of the island covering much of the Corkum Farm/Barnabas Camp parcel (District Lot 1469) and the northwest corner of Plumper Cove Provincial Park on moderately to steeply sloping gradients. Capilano soils originate from deep (at least 2 metres), coarse textured, stony, glaciofluvial, deltaic and some marine deposits. The upper layer structure is composed of coniferous forest litter, up to 15 cm thick, well decomposed near the bottom, followed by a 2 to 5 cm band of loose, grey sand. Underlying this is a 40 cm layer of friable or loose, dark red-brown to yellow red, gravely sand grading to a 50 cm layer of strongly cemented, grey to olive-brown, hard gravely zone. This, in turn, grades to loose, unweathered grey to olive gravel and sand. Capilano soils are well to rapidly draining, and are pervious in the upper layers until reaching the cemented layer. They have low water holding capacity and slow surface runoff.

The Bose-Sunshine series covers most of the Community Park, 1 km. West of Eastbourne and edges into adjacent land parcels. The Sunshine soils occur where slopes are gentle and rolling. They originate from glacial and marine deposits over 2 metres thick. The surface of the soil is covered by up to 5 cm of partially decomposed forest litter underlain by a grey, highly leached sandy layer 2 to 5 cm in depth. This is followed by a 20 cm band of red-brown sandy material which grades down to 50 cm of deep brown to yellow-brown sand with red mottles. Below this there is dense, compact, grey to grey brown glaciomarine, marine or glacial till material.

The Capilano and Sunshine soils have the same types of associated tree cover as the Bose and Cannell, with the exception of birches. Both soils are very acidic in the upper layers becoming moderately acidic with depth. Crop cultivation and minor livestock farming is possible, again with irrigation and fertilization of both soils and stonepicking in the Capilano soils.

Sensitive Ecosystems

The Gambier Local Trust Area and specifically, Keats Island, is an ecologically diverse area with numerous significant regions. A Sensitive Ecosystems Inventory (SEI) was carried out on Keats Island and other surrounding islands by Environment Canada, Ministry of Environment, Lands and Parks, and the Habitat conservation Trust Fund in 1996-97¹². This study produced a series of maps which delineate locations of rare terrestrial ecosystems that are fragile and support a diversity of species. There are nine sensitive ecosystems cited in the study of which Keats Island has representations of five: Coastal Bluff; Terrestrial Herbaceous; Older Forest; Second Growth Forest; and Wetland (Seasonally Flooded Agricultural Field, Riparian, Sparsely Vegetated and Woodland are the others not found on Keats Island)¹³ (see Appendix 3)

Coastal Bluffs have been recognized as providing vital habitat for rare plant species and nesting seabirds. Significant coastal bluffs occur on almost the entire southern and much of the eastern perimeter of Keats Island as well as both Shelter islets and Home Island (also known as Salmon Rock).

Terrestrial Herbaceous ecosystems are rare coastal grasslands and moss-covered rocky outcrops. These ecosystems provide habitat for, butterflies, deer, and snakes. About 6 isolated pockets of these herbaceous ecosystems occur on the island: one just below the Plumper Cove Provincial Park boundary on the east side, another on the southeast corner of District Lot (D.L.) 876 where the scenic bluff and Pebble Beach are located on the southern part of the island; the other 4 occur in pairs between the southeast side of the Community Park and the western boundary of Eastbourne subdivision.

Older Forest, as defined by this study, are forests older than 100 years. These older forested regions are important as they provide habitat for a diversity of species, including birds of prey, small mammals and amphibians. There is one, approximately 5 ha (12 ac) pocket occurring on the south coast of the island just east of the scenic bluff and Pebble Beach.

Second Growth Forests that are ecologically significant are forest stands between 60 to 100 years in age. They are important because of the plants and animals they support. In addition, they may act as corridors between other natural areas. There are large areas of second growth forests on Keats Island: much of

¹² MELP, Environment Canada, and Habitat Conservation Trust Fund. Sensitive Ecosystems of East Vancouver Island and Gulf Islands, Map. 1997

¹³ Sensitive ecosystems are described as outlined on the SEI map, 1997.

the peninsula south of Keats Landing, Preston Island, all of Plumper Cove Provincial Park and about half of the subdivision south of it, almost all of the long narrow 'Corkum' parcel (D.L. 1829) and into a few of the 10 acre lots to the southeast, and nearly all of the Community Park.

Wetland ecosystems support rare plant and invertebrate species, and provide resting, feeding and breeding areas for ducks, songbirds, fish amphibians. There is one small wetland area (approximately 3 ha or 7 ac) located in the north east corner of the Community Park.

Currently, a more detailed inventory and ground truthing of the nature of the sensitive ecosystems on Keats Island is underway which will provide more information. Areas that should be protected, but do not appear on the SEI map are Pebble Beach and the scenic bluff above it. Islanders have observed the presence of wildlife such as black tailed deer, shrews, squirrels, Barred Owl species (similar to Spotted Owl species), eagles, woodpeckers and, occasionally, bears. At one time there were many raccoons, but their numbers have recently diminished, probably arriving at some equilibrium with their environment.

Crown Lands

Crown land is land that is administered by the either the federal or provincial government and, consequently, belongs to the people of Canada and the Province of BC, respectively. In BC, Crown lands are currently under the auspices of the B.C. Assets and Land Corporation. Formerly they were managed by the Ministry of Environment, Lands and Parks.

In BC in the 1860's, Crown land was surveyed and then granted for sale, mainly for settlement purposes, to those who were interested. At the turn of the last century, as the population and competing uses for land grew, it became necessary to hold some of the Crown land in reserve for public use such as, roads, utilities, communications, public service, parks and ecological reserves, most of which exist on Keats Island. Crown land can also be tenured or sold to community groups and individuals for community, commercial or, residential uses. Appendix 4 is a list of basic terms associated with Crown land tenure¹⁴.

Figure 3 shows the distribution and status of Crown Land from information that is currently available¹⁵ (see also Appendix 5). Of the 607 ha (1500 ac) that make up the land base of Keats Island, approximately 65 ha (160 ac) or 11% is Crown land. The tenures are held by government agencies for park and road use, there are no private or public utility tenures. The two parks, Plumper Cove Provincial Park and the Community park, occupy most of the Crown land at 47 ha (116 ac) or about 73%. Roads occupy approximately 18 ha (44 ac) or 27%.

¹⁴Ministry of Crown Lands. Crown Land Programs. Province of British Columbia: no date (c. 1988). p. 7.

¹⁵British Columbia Assessment Authority. Keats Island Property Assessment Rolls for 2000.

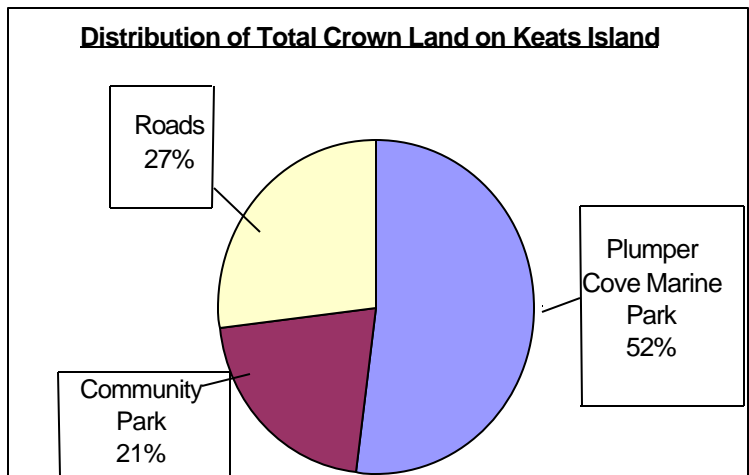


Figure 3

Source: BCAA Rolls, 2000

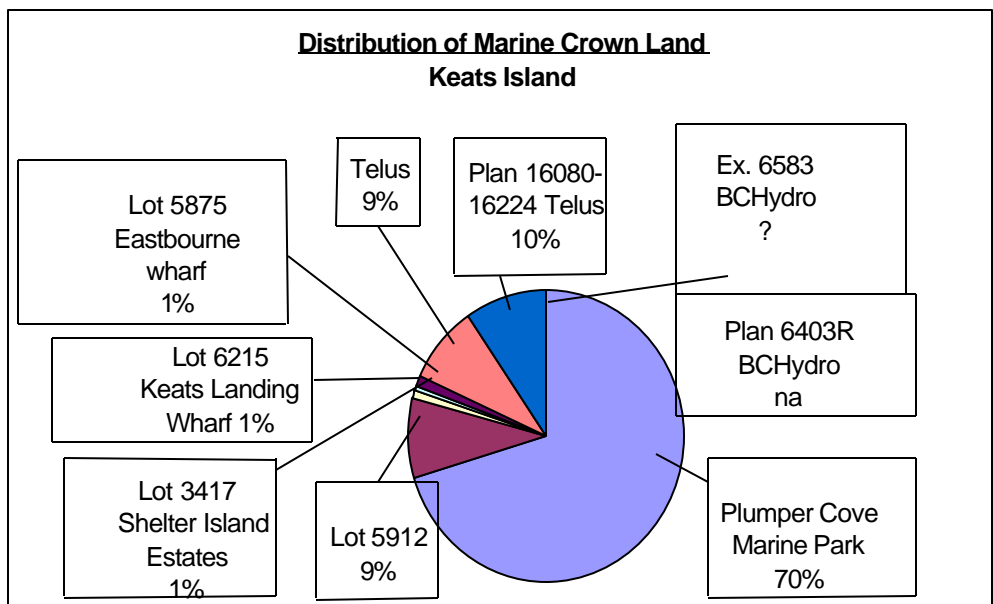


Figure 4

Source: BCAA Rolls, 2000

The foreshore* and deeper waters around Keats Island are also all Crown

land, but only an area of about 51+ ha** (125 ac) has been tenured, mainly on the west side of the island in Shoal Channel (except for the Eastbourne ferry wharf).

Of this, about 45 ha (111 ac) or 89% of the foreshore is covered by currently active tenures. Figure 4 shows the distribution of foreshore Crown land (see also Appendix 2). The marine portion of Plumper Cove Provincial Park makes up most of the active tenures at approximately 32 ha (78 ac) or 70%. This is followed by 2 telephone utility right of ways: one across the channel at 4.4 ha (10.9 ac) and the other through the Keats Landing Ferry wharf at 3.8 ha (9.4 ac) for a total of 18%. The hydro utility also has a Right of Way across the channel. There is a private lease tenure for a float and log salvaging operation of approximately 4 ha (10ac) or 9% as well as a license for a private moorage facility*** of .3 ha (.7 ac)¹⁶. The Federal government has tenure on the two public wharves for public access purposes at Keats Landing (0.37ha or 0.92 ac) and Eastbourne (0.45 ha or 1.12ac) together representing just under 2% of the marine Crown land.

The two adjacent water lots on the west side of the 'toe' of Keats Island totaling approximately 6 ha (14 ac) or 11% are inactive or may be considered as 'vacant'¹⁷. They were probably originally tenured for shellfish or log floating purposes and then not renewed, however their boundaries sometimes appear on maps of the island.

POPULATION AND SETTLEMENT

Population data for Keats Island is based mostly on local information, either by verbal communication or recent social profiles. Census data from Statistics Canada is not adequate as data prior to 1996 has been aggregated with data from other locations, also referred to as data suppression. This occurs when population counts are below 40. In addition, for reasons of confidentiality, the 1996 data has been randomly rounded up or down to the nearest five or ten, sometimes even fifteen and, thus, is not representative.

*Foreshore - the first 100 metres of water/land from the high tide mark
(Offshore - out beyond 100 metres of water from the high tide mark)

**This figure does not include the BC Hydro Utility submarine cable Right of Way as no acreage was given in the BCAA Assessment Rolls, and does not include the 32 privately owned moorage docks listed in the BCAA Rolls for the same reason.

***This moorage facility is not listed in the BCAA Rolls.

¹⁶ McKay, Linnet. Area Assessor, British Columbia Assessment Authority (North Vancouver, BC). Telephone Interview. January 2000.

¹⁷ Leong, Malcolm. BC Assets and Land Corporation, Land Office (Surrey, BC). Telephone Interview. December 21, 2000.

Settlement Patterns

Prior to white settlement, the First Nations peoples of the Squamish Nation set up summer villages on the shores of Keats Island to catch fish, hunt, gather berries¹⁸, and possibly collect shellfish. There is no significant evidence of their presence on the island, but they probably camped in protected bays on the west, north and east sides of Keats Island.

There are indications in Native legends and Chinese journals of Chinese explorers in the area over a thousand years before the Spanish navigated Howe Sound in 1791¹⁹. Captain George Vancouver surveyed Howe Sound in detail shortly thereafter, followed by Captain George Richards in 1864 in the HMS Plumper after which Plumper Cove Provincial Park is named²⁰. Captain Richards named Keats Island after Admiral Richard Goodwin Keats²¹. Admiral Keats was involved in a famous sea battle that resulted after he anchored his boat in the protected bay of a small island similar to Keats Island.

Non-Native settlement began on Keats Island in about 1888 with a couple, John Hooper and Lehannah Konderoy, coming to homestead near Keats Landing^{*22,23} and another individual, Harry White, about a year or two later settling on the east side of the island at what is now Eastbourne²⁴. In 1894 J.W. Taylor raised sheep on the north part of the island which became the Corkum Farm in the 1930's and in 1986 the Barnabas Family Ministries. Several more homesteaders came to settle on Keats Island in various locations making their living by farming and logging.

In 1926 the 'Baptist Camp' at Keats Landing was created with 110, 99-year lease lots and a 12 acre parcel for the camp. The purpose for the camp was, and still is, for young people from church-going and non-church-going families, usually from the Lower Mainland, to spend their summer vacations pursuing outdoor activities and partaking in church related activities. Recently, a company based in Gibsons rents the camp facilities from September to November and from February to June Spring and Autumn to operate the Sea to Sky Outdoor School for students from Lower Mainland and Sunshine Coast schools. During the winter months Keats Camp is closed.

*One year prior George Gibson founded the town of Gibsons after having explored Keats Island with his sons some months earlier. At Keats Landing John and Lehannah would have had the easiest access to supplies, etc. from Gibsons.

¹⁸Bennie, Rob. B.C. Ferry Corporation, Dogwood Princess II, Launch Operator. Keats & Gambier Islands: A Social Profile. Roberts Creek, BC. ca 1998-99. p. 1.

¹⁹ibid. p.1.

²⁰ibid. p.1.

²¹ibid. p.1.

²²ibid. p.1.

From the 1920's and onward, Eastbourne was settled with several homes being built. In 1931, Eastbourne Estates purchased D.L. 1593, 1594, and 1595 (a total of approximately 447 acres). In 1934, 36 small lots (average size: ¼ acre) were subdivided in Eastbourne. And in the mid 1950's, Eastbourne Estates subdivided an additional 184 lots, bringing the total number of Eastbourne lots to 220²⁵. Lots were selling for about \$400 each. Eastbourne Estates sold the remaining 375 acres to Harry Smith in the 1970's. Smith subdivided the land into 33 – 10 acre lots in 1981. This subdivision included a 33 acre community park.

The Melody Point area was first settled in the late 1930's, becoming a subdivision in the late 1960's. Currently, all of the properties are recreational-use. The lots just behind the waterfront lots were originally part of another development owned by Clark-Whiting. Melody Point property owners purchased these variably sized parcels in 1976 with each homeowner buying a share of the Clark-Whiting land or 'upper property', as it is currently referred to. It is a 'green belt' for the local community and provides a buffer from potential future development on the Corkum Farm/Barnabas Camp property. The Clark-Whiting land has recently been converted to 3 large parcels²⁶ (note: calculations in this profile are based on the parcel configuration prior to this amalgamation).

Since the late 1920's people were coming to the island more for recreational purposes than to homestead. Currently, many of the properties on Keats Island are used as summer and weekend cottages. Eastbourne, however, while still a recreational cottage area, is becoming the principal area of year-round settlement on the island.

Currently, of the 359 developed properties (Figure 5), about 20 to 25 (6 - 7%) are occupied on a full-time basis. The remaining 334 to 339 lots (93 - 94%) are used for weekend, seasonal and recreational purposes.

Barnabas Family Ministries, a non-denominational, Christian organization has a 1/3 interest in the Corkum Farm property (D.L. 1469), a 140-acre parcel on the north side of the island. It is a camp geared mainly towards families and children but also welcomes individuals, and hosts retreats and conferences for businesses and corporations. Adjacent to this parcel is a subdivision of 20 parcels ranging from about 2 to 5 acres (Cotton Point area). There is no road access to this subdivision, only water access.

²³ McIlveen, Brent. Cottager's Orientation Guide, Eastbourne, Keats Island. 2nd Ed. Keats Island, BC. Summer 1994. p. 1.

²⁴ *ibid.* p.1.

²⁵ *ibid.* p.1.

There are four main areas of settlement and they occur along the shores of the island, Eastbourne, Keats Landing, Melody Point-Plumper Cove, and the Cotton Point area. There are acreages of ten acres or more inland from Eastbourne and between Keats Landing and Plumper Cove, and three large tracts of land, ranging from about 120 to 185 acres each crossing the island in a north-south direction (D.L.s 1469, 876, 1829). (see Appendix 2)

Population

The population varies considerably on Keats Island at any given time depending on the season. Figure 6 show it fluctuating from a low of fewer than 50 to a high of more than 1300 persons (including visitors to the summer camps and Plumper Cove Marine Park)²⁷.

Full-time, Year-Round Residents

Currently, the number of people living full-time on Keats Island is estimated to be approximately 45²⁸ to 50²⁹ and also as much as 60³⁰ or 80³¹. This has risen from 31³² to 38³³ in 1991. The population numbers can vary from year to year, it seems, but the overall trend is that they are rising. The yearly fluctuations can be, in part, due to part-time residents experimenting with living full-time on the island. In the 1980's Eastbourne had 2 full-time residents and as of August 1998 had 23³⁴. This figure is could increase to 125 in the next 13 years if present trends continue³⁵. In 1998, Keats Landing had 14 full-time residents and the inland part of the island had 10³⁶. There are no full-time residents in Melody Point³⁷, Plumper Cove Subdivision (south of the Marine Park) and the Cotton Point area³⁸.

²⁶ Hall, John. Melody Point Cottage Owners. Telephone Interview. December 14, 2000.

²⁷ Benson, Kim. Islands Trust, Keats Island Trustee. Keats Island Planning Review 2000; Some Background Information About Keats Island. (unpub. notes). Keats Island BC. June 2000. p. 2.

²⁸ ibid. p. 2.

²⁹ Bennie, Rob. B.C. Ferry Corporation, Dogwood Princess II, Launch Operator. Keats & Gambier Islands: A Social Profile. Roberts Creek, BC. ca 1998-99. p. 2.

³⁰ Pederson, Ken. Building Contractor (Keats Island, BC.) Tel. Interview. February 28, 2001.

³¹ McIlveen, Brent. Eastbourne Community Association, ECA Water Committee (Keats Island, BC). Telephone Interview. February 26, 2001.

³² Bennie, Rob. B.C. Ferry Corporation, Dogwood Princess II, Launch Operator. Keats & Gambier Islands: A Social Profile. Roberts Creek, BC. ca 1998-99. p. 2.

³³ BC Stats. Victoria, BC. Telephone Interview. December 21, 2000.

³⁴ Bennie, Rob. B.C. Ferry Corporation, Dogwood Princess II, Launch Operator. Keats & Gambier Islands: A Social Profile. Roberts Creek, BC. ca 1998-99. p. 2.

³⁵ ibid. p. 2.

³⁶ ibid. p. 2.

³⁷ Hall, John. Melody Point Cottage Owners. Telephone Interview. December 14, 2000.

³⁸ Pederson, Ken. Building Contractor (Keats Island, BC.) Tel. Interview. February 28, 2001.

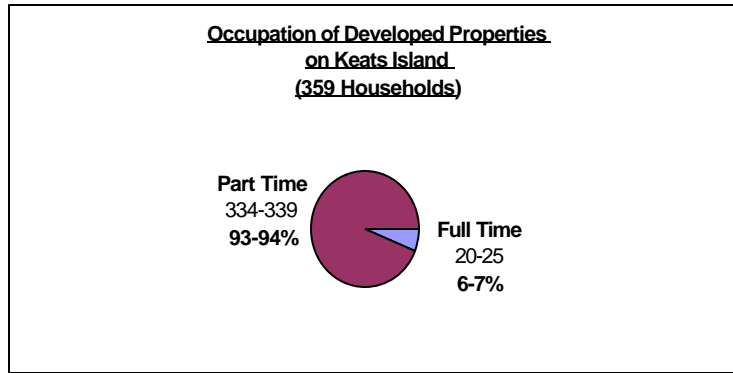


Figure 5

Source: Benson, Kim. Plan Review 2000.

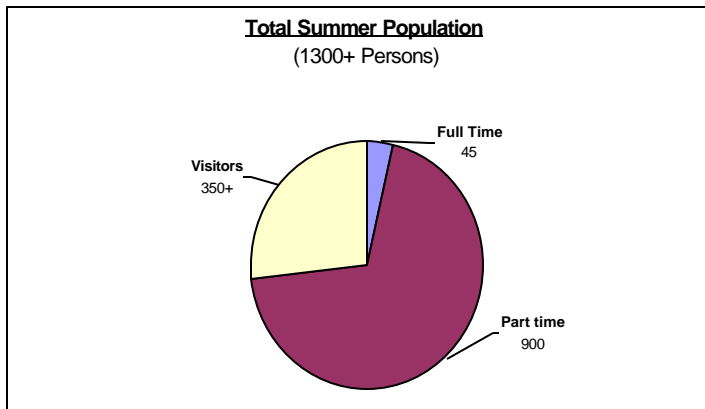


Figure 6

Source: Benson, Kim. Plan Review 2000.

Part-time Residents

While there may be approximately 50 to 80 full-time residents, the part-time residents are a significant year-round presence on Keats Island. Many of the part-time residents can spend 3-4 days a week on Keats Island. The population in Eastbourne climbs to approximately 300^{39,40} to 400 when all cottagers and weekend residents are included⁴¹. In total the number of part-time residents is about 900⁴², however, this number could be higher due to the multigenerational use of the cottages by many Keats Island families⁴³.

Visitors

Keats Camp in the summer may have up to 170-200 visitors and up to 100 staff⁴⁴, and in the Autumn and Spring there can be up to 100⁴⁵ to 120⁴⁶ when the Sea to Sky Outdoor School is in operation. Barnabas Camp in the past years has had about 1000 visitors over the course of the year. However, this past year visitors have increased to about 1500⁴⁷. Plumper Cove Provincial Park has about an average of 1700 camp users, 7500 day visitors and 3500 boating visitors during the year (the majority of these are in the warmer months)--see Recreation under Community Services. Thus, combining the 2 camps and the Marine Park there are approximately 350 visitors on the island at any one time during the summer⁴⁸.

Population By Age

The demographic patterns and trends on Keats Island contribute to the demands on and availability of housing, community services, labour and employment. Approximately one quarter of the full-time population (12 out of 45) is over 60 years of age⁴⁹. There are about 21 adults aged 20 to 60⁵⁰. Last year (2000) there were 11 school-aged children, 4 in Eastbourne and 7 at Keats Landing.⁵¹ In the early part of the 1990's there were no children living on Keats Island⁵².

³⁹McIlveen, Brent. Eastbourne Community Association, ECA Water Committee (Keats Island, BC). Telephone Interview. February 26, 2001.

⁴⁰Pederson, Ken. Building Contractor (Keats Island, BC.) Tel. Interview. February 28, 2001.

⁴¹Bennie, Rob. B.C. Ferry Corporation, Dogwood Princess II, Launch Operator. Keats & Gambier Islands: A Social Profile. Roberts Creek, BC. ca 1998-99. p. 2.

⁴²Benson, Kim. Islands Trust, Keats Island Trustee. Keats Island Planning Review 2000: Some Background Information About Keats Island. (unpub. notes). Keats Island, BC. June 2000. p. 2.

⁴³ibid. p. 2.

⁴⁴Potter, Kirk. Keats Camp, Executive Director (Keats Island, BC) Telephone Interview. February 23, 2001.

⁴⁵Bennie, Rob. B.C. Ferry Corporation, Dogwood Princess II, Launch Operator. Keats & Gambier Islands: A Social Profile. Gibsons?, BC. ca 1998-99. p. 15.

⁴⁶Bentall, Rob. Corkum Farm/Barnabas Camp, Executive Director (Keats Island, BC). Telephone Interview. December 14, 2000.

⁴⁷ibid.

⁴⁸Benson, Kim. Islands Trust, Keats Island Trustee. Keats Island Planning Review 2000: Some Background Information About Keats Island. (unpub. notes). Keats Island, BC. June 2000. p. 2.

⁴⁹Benson, Kim. Islands Trust, Keats Island Trustee. Personal Interview. October 3, 2000.

⁵⁰Forscutt, Maureen, Eastbourne resident (email, May, 2001).

⁵¹Pederson, Ken. Building Contractor (Keats Island, BC.) Tel. Interview. February 28, 2001.

⁵²Benson, Kim. Islands Trust, Keats Island Trustee. Personal Interview. October 3, 2000.

LAND USE AND HOUSING

Land Use Zoning

The current Keats Island Community Plan, authored by the Sunshine Coast Regional District in consultation with the community of Keats Island, has three main objectives⁵³ pertaining to land use and development on the island:

- to ensure the preservation of the existing amenities, such as the natural beauty, privacy and generally rural character of the island for all people
- to protect these amenities from damage by future development
- land uses be limited to residence, private and institutional recreation, public park, and existing agriculture, and also limited small local service...

There are five land use zoning classifications on Keats Island that have been established by the Sunshine Coast Regional District (codes in brackets are how these zones appear in cadastral maps of the island⁵⁴):

Country 4, Subdivision District B (A4B)
 Country 4, Subdivision District Y (A4Y)
 Public and Institutional 1, Subdivision District Z (P1Z)
 Public and Institutional -- Natural Park Area (PN1)
 Country and Institutional 3, Subdivision District B (P3B)

On Keats Island, the land-use category 'Country 4' refers to residential land use⁵⁵ while 'Public & Institutional' to civic and parkland use⁵⁶, and 'Country and Institutional 3' to noncommercial, public recreation, education and religious assembly use⁵⁷. The subcategory, 'subdivision district' (S.D.), refers to the regulations for each zone type including the minimum allowable parcel size. The minimum parcel size of approximately 4.05 ha (or 10 acres)⁵⁸ is the same for all land use categories except Public and Institutional--Subdivision District Z and Natural Park Area. Public and Institutional--Subdivision District Z has a minimum parcel size of 100 hectares (247 acres)⁵⁹ and Natural Park Area is not subdivideable⁶⁰.

⁵³ Sunshine Coast Regional District. Keats Island Community Plan, By-law No. 107. October 21, 1975. p. 1.

⁵⁴ bracketed codes are from: Sunshine Coast Regional District untitled cadastral map of Keats Island. scale is presumably 1:5 000. no date.

⁵⁵ Sunshine Coast Regional District. By-law No. 96, Land Use Regulation. April 14, 1977. p. 3.1.4.

⁵⁶ *ibid.* p. 3.5.

⁵⁷ Sunshine Coast Regional District. By-law No. 96, Land Use Regulation, April 14, 1977, Gambier Island Trust Committee Zoning Amendment Bylaw No. 25. April 1988. p. 1.

⁵⁸ Sunshine Coast Regional District. Subdivision By-law No. 103 as Amended by Gambier Island Trust Committee, By-laws No. 8, 3. January 1983. p. 6.2 B zone.

⁵⁹ *ibid.* p. 6.6 Z zone.

⁶⁰ Sunshine Coast Regional District. By-law No. 96, Land Use Regulation, April 14, 1977, Gambier Island Trust Committee Zoning Amendment Bylaw No. 64. November 1999. p. 1.

Figure 7 summarizes the type of use and area covered by each category in a table and Figure 8 is a graphical representation. Country 4, S.D. B covers most of the island at approximately 484 hectares (1196 acres) or 79% of the island⁶¹. The parcel jointly owned by the Corkum Family and the Barnabas Family Ministries on the north side of the island is zoned as Country & Institutional, S.D. B, and covers about 64 ha (157 acres) or 10.5%. Thus, these two land use areas make up the private land component of the island. The two parks, Plumper Cove Provincial Park and the Community Park near Eastbourne are zoned as Public and Institutional, S.D. Z and Public & Institutional, Natural Park Area, respectively. Together they cover 47 ha (116 acres) or 8%. Roads cover an area of almost 16 ha (40 acres) or 2.5%.

The surrounding smaller islands; Home, Shelter, and Preston Islands are Zoned as Country 4, S.D. Y and together comprise about 7 ha (17 acres). (Little Shelter, IR, is about 1 ha (2 ac).

Figure 9 is a tabular summary of lot size distribution by parcel size. Figure 10 shows the number of lots in each parcel-size category and Figure 11 the island area covered by each parcel-size category. Over 3/4 of the lots (358) on Keats Island are 1/2 acre or less and occupy less than 5% of the island's total land base of 1500 acres. Just over 1/10 of the parcels (60) are between 1/2 and 10 acres and occupy 10% of the land base. Another 1/10 are between 10 and 30 acres and occupy 28% of the island. The remaining 6 large (less than 0.5%) parcels (over 30 acres) cover over half the area of Keats Island. The large number of small lots (less than 1/2 acre) can have a significant impact on the land and surrounding environment.

On Keats Island there are a total of about 465 existing parcels of land (including both fee simple and the leasehold lots that are part of the Keats Baptist Camp property)⁶². Approximately 456 of these lots or 98% are residential and in the Country 4 land use zone. Of the remaining 9 parcels; 2 have private institutional (non-profit 'summer camp') use--one is in the Country 4 zone and the other in the Public & Institutional zone, 1 is the 33ha (82.5 acres) Plumper Cove Provincial Marine Park and campground, 1 is a 13.3 ha (33 acre) local area or community park, 4 are small 'pocket' parks in Eastbourne, and 1 is used for telephone utility purposes at the Keats Landing Public Wharf⁶³. There is a small shorefront right of way further south on the Keats Camp property, which is not considered a parcel here, but is part of the hydro utility.

⁶¹ Zone coverage is based on individual parcel acreages given in, or estimated from, the BC Assessment 2000 Rolls.

⁶² Benson, Kim. Islands Trust, Keats Island Trustee. Keats Island Planning Review 2000; Some Background Information About Keats Island. (unpub. notes). Keats Island, BC. June 2000. p. 1.

⁶³ *ibid.* p. 1.

Land Use Distribution

Land Use Category	Land Use Zone	Number of Lots	Approximate Land Coverage acres	Percent Coverage
Country 4, S.D. B	residential	462	1196	79.0%
Public & Institutional 1, S.D. Z	Prov Park	1	83	5.5%
Public & Institutional 1--Natural Park Area	Neighborhood Park	1	33	2.5%
Country & Institutional 3, S.D. B	residential	1	157	10.5%
Roads		na	40	2.5%
Country 4, S.D. Y	residential	3 islets	~20	na
Total		465	1469	100.0%

Figure 7

Source: BCAA Rolls 2000

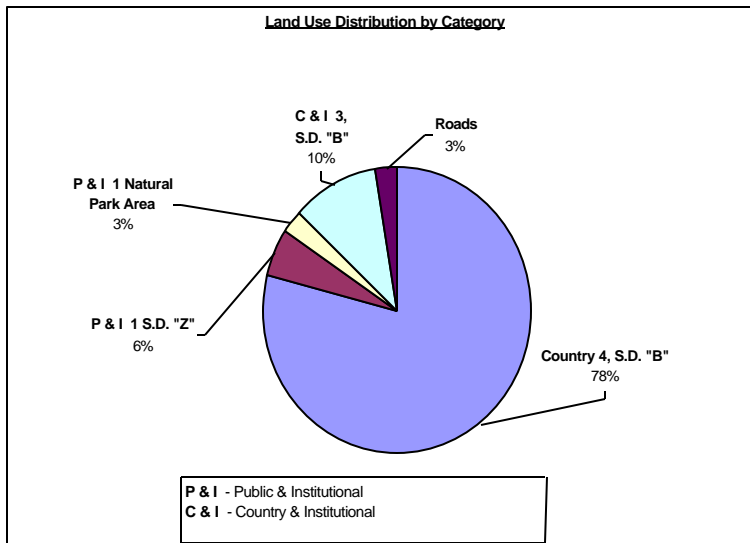


Figure 8

Source: BCAA Rolls 2000

Total Lot Size (acres)	Total Number of Lots	% of Total Number of Lots	Total Area of Lots (acres)	% of Total Island Area (acres)
<=0.5	358	77%	71	5.0%
0.5 to 10	60	13%	150	10.0%
10= to 30=	41	9%	424	28.0%
30 to 100=	2	0.30%	116	8.0%
>100	4	0.70%	699	46.5%
Road Allowances	na	na	40	2.5%
Total	465	100%	1500	100.0%

Figure 9

Source: BCAA Rolls 2000

from Benson, Kim. Plan Review 2000.

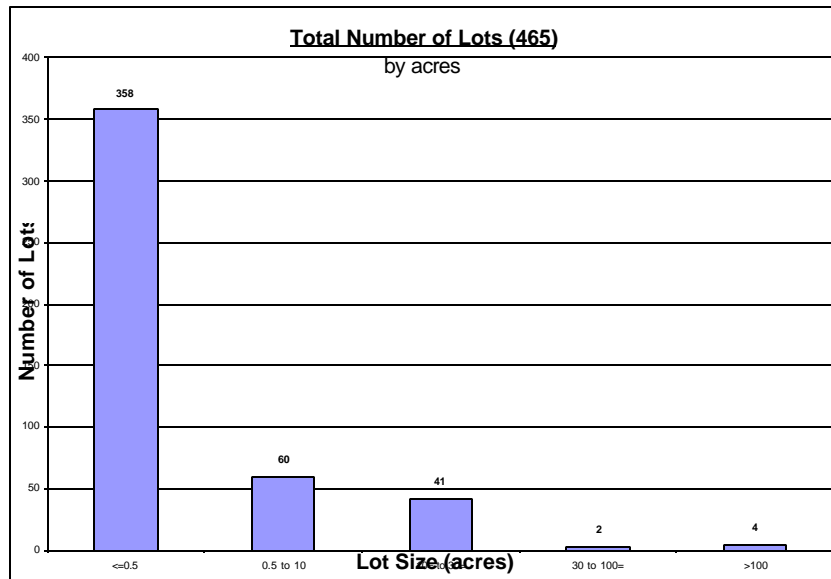


Figure 10

Source: BCAA Rolls 2000

from Benson, Kim. Plan Review 2000.

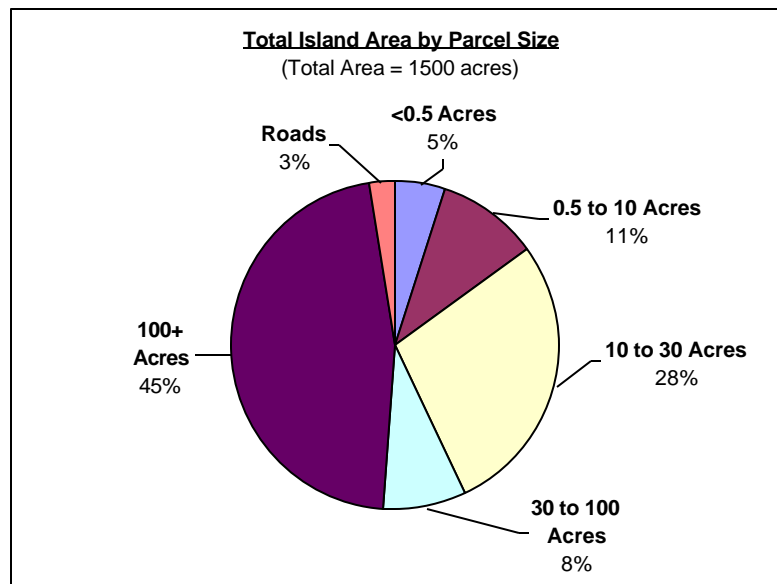


Figure 11

Source: BCAA Rolls 2000

from Benson, Kim. Plan Review 2000.

Subdivision Potential

District Lot Number	Parcel (Lot) Number	Owner Name	Lot Size (acres)	Potential Number of Lots	Potential Number of New Lots
876	na	Corkum	185	18	17
1829	na	"	126	12	11
1469	na	Corkum/Barnabas	157	15	14
1467	1	Shepard	20.5	2	1
"	7	Spindrift Prop.	20.5	2	1
6031	na	Blair	21.5	2	1
Total				51	45

Figure 12

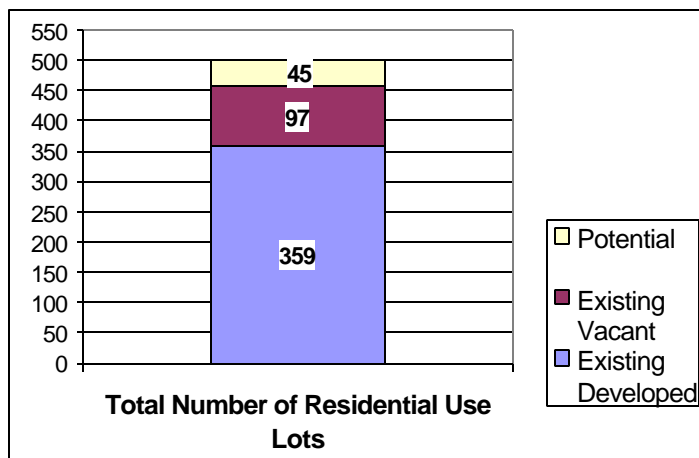


Figure 13

Source: BCAA Rolls 2000
 from Benson, Kim. Plan Review 2000.

Parcel Occupancy

Lot Size (acres)	Total Number of Lots	Number of Occupied Lots	Percentage of Occupied Lots	Number of Improved Lots	Percentage of Improved Lots	Number of Vacant Lots	Percentage of Vacant Lots
<=0.5	358	277	77%	15	4%	66	19%
0.5 to 10	60	39	65%	2	3%	19	32%
10= to 30=	41	22	54%	1	2%	18	44%
30 to 100=	2	(parks)	0%	0	0%	0	0%
>100	4	3	75%	0	0%	1	25%
Total	465	341		18		104	

Figure 14

Source: BCAA Rolls 2000

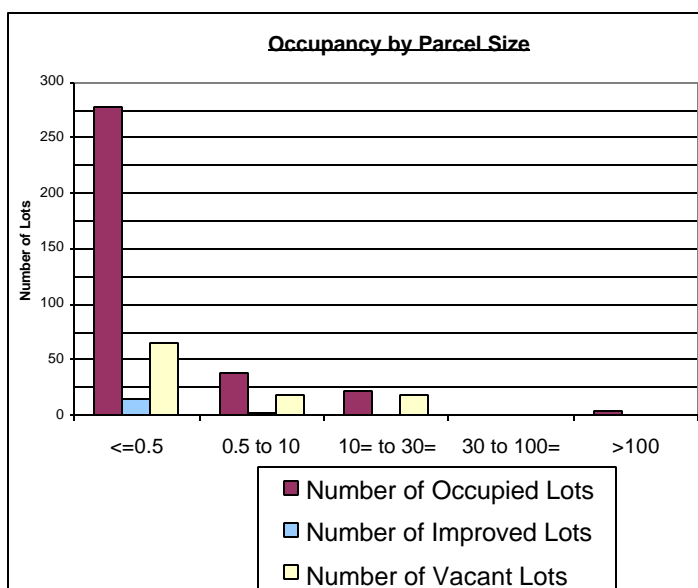


Figure 15

Source: BCAA Rolls 2000

Subdivision Potential

There are 5 parcels on Keats Island that could potentially be subdivided as shown in Figure 12: District Lots 876; 1829; 1469; and 1467, parcel numbers 1 and 7, and one parcel that is currently in process of subdivision (D.L. 6031). Three of these, D.L. 876 (Corkum), 1829 (Corkum) and 1469 (Corkum Farm/Barnabas Family Ministries) could be divided into 18, 12, and 15 lots respectively for each parcel. Lot numbers 1 and 7 in D.L. 1467, Plumper Cove Subdivision, and D.L. 6031 can each be divided into 2 lots. All, except for Corkum Farm/Barnabas Camp property, are in the Country 4, Subivision B zone. In total, approximately 45 new lots having residential land use designation could be created based on the 4 ha (9.9 acres) minimum allowable parcel size. If the Corkum Farm/Barnabas Camp property were to be subdivided (which is not expected at this time) the zoning for 'noncommercial, public recreation, education and religious assembly use' would likely be changed. This would bring the total number of potential residential lots on Keats Island to a theoretical maximum of 501 lots as shown in Figure 13 (359 existing developed residential parcels + 97 vacant residential parcels + 45 new parcels through subdivision), or an overall density of 1 residential lot per approximately 1.2 ha (3 acres).

Since 1978 there has been a Land Use Contract in place between the Convention of Baptist Churches of B.C. and Islands Trust, respecting the Baptist Camp property (D.L. 696)⁶⁴. The 110 residential lots on the property are under a 99 year lease established in 1926. Under the land use contract, the unregistered leaseholds on D.L. 696 could be formalized by means of a bare land strata subdivision, thereby establishing separate titles for each leasehold lot.⁶⁵ A subdivision application for D.L. 696 was made in 2000. The subdivision approval authority rests with the Provincial Approving Officer. Final approval is subject to certain conditions being met, such as dedication of access to lands beyond, dedication of park, proof of potable water for every lot, septic approval for every lot, and other conditions as required by various agencies

Parcel Occupancy

Figure 14 summarizes the level of lot occupancy by parcel size and Figure 15 is a graphical representation. Of the total of 456 residential lots 341 or 73.5% are occupied, that is, they have a complete living abode, assessed as more than \$9500, not just a trailer, camping platform or lean-to. Eighteen or 4% have some type of improvement not valuing more than \$9500 and the remaining 104 parcels are vacant with no improvements or other development. The number of small residential parcels, .5 acres or less, of which there are 355 in total, 277 or 77% are occupied, while 15 or 4% have some improvement and 66 or 19% are

⁶⁴ Gambier Island Trust Committee, By-law No. 4. A By-law Authorizing a Land Use Contract relating to the Convention of Baptist Churches of BC, for District Lot 696, Keats Island, New Westminster Land District. November 21, 1978.

⁶⁵ Sunshine Coast Regional District. Keats Island Community Plan, By-law No. 107. October 21, 1975. p. 15.

Approximate Household Size

Number of Persons Per Household	Number of Households	Total Population
1	3 or 4	4
2	12	24
3	2 or 3	9
4	1 or 2	8
5+	0	0
Total	18 to 21	45

Figure 16

Source: Local Residents

undeveloped. The level of development on the small parcels is important, because while they cover a relatively small area at 6% of the island, the concentration of human activity can have a significant impact, such as the Eastbourne area which contains most of the small lots (218) followed by the Keats Baptist Camp with 110 lease lots. Many of the lots in these two locations are less than 0.25 of an acre.

Occupied Private Dwelling Tenure

There are approximately 23-25 residential households that are occupied on a full-time, year-round basis on Keats Island. The Keats Landing area, Eastbourne, the "10 acres" and Barnabas are the main locations on the island for full time residency. Keats Camp property has about 4 dwellings (2 lease lots and 2 in the camp area)⁶⁶; Eastbourne has about 14 -16⁶⁷; the "10 acres", perhaps about 4; and the Corkum and Barnabas Camp properties, 2.

All the residences, not including the camps, on the island are single, detached dwellings. Approximately 2-3 are rented and the remaining 20 (+/-) are owner occupied.

In the summer months, there is a likelihood of some short-term rentals of dwellings to visitors.

Household Size

Currently, most households on Keats Island, perhaps about 12, or so, are occupied full-time, year-round, by 2 persons, many of them retired couples. This level of household size is expected to increase as there are more people retiring to Keats Island. There are perhaps 3 to 4 single occupancy households (1 person per household), 2 to 3 3-person households and about 2 4-person households. See Figure 16.

Dwellings that are occupied on a part-time basis in the winter months are mainly 1 and 2 person occupancy, with the exception of holiday weekends and Christmas-New Year when there are also families with children. In the summer months, of course, the number of people per dwelling increases significantly.

Property Assessment

The BC Assessment Authority (BCAA) rolls for 2000 indicate that Keats Island has approximately 465 parcels of land, of which: 461 (or 99%) are for residential use; 2 (0.4%) are parks, 2 (0.4%) are private institutional use (though one is officially designated as 'residential') and roads (0.2%).

⁶⁶Potter, Kirk. Keats Camp, Executive Director (Keats Island, BC) Telephone Interview. February 26, 2001.

⁶⁷McIlveen, Brent. Eastbourne Community Association, ECA Water Committee (Keats Island, BC). Telephone Interview. February 26, 2001.

Figure 17 shows the approximate minimum, maximum and average property and improvement values for the various parcel sizes on Keats Island. There are 277 occupied small parcels, .5 acres or less, with an average land value of approximately \$78,000 and improvements of about \$54,000. The 66 vacant parcels have an average value of about \$24,000, while those with minor improvements (\$9,500 or less) have an average land value of about \$38,000.

The 39 occupied parcels ranging from over .5 acres to less than 10 acres have an average land value of about \$152,000 (this is skewed due to one parcel having considerably more value than the others; \$135,000 would be more accurate) with improvements of about \$175,000. There are 19 vacant parcels in this range with an average value of \$76,000. The two lots with minor improvements value at about \$86,000.

There are 22 occupied parcels in the range of 10 acres to 30 acres, with an average land value of \$195,000 and improvements averaging \$110,000. The 18 vacant lots value at an average of about \$137,000. There is only one lot with minor developments and its value is about \$110,000.

There are 4 lots over 100 acres, 3 of which are occupied. Two have an average land value of almost \$900,000 while the other is just over \$5,000,000. The value of improvements vary for two of the lots from less than \$50,000 to about \$240,000 and for the third parcel, Keats Camp Property (including lease lots), no clear figure is available.

Figure 18 shows the overall average assessments for land and improvements each by parcel size. The value of improvements remains fairly even as lot sizes become larger. Properties ranging from .5 to 10 acres and those larger than 100 acres have slightly elevated values. Land values increase dramatically as acreages exceed 20 or so acres. This depends largely on views and particularly water frontage. The Keats Camp property (D.L. 696) has a high value for this reason. Figure 19 shows the overall total assessment by parcel size and, as expected, is governed by land values as the trend-line is similar to that in the previous figure.

The total land value for Keats Island is about \$35 to \$40 million and total property improvements are about \$18 to \$20 million (when the lease lots and Keats Camp are included). The parcel assessed by the BCAA as being of the least value is about \$15,000 and the highest at about \$5 million.

In 1999, property taxes paid on Keats Island totaled at about \$449,300 (approximately an average of \$965 per property)⁶⁸. Distribution of these taxes were

⁶⁸Benson, Kim. Islands Trust, Keats Island Trustee. Keats Island Planning Review 2000; Some Background Information About Keats Island. (unpub. notes). Keats Island. June 2000. p. 1.

Approximate Land and Property Improvement Values for Keats Island

Parcel Size (acres)	Occupancy Status	Number of Lots (N)	Land Value (\$)			Improvements (\$)			Average	*Total Value (\$)		
			Min	Max	Avg (ALV)	Min	Max	Avg (AI)	Asses. (AA)	Land (L)	Improv. (I)	L + I = Total (T)
<=0.5	Occupied	277	\$18,600	\$175,000	\$77,500	\$13,000	\$216,000	\$53,900	\$131,400	\$9,768,600	\$7,648,900	\$17,417,500
	Improvement	15	\$30,200	\$120,900	\$38,400	\$300	\$9,400	\$46,000	\$43,000	\$537,700	\$64,800	\$602,500
	Vacant	66	\$15,100	\$153,000	\$23,700	0	0	0	\$23,700	\$1,561,200	0	\$1,561,200
Average		358			\$53,200			\$49,100	\$87,800	\$11,867,500	\$7,713,700	\$19,581,200
0.5 to 10	Occupied	39	\$56,900	\$661,000	\$152,400	\$10,600	\$420,000	\$182,600	\$283,500	\$5,030,200	\$6,027,400	\$11,057,600
	Improvement	2	\$83,200	\$88,200	\$85,700	\$1,100	\$2,600	\$1,800	\$87,500	\$171,400	\$3,700	\$175,100
	Vacant	19	\$56,800	\$98,300	\$76,100	0	0	0	0	\$836,700	0	\$836,700
Average		60			\$137,200			\$172,300	\$274,300	\$6,038,300	\$6,031,100	\$12,069,400
10= to 30=	Occupied	22	\$99,500	\$508,000	\$195,100	\$18,900	\$331,000	\$110,200	\$305,300	\$4,292,500	\$2,423,600	\$6,716,100
	Improvement	1	\$110,000	\$110,000	\$110,000	\$5,000	\$5,000	\$5,000	\$115,000	\$110,000	\$5,000	\$115,000
	Vacant	18	\$79,000	\$301,000	\$136,800	0	0	0	0	\$2,462,300	0	\$2,462,300
Average		41			\$167,400			\$105,600	\$226,700	\$6,864,800	\$2,428,600	\$9,293,400
30 to 100=	Occupied	2	\$156,000	\$1,798,000	\$899,100	0	\$81,800	\$81,800	\$1,017,900	\$1,954,000	\$81,800	\$2,035,800
	Improvement	0	0	0	0	0	0	0	0	0	0	0
	Vacant	0	0	0	0	0	0	0	0	0	0	0
Average		2			\$977,000			\$81,800	\$1,017,900	1,954,000	\$81,800	0
>100	Occupied	3	\$826,000	\$0	\$898,000	\$240,500	\$454,000	\$142,900	\$2,412,600	\$6,952,000	\$285,900	\$7,237,900
	Improvement	0	0	0	0	0	0	0	0	0	0	0
	Vacant	1	\$732,000	\$732,000	\$732,000	0	0	0	0	\$732,000	0	\$732,000
		4			\$1,921,000			\$142,900	\$1,992,500	\$7,684,000	\$285,900	\$7,969,900
Total		465								\$34,408,600	\$16,541,100	\$50,949,700

Figure 17 Source: BCAA Assessment Rolls 2000

Total improvement value
does not include those for the
Leaselots or Keats Camp

Total Value for Land and Improvements each was determined by counting entries in the Assessment Rolls

Average Assessment (Land & Improvements) = T/N

Average Land Value = L/N*

Average Improvements = I/N*

*For parcel sizes <=0.5 the number of 'occupied' used here is 142 (277- 110 leaselots - 25 token lots at Melody Point) and 0.5 - 10 the number of 'occupied' used was 33 (39 - 6 with no land values given), and the number of 'vacant' is 11 (18-7 token lots at Melody Point)

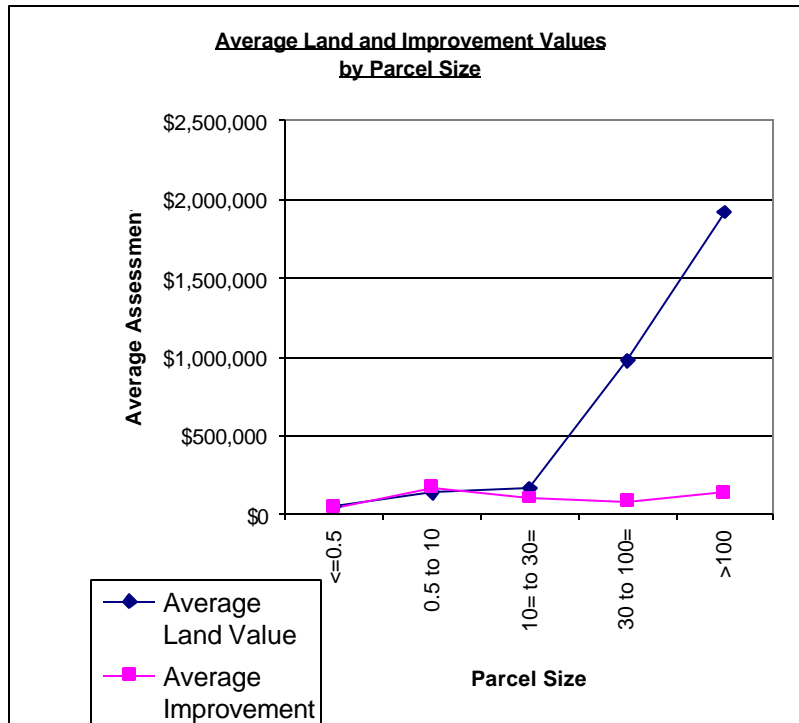


Figure 18

Source: BCAA Rolls 2000

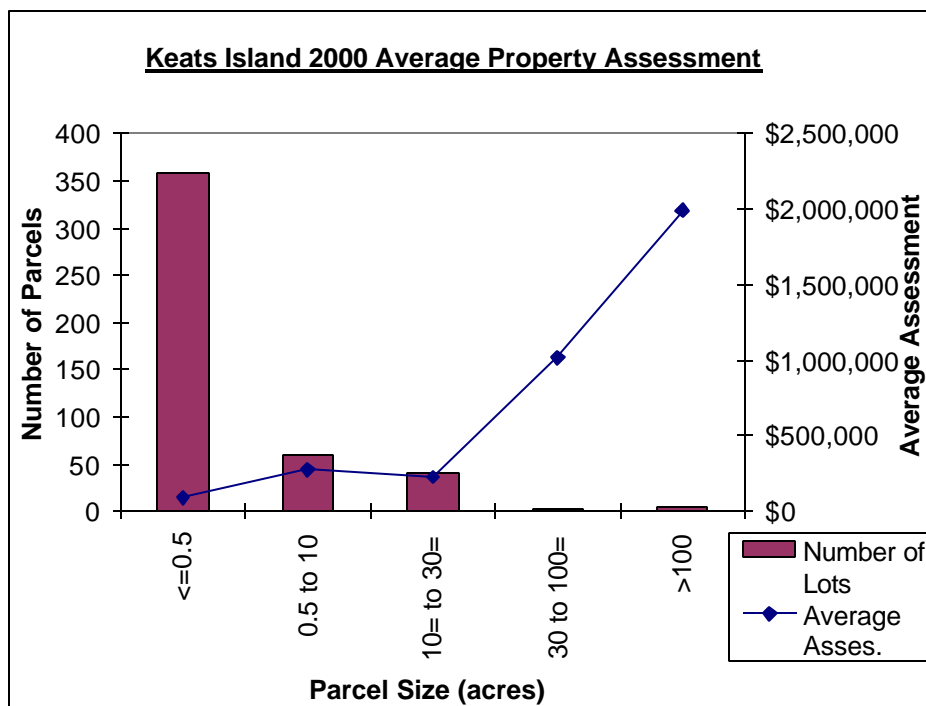


Figure 19

Source: BCAA Rolls 2000

as follows: School \$227,500; Sunshine Coast Regional District \$102,000; General \$75,300; Islands Trust \$44,500⁶⁹.

Residents of the Melody Point and Eastbourne communities also contribute financially, in addition to taxes, toward some community services, particularly water and fire protection (and communal land and trail building in the case of Melody Point). Melody Point residents paid into the Melody Point Community Association when they purchased their property. Eastbourne residents pay, on a voluntary basis, a total of \$150 per year for the following; \$50 for water, \$50 for the Volunteer Fire Department and \$50 toward the Eastbourne Community Association (ECA)⁷⁰. In addition, there are fundraising events to help raise money for needed equipment or community improvements. The ECA has a fundraising sub-committee.

INCOME AND LABOUR

Service and Retail Sector

The service and retail sector includes communication, wholesale, retail, business, accommodation and other services. On Keats Island the two camps; Barnabas Family Ministries and Keats Baptist Camp, which are in the category of accommodation and recreation are the only types of services provided. Each employs 1 and 2-3 families respectively on a full-time year round basis to carry out administration and caretaking tasks⁷¹. Additional staff are employed seasonally⁷². Some of these may be relatives of the cottagers or from off-island.

There are no stores, banks or other such commercial services on the island. There has been some discussion in Eastbourne relating to the establishment of a small general-type store for basic supplies⁷³. However, there are mixed opinions about this. For example, there is concern by some Keats Islanders that it is premature to establish a store before there is either enough of a full-time population in Eastbourne to warrant one, or a clear desire within that community as a whole to have one. They feel that the existence of a store might artificially accelerate growth in the full-time population of Eastbourne, and/or change the non-commercial character of the island. On the other hand, some Eastbourne residents feel that there are already enough people who might desire such a service.

There is a small community newsletter published twice a year by an Eastbourne resident called the Keats Island Tide Lines⁷⁴. It is circulated to property owners and leaseholders on the island. Papers from the Sunshine Coast such as

⁶⁹ *ibid.* p. 1.

⁷⁰ Romanovich, Ted. Eastbourne Community Association, ECA Water Committee, Custodian. Telephone Interview. February 22, 2001.

⁷¹ Hall, John. Melody Point Cottage Owners. Telephone Interview. December 14, 2000.

⁷² *ibid.*

⁷³ Benson, Kim. Islands Trust, Keats Island Trustee. Personal Interview. October 3, 2000.

⁷⁴ Bennie, Rob. B.C. Ferry Corporation, Dogwood Princess II, Launch Operator. *Keats & Gambier Islands: A Social Profile*. Roberts Creek, BC. ca 1998-99. p. 2.

The Coast Independent, and The Reporter arrive by mail. Other newspapers such as the Vancouver Sun and The Province are available at the Langdale Ferry terminal⁷⁵. Islanders with internet connections can access online newspapers.

To enhance communication on the island, a website is currently in the process of being created; www.keatsisland.net, and is expected to be completed soon. Features that are to be included in the site are: ferry schedules; weather, marine and tidal conditions and forecasts; a forum for community issues including the current Community Plan Review⁷⁶. Other topics for what should be included in the site are still under discussion.

Industrial Sector

There is no significant industry on Keats Island. There was small-scale logging and homestead farming in the past. Log booms and floats were common mostly on the foreshores of Gambier Island, but some around Keats Island also. There is a Crown lease water lot (L. 5912), approximately 10 acres, adjoining the south border of the marine component of Plumper Cove Provincial Park that is tenured for float and log salvage use. Some selective hand logging still occurs⁷⁷ to clear for housing, for example.

There are two people working in house construction and contracting and another as a house painter. Both Keats Camp and Barnabas employ live-in caretakers. Four or five islanders have home-based businesses, such as doing artwork, or graphic design. One or two individuals commute to Gibson's to work. Three or four individuals leave the island during the week to work on the Lower Mainland, while their spouses remain on Keats Island. About 12 full-time residents are retired or semi-retired.

Barnabas Family Ministries has two orchards and a farm to maintain 'farm' status. Sheep and pigs are raised there. There is also a llama farm located on one of the 10-acre lots, on the outskirts of Eastbourne.

Public Service Sector

There are no public services such as healthcare, public education, policing, postal, cable, refuse collection, or publicly funded fire protection services available on Keats Island. The church camps, while privately owned, provide service to the community at large in the form of recreation, outdoor education and church related activities. Residents pick up their mail in Gibsons⁷⁸. For other services see 'Infrastructure'.

⁷⁵ *ibid.* p. 2.

⁷⁶ Hall, John. Melody Point Cottage Owners. "Keats Island Website Under Development". *Keats Island Tide Lines*, Vol. 6, No.2. Keats Island, BC. Winter 2000. p. 4.

⁷⁷ Bennie, Rob. B.C. Ferry Corporation, Dogwood Princess II, Launch Operator. *Keats & Gambier Islands: A Social Profile*. Roberts Creek, BC. ca 1998-99. p. 4.

⁷⁸ *ibid.* p. 2.

There are 11 school-aged children on Keats Island; 9 of who attend school in Langdale, Langdale Elementary School, and in Gibsons, Elphinstone Secondary School^{79,80}. The remaining 2 are home schooled⁸¹. Those that travel off-island are transported there by a privately run water taxi or by the Dogwood Princess II of BC Ferries when the weather is rough⁸².

There is a lack of policing presence by the RCMP on Keats. The RCMP detachment in Gibsons is currently understaffed due to funding cuts. Islanders request the RCMP to be responsive to island needs, and require additional policing services during the peak recreation season which is from approximately May 15th to September 15th.

Community Volunteer Sector

Like many Gulf Island communities, Keats Island has a strong volunteer component that provides both 'public' and 'infrastructure' services to the community. Significant ones at this time include: water; fire protection; recycling; and trail-building and maintenance.

As a public service, fire protection, on Keats Island is carried out on a volunteer basis with each community, more or less, responsible for itself. However, assistance is given wherever possible. The Eastbourne community upgraded its fire protection capabilities from the Eastbourne Community Association Fire Committee to the Eastbourne Volunteer Fire Department (August 2000)⁸³. This also includes providing emergency medical support. By becoming a formal society they are able to apply for financial aid for equipment purchases and training for C.P.R. and First Responders, for example. Keats Camp relies mainly on leaseholders and camp staff assistance in case of a fire or medical emergency (see under Infrastructure-Groundwater-Keats Camp Property). Likewise, Melody Point also relies on the local community to help. Each pair of homes in Melody Point share a 100-foot hose that can be connected to the main water line. The Barnabas Camp has a sprinkler system installed in its 3 accommodation buildings (one is a trailer for staff), office and temporary cooking shelters, and a number of fire hoses. Help, in case of emergency, is again by carried out by staff and visitor assistance.

Household Income

There is no data available. For reasons of confidentiality Statistics Canada requires a population of 250 or more to provide this information⁸⁴.

⁷⁹ Benson, Kim. Islands Trust, Keats Island Trustee. Personal Interview. October 3, 2000.

⁸⁰ Hall, John. Melody Point Cottage Owners. Telephone Interview. December 14, 2000.

⁸¹ Ibid.

⁸² Bennie, Rob. B.C. Ferry Corporation, Dogwood Princess II, Launch Operator. Keats & Gambier Islands: A Social Profile. Roberts Creek, BC. ca 1998-99. p. 4.

⁸³ Eastbourne Fire Dept. "A Message From the Chief", Eastbourne Fire Dept. Newsletter. Keats Island, BC. January 2001.

⁸⁴ BC Stats. Victoria, BC. Telephone Interview. December 21, 2000.

INFRASTRUCTURE

Transportation

Keats is an island with no car ferry, no paved roads, relatively few automobiles (ie. fewer than a hundred), and limited year-round moorage potential for private boats. The island has 2 public wharves: Keats Landing (on the northwest side of the island adjacent to Keats Camp), and Eastbourne (on the southeast side). The 2 wharves are accessible by public road. Approximately 73% of Keats Island properties are accessed directly or indirectly via these “government” wharves, currently operated by Transport Canada (Figure 20)⁸⁵. There is also a public dock located at Plumper Cove Provincial Marine Park. However, this moorage facility is not accessible by road, and is for the exclusive use of park visitors.

Both of Keats Island’s government wharves are serviced by a passenger-only ferry service operated by BC Ferries between Langdale on the mainland, Gambier Island and Keats Island. Water taxis (both scheduled and chartered) and private boats also load and unload passengers and cargo at the Keats Landing and Eastbourne public wharves on a daily basis. These 2 wharves are the main public access points on Keats island.

Some parts of Keats Island, such as Plumpers Cove, Melody Point, and the waterfront lots located between Cotton Point and the Corkum Farm/Barnabas Camp property, are not accessible by public road. These properties and some of the Baptist Camp lease lots are accessed by water via private docks or moorings.

Marine

Public Wharves⁸⁶

As mentioned above, Keats Island has two ports (public wharves) owned by the federal government of Canada: Keats Landing and Eastbourne. Both ports are currently administered by Transport Canada, and are classified as Regional/local ports. However, the federal government has signed an agreement in principle to divest nine federal ports, including the Keats Landing and Eastbourne government wharves to the Sunshine Coast Regional District (SCRD). In October 2000, a Ports Referendum was passed, authorizing the SCR D to set up a ports function, and to raise taxation funding to offset the ongoing costs of repairs and maintenance on all the acquired docks.

⁸⁵ Benson, Kim. Islands Trust, Keats Island Trustee. Keats Island Planning Review 2000: Some Background Information About Keats Island. (unpub. notes). Keats Island, BC. June 2000. p. 2.

⁸⁶ Ference Weicker & Company. Sunshine Coast Regional District Divestiture of Government Ports, Information Binder. 2000.

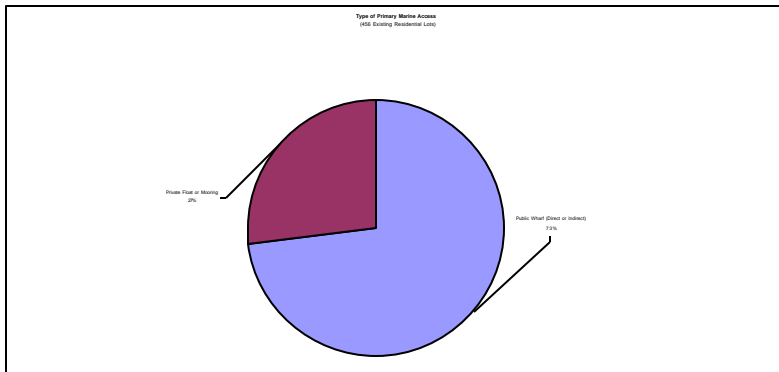


Figure 20

Source: Benson, Kim. Planning Review 2000.

The divestiture process is not yet complete. The SCRCD will not take possession of the docks nor receive \$1.2 million from the federal Ports Divestiture Fund until the provincial Crown land water lot leases at all the divested wharf sites are transferred from the federal government to the SCRCD. The transfer of Crown foreshore leases is administered by the provincial Crown Lands agency, BC Assets and Lands Corporation. After the water lot leases are transferred, and the ports local function is in place, the SCRCD must sign a Legal Transfer Agreement with Transport Canada. Upon receipt of the negotiated funding and compliance with all other terms of the Legal Transfer Agreement, the SCRCD will then assume ownership and administrative responsibility for the divested ports.

Both public wharves on Keats Island have been vitally important public access points for the island for many decades. The Keats Landing wharf-site was created in 1929 (the current structure dates from 1951). The Eastbourne wharf-site was created in 1939 (and the current structure dates from 1955). Government wharves were originally built in the days when the Union Steamship Company provided direct passenger service between Vancouver and many coastal destinations including Bowen, Gambier, Keats Islands and mainland communities like Gibsons Landing, Roberts Creek, and Sechelt. This service was discontinued in the early 1950's.

Since the construction of the government wharves, Keats Island residents, visitors, and essential service providers (eg. BC Ferries, water taxis, charter vessels, BC Hydro, Telus, RCMP, builders and trades people, etc.) have been utilizing the Keats Landing and Eastbourne ports to access Keats Island. Figure 21 by Ference Weicker and Co., consultants in the divestiture process, shows the usage of the two docks by island residents (Appendix 6 contains the same data in tabular format). While the Keats Landing wharf is used more than the Eastbourne dock, the latter provides a significant service to the island. Both are considered to be "...heavily used"⁸⁷. In addition, many islanders continue to rely heavily on the wharves to obtain access to essential off-island supplies and services (such as groceries, banking, post office, medical facilities, schools, building supplies, etc.)

The majority of boating users of both the Keats Landing and Eastbourne ports are local residents who utilize the ports primarily for transporting passengers and supplies rather than for overnight moorage. BC Ferries provides regular passenger service to both ports. Also many visitors to Keats Island utilize the ferry service, private boats, water taxis, and charter vessels to access the island's hiking trails, provincial park and summer camps.

The Keats Landing port is in a more protected location and is in better

⁸⁷ Ference Weicker & Company. Sunshine Coast Regional District Port Transfer Proposal. August 1997. p. 16.

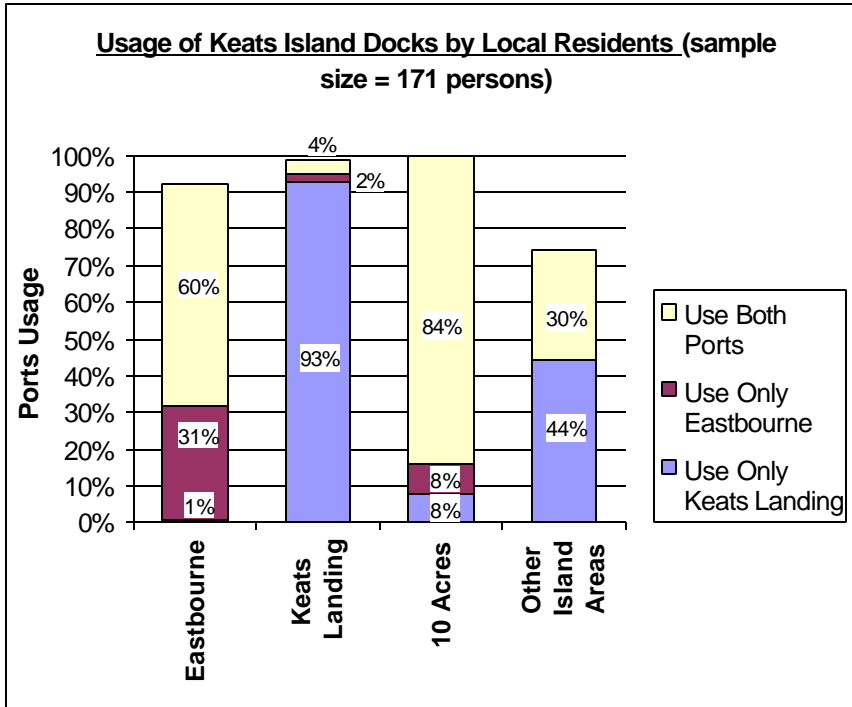


Figure 21

Source: Ference Weicker & Co. Sunshine Coast Regional District
 Port Transfer Proposal. August 1997.

condition than the Eastbourne facility. The wharf-head at Keats Landing is wide enough for vehicles to access the dock, whereas the Eastbourne dock is not. The Keats Landing wharf has a wharf shed and derrick, whereas the Eastbourne wharf does not. Both wharves have relatively small public floats with very limited capacity for overnight moorage.

Several interconnected private floats are attached to the Keats Landing public float to provide moorage for a group of the Keats Landing D.L. 696 leaseholders who do not have waterfront access. This sub-leasing arrangement between Transport Canada and the “Keats Island Moorage Society” has existed since the 1970’s.

The public float at Eastbourne is also of a limited size. However, no private floats are attached to the Eastbourne government wharf float. Instead, during the summer months, perhaps 15-20 Eastbourne residents moor their boats at private mooring buoys anchored in the waters near the Eastbourne wharf. The Eastbourne wharf is not a protected, all-weather port, and boats mooring at the Eastbourne public float can be damaged during poor weather.

Passenger Only Ferry Service

The BC Ferries Corporation services Keats Island directly from Langdale, 5 km north of Gibsons Landing. Passengers from the Lower Mainland wishing to go to Keats Island must first go to the Horseshoe Bay ferry terminal, 30 km North of Vancouver and take Route 3 (Horseshoe Bay – Langdale)⁸⁸. This is a 40 minute ride on a car ferry, and there are crossings approximately every two hours. Once in Langdale, passengers bound for Keats Island must transfer on foot to Route 13 (Langdale – Gambier – Keats).

The 38 foot passenger-only ferry, Dogwood Princess II, travels from Langdale to the government wharves at New Brighton on Gambier Island, and Keats Landing and Eastbourne on Keats Island in various configurations. The ferry schedule is quite complex. Generally, there are more scheduled sailings to and from Keats Landing than there are from Eastbourne.

All direct crossings between Keats Island and the Langdale ferry terminal are about 15 minutes long. But some of the multi-port sailings can be up to 40 minutes long. There are 5 or 6 possible departures to Keats Island by way of Keats Landing or Eastbourne, with 1 or 2 additional sailings offered on Fridays, Sundays and holiday Mondays. Some Keats Island sailings are on a “by request only” basis, especially during the winter months. The ferry service is operated daily, with the first sailing to Keats leaving Langdale at 7:25 am and the last sailing leaving Keats Island at 5:45 pm (except 6:55 pm on Fridays only). The current regular adult fare is \$3.75 one way during most of the year, and rising to \$4.00 during the Summer.

⁸⁸ Sailing times and route information are from: British Columbia Ferry Corporation. M.V. Dogwood Princess II Schedule - effective Monday, September 11, 2000.

Figure 22 shows monthly passenger use of the Dogwood Princess II to Keats Island via the Langdale and Gambier Harbour terminals from May 1997 to March 2000 (Appendix 7 shows more detailed data). The data begin with May 1997 as Keats-only passenger statistics are not available prior to this date. The Langdale-Keats Island run is significantly more heavily used than the Gambier-Keats run. In the summer months of July and August the Langdale-Keats run was travelled by up to approximately 6000 passengers in total for each year in 1997 and 1998, and in 1999 that total reached about 7000. Meanwhile the Gambier-Keats run peaks at about 60-80 passenger for both July and August in 1998 and 1999. In May, June and August 1997, however, there was considerably more traffic of approximately 250-300 passengers for May and August each, and up nearly 500 in June. From about March-June and September-November there are about 1500 to 2000 passengers per month travelling to and from Keats Island. The winter months, December to February, experience the least traffic at about 700-900 ferry passengers.

BC Ferries has been operating passenger service to Keats since the early 1960's⁸⁹. The "Sea Wolf" was replaced by "Dogwood Princess I" in 1968. And the original Dogwood was replaced by the current "Dogwood Princess II" in 1979. Between when the Union Steamships stopped running in the early 1950's, and when BC Ferries service from Langdale began in the 1960's, access to Keats Island was provided by private water taxis, charter vessels, and private boats, only.

Water Taxis and Charter Vessels⁹⁰

Some residents, visitors and island service providers access Keats Island by water taxi or charter vessel. There are a number of private water taxis operating in Howe Sound. For example Mercury Launch & Tug, operating out of Horseshoe Bay, offers scheduled weekend-only water taxi service between Horseshoe Bay, Gambier Harbour and West Bay on Gambier Island, and Eastbourne on Keats. This service is very popular with Eastbourne's weekend population. Other water taxis used by Keats Islanders include Gibsons Water Taxi, Coastal Water Taxi (Gibsons), Gambier Island Water Taxi, and Cormorant Marine (Bowen Island).

Keats Camp hosts approximately 3,000 campers each year with 200 arriving and leaving each week in the summer via the Keats Landing wharf. The Camp hires charter vessels to transport those arriving at camp from Coal Harbour in Vancouver to Keats Landing, and return those leaving camp from Keats back to Vancouver. This rotation of arrivals and departures occurs once a week throughout the summer. The charter vessels need to be large enough to transport at least 200 persons and their luggage. Vessels hired include the "M.V. Britannia"

⁸⁹ Historic ferry services information is in: Bennie, Rob. B.C. Ferry Corporation, Dogwood Princess II, Launch Operator. Keats & Gambier Islands: A Social Profile. Roberts Creek, BC. ca 1998-99. p. 4-5.

⁹⁰ Benson, Kim. Islands Trust, Keats Island Trustee. Keats Island Community Profile in progress, additions and edits. January 2001.

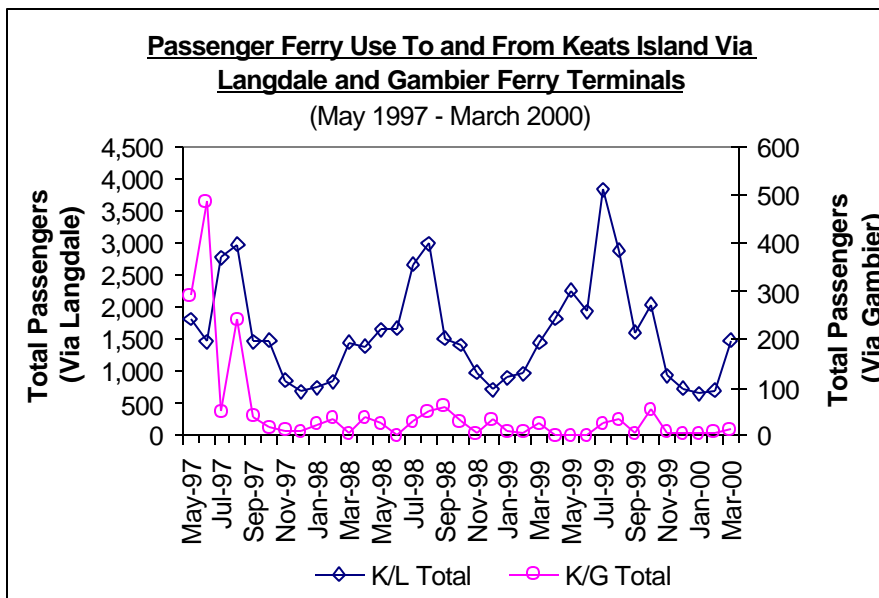


Figure 22

Source: BC Ferry Corp. Passenger Counts May 1997 - March 2000

and “M.V. Malibu Princess”. Barnabas Camp and Sea to Sky Outdoor School charter water taxis, and even the Dogwood Princess to transport program attendees, usually to and from Langdale.

Private Boats⁹¹

Approximately 27% of Keats Island properties are accessed directly by water via private floats or moorings (Figure 20)⁹². This includes all leasehold waterfront properties, both east and west of the Keats Landing government wharf on D.L. 696, all waterfront lots in Plumper Cove and Melody Point, and all north facing waterfront lots from Corkum Farm/Barnabas Camp eastward to Cotton Point.

Keats Island owners of waterfront property who desire moorage for their boats, provide and maintain their own private docks, mooring buoys and/or anchorages. Private docks and floats, and associated waterlot leases are assessed and taxed as improvements to real property.

Very few private docks on Keats are constructed for year round use. Most private floats are removed and stored over the winter months. Some limited seasonal moorage buoys and temporary floats for private boats also exist on the more exposed north, east, and south sides of the island. Most water-access properties on Keats are also accessible by foot trails over private land.

BC Assessment (2000) data shows 32 folios for private waterlot leases on Keats Island, with Crown foreshore “land” and privately constructed dock-related improvements having a total assessed value of \$636,600 (or an average value of \$19,894 per private dock-site). A number of these private dock-sites are shared between 2 or more adjoining properties. In addition, Keats Camp has 2 private dock-sites for camp use (one year round site, and one seasonal site), and Barnabas Camp has one private dock-site for seasonal use.

Many of the private moorage buoys, and some of the seasonal docks and floats in the waters off Keats Island were been put in place many years ago without any formal leasing permission from the Crown. No firm numbers exist for how many such informalized buoys and floats exist, but local sources estimate the current number at approximately 20 seasonal floats and 30 mooring buoys.

Since most water-access properties on Keats are occupied seasonally, many boat owners with such property on Keats also rent moorage space, and store their boats at commercial marinas on the mainland, such as Gibsons Marina, Sunset Marina (Lions Bay), or Thunderbird Marina (West Vancouver).

⁹¹ *ibid.*

⁹² Benson, Kim. Islands Trust, Keats Island Trustee. Keats Island Planning Review 2000; Some Background Information About Keats Island. (unpub. notes). Keats Island, BC. June 2000. p. 2.

Keats Islanders with upland property have very few options for long-term overnight moorage of private boats. As mentioned previously, in Eastbourne, some boat owners with upland property maintain private moorage buoys in the waters adjacent the Eastbourne government wharf on a seasonal basis. And at Keats Landing, there are 4 or 5 mooring spaces at the public float attached to the Keats Landing wharf. These spaces are occupied on a “first come, first serve” basis, usually by full-time island residents who do not live on D.L. 696, and who come and go by vehicle to elsewhere on the island, or by “day users” such as construction crews and tradespeople from Gibsons. Also, several interconnected private floats are attached to the Keats Landing public float to provide moorage for about 20 Keats Landing D.L. 696 leaseholders who do not have waterfront access. The current sub-leasing arrangement between Transport Canada and the “Keats Island Moorage Society” has existed since the 1970’s.

Barge Ramp/Boat Launch⁹³

There is a concrete barge ramp next to the Keats Landing wharf. The ramp is usable only during moderate to high tide. Island vehicles, building supply trucks, road maintenance equipment, telephone and hydro service vehicles, etc. are brought over from Gibsons, on the mainland, to Keats Island by private commercial barge, via the Keats Landing barge ramp. There are two commercial barge operators in Gibsons. And Barnabas Family Ministries has a small private “sea truck”-type barge.

The barge ramp was constructed in the 1970’s by residents of D.L. 696 (the Baptist Camp property) as a boat launch. It is constructed partially on private property, partially on an existing Ministry of Transportation & Highways road right of way, partially on the waterlot for the Keats Landing government wharf, and partially on the waterlot for Keats Camp. As a result of the overlapping jurisdictions involved, the ramp is currently not formally maintained or managed.

Terrestrial

Roads⁹⁴⁻⁹⁷

There are approximately 8 kilometers of constructed public roads on Keats Island, which are under the jurisdiction of the Ministry of Transportation & Highways (MoTH). These roads are all surfaced with gravel. There are additional unconstructed road rights-of-way in Eastbourne, the “10 acres” subdivision, Melody Point, and Plumper Cove.

⁹³ Benson, Kim. Islands Trust, Keats Island Trustee. Keats Island Community Profile in progress, additions and edits. January 2001.

⁹⁴ Szalay, Maria. MoTH, District Highways Manager (North Vancouver, BC).

⁹⁵ Legault, Don. MoTH, Area Highways Manager.

⁹⁶ Battimelli, Jeff. Emcom Services, Division Manager. Wilson Creek (Sechelt), BC.

⁹⁷ Ministry of Transportation & Highways (MoTH) and Islands Trust. Letter of Agreement - Road Standards, Classification and MoTH Consultative Process in the Islands Trust Area. 1992, amended 1994.

On lands which have been subdivided (eg. Eastbourne, “10 acres”, Melody Point, Plumper Cove), constructed roads and unconstructed road rights-of-way have been dedicated at the time of subdivision. The dedicated width of road rights-of-way in most subdivisions is 20 metres. However in a few locations, road-width dedications are narrower (eg. 6-10 metres). The constructed road-width surface of dedicated road allowances is often much narrower than the dedicated width (eg. 4-5 metres).

On unsubdivided lands (eg. D.L. 696, 876, 1829, 1469), in locations where the main “Keats Road” (which crosses the island from the Eastbourne government wharf to the Keats Landing government wharf) exists, a road right-of-way has not been formally dedicated. However, under Section 4(1) of the Highway Act, “If public money has been spent on a traveled road that has not before then been established by notice in the Gazette or otherwise dedicated to public use by a plan deposited in the land title office for the district in which the road is located, that traveled road is deemed to be and is declared to be public highway”. In the case of the undedicated portions of “Keats Road”, only the traveled and maintained surface of the road-bed is deemed public. Land on either side of the road-bed is private.

On D.L. 696 and 876, there is also an old gazetted road right-of-way, dating from 1937 (Reference Plan No. 2618). This dedicated right-of-way is approximately 9 meters wide. It begins near the Keats Landing barge ramp, goes straight up the hill from the wharf, then zig-zags in a generally easterly direction, and ends at the western boundary of D.L. 1829. This right-of-way was, at one time, a driveable road. However, when hydro was brought to Keats in the 1960’s, the existing “Keats Road” was constructed along the newly cleared hydro corridor, thereby replacing all but a fragment or two of the “old road”. Over time, most portions of Reference Plan No. 2618 (the “old road”) have grown over, and have since become a footpath through the woods.

Maintenance of constructed public roadways on Keats Island is within the jurisdiction of the Ministry of Transportation & Highways (MoTH). Emcon Services, in Wilson Creek near Sechelt, is under a management contract with MoTH to conduct maintenance of roads on the Sunshine Coast (including Keats, Gambier, Thormanby, Texada Islands), in accordance with an annual Contractor Plan and Schedule. The current road maintenance contract is for \$3.5 million for the whole Sunshine Coast from Port Mellon to Powell River. No designated amount is allocated specifically for maintenance of Keats Island public roads.

Emcon’s road maintenance activities on Keats vary from year to year. But generally, a grader and road crew are brought over from the mainland for a week or two every Fall. Maintenance activities on the major traveled roads include: gravel surface grading; ditch and culvert maintenance, roadside mowing; roadside brushing. The main “Keats Road” across the island is classified under MoTH standards as 6F (10-100 vehicles per day). Most other roads within Eastbourne and the “10 acres” subdivision are classified as 7F (0-10 vehicles per day). Keats

roads are not classified for winter maintenance (ie. snowplowing). Annual road maintenance on Keats is supplemented by an island resident who is subcontracted by Emcon to mitigate “washboarding” and pothole effects on the main Keats road from time to time, using his private backhoe.

In 1992, a Letter of Agreement was signed between the Ministry of Transportation and Highways and the Islands Trust, respecting road standards, classification, and a MoTH/Islands Trust consultative process in the Islands Trust Area, including Keats Island. This Agreement formally recognizes that island roads within the Trust Area form part of the unique amenities of the Trust Area and require extraordinary measures to protect their special rural character and to encourage safe use.

Under the MoTH/Islands Trust Road Standards Agreement, Keats Island roads are classified as “Residential Rural/Local”. Under this classification, the maximum gravel surface top width is to be no wider than 5.5 metres, and the posted speed may be in the range of 30 to 50 km/hr. Near the government wharves, the posted speed is 10 km.

Island Vehicles⁹⁸

One rather unique aspect of Keats Island is the relative absence of motorized vehicles on the island. The main areas of settlement on the island (Eastbourne and Keats Landing) are clustered in close proximity to the 2 government wharves. The island has no car ferry, and a very small number of full-time residents. The majority of people accessing Keats Island via the government wharves and road system are pedestrian visitors and part-time residents. Every year, hundreds of hikers, campers, and week-end cottagers are attracted to Keats Island for recreation purposes, at least in part, because of its quiet, rural ambience and lack of motor vehicle traffic. Pedestrian residents and visitors generally arrive on the island carrying personal effects and supplies in backpacks, carry bags, and even small 2 wheeled shopping carts.

It is estimated that during most times of the year, there are only about 20 automobiles using the island’s roadways on a regular basis (ie. 2 or 3 times a week), with fewer than 10 using the roads on a daily basis (see Figure 23). This number tends to rise, especially on weekends during the summer months. An additional 50 (+/-) automobiles are used occasionally (ie. weekends, holidays, etc), when cottagers are on the island. However, it would be rare to have twenty or more vehicles using the island roads on a single day, even in the summer.

⁹⁸Benson, Kim. Islands Trust, Keats Island Trustee. Keats Island Community Profile in progress, additions and edits. January 2001.

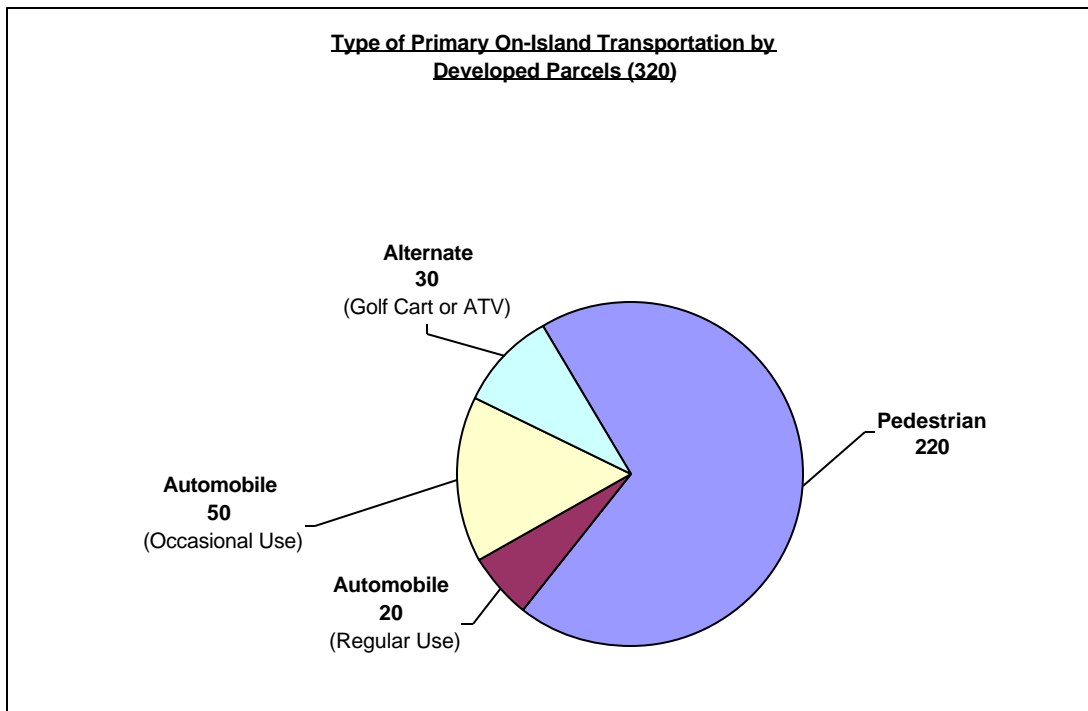


Figure 23

Source: Benson, Kim. Planning Review 2000.

Most island automobiles are owned by residents of Eastbourne or the “10 acres” subdivision. But Keats Camp, Barnabas Camp, and 1 or 2 island service providers from the mainland also keep trucks or vans on Keats. Automobiles are used mainly to transport supplies, heavy freight, and people across the island, usually to and from the government wharves.

Since Keats Island has no car ferry, island vehicles must be barged over from the mainland, at a cost of from \$100 to \$300 per vehicle. There are no gas stations or tow trucks on the island. Gasoline is usually brought over from the mainland in 20 litre containers via private boats or water taxis (transporting fuels on the Dogwood Princess passenger ferry is prohibited). Historically, when island autos have worn out and become “derelict”, they have often been abandoned in the bush, since the cost of removing a derelict vehicle from the island can sometimes exceed the value of the vehicle. In the last few years, efforts have been made on the island to discourage this practice.

In addition to automobiles, there are also about 30 (+/-) alternative vehicles, including both electric or gasoline-powered golf carts, and All Terrain Vehicles (ATV's)*, in use on Keats Island. About 15 alternative vehicles are used by residents of Keats Landing, with about 12 or 13 in use elsewhere on the island. Alternative vehicles are also used for hauling supplies and people (usually shorter distances) to and from the wharves. Alternative vehicles take up much less space than regular vehicles. They are easier to repair and haul away, so they don't usually end up as abandoned “derelicts”. In addition alternative vehicles create less dust and have fewer impacts on the island's unpaved gravel roads than automobiles, thereby helping to reduce expenditure of public funds on road maintenance.

However, traffic and parking by motorized vehicles of all kinds (both conventional and alternative) in proximity to both Keats Island government wharves, have become issues of contention on the island in recent years. The presence of even 5 or 6 vehicles around the wharves at one time can be problematic. This is especially the case at peak times when large numbers of pedestrians are accessing the passenger ferry or the Keats Camp charter vessel. Other issues arise from vehicles speeding in proximity to pedestrians, and from vehicles being parked on or near the wharves for any length of time. Concerns have also been raised regarding safety, accessibility, legality, liability, jurisdiction, monitoring, enforcement, fairness, sustainability, community values, private property rights, individual needs, common courtesy, and island “etiquette” involving the competing interests of pedestrians and motorists alike.

The use of bicycles, other than for recreation, is rare on Keats Island. Due to the hilly, unpaved road conditions on the island, carrying supplies to and from the wharves by bicycle is generally considered impractical.

*All Terrain Vehicles (ATV's) include both specially designed “off road” motorcycles with 3 or 4 wheels, and 6-wheeled “gators” used by groundskeepers on golf courses.

Pedestrian Trails⁹⁹

As mentioned, every year Keats Island's roads (both constructed roadways and many unconstructed road rights-of-way) are used extensively by hundreds of residents and thousands of visitors for hiking purposes.

In addition, there are approximately 10 kms of private land hiking trails on the island. For example, pedestrian access to the Plumper Cove Provincial Marine Park, and to many of the island's beaches and scenic viewpoints is by trespass across private land.

Most of the larger parcels on Keats Island (eg. D.L. 696, 876, 1829, 1469, and a few 10 acre parcels) have trail networks and/or long private driveways, or private access roads (maintained at the owner's expense), which are not public. In certain situations, a number of landowners generously tolerate respectful pedestrian trespass on some (but not all) of these privately owned pathways and access driveways (ie. to get to the park or to the beach). However most will not allow vehicular trespass without permission.

Also, trails to private cottages in some water-access-only parts of the island are for the exclusive use of cottage owners and their neighbours, not the general public. Melody Point property owners, however, have been working on building a by-pass trail for non-resident hikers¹⁰⁰, and residents of Plumper Cove have maintained a private land foot trail through their properties to the Plumper Provincial Marine Park for many years.

Hydro

BC Hydro electric power service runs via a submarine cable from the town of Gibsons to the south west shore of the Keats camp property, just south of the lease lots. The cable was originally installed in 1962¹⁰¹ and was upgraded in 1994. Its voltage was increased from 7200 to 14400 by installing a larger cable and changing to higher voltage transformers¹⁰².

BC Hydro connections on Keats Island have steadily increased over the years, and currently there are about 330 connections¹⁰³. Present power capabilities to the island are sufficient to support some growth in the number and consumption patterns of hydro customers¹⁰⁴. Existing power facilities, however, would not be able to support significant industrial activities.

⁹⁹ *ibid.*

¹⁰⁰ Hall, John. Melody Point Cottage Owners. E-mail to Gillian Saxby (Senior Planner, Islands Trust)--Melody Point Background. Keats Island, BC. January 29, 2001.

¹⁰¹ Bennie, Rob. B.C. Ferry Corporation, Dogwood Princess II, Launch Operator. Keats & Gambier Islands: A Social Profile. Roberts Creek, BC. ca 1998-99. p. 5.

¹⁰² Driscoll, Al. BC Hydro, Designer (Sechelt, BC). Telephone Interview. December 22, 2000.

¹⁰³ *ibid.*

¹⁰⁴ *ibid.*

Waste Management

Solid Waste & Recycling^{105,106}

Keats Island has no curbside garbage pickup or disposal facility. Residents, cottagers and visitors must take their solid waste materials and dispose of them in a designated bin at the Langdale Ferry terminal or the Gibsons Marina. Residents are given a key to access the Gibson Marina disposal bin. Refuse from both sites is then transported to the Sechelt Landfill. This arrangement was made by islanders with the Sunshine Coast Regional District. Another option is for off islanders to take their garbage home with them and sort out their recyclables from non-recyclables and dispose of them in accordance with the regulations of where they live. For the last 2 years there has been a 'clean-up' program carried out by islanders, mostly at the Eastbourne and Keats Camp, and the SCRCD to remove, non-working appliances, metal, old paint and other such materials. This year they hope to complete the project at Keats Camp. Individuals are strongly encouraged to remove what they bring on the island. There is no data on the amount of solid waste generated on Keats Island, but as the permanent and visitor population continues to increase, the volume of solid waste and recyclable material will also increase.

A pilot project has been initiated in September 2000 to help Keats Islanders get their recyclables to depots more easily. Residents, the SCRCD and the Sunshine Coast Recycling and Processing Society (SCRAPS) are working to generate data on the amount and type of materials to be recycled so that removal needs can be determined. Pick-up of sorted recyclables is currently scheduled on a monthly basis from the Eastbourne dock. The bags are then transported, by a different volunteer each time, to the Keats Landing wharf, where residents there can add their sorted recyclables. The Gambier Water Taxi, in transporting such material from Gambier Island, makes a stop to pick up Keats' recyclables. SCRAPS, based in Gibsons, pick it up at the Gibsons Marina. A variety of materials are accepted for recycling and include bond, magazine and newsprint paper (including telephone books), cardboard, glass, cans, plastics and returnable beverage containers.

Keats Camp/leaseholders for the most part have their own system of managing recyclables although, as mentioned above, they do participate with Eastbourne in a limited way. Visitors to Barnabas Camp and residents of Melody Point and the Cotton Point area take care of their recycling individually. Residents of the "10-acres" put their recycling materials together with Eastbourne.

¹⁰⁵ Forscutt, Maureen. Recycling Coordinator (Keats Island, BC). Telephone Interview. February 26, 2001.

¹⁰⁶ Kenny, Cathy. SCRCD, Solid Waste Manager (Sechelt, BC). Telephone Interview. February 27, 2001.

Liquid Waste

Liquid waste on Keats Island is treated in a variety of ways. The term, liquid waste, refers to the used water that comes from toilets, sinks, baths, laundry, dishwashers, etc.. Water from the toilet is called 'blackwater' while that of the other sources is known as 'greywater'. Individual property dwellers on the island are responsible for their own liquid waste management. There are some exceptions such as on the lease-lots near Keats Landing, where there are some shared septic fields.

Currently, conventional septic systems and approved composting toilets (when accompanied by an approved conventional septic system) are considered legal by the Coast Garibaldi Community Health Services Society (CGCHSS). Permit approvals for a septic system require suitable soil and space*. As a result of an increase in the occupancy of small lots, where space and soil conditions are less than ideal for conventional septic systems, there is greater community awareness of the need to find viable means to treat liquid waste.

The most common way of handling liquid waste on Keats Island is the use of conventional on-site septic systems followed by alternatives such as composting

**Ideally, for treatment to be effective the tank should be large enough to accommodate sewage for at least 48 hours to allow the microorganisms (anaerobic) to digest about 45% of the solids¹⁰⁷, provided no harmful chemicals have been poured down the drain. It should be 15 metres (50 feet) away from the house¹⁰⁸. A one or two bedroom house should have a tank volume of 2000 litres (500 gallons) with each additional room requiring an increase of about 600 litres (150 gallons)¹⁰⁹. These are just guidelines, however, because it is the amount of water being used in the house and what is going down the drain that determines the effectiveness of the tank.*

The remainder 55% of the sewage effluent is processed in the septic or drainfield, whose efficiency depends on the depth and percolation rate of the surrounding soil. Sandy, loam textured soils provide optimum percolation and habitat conditions for microbes that digest sewage. The length and width of the drain field, depending on soil conditions, is approximately 3 metres by 6 metres (10 feet by 20 feet). The depth of the septic field from the surface must be a minimum of 1.2 metres before reaching the water table or bedrock¹¹⁰. Septic fields are required to have setbacks of 30.5 m (100 feet) from property lines and wells. In addition, there should be an area set aside on the property to accommodate a 'spare' field when the original stops functioning. No activities that compact or disturb the soil in any way, such as a driveway, garden or trees and shrubs, should occur on the active or spare field.

¹⁰⁷ Ladouceur, Richard. "Rural Waste Water Basics". unpublished article. Hornby Island. no date.

¹⁰⁸ Ministry of Health. Sewage Disposal Regulation, B.C. Reg. 411/85, O.C. 2398/85. Deposited Dec. 20, 1985. Province of British Columbia. Consolidated 29 Sept. 1995. p.20.

¹⁰⁹ *ibid.* p. 15.

¹¹⁰ *ibid.* p. 3.

toilets, outhouses and gravel pits, and there are a few treatment plants¹¹¹. Many of the septic systems, unfortunately, are not maintained properly due to the high cost of barging a pump truck to the island from the mainland¹¹². This is especially true for areas such as Eastbourne and lots that are accessible only by boat¹¹³. The Keats and Barnabas Camps, however, maintain their systems on a more regular basis¹¹⁴. Keats Camp currently has a septic system. A new accommodation facility is in the planning stages with composting toilets part of the design. As yet this needs to be approved by the CGCHSS. The lease lots have septic systems with some fields shared with 2 or more homes, as well as some composting toilets¹¹⁵. Some of the older cottages are upgrading to septic systems where they may have otherwise been outhouses or portable toilets. Barnabas camp has 35 low flow toilets which use only one gallon of water per flush as opposed to the 5 gallons regular toilets use¹¹⁶.

Another way that some households on Keats Island treat the 'blackwater' portion of their household waste is the use of composting toilets. It is unknown how many there are on the island. This tends to be a 'dry' system in that no water is used for flushing. Natural processes of decomposition are allowed to occur in a controlled environment to convert biological waste into pathogen and odour free usable garden soil. As a precaution, however, some experts suggest composting the soil for another season in an area protected from rain, especially if it is to be added to a food garden.

Some summer residents use outhouses on their properties, especially during the summer when water may be scarce. It is not known how many are sealed or unsealed. Approved privies must have sealed chambers which need to be pumped out periodically.

Greywater, in some of the residences, flows directly onto the ground via a pipe from the house or into dug pits filled with gravel. This method of greywater disposal can have adverse effects on the groundwater if soil percolation, depth and drainage are inadequate.

Government agencies that have regulations regarding liquid waste management are; the Ministry of Health, Ministry of Environment, Lands and Parks (MELP), and the Ministry of Agriculture. Each have their own mandate and corresponding legislation. However, there is some overlap. Currently, the Coast

¹¹¹ Weston, Bob. Coast Garibaldi Community Health Services Society, Environmental Health (Sechelt, BC). Telephone Interview. June 2000.

¹¹² Benson, Kim. Islands Trust, Keats Island Trustee. e-mail. July 3, 2000.

¹¹³ *ibid.*

¹¹⁴ *ibid.*

¹¹⁵ Potter, Kirk. Keats Camp, Executive Director (Keats Island, BC) Telephone Interview. February 23, 2001.

¹¹⁶ Bentall, Rob. Corkum Farm/Barnabas Camp, Executive Director (Keats Island, BC). Telephone Interview. December 14, 2000

Garibaldi Community Health Services Society is under the auspices of the Ministry of Health and administers the sewage issues for Keats Island as well as other areas. It presides over areas where sewage flow per building is under the maximum of 5000 gallons per day¹¹⁷. Flows over this amount are administered by MELP. The Ministry of Agriculture regulates compost, including composting toilets, under the Waste Management Act. If the sewage threatens ground or surface water, it violates the Health Act and becomes the concern of the Ministry of Health and, specifically, CGCHSS.

Wastewater Issues on Keats Island

Liquid wastewater treatment is a serious issue on Keats Island and other islands because of its direct effect on ground water. Currently, there is no legislation for the protection of groundwater in the province, though there are steps in this direction. There are regulations, however, that require wells and septic fields to be a minimum of 30.5 metres (100 feet) apart¹¹⁸. This does not consider slope, i.e. a septic field up-slope from a neighboring well. In the Eastbourne subdivision and the lease lots on the Keats Camp property, where lot sizes average about one quarter of an acre, adequate spacing can be problematic. There is the concern that inadequately installed and/or maintained septic systems, especially in the relatively higher density areas on the island, can pollute groundwater resulting in the possible transmission of water borne diseases. In all the Coast Garibaldi Health District, including Eastbourne, there has been a year-round, water boiling order for drinking water for the last 3 years. The same is true for another 228 communities in British Columbia.

Many of the locations on Keats Island are not suitable to handle large amounts of wastewater due the steep topography poor soil conditions. Figure 24 shows the characteristics of each of the soils on the island and their ability to cope with liquid waste. Reference is made only to currently approved, conventional septic systems, however, all methods of sewage treatment must be carefully considered. Possible future approval of improved septic system technologies that reduce the need for a large and deep drainfield, as well as other wastewater treatment systems may reduce some of the soils' limitations.

Greater awareness is needed about liquid waste treatment and the function and limitations of treatment systems themselves. For example, conventional septic systems, because they are underground and not visible, are easily forgotten until there is an obvious problem. They are especially prone to surges in water use such as numerous loads of laundry one after the other or baths, for example. Home owners also may not know where their septic system is located thus, sometimes requiring decks or other structures to be torn up when servicing is needed. Composting toilets are visible and, therefore, most problems can be

¹¹⁷ Ministry of Health. Sewage Disposal Regulation, B.C. Reg. 411/85, O.C. 2398/85. Deposited Dec. 20, 1985. Province of British Columbia. Consolidated 29 Sept. 1995.

¹¹⁸ *ibid.* p. 21.

Soils and Liquid Waste Treatment

Cannell	Septic tanks unsuitable due to insufficient soil depth for effluent disposal and steep slopes
Bose	Low subsoil permeability and often strongly sloping topography limit sewage effluent disposal from septic tanks
Buntzen	The dense, slowly permeable subsoil and steep slopes are poor for septic tank effluent disposal
Capilano	Septic tanks function efficiently for sewage effluent disposal, but incomplete filtration of the effluent may occur due to the coarse subsoil textures, and groundwater contamination is possible
Sunshine	Numerous septic tank disposal fields may cause perching of a groundwater table above the slowly permeable subsoil resulting in lateral seepage

Figure 24

Source: Luttmerding, H.A. MELP. Soils of the Langley-Vancouver Mar Area Report No. 15. 1981

immediately attended to with relatively low cost. However maintenance can be difficult or impossible for some individuals.

Water

Water quantity and quality are issues for most of the Gulf Islands, and Keats Island is no exception. Water shortages are prone to occur on Keats Island primarily in the summer when the recharge rate is low. This period of water scarcity is compounded by the increase in demand from the seasonal population and tourists. Water is one of the prime factors limiting development on Keats Island. An emphasis must be placed on the need to preserve local water. This is, in part, accomplished by encouraging the use of various water conservation methods and technologies such as low flush toilets, shared water systems, water storage tanks on individual properties, and the shutting down of community water tanks overnight during parts of the summer¹¹⁹, for example.

Surface Water

Water is managed by the Ministry of Environment, Lands and Parks (MELP). The Water Rights Branch of the MELP administers the allocation of surface water in B.C. through a licensing process established under the Water Act. Licenses are issued by MELP regional offices for a variety of purposes. Water licenses for Keats Island are issued from the MELP Surrey Regional Office.

Currently there have been 22 surface water licenses issued for domestic and municipal waterworks purposes on the island¹²⁰ (other uses can be irrigation and storage, but these have not been thus far applied for). Please refer to the *Watershed* section on page ----. Figure 25 shows the distribution of licenses on the creeks and springs of Keats Island, and water usage (see also Appendix 8). There are 4 springs, 2 creeks and 1 brook which have licenses on them. All, except Park Brook are used for domestic purposes. Park Brook has a municipal waterworks license on it to supply water needs of the Marine Park users. The 21 domestic use water licenses amount to a total of 7500 gallons/day (approximately 28,400 litres/day) or .52 gal/min (approximately 2 litres/min). The waterworks license uses 4000 gal/day (approximately 15,100 litres/day) or .28 gal/min (1.05 litres/min).

The Melody Point community reported that the spring from which they were sharing water use, Alderson Spring, became significantly polluted in the early 1990's to prompt the drilling of a rock well as a water source¹²¹. Before the well, the

¹¹⁹ Eastbourne Community Association. Water Committee Update. Keats Island, BC. Winter 2001.

¹²⁰ MELP. Website: Surface Water Licences. www.elp.gov.bc.ca:8000/wtrwhs/pls...ershed=KEATS ISLAND. October 2000.

¹²¹ Hall, John. Melody Point Cottage Owners. E-mail to Gillian Saxby (Senior Planner, Islands Trust)--Melody Point Background. Keats Island, BC. January 29, 2001.

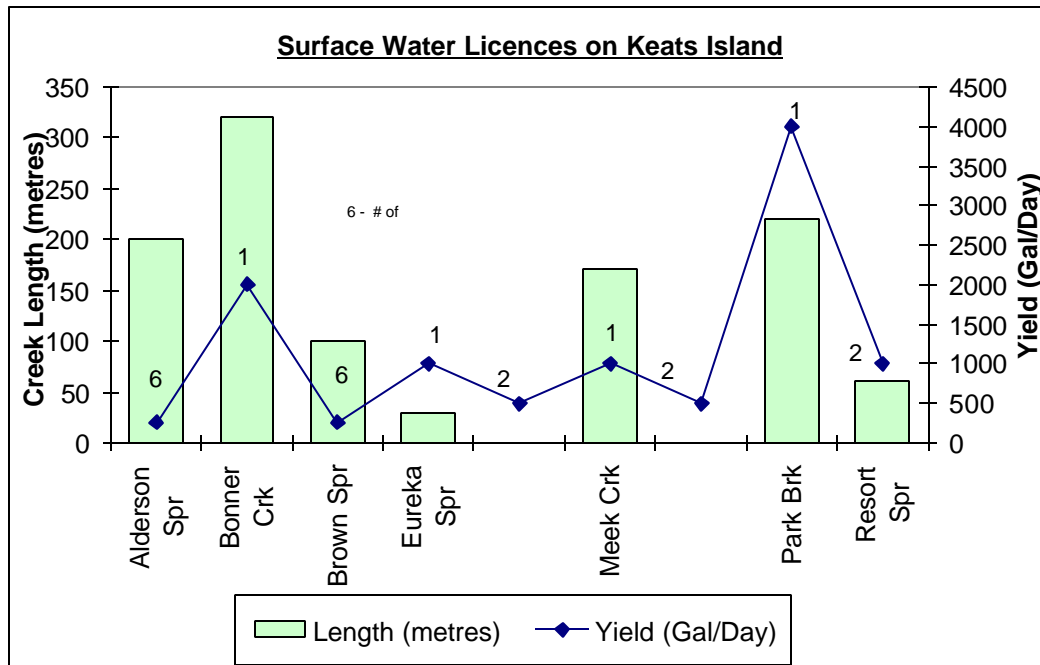


Figure 25

Source: MELP. Water Licences Report. www.elp.gov.bc.ca

MELP, Water Rights Branch, Surrey. Mapsheets 92G-033-4-3, 92G-033-4-4, 92G-043-2-1. hand sketched fax.

spring supplied the community's water requirements. Water was pumped into to a large wooden slat tank and then distributed to all the homes in Melody Point. The eventual pollution of the spring is thought to have occurred due to animals also using the spring.

Groundwater

Groundwater is also managed by MELP, and although recent Safe Drinking Water Legislation has been introduced, currently, there are no regulations governing the use of groundwater. Well drillers have the option to register the wells they have drilled and provide information about each well as general or detailed as they wish.

Current health regulations do not address problems associated with abandoned and otherwise unsealed wells¹²². Sealing refers to either filling the well shaft or placing some barrier around the shaft circumference to keep water, especially contaminated water from seeping through the walls, getting into the groundwater and affecting neighboring wells. It is also useful to seal the well from above, not only for safety, but to keep contaminated surface water from draining into the well.

Groundwater is the primary source of potable water on Keats Island. The Groundwater Section of the Water Management Branch of the MELP conducted a preliminary hydrogeological reconnaissance of Keats Island in the Autumn of 1992¹²³). Based on well drill logs, it was found that much of the island is made up of bedrock, from the Bowen Island Group of metamorphosed volcanic and lesser interbedded sedimentary rocks and the Coast Plutonic granitic rocks, indicating that there is not much in the way of unconsolidated surficial deposits¹²⁴, which can be a significant source of groundwater. However, two of the drill logs showed depths of over 60 feet of till over the bedrock¹²⁵. It is possible, though there are no drill records, that the interior valleys and other depressions may have deeper pockets of overburden where water may be stored¹²⁶.

Precipitation is the main source of recharge to the groundwater and its hydraulic behavior is determined by topography, distribution of bedrock and surficial deposits. climate and vegetation. Precipitation percolates into the soil eventually reaching the water table where it replenishes the groundwater aquifers.

¹²² McKenzie, Mary. Hornby Island Water Stewardship Project--Project of Heron Rocks Friendship Centre Society, Past Chair, (Hornby Island, BC). Personal Interview. August 28, 1998.

¹²³ Johansen, D. MELP Hydrology Branch, Water Management Div. A Hydrogeologic Inventory and Reconnaissance of Keats Island. Victoria, BC. January 1993. p. 1.

¹²⁴ *ibid.* p. 2.

¹²⁵ *ibid.* p.2.

¹²⁶ *ibid.* p. 2.

In Keats Island aquifers, this recharge occurs mostly in the winter months when precipitation is high and vegetation is dormant¹²⁷. An example on Keats Island where precipitation recharge is significant is a well at Eastbourne whose level rose 3 feet overnight after a September rainfall¹²⁸.

On Keats Island, there are approximately 30 registered wells*¹²⁹ and at least one unregistered dug well. They are located mainly on the western, northern and eastern perimeter of the island with the majority occurring in the Plumper Cove subdivision and Eastbourne area. Figure 26 is a summary showing the distribution of both dug and drilled wells on the island and their average yields and depths (see also Appendix 9).

Figure 27 is more detailed and shows well depths, depth from the surface to the water table at time of drilling, and the depths at which water enters the well via fractures for each of the wells (see accompanying table in Appendix 10). There are 6 dug wells (approximately 20%) ranging from 11 to 20 feet in depth and 2 to 12 feet in diameter. They are completed in areas where there are surficial deposits¹³⁰ (i.e. they never reach the bedrock). With caution they are adequate for domestic use, but when a large number of people draw on them they are not. The latter occurs with the 3 dug, community wells at Eastbourne in the late summer¹³¹.

The remaining 20 drilled wells range from 80 to 445 feet in depth and are all the standard 6 inches in diameter. Depth from the surface to the top of the water table ranges from 0 almost 70 feet. All drilled wells are completed in the bedrock and groundwater is derived from the fractures. Yields for the dug wells are unknown. Many of the drilled wells each have water coming from more than one fracture at different depths. About 5 or 6 wells have up to 3 fractures from which water enters at about anywhere from 1/2 gpm to 8 gpm per fracture.

*Four of these (drilled), however, appear to be duplicates, ie. there are two well tag numbers for the same well (well depth and depth of fractures at which water enters the well are the same for each pair), so there may actually be only 26 wells). It will be assumed, however, they are separate existing wells. In addition, there is one unregistered dug well on the Corkum/Barnabas property that was constructed about 50 years ago.

¹²⁷ ibid. p. 2.

¹²⁸ ibid. p. 3.

¹²⁹ Ministry of Environment, Lands and Parks (MELP). Website: How to Find A Well.
www.elp.gov.bc.ca/wat. June 2000.

¹³⁰ Johansen, D. MELP Hydrology Branch, Water Management Div. A Hydrogeologic Inventory and Reconnaissance of Keats Island. Victoria, BC. January 1993. p. 3.

¹³¹ ibid. p. 3.

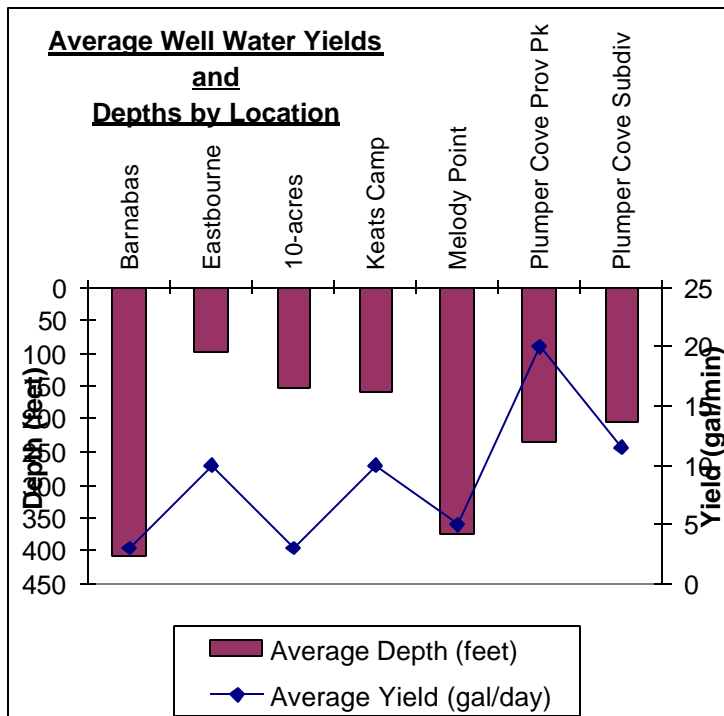


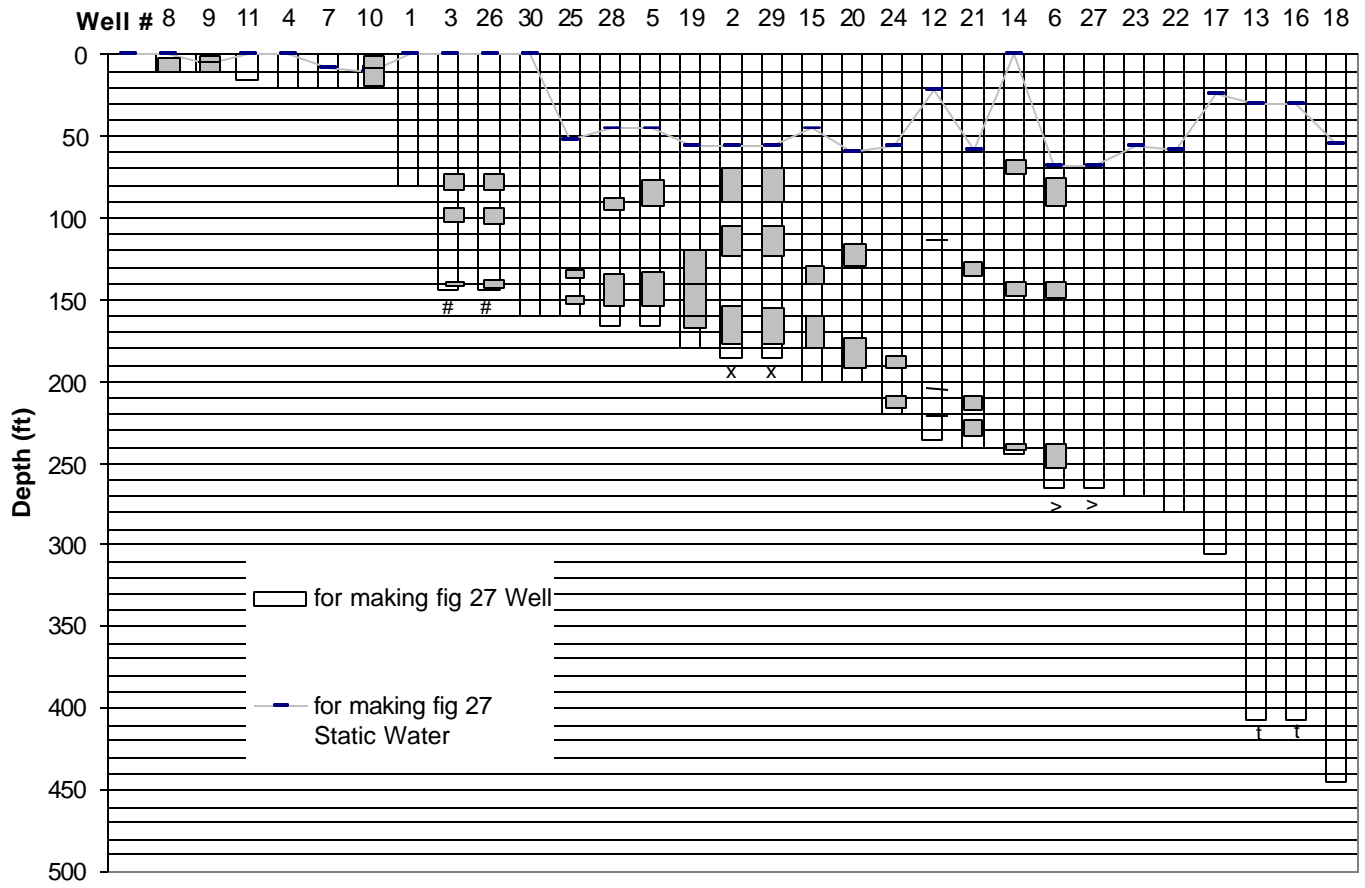
Figure 26

Source: MELP Well Logs. www.elp

Johansen, D. MELP. A Hydrogeologic
Inventory and Reconnaissance of
Keats Island. 1993.

Well Depths, Static Water Levels and Depths at Which Water Enters Wells

(#,x,>,t - possible duplicates)



In **Eastbourne** there are 3 community wells of which only 2 are in operation. They are referred to as the 'Eastbourne Well' and the 'West Well'. The Eastbourne Well (D.L. 1595, Plan 10378, Lot 3)* has the most users; it supplies approximately 60 dwellings¹³² to 80¹³³ while the West Well (D.L. 1593, Plan 18682, BLK 27)** supplies water to about 11 dwellings. The third abandoned well is located [possibly] at (D.L. 1595, Plan 6472, BLK 1, Lot 1 or BLK 2, Lot 1***). All of these wells are about 20 ft deep, but have various diameters or widths ranging from 5 - 10 ft.

The Eastbourne well, the main supplier, is more like a constructed aquifer (human-made rather than occurring naturally). It is 5 ft**** wide by 110 feet long, lined with a water-proof membrane (to prevent contamination) and filled with crushed rock. A perforated pipe lies along its bottom and water is pumped into 6 tanks nearby on higher ground and to a 7th tank further away. This latter tank is located near the abandoned well, known locally as the Gordon Catchment Area¹³⁴ and services that part of the community. The tanks each have a capacity of 2,000 gallons to provide a total of 14,000 gallons of storage. The tanks fill in a trickle basis and are shut off when full. This has been in place for about 7 years and has greatly helped in reducing some of the surges in water use and resultant priming problems¹³⁵. There are 3 water meters connected to the main lines in various parts of the community, so that leaks or breakages to the system can be detected.

The West Well in the southwest part of Keats has a diameter of 10 feet, according to MELP. It too, presumably, is connected to 1 or more storage tanks that service that part of Eastbourne. Some individual dwellings have their own drilled wells. According to MELP logs there are about 4 drilled wells in Eastbourne, but others have estimated there may be about 15¹³⁶. In addition, many homeowners have installed water storage tanks on their properties, ranging from 1,000 - 2,000 gallon capacities, to assist in water conservation and fire fighting capacity. The Eastbourne Volunteer Fire Department recommends that Eastbourne property owners install a fire fighting access valve on their water storage tank.

*BCAA shows this parcel as belonging to the Eastbourne Community Association

** " " " " " " " " William Steen

***BCGS Map sheet number 92G-033-4-4 in A Hydrogeologic Inventory and Reconnaissance of Keats Island. by Johansen, D. MELP, Hydrology Branch, Water Management Div. January 1993. However, according to BCAA Rolls neither of these lots are owned by the Eastbourne Community (BLK 1, Lot 1 is owned by Craig Pay, BLK 2, Lot 1 is owned by Eugene Luttrell.

****MELP logs state that this well has a diameter (width) of 7 ft.

¹³²Romanovich, Ted. Eastbourne Community Association, ECA Water Committee, Custodian. Telephone Interview. February 22, 2001.

¹³³McIlveen, Brent. Eastbourne Community Association, ECA Water Committee (Keats Island, BC). Telephone Interview. February 26, 2001.

¹³⁴Romanovich, Ted. Eastbourne Community Association, ECA Water Committee, Custodian. Telephone Interview. February 22, 2001.

¹³⁵McIlveen, Brent. Eastbourne Community Association, ECA Water Committee (Keats Island, BC). Telephone Interview. February 26, 2001.

¹³⁶ibid.

Eastbourne has been working with the Sunshine Coast Regional District on developing a 10-year Infrastructure Plan since about 1995. Details of what the plan involves is not clear at this time but, essentially, if implemented, it will require a complete overhaul of the current distribution system and bring Eastbourne into a tax-based water system by 2005¹³⁷.

In 1994 the SCRD commissioned a “Keats Island Water Supply Study” in response to a request by the Eastbourne Community Association to investigate the feasibility of creating a Regional District managed water supply for the Eastbourne subdivision. The consulting firm was mistakenly instructed to investigate the feasibility of supplying water for Keats Island as a whole, rather than just for Eastbourne. And the study was carried out without consultation with either the Keats Island community at large, or the Islands Trust. As a result of these errors in the terms of reference for the study, the consulting firm recommended establishing a pipeline connection from Gower Point (approximately 3 km southwest of Gibsons) to Keats Island, or developing a large surface water storage facility on Bonner Creek within the boundaries of the Community Park¹³⁸.

Unfortunately, both options were considered unacceptable to Keats Island residents outside of Eastbourne, who did not wish to be involved in an expensive island-wide water utility funded by property taxation. And both options were contrary to and at variance with “preserve and protect” policies of the Islands Trust regarding island self-sufficiency with respect to freshwater, and preservation of freshwater and wetland ecosystems and riparian zones¹³⁹. However, both the Islands Trust and Keats Islanders from outside of Eastbourne were supportive of Eastbourne working with the SCRD to pursue a smaller scale well, storage, and distribution system within Eastbourne that could meet the needs of that community without impacting the rest of the island¹⁴⁰.

At that time, the cost of drilling for other sources of groundwater within Eastbourne was not considered justifiable, even though the possibilities of finding water indicated “some promise”¹⁴¹. Current plans to address Eastbourne’s water supply needs within Eastbourne include improving the existing sources of water, namely, the East and West wells. Currently, both wells are unprotected systems and there are concerns that they are vulnerable to contamination¹⁴².

¹³⁷ *ibid.*

¹³⁸ Dayton & Knight Ltd. and Piteau Associates. Sunshine Coast Regional District, Keats Island Water Supply Study. West Vancouver, BC. February 1994. p. 2.

¹³⁹ Islands Trust Council. Islands Trust Policy Statement, Bylaw No. 17, As Amended by Islands Trust Council Bylaw No. 42. Islands Trust. June 1994. p. 7-9.

¹⁴⁰ Benson, Kim. Islands Trust, Keats Island Trustee. Personal Interview. October 3, 2000.

¹⁴¹ Dayton & Knight Ltd. and Piteau Associates. Sunshine Coast Regional District, Keats Island Water Supply Study. West Vancouver, BC. February 1994. p. 2.

¹⁴² McIlveen, Brent. Eastbourne Community Association, ECA Water Committee (Keats Island, BC). Telephone Interview. February 26, 2001.

The **Keats Camp property**, with the 110 lease lots of which there are about 80¹⁴³ to 100¹⁴⁴ dwellings and visitor and staff facilities for up to 300 in total, has 2 wells, of which only one is in use. The active well is located on the northeast side of the peninsula near the south edge of the D.L. 696 boundary. The water is first pumped into 2 of 4 existing stainless steel storage tanks, and when those are full the remaining 2 are filled. Each tank holds 15,000 gallons for a total of 60,000 gallons. These tanks are located upland approximately 1 - 1.5 kilometres (or about a 15 minute walk). The 2 primary tanks connect to one line that, by means of gravity, supplies the lines to the camp facilities and 80% of the lease lots. The remaining 21 lease lots in the Plumper Cove portion of D.L. 696 are on a separate well, storage, and gravity distribution system located in a central location upland from these lots.

In the case of fire, water from the 4 main tanks on D.L. 696 can be pumped (electrically) to increase the water pressure. A Forestry pump is also on hand to pump saltwater from the ocean to provide extra water or while the freshwater tanks are recharging. The Forestry pump can also be connected to the storage tanks if the other pump fails. In the late 1980's, the camp property owners hired a consulting firm to look into the possibilities of drilling another well to increase water availability to the leaseholders and camp. The well was drilled, but the yield is not sufficient to be viable.

At the **Corkum Farm/Barnabas Camp** property there are two drilled wells and one unregistered, dug well. The two drilled wells serve the camp's 2 accommodation buildings and trailer, cooking shelters and office, while the dug well supplies the farmhouse, orchard and livestock area¹⁴⁵. Water from the drilled wells is pumped into a nearby 1,000 gallon tank near the well and then distributed to 6 12,000 gallon tanks, approximately 600 feet uphill from the camp. The outlets of the tanks can be variably closed or opened as needed to allow the tanks to recharge. The uphill location of the tanks provides enough water pressure for the fire sprinklers to be considered legal. Another 8 3,000 gallon tanks will be added to create a total of 96,000 gallons of water storage.

Melody Point subdivision property owners buy into the community water system when they acquire their property to offset the costs of drilling. There are two wells, but only one is currently in use. It is located on the northeast side of the subdivision on a private parcel, on which there is a right of way and covenant on the well (with the owner's approval). The well has a yield of approximately 8-9 gal/min¹⁴⁶.

¹⁴³Bentall, Rob. Corkum Farm/Barnabas Camp, Executive Director (Keats Island, BC). Telephone Interview. December 14, 2000.

¹⁴⁴Potter, Kirk. Keats Camp, Executive Director (Keats Island, BC) Telephone Interview. February 23, 2001.

¹⁴⁵Bentall, Rob. Corkum Farm/Barnabas Camp, Executive Director (Keats Island, BC). Telephone Interview. December 14, 2000.

¹⁴⁶Hall, John. Melody Point Cottage Owners. Telephone Interview. February 26, 2001.

There are two 1500 gallon storage tanks (for a total of 3000 gal) about 100 feet uphill from the well. Either one or both tanks, are used to supply, by gravity flow, the 15 or 16 cabins in the subdivision, depending on the season. Both tanks are in operation in the summer and only one in the spring and fall. The tank not in use is allowed to run down at the end of season.

The other well is located about 400-500 feet south of the active well, but its yield is too low to render it viable. It could, however, be tapped into if there was a substantial water shortage. There are no private wells on any of the properties in Melody Point at this time. Owners of properties outside of Eastbourne, the Keats Camp property, and Melody Point are responsible for providing and maintaining their own wells, water storage and distribution systems at their own expense.

Water shortages do occur on Keats Island in the summer and early autumn months due to both environmental stresses, when there is reduced groundwater recharge and increased use, and when there are leaks or other equipment failures in the individual community water systems. This is true for Melody Point, the Keats Camp and Corkum/Barnabas Camp properties, and Eastbourne. Eastbourne, however, has also experienced water shortages both in the community system and individually owned wells due to environmental factors. Other Keats Island properties with wells also can experience 'naturally' occurring water shortages.

COMMUNITY SERVICES

Parks and Recreation

Keats Island offers an abundance of recreational opportunities, such as boating, water sports, hiking, camping and mountain biking. There are 2 parks and 2 privately owned, public camp facilities. One of the parks is Plumper Cove Provincial Marine Park and Campground. It was established in 1960. The land portion of the park is 33.5 ha (83 ac) and the marine park is 31.5 ha (78 ac). The park is intended for day use and camping. The other park is the 13.5 ha (33 ac) Community Park located near Eastbourne and is managed by the Sunshine Coast Regional District. It was officially dedicated in 1981, at the time of the subdivision of the 33, 10-acre lots¹⁴⁷. The purpose of the Community Park is to protect the Bonner Creek watershed and wetland, and to provide green space for residents and the public on the east side of Keats Island. Walking trails and nature-interpretive areas are permitted uses within the Park.

¹⁴⁷Benson, Kim. Islands Trust, Keats Island Trustee. Keats Island Community Profile in progress, additions and edits. January 2001.

Plumper Cove Provincial Park has a number of natural attractions including scenic ocean views and beaches for swimming, and hiking, camping and boating options. Visitors can camp in the park itself or stay on their boats which they can tie to either a number of docks or buoys provided. Figure 28 shows the number of visitors, both day and overnight in the last decade¹⁴⁸ (see also Appendix 11).

From 1995 to 1996 there is a significant jump in the number of campground users and day visitors with an increase of nearly 3-fold and 5-fold, respectively. And again in 1997 there is almost a 2-fold increase in day visitors to almost 10,000. The number of boaters has been somewhat steady. However, in 1997 there were nearly 3900 boaters and the next year they dropped by nearly half. These significant changes in attendance may be due to errors in counting by BC Parks.

Societies, Associations and Committees

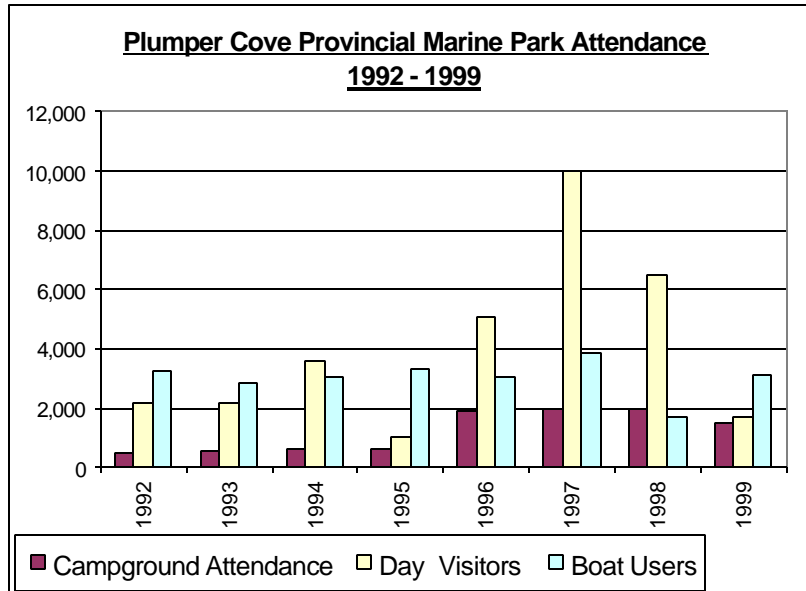
Keats Island, as mentioned earlier, has a number of societies and organizations whose overall objective is to, firstly, address various local needs mainly relating to infrastructure and what otherwise would be public services, and, secondly, to bring a diverse community together. Figure 29 shows a list of Keats Island societies, associations and committees.

Issues relating to requirements such as water and fire protection are managed on a local community level (i.e. Eastbourne, Melody Point, Barnabas, Keats Camp) while recycling and transportation are somewhat island-wide. Recycling is managed more on an informal, voluntary basis rather than a particular group at this time, though there is one person who has taken on the co-ordination. Recently, concerns around island-wide issues particularly relating to the public ferry service, wharves, land use issues and development proposals have provided crossover between various groups.

For example, the Keats Island Advisory Planning Group (KIAPG) has members from nearly all the individual communities on the island, such as Plumper Cove, Eastbourne, Keats Landing leaseholders, Melody Point, the '10-acres', and summer camps. As KIAPG is appointed by Islands Trust, its purpose is advise on land use matters, such as the Official Community Plan Review process and development application responses. However, the KIAPG also helps to facilitate efforts to foster a growing spirit of island-wide communication and cooperation on Keats.

There is not much in the way of formalized social groups on Keats Island such as arts and crafts, but there is both a prayer group and Bible study group. But there are small informal social groups, based on friendships (eg. Walking group, book club, quilters, etc.)

¹⁴⁸ BC Parks. Garibaldi/Sunshine Coast District, Information/Administration. BC Parks Attendance System Data, 1992 - 1999. June 2000.

**Figure 28**

Source: BC Parks. BC Parks Attendance System Data,
1992-1999. June 2000.

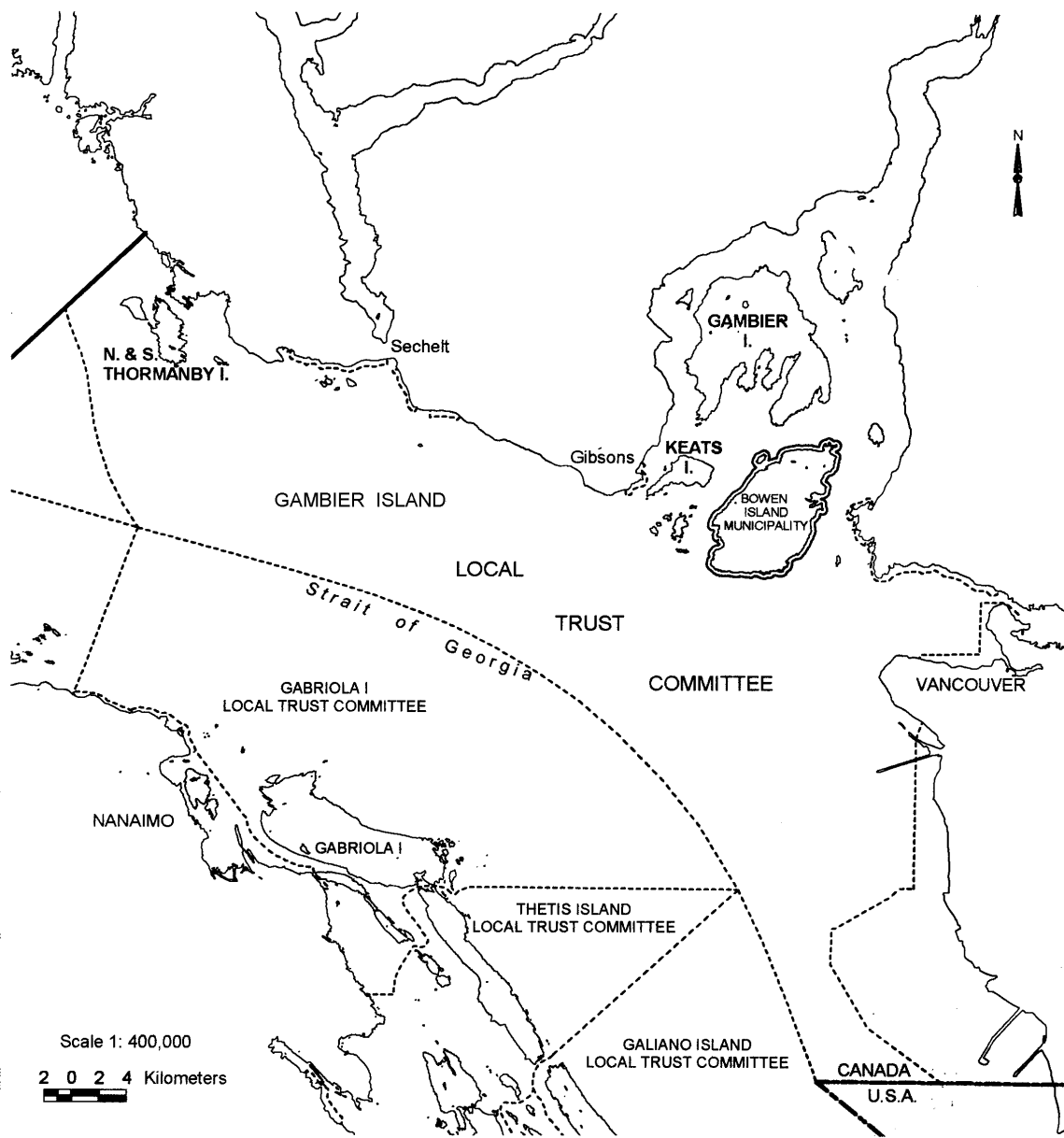
Keats Island Societies and Committees

Name	Date Formed
Barnabas Family Ministries (non-denominational)	1986
Eastbourne Community Association	1972
ECA Water Committee	
Eastbourne Volunteer Fire Department	Fall 2000
Fundraising Committee	
Melody Point Cottage Owners	1976
Melody Point Water Board	
Keats Camp (Convention of Baptist Churches of BC)	
Baptist Church Camp Property Committee	
Keats Island Leaseholders Association (KILA)	
Prayer Group (Keats Camp and KILA)	
Keats Island Moorage Society	
Keats Island Public Access Committee	
Keats Island Advisory Planning Group*	
Sea to Sky Outdoor School**	
* Appointed by Islands Trust	
** Based in Gibsons	

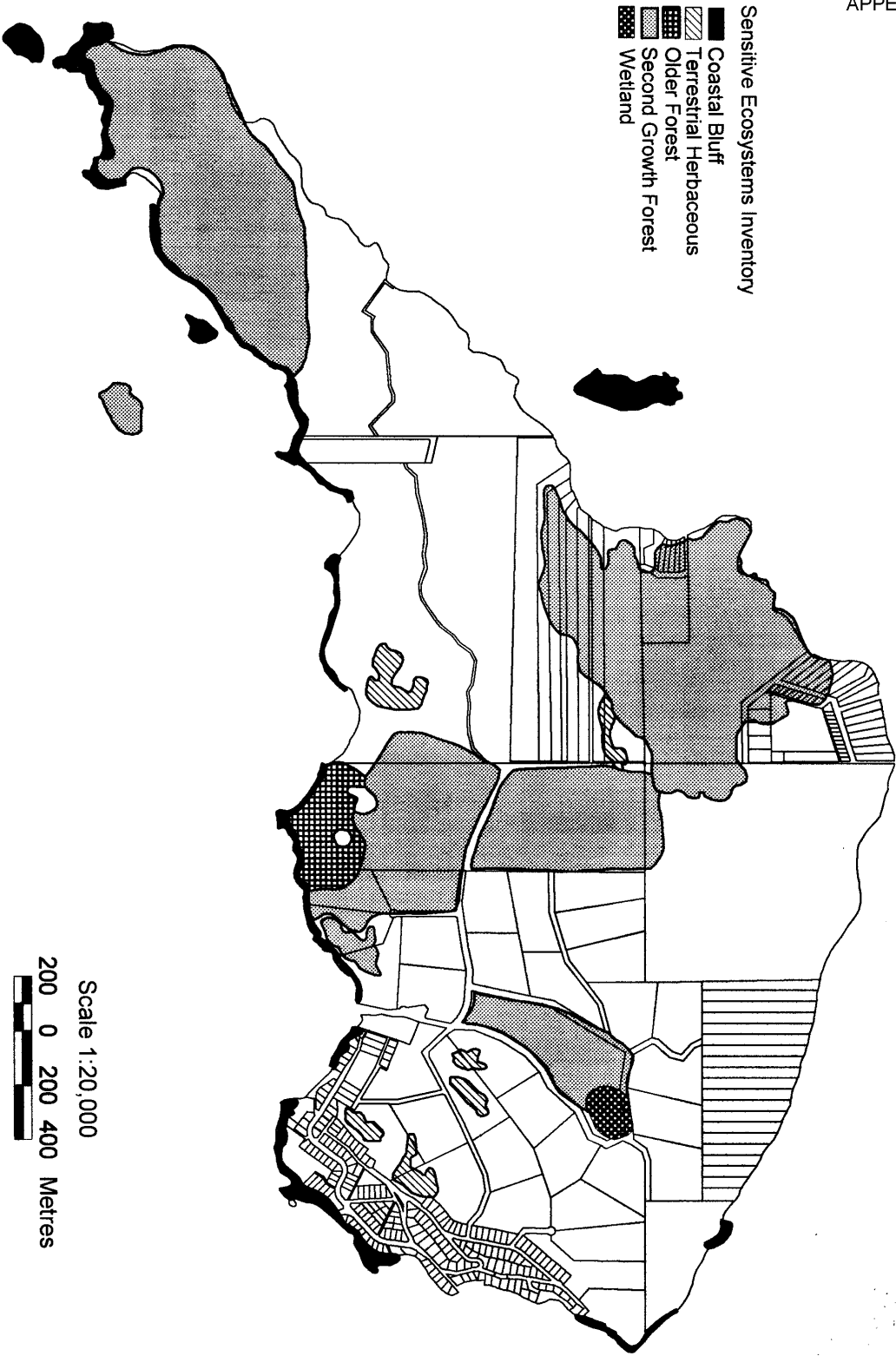
Figure 29

Source: Bennie, Rob. Keats & Gambier Social Profile. 1998-99.

APPENDICES



APPENDIX 3



APPENDIX 4. **Crown Land Tenure Terms**

Permits - term of 6 months to 1 year and is exclusive use. No legal survey required.

Licenses - valid for up to 10 years and can be multiple-use. No legal survey required.

Leases - valid for up to 30 years and must be single use. Legal survey required.

Statutory Right of Ways - term of up to 60 years and are for exclusive use. Governments, Crown Corporations and individuals can request statutory rights of ways for utility lines, such as water, electricity, etc. Legal survey required.

Reserve/Notation and Order in Council (OIC) - Government agencies at all levels often have reserve/notation tenures on Crown land which tend to extend into perpetuity. They are free to preside over the land as they wish but, within the public interest and the legal conditions of the tenure. Sometimes these reserves involve a legal process called an Order in Council (OIC), such as in the case of Plumper Cove Provincial Park Occasionally, as in the latter case, an OIC is applicable to land granted for a community need. If the purpose of such an area were to change, an OIC process would be required.

Notation of Interest - In addition governments can express interest in a parcel of Crown land for protection which is then held in reserve as a notation of interest. However, applications for other uses are accepted during this time.

Crown Grants, Free Crown Grants - The Government also grants Crown land both for sale at market values, referred to as a direct sale, and as free Crown grants which are 'sold' for a token fee. In many instances land that is bought from the Crown for community uses and/or services must be retained for the agreed upon purpose or the land may revert back to or be revested (bought) by the Crown. This depends on the conditions of the grant sale. Reversion back to the Crown also occurs when taxes remain unpaid on privately owned land.

Tenure Precedence

In terms of tenure precedence, Crown granted and Crown owned land has highest priority. This is followed equally by statutory right of way, standard lease and OIC. Licenses and reserves, again equally, are next, followed by notation of interest reserves. There may be exceptions to this. Tenures at the same level of priority are established on a first come-first served basis.

APPENDIX 5. Distribution And Status of Crown Land on Keats Island and Foreshore

Name of Parcel	Size (ha)	(ac)	Percent of Total Crown Land	Land Use	Tenure Type	Status	Land Value
Plumper Cove Marine Park	33.5	83.00	52%	park	OIC	current	\$1,798,000
Community Park	13.4	33.00	21%	park	OIC	current	\$156,000
Roads	16.0	40.00	27%	transportation	OIC	current	na
Total	62.9	156.0	100%				
Lot 6937 BLK A	-4.0	10.00	na	shellfish?	lic. or lease	exp	?
Lot 6937 BLK B	-1.6	4.00	na	shellfish?	lic. or lease	exp	?
Plumper Cove Marine Park	32.0	78.00	70.2%	marine park	OIC	current	na
Lot 5912	4.0	10.00	9.0%	float & log salvg	lease	exp 11/01	6000 (2 ac)
Lot 3417 Shelter I. Estates	0.3	0.70	0.6%	private moorage	lease	exp 2019	\$2,500
Lot 6215 Keats Lndg. wharf	0.4	0.92	0.8%	transportation	OIC	current	\$5,000
Lot 5875 Eastbourne wharf	0.5	1.12	1.0%	transportation	OIC?	current	\$5,000
-- Telus	3.8	9.44	8.5%	utility	lease	current	\$19,700
Plan 16080-16224 Telus	4.4	10.90	9.8%	utility	lease	current	\$400
Plan 6403R BC Hydro	na	na	na	utility	lease?	current	\$400
Ex. 6583 BC Hydro	na	na	na	utility	lease?	current	na
Total	45.4	111.1	100%				

Source: BCAA Assessment Rolls, 2000

McKay, Linnett. Area Assessor. BCAA. Jan. 2000

APPENDIX 6
Usage of Keats Island Docks by Local Residents

(sample size = 171 persons)

Location of Residence	Use Only Keats Landing	Use Only Eastbourne	Use Both Ports
Eastbourne	1%	31%	60%
Keats Landing	93%	2%	4%
10 Acres	8%	8%	84%
Other Island Areas	44%	0%	30%
Total	33%	16%	42%

Source: Ference Weicker & Co. Sunshine Coast Regional District Port

Transfer Proposal, August 1997, P16

APPENDIX 7. Passenger Ferry Counts May/97 - March/00

Month/Year	Langdale to Keats	Keats to Langdale	K/L Total	Gambier to Keats	Keats to Gambier	K/G Total	TOTAL
May-97	765	1,062	1,827	108	184	292	2,119
Jun-97	883	595	1,478	90	397	487	1,965
Jul-97	1,385	1,394	2,779	11	40	51	2,830
Aug-97	1,435	1,554	2,989	102	140	242	3,231
Sep-97	692	778	1,470	9	32	41	1,511
Oct-97	714	768	1,482	2	15	17	1,499
Nov-97	392	466	858	9	3	12	870
Dec-97	321	372	693	4	5	9	702
Jan-98	316	441	757	14	9	23	780
Feb-98	394	450	844	12	23	35	879
Mar-98	692	769	1,461	4	2	6	1,467
Apr-98	649	743	1,392	18	11	39	1,431
May-98	734	927	1,661	14	13	27	1,688
Jun-98	853	827	1,680	1		1	1,681
Jul-98	1,335	1,335	2,670	28	2	30	2,700
Aug-98	1,374	1,629	3,003	51		51	3,054
Sep-98	636	885	1,521	32	30	62	1,583
Oct-98	627	789	1,416	15	15	30	1,446
Nov-98	439	548	987	4		4	991
Dec-98	362	368	730	10	23	33	763
Jan-99	368	544	912	3	6	9	921
Feb-99	457	525	982	6	2	8	990
Mar-99	693	762	1,455	17	8	25	1,480
Apr-99	829	1,004	1,833			0	1,833
May-99	1,047	1,212	2,259			0	2,259
Jun-99	1,034	904	1,938			0	1,938
Jul-99	1,748	2,101	3,849	27		27	3,876
Aug-99	1,280	1,611	2,891	32	1	33	2,924
Sep-99	726	887	1,613	4		4	1,617
Oct-99	875	1,174	2,049	1	54	55	2,104
Nov-99	400	534	934	6	2	8	942
Dec-99	400	349	749	3	1	4	753
Jan-00	210	453	663	3	3	6	669
Feb-00	292	414	706	7		7	713
Mar-00	693	800	1,493	13		13	1,506

Source: BC Ferry Corporation. Passenger Ferry Counts May/97 to Mar/00. December 2000.

Note: Blank spaces either mean there are no data available or there were no passengers

APPENDIX 8. Surface Water Licences on Keats Island

Creek Name	Location	Length (metres)	Number of Licences	Use	Yield (Gal/Day)
Alderson Spr	Melody Pt., DL 1468, PI 8397, Lots 9-16	200	6	Domestic	250
Bonner Crk	Comm. Park & east Eastbourne, DL 1593	320	1	Domestic	2000
Brown Spr	Melody Pt., DL 1468, PI 8397, Lots 9-12	100	6	Domestic	250
Eureka Spr	Keats Camp parcel, N corner, DL 696	30	1	Domestic	1000
			2	Domestic	500
Meek Crk	PC Large Subdiv DL 1467, PI 6646, Lot 1	170	1	Domestic	1000
			2	Domestic	500
Park Brk	Plumper Cove Prov Park, DL 1468, Lot B	220	1	Waterworks	4000
Resort Spr	Keats Camp parcel, N corner, DL 696	60	2	Domestic	1000
Total		1100	22		10500

Source: MELP. Water Licences Report. www.elp.gov.bc.ca

MELP, Water Rights Branch, Surrey. Mapsheets 92G-033-4-3,
92G-033-4-4, 92G-043-2-1. hand sketched fax.

APPENDIX 9.
Minimum, Maximum and Average Well Depths and Yields by Location

Location	Number of Wells	Depth (feet)				Yield (gal/day)		
		Min	Max	Average	Total	Min	Max	Average
Barnabas	3	?	407	407	407	3	3	3
Eastbourne	7	20	165	97	680	10	11	10
10-acres	9	11	265	154	1382	1	5	3
Keats Camp	1	160	160	160	160	10	10	10
Melody Point	2	305	445	375	750	2	8	5
Plumper Cove Prov Pk	1	235	235	235	235	20	20	20
Plumper Cove Subdiv	8	80	280	204	1630	3	30	11.5

Source: MELP Well Logs. www.elp

Johansen, D. MELP. A Hydrogeologic Inventory and Reconnaissance of Keats Island. 1993

APPENDIX 10. Keats Island Wells

002- Excel would otherwise keep showing this as a date														
No.	MELP Well	Drilled or Dug	Depth (feet)	Diameter (inches)	Depth to Bedrock (feet)	Static Level of Water	Total Yield (gpm)	Water Enters at ___ feet*	Yield (gpm)	Use	DL or area	Plan #	Lot #	Construction Date
8	752	Dug	11	na	unknown	na	na	002-11	na	Domestic	10 ac 1593	2668	A	na
9	750	Dug	11	144	unknown	6	na	002-11	na	Domestic	10 ac 1593	18682	27	na
11	759	Dug	15	24	unknown	na	na	na	na	Abandoned	10 ac 1594	18682	30	na
4	7997	Dug	20	84	unknown	na	na	na	na	Comm & Ind	E EW 1595	10378	2	1950 Jan
7	749	Dug	20	60	unknown	8	na	na	na	Comm & Ind	E 1595	6472	Bk 1or2, Lot 1	na
10	753	Dug	20	120	unknown	10	na	002-20	na	Comm & Ind	10ac ww 1593	18682	27	na
1	20428	Drilled	80	6	0	na	3	70	3	Domestic	PC 1467	6646	7	1967 Jan
3#	59796	Drilled	145	6	2	na	11	75-85	0.5	Domestic	E 1595	10378	11	1991 Aug
								95-105	0.5					
								145	10					
26#	73851	Drilled	145	6	2	0	10	75-85	0.5	na	E	10378	11	1991 Aug
								95-105	0.5					
								140-145	10					
30	none	Drilled	160	6	na	na	10 in 1988	na	na	na	KC 696	na	na	1968 Jan
							35 in 1968	na	na					
25	73850	Drilled	160	6	2?	52	20	134-138	0.5	na	PC	na	?	1993 July
								150-155	20					
28	73853	Drilled	165	6	9	46	10	87-96	1	na	E 1595	10378	Bk 16	1992 May
								134-156	9		Gordon Ave		6	
5	60005	Drilled	165	6	9	46	10	78-96	1	Domestic	E 1595	10378	Bk 16	1992 May
								134-156	9				6	
19	73844	Drilled	180	6	33?	56	12	120-140	0.25	na	PC?	na	na	1992 Dec
								140-160	8					
								160-170	4					
2x	59991	Drilled	185	6	18	56	4	70-82	1	Domestic	10 ac 1593	18682	23	1992 May

								106-124	1					
								156-169	2					
29x	73854	Drilled	185	6	18	56	4	70-82	1	na	10 ac 1593	18682	23	1992 May
								106-124	1					
								156-169	2					
#	Possible duplicates							*Fractures			10 ac - 10-acres			
x											E - Eastbourne, EW - East Well			
											WW - West Well			
											KC - Keats Camp Property			
											PC - Plumper Cove			
No.	MELP Well Tag No.*	Drilled or Dug	Depth (feet)	Diameter (inches)	Depth to Bedrock (feet)	Static Level of Water	Total Yield (gpm)	Water Enters at ___ feet*	Yield (gpm)	Use	DL or area	Plan #	Lot #	Construction Date
15	52769	Drilled	200	6	59	45	1	130-140	0.5	Domestic	10 ac 1594	18682	40	1983 Sept
								160-180	0.5	(not in use)				
20	73845	Drilled	200	6	35?	60	8	117-130	1	na	PC	na	6	1993 July
								176-194	7					
24	73849	Drilled	220	6	23?	56	30	186-193	1	na	PC	na	1	1993 July
								208-216	30					
12	774	Drilled	235	6	24	22	20	115	na	Other	PC Prk 1468	10383	Bk B	na
								207	na					
								222	na					
21	73846	Drilled	240	6	21?	58	6	128-135	0.5	na	PC	na	5	1993 July
								210-220	1					
								225-235	4					
14	59791	Drilled	245	6	2	na	5	65-75	1	Domestic	10 ac 1594	18682	41	1991 Aug
								140-150	0.5					
								240-245	4					
6>	59995	Drilled	265	6	1	68	2	78-96	1	Domestic	10 ac 1594	18682	30	1992 May
								140-150	0.5					
								240-255	0.5					

27>	73852	Drilled	265	6	1	68	2	78-96	1	<i>Domestic</i>	10 ac <u>1594</u>	<u>18682</u>	30	1992 May
								140-150	0.5					
								<u>240-255</u>	<u>0.5</u>					
23	73848	Drilled	270	6	40?	56	6	134-140	0.5	na	PC	na	3	1993 July
								168-176	1					
								na	na					
22	73847	Drilled	280	6	29?	58	6	180-200	0.5	na	PC	na	4 or	1993 July
								245-250	1				A/B	
								268-280	3.5					
17	72262	Drilled	305	6	17?	24	8	34-38	3	na	MP	na	na	1994 Oct
								205-220	2					
								268-282	3					
13t	58922	Drilled	407	6	66	30	3	na	na	Domestic	C/B 1469	na	na	1989 Jul
16t	63976	Drilled	407	na	66?	30	3	na	na	Domestic	C/B 1469?	na	na	1989 Jul
18	72263	Drilled	445	6	20?	55	2	180-190	2.5	na	MP	na	na	1994 Oct
>	Possible duplicates													
T											C/B - Corkum/Barnabas			
											MP - Melody Point			
Source: MELP Well Logs. www.elp											PC Park - Plumper Cove Prov. Park			
<u>Johansen, D. MELP. A Hydrogeologic Inventory and Reconnaissance of Keats Island, 1993</u>														

APPENDIX 11
Plumper Cove Provincial Park Attendance 1992-1999

Year	Campground Attendance	Day Visitors	Boat Users	Total Annual Use
1992	498	2,170	3,258	5,926
1993	534	2,166	2,844	5,544
1994	615	3,614	3,026	7,255
1995	616	1,000	3,313	4,929
1996	1,884	5,040	3,017	9,941
1997	1,990	9,968	3,856	15,814
1998	1,993	6,464	1,705	10,162
1999	1,491	1,705	3,126	6,322
TOTAL	9,621	32,127	24,145	65,893

Source: BC Parks. BC Parks Attendance System Data, 1992-1999. June 2000.

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