

Appendices

One Island, One Earth Project



June 2022

Galiano Conservancy Association

Appendix A: Biocapacity Data Collection

Land Use Mapping

In 2004, the Galiano Conservancy Association published a Landscape Classification for Galiano Island in its UP-CLOSE Workshop Series Final Report,¹ based primarily on interpretation of 1998 and 2002 aerial photography and subsequent ground-truthing throughout 2000 to 2003.

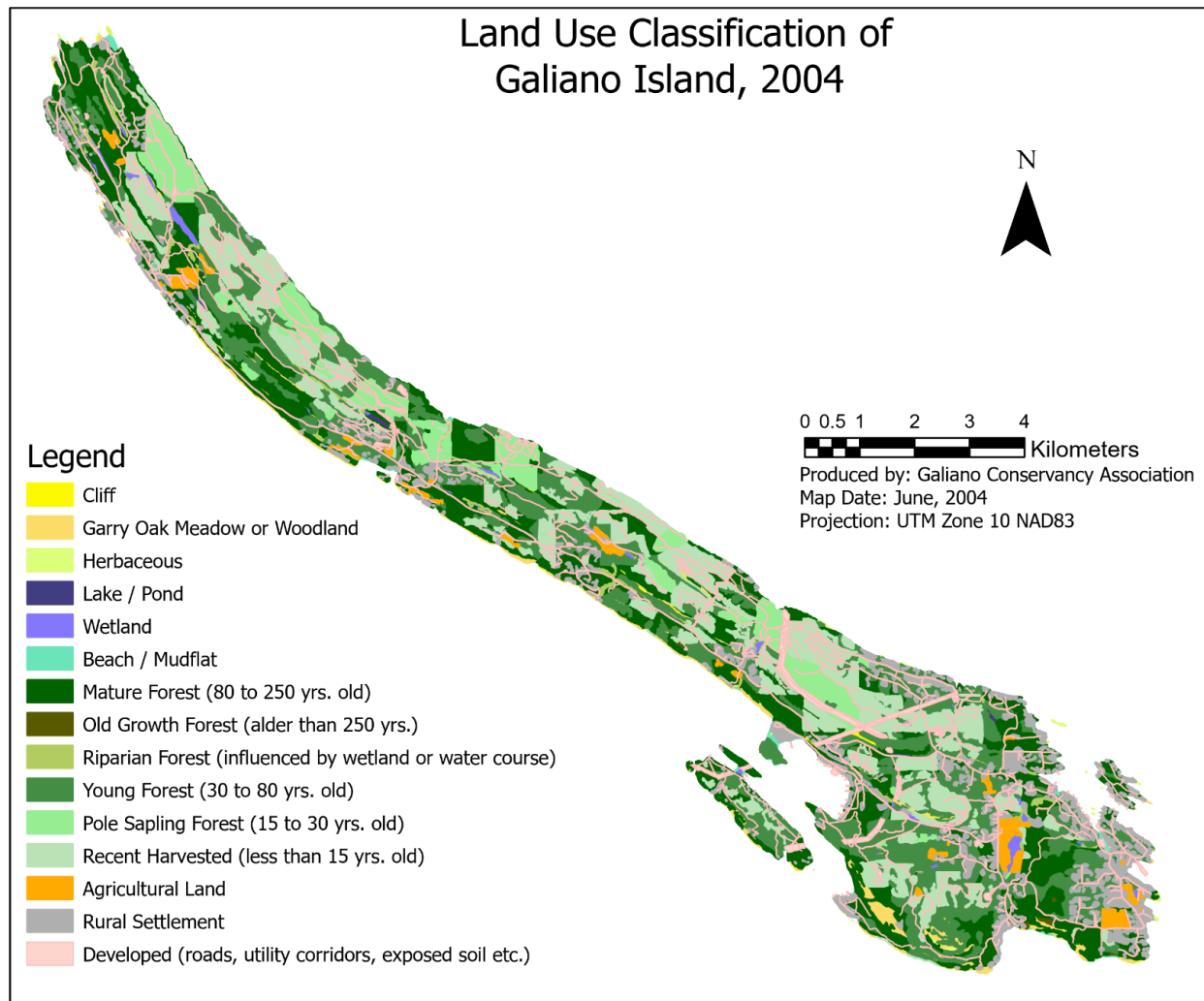


Figure 35. 2004 Land Use Map of Galiano Island.

We generated an updated 2021 Land Use map based on the Landscape Classification from 2004 by reviewing aerial orthophotography taken by the Islands Trust and Capital Regional District in 2002, 2017, and 2021; additional sources for interpretation included Government of British Columbia's 2019 LIDAR

¹ Emmings, K., & Erickson, K. (2004). *Galiano Island Landscape Classification and UP-CLOSE Workshop Series Final Report*. Galiano Conservancy Association, Galiano Island, BC.
https://galianoconservancy.ca/wp-content/uploads/2016/11/final_report_complete.pdf

layer, a 2015 Islands Trust building footprint layer, and 2020 ArcGIS World Imagery. We ground-truthed areas for which land use remained unclear in 2021. Wise, Charles, Sphinx and Julia islands were not included in the 2004 Land Use map, but are included in the new 2021 Land Use map.

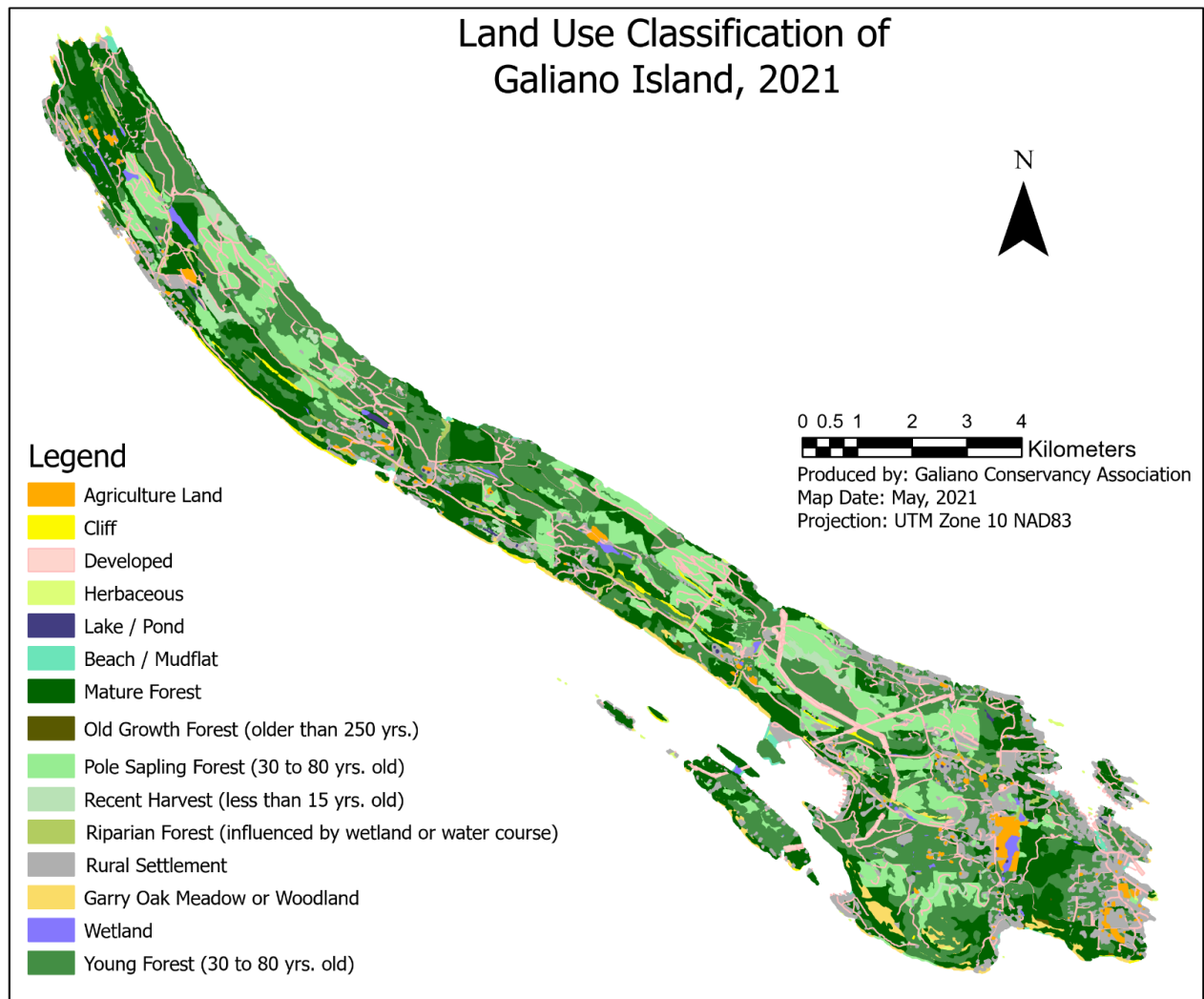


Figure 36. 2021 Land Use Map of Galiano Island.

We assumed that areas which were forested in 2004 and remained forested in 2021 had aged approximately two decades, and updated our classifications of these forested areas accordingly:

- Recent Harvest (0 to 15 years old) -> Pole Sapling (15 to 30 years old)
- Pole Sapling (15 to 30 years old) -> Young Forest (30 to 50 / 80 years old)

Young Forest was mostly retained within this category, but in select cases was upgraded to Mature Forest based on interpretation of LIDAR imagery and ground-truthing.

We created four new land use subcategories to increase specificity with respect to human land use:

RH - r = Restoration: Land where restoration has taken place.

AG - c = Cropland: Land used to cultivate crops.

AG - p = Pasture: Land used for grazing by domesticated livestock.

AG - g = Garden: A small piece of ground used to grow vegetables, fruit, herbs or flowers for use by a household.

Definitions of all of the land use categories can be found below.

Land Use Definitions

Table 7. Land Use Definitions

Natural Ecosystems - Landscape units with little or no human development. In the Trust Area these are usually rare and/or Fragile ecosystems	
Class	Subclass
OF - Old Growth Forest Large patches of forest that have not been subject to recent human disturbance (in the last 150 years). Areas display a wide variety of tree sizes, spacing and age. Old veteran tree comprise a major component of the site. Characterized by large dead standing and dead fallen trees of varying states of decay, canopy gaps, understory patchiness high organic matter accumulations, and multiple canopy layers. Average tree age of the dominant canopy is 250 years or more.	co - Conifer: > 75% of tree cover is coniferous
	mx - Mixed: mixed with broadleaf component >25%.
MF - Mature Forest Large patches of forest where old-growth characteristics are beginning to develop. Usually with multi-storied canopies, well developed understories, and diverse structural features such as large dead standing and dead fallen trees. Average tree age is 80 - 250 years.	co - Conifer: > 75% of tree cover is coniferous
	mx - Mixed: mixed with broadleaf component >25%.
WD - Woodland Dry, open stands of deciduous forest, generally with between 10 and 25% tree cover. Woodlands may include non-forests openings, often with shallow soils and bedrock outcropping.	mx - Mixed: mixed with conifer component > 15%
	Bd - Broadleaf: Dominant Broadleaf
HB - Herbaceous Non-forested ecosystems with less than 10% tree	mx - Mixed: mixed with conifer component > 15%
	cs - Coastal herbaceous: Rocky shoreline,

cover. Most have shallow soils and bedrock outcrops.	influenced by the marine environment and characterized by grasses, forbs, mosses and lichen.
	sp - Spit: Sand and gravel deposits with low to moderate cover of grasses and herbs.
	du - Dunes: Sand Dunes with a low cover of grasses.
	sh - Shrub: Shrubs account for more than 20% of the vegetation.
RI - Riparian Streamside areas along creeks, streams, gullies, canyons and larger floodplains.	fl - Low bench: areas flood at least once every two years for part of the growing season; plants are adapted to extensive flooding and abrasion.
	fm - Medium bench: areas flooded every one-six years for short periods (10 - 25 days); usually deciduous or mixed forests with trees tolerant of flooding and sedimentation.
	fh - High bench: areas periodically and briefly inundated by high waters; typically conifer-dominated floodplains of larger coastal rivers.
	ff- Fringe: Narrow, linear areas along open water bodies (River, lakes and ponds).
	gu - Gully: where the watercourse is in a steep V-shaped gully.
ST - Stream Watercourse formed when water flows between continuous, definable banks.	fp - Perennial: Creek or stream that flows continuously throughout the year.
	fs - Seasonal: Stream that flows only at certain times of the year, (e.g.,when the groundwater table is high and/or when it receives water from springs).
WN - Wetland Areas characterized by daily, seasonal or year-round water at or above the surface	bg - Bog: Shrubby or treed, nutrient-poor peatlands with distinctive communities of plant species adapted to highly acid and oxygen-poor soil conditions.
	ff - Fen: Peatlands where groundwater inflow maintains a high mineral content within the rooting zone.

	ms - Marsh: shallowly flooded mineral wetland dominated by emergent grass-like vegetation.
	sp - Swamp: Forested, mineral wetland dominated by broadleaf shrubs and trees on sites with a flowing, semi-permanent, near surface of water table.
	sw - Shallow Water: Aquatic ecosystems dominated by rotted, submerged and floating aquatic plants.
	wm - Wet Meadow: Seasonally inundated wetlands, dominated by grasses, sedges, or rushes. They generally occurs on mineral soil and have little or no peat accumulation. Tree cover is less than 10%.
CL - Cliffs Steep, vertical or overhanging rock face -sparse vegetation may occur in crevices or on ledges.	cc - Coastal Cliffs: cliffs with a marine interaction. Generally near vertical bedrock with accumulation of soil limited to fissures and ledges.
	ic - Inland Cliffs: Typically formed as a result of erosion, catastrophic failures or mass wastage. Generally characterized by rapid drainage and the accumulation of soil that is limited to bedrock fissures and ledges.
LC - Lacustrine Lacustrine ecosystems are freshwater ecosystems where total vegetated cover of the surface area is less than 5%.	la - Lake: a naturally occurring static body of water, greater than 2m deep in some portion.
	pd - Pond: A small body of water greater than 2m deep, but not large enough to be classified as a lake. Most ponds in our dataset are artificial in origin rather than natural, but both are categorized here.
LT - Littoral Ecosystems are marine influenced where total vegetated cover of the surface area is less than 5%.	mu - Mudflat: Flat, plain-like areas dominated by fine-textured sediments and exposed at low tide; includes estuaries.
	Be - Beach: Area that expresses sorted sediments, reworked by wave action in recent times.

Modified - Landscape units with human development or disturbance.	
Class	Subclass
YF - Young Forest Self-thinning has become evident and the forest canopy has begun to differentiate into distinct layers (dominant, main canopy, and overtopped); vigorous growth and a more open stand than in the pole sapling stage; begins as early as age 30 and as late extends to 50-80 years. Young Forest that was designated in the 2004 land classification has retained its classification as Young Forest.	co - Conifer: > 75% of tree cover is coniferous
	mx - Mixed: Neither coniferous or broadleaf account for > 75% of tree cover.
	bd - Broadleaf: > 75% of tree cover is broadleaf
NYF - New Young Forest Self-thinning has become evident and the forest canopy has begun to differentiate into distinct layers (dominant, main canopy, and overtopped); vigorous growth and a more open stand than in the pole sapling stage; begins as early as age 30 and as late extends to 50-80 years. The New Young Forest classification has been automatically applied to all areas that were classified as Pole Sapling in the 2004 Land Classification data.	co - Conifer: > 75% of tree cover is coniferous
	mx - Mixed: Neither coniferous or broadleaf account for > 75% of tree cover.
	bd - Broadleaf: > 75% of tree cover is broadleaf
PS - Pole Sapling Dense regeneration of clearcut area between 15 and 30 years old, but can range upwards of 50 years if growing under poor conditions. Trees are greater than 10m tall and have overtopped shrubby and herbaceous vegetation.	co - Conifer: > 75% of tree cover is coniferous
	mx - Mixed: Neither coniferous or broadleaf account for > 75% of tree cover.
	bd - Broadleaf: > 75% of tree cover is broadleaf
	cc - Clearcut: This describes areas that were automatically updated to the Pole Sapling class (clearcut subclass from those that were designated as Recently Harvested in the land classification data published in 2004. Aerial imagery from 2017 and LiDAR from 2019 confirm the successful regeneration of dense stands of trees, however no ground truthing has been done so species composition cannot be verified.
	gs - Group Selection: This describes areas that were automatically updated to the Pole Sapling

	<p>class (group selection subclass) from those that were designated as Recently Harvested in the land classification data published in 2004. Aerial imagery from 2017 and LiDAR from 2019 confirm the successful regeneration of dense stands of trees, however no ground truthing has been done so species composition cannot be verified.</p> <p>st - Seed Tree Retention: This describes areas that were automatically updated to the Pole Sapling class (seed tree subclass) from those that were designated as Recently Harvested in the land classification data published in 2004. Aerial imagery from 2017 and LiDAR from 2019 confirm the successful regeneration of dense stands of trees, however no ground truthing has been done so species composition cannot be verified.</p>
<p>RH - Recent Harvest Stands less than 15 years of age that are undergoing the initial stages of regeneration (Usually dominated by shrubby and herbaceous vegetation, trees species less than 10m tall) in areas where timber has been removed.</p>	<p>cc - Clearcut: Clear-cuts and heavily logged areas, mostly or all stripped of native vegetation, may be replanted or naturally regenerating. Naturally regenerating sites are dominated by seedlings, shrubs and herbaceous species (usually with a large component of exotic species). Replanted sites will vary in composition depending on silvicultural applications. Includes human caused serious erosion areas.</p> <p>st - Seed Tree Retention: Clear-cuts where individual trees or groups of trees have been retained for regeneration or aesthetic purposes.</p> <p>gs - Group Selection: Areas where timber harvest has occurred using group or individual tree selection methods including commercially thinned forest.</p> <p>r - Restoration: Land where restoration has taken place. Area may or may not have been cleared recently, but attempts to restore natural ecological processes have begun within the last 15 years.</p>
<p>RW - Rural Area in which human developments are interspersed with forest range, farmland, and native vegetation or cultivated crops.</p>	<p>se - Settlement: Residential, commercial or other structures are interspersed with native vegetation farmland or cultivated crops.</p> <p>gc - Golf Course: Grass-covered fairways and open</p>

	areas for the playing of golf.
	pk - Park: Groomed areas including parks, playgrounds, aesthetic areas, and cemeteries.
	ar - Arrested Reforestation: Area previously deforested which has failed to return to forest after more than a decade. Instead of tree species, area dominated by grasses, forbs, shrubs, and/or bare soil. Likely cause deer browse, invasive plant species, and/or compacted soils. Up to 10% tree cover/regeneration.
AG - Agriculture Area where dominant use is for agriculture purposes.	co - Cultivated Orchard: An agricultural area composed of single or multiple tree species planted in rows.
	cv - Cultivated Vineyard: Vineyard
	c - Cropland: Land used by commercial enterprises (most crops are sold rather than consumed by household) to cultivate crops and livestock feed.
	p - Pasture: Is land used for grazing by domesticated livestock. 2021 update: we included backyard poultry in this category.
	g - Garden: A small piece of ground used to grow vegetables, fruit, herbs or flowers for use by a household.
	n - Nursery: Mixture of covered and open spaces for propagating agricultural plants
	r - Restoration: Agriculture using only native plants
DP - Developed Areas where human features or disturbance are dominant.	ca - Canal: Artificial watercourse created for transport, drainage, and/or irrigation purposes.
	sz - Developed/Occupied Foreshore: Dock marina or shellfish lease.
	rz - Road Surface: Area cleared and compacted for vehicle transport.
	gp - Gravel Pit: Area exposed for the removal of sand and gravel.
	ur - Urban/suburban: Area in which residences

	and other human developments form an almost continuous covering of the landscape.
	uc - Utility Corridor: Area permanently altered to allow for the passage of a public or private utility.
	es - Exposed Soil: Area of exposed soil; not included in any of the other definitions.
	lq - Unrestored landfills and quarries: Includes large-scale soil, rock and debris dumping, gravel/rock quarries, major ditching disturbances.

Appendix B: Ecological Footprint Data Collection

Transportation

ICBC provided the make and model for all of the registered vehicles on Galiano Island for 2020. Data from our Odometer Survey was applied and stratified to reflect the vehicle class distribution on Galiano Island from ICBC's data. The Odometer Survey provided mileage for the most popular car types: Small Passenger Car (Gasoline), Small Passenger Car (Electric), Light Trucks, Vans and SUV (Gasoline) and Motorcycle (Gasoline). Those four categories represent 92% of the cars on Galiano. For car types where there was no data, either a proxy was used or phone calls were made to local businesses and farmers to have them estimate their vehicles mileage (e.g., Heavy Duty Trucks (Diesel) and Tractors).

In the Community Mail-Out Survey we also asked about the use of other modes of transportation.

The Community Mail-Out Survey asked questions about the following topics:

- Personal boat ownership
 - Yearly fuel consumption
 - Type of fuel
- Individuals ferry trips
 - Most common trip destination
 - Trip Purpose
 - Other destinations
 - Trip Purpose
- Individuals air travel (in a non-Covid year)
 - Trip destinations

Waste and Recycling

We compared the results of our Waste Tracker survey to data provided by Galiano Island Recycling Resources (GIRR). GIRR's data gave us a better understanding of how to scale our Waste Tracker survey data, which was used to estimate the recycling footprint for the Galiano Island community. To get a better understanding of how much garbage the Galiano Community takes off-island to landfills, we received data from the Garbage Gals (an on-island garbage collection business).

The Community Mail-Out Survey asked questions about the following topics:

- Percentage of recycling taken to GIRR vs. percentage taken off-island

Buildings & Stationary Energy

Built area was classified using the 2015 building footprints data set and the 2019 zoning layer provided by the Islands Trust. Data was extracted using ArcGIS pro.

The Salish Sea Renewable Energy Co-op (SSREC) provided a rough estimate of energy produced on-island from solar panels on an annual basis. Superior Propane shared data on the quantity of propane delivered on the island in 2020. BC Hydro provided data on electricity use for 2020/2019.

The Community Mail-Out Survey asked questions about the following topics:

- Method of household heating
- Household propane use
- Household heating oil use
- Household wood use
- Household square footage

Food

The results from the Food Diary were projected for the entire population of both the full-time and part-time residents, based on the assumption that part-time residents have a similar diet to full-time residents. Canadian average diet was assumed for tourists

Suggestions for Improvements to Future Surveys

Odometer Survey

- The second survey should have an option for cars that have been sold, or have been taken to the junkyard.
- Ask how many people use this vehicle as their primary vehicle.

Food Diary

- Create more user-friendly servings sizes

Community Mail-Out Survey

- Ask participants to self-identify as part-time or full-time residents.
- Ask if part-time residents rent out their space when they are away.
- Flights - First ask how many flights participants have taken this year, then follow up about whether this is a normal pattern and ask participants to explain why or why not.
- Ask if participants make use of seaplane travel between the island and the mainland.
- Ask if participants use a composting toilet.
- Ask whether participants purchase propane on-island or off-island.
- Ask participants about the capacity of rainwater collection systems.
- Ask participants about the frequency of trips taken on cruise ships.

Waste Tracker

- Align recycling categories the categories of the local recycling centre.

Appendix C: Ecological Fingerprint Data Collection

Oral History - Interview Questions

Oral History Guiding Questions

One Island, One Earth Project

Could you please introduce yourself and tell me where we are?

What has been your relationship with Galiano? Past and present?

What environmental changes have you seen during your time on Galiano?

In the past how much did you rely on the land and sea? How has that changed?

Who was the oldest person that you remember living on Galiano? What was their life like?

Why are you living here (Galiano) today?

Do you think that you are currently living a sustainable lifestyle? If not, what are your barriers?

What changes would you like to see happen in the future?

Do you feel optimistic about the future?

Is there anything that you want to tell people? Final comments?

**Towards the end of interviewing a few additional questions were asked about waste, transportation and invasive species.*

Interview Dates

Table 8. Interviews were conducted from July 2021 - March 2022.

Date	Interviewee	Interviewer(s)
July 21, 2021	Levi Wilson & Emily Menzies	Adam Huggins & Michelle Thompson
Sept 27, 2021	Carol & Don Robson	Kris Krug & Michelle Thompson
Oct 1, 2021	Jane Wolverton	Kris Krug & Michelle Thompson
Nov 5, 2021	Karen & Richard Charlie	Adam Huggins & Michelle Thompson
Nov 16, 2021	Florence James	Suzanne Fournier & Michelle Thompson
Jan 17, 2022	Bowie Keefer	Michelle Thompson
Jan 31, 2022	Geoff Gaylor	Ana Bazdresch
Feb 6, 2022	George Harris	Ana Bazdresch
Feb 7, 2022	Gary & Barbara Moore	Michelle Thompson
March 4, 2022	Barry New	Ana Bazdresch
March 10, 2022	Sheila & Don Anderson	Adam Huggins
2021	Charlie Head, Lloyd Baines and Johnny Georgeson	Richard Wilson & Shar Wilson
2021	Janice Wilson	Richard Wilson & Shar Wilson
2021	Bob Wilson	Richard Wilson & Shar Wilson

Appendix D: Survey Results

Odometer Survey Results

Table 9.

Vehicle Type	Sample Size	Average annual km/vehicle
Small Passenger Car (Gas)	16	4657.19
Small Passenger Car (Electric)	4	5471.5
Light Trucks, Vans, and SUV (Gas)	40	5180.05
Motorcycle (Gas)	1	847

Community Estimates

Table 10.

Vehicle Type	Sample Size	Average annual km/vehicle
Heavy Duty Trucks (Diesel)	3	5755
Tractor	1	80

Food Diary Results

The survey represented 39 males and 47 females. Two participants did not specify gender.

Table 11.

Age Groups	Participants
0 - 14	12
15 - 64	47
65 - 84	19
84 - 100	1

Table 12.

Household Size	# of Households
1	5
2	15
3	7
4+	3

Both spring and summer 2021 survey results are included below. 88 people (43 households) completed our Food Diary surveys. Food Diary survey forms can be found in Appendix E. Serving sizes for each food group were projected for the year, averaged, and divided to represent one person. Participants were asked to identify whether servings were produced locally (grown or harvested on the island) or originated from off-island. The chart below shows an averaged estimate of a Galiano Island community member's food consumption by weight over an entire year.

Table 13.

Food Group	On Island (kg/ca)	Off Island (kg/ca)	Annual projection for one Galiano Island community member (kg/ca)
Fruits and Vegetables	35.18	75.38	110.56
Rice	0.00	9.72	9.72
Wheat & Other Cereals	0.00	41.69	41.69
Fish/Seafood	0.66	4.74	5.41
Beef or Veal	0.00	3.50	3.50
Pork	0.00	4.65	4.65
Lamb/other	0.22	0.40	0.62
Poultry	0.53	5.67	6.20
Venison/Game Meat	0.22	0.18	0.40
Eggs	7.45	7.39	14.83
Milk, Yogurt, Cottage Cheese	3.09	27.76	30.85
Cream	0.00	1.18	1.18
Cheese	0.12	4.57	4.69
Butter	0.00	1.18	1.18
Oils	0.00	2.65	2.65
Seeds	0.02	1.19	1.21
Nuts	0.22	12.29	12.51
Legumes	0.46	14.17	14.64
Sugar	0.00	2.67	2.67

Honey	0.19	0.41	0.60
Maple Syrup	0.00	0.69	0.69
Coffee	0.00	1.65	1.65
Tea	0.06	0.41	0.47
Cocoa	0.00	0.17	0.17
Wine	0.44	15.16	15.60
Beer	0.00	44.55	44.55
Spirits	0.00	2.69	2.69
Soft drinks/Sugar sweetened beverages	2.17	3.26	5.44
Juice	2.73	8.81	11.54
Bottle Water	0.00	10.34	10.34
Soy, almond, coconut or other dairy alternatives	0.00	33.88	33.88

Waste Tracker Results

46 females and 45 males were represented in this survey.

Table 14.

Age Groups	Participants
0 - 14	7
15 - 64	47
65 - 84	20
85 - 100	2
?	15

Table 15.

Household Size	# of Households
1	8
2	19
3	11
4+	3

Both spring and summer 2021 survey results are included below. 41 households completed the Waste Tracker Survey which represents 91 people. Waste Tracker survey forms can be found in Appendix E. Survey data was projected for the entire year and scaled down for one Galiano Island community member.

Table 16.

Waste Category	Method/Waste Type	Annual Projections for one Galiano Island community member
Yard Waste (kg)	Burn	1041.43
	Compost	1290.00
	Dispose	535.00
Tires (#)	Dispose	2
Recycle Compost (kg)	Paper	1701.986
	Metal	805.246
	Glass	2817.698
	Plastic	1009.606
	Food Compost	7233.85
	Textiles	218.4
	Other	18.98
Burn (kg)	Paper	551.356
	Wood Waste	1.04
	Other	0

Listed below are all of the large appliances, small appliances, batteries, and hazardous waste that survey respondents reported disposing of or recycling within the year 2021.

Table 17.

Category	Disposed	Recycled
Large Appliances	1 Fridge	1 Printer/fax
	1 Electric Stove	1 Range
	1 Couch	1 Washer
	1 Fridge	
	1 Rug	
	1 500g fibreglass tank	

	1 Washer	
	1 Drier	
	Chair	
	3 Tarps	
Small Appliances	1 Electric Kettle	2 Small Appliance
	1 Landline	2 Toaster Oven
	Computer cords	1 Sound Bar
	2 Phones	1 Computer
		1 Blender
		CD Player

Table 18.

Battery Type	Disposed
AA	158
AAA	118
C	8
D	12
12V	1
Car Battery	2
Misc.	65
Alkaline	20

Table 19.

Hazardous Materials - Disposed
8 gallons of paint
15 oil changes
1 pale of wood stain
1L anti-freeze
2L chainsaw oil
1 fluid flushing

Community Mail-Out Survey Results

Demographics

A total of 135 surveys were completed, representing 282 people, including 145 females, 121 males, and 16 people who did not report their gender. Within the survey, 12 participants identified as minorities and

7 identified as Indigenous. For the purpose of this survey, full-time residents were defined as residents that spend more than 180 days annually on Galiano Island, whereas part-time residents spend less than 180 days annually on Galiano Island. The survey represented 229 full-time residents and 53 part-time residents.

Table 20.

Age	# of Respondents
0 to 14	21
15 to 30	20
31 to 45	30
46 to 64	72
65 to 84	93
84 to 100	9
Unknown	26

Table 21.

Household Size	# of Respondents
1	33
2	77
3	10
4	10
5	5
6+	0

Food

Below is an average of responses to the question: "If someone in your household produces/grows their own food, how much land area and greenhouse square footage is used for production?"

Table 22.

Type of Resident	Average Garden/Greenhouse Space (sqft)
Full-time Residents	5644.31
Part-time Residents	95.73

Active Transportation

Below is the spread of responses to the question: "What percentage of on-island trips do you use active transportation (Biking and Walking)?"

Table 23.

On-Island Active Transport Trips	# of Respondents
0%	20
1 % - 10%	60
11% - 25%	19
26% - 50%	13
51% - 75%	10

76% - 99%	8
100%	2

Below is the spread of responses to the questions: “Do you personally feel safe biking on public roads around the island?” and “Do you personally feel safe walking on public roads around the island?”

Table 24.

Biking	Yes	30
	No	70
	Other	23
Walking	Yes	78
	No	36
	Other	16

Boat Fuel

Below is an average of responses to the question: “How much fuel does your boat(s) consume in a typical year?”

This response represents 25 out of 135 households, with respondents providing answers in terms of both quantity and cost.

Table 25.

Fuel Type	Quantity (L)	Cost (\$)
Gas	6307	2550
Diesel	3360	1480

Ferry Travel

Below is an average of responses to the question: “In a typical non-Covid year, how many round trips by ferry do you personally make off-island per year?”

Table 26.

Type of Resident	Annual roundtrip journeys by ferry
Full-time Residents	22.16

Part-time Residents	17.69
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Air Travel

115 full-time residents provided information on their annual flying habits. We assumed that all flights departed from YVR.

Below is a summary of full-time resident responses to the questions: “In a typical non-Covid year, how many one-way flights do you personally take per year (including seaplanes)?” and “Where are the flights to? (If possible please provide the city or country).”

Table 27.

Flight Distance	Destination	One-Way Trips
Short 500 km	Prince Rupert	8
	Kelowna	6
	Galiano to Vancouver	2
	Kamloops	5
Medium 500 - 3700km	Calgary	19
	Edmonton	6
	Kitchener, On	2
	Ottawa	6
	Toronto	27
	Thunder Bay	1
	Winnipeg	3
	Montreal	6
	L.A.	4
	San Francisco	5
	Appleton, Wis	2
	USA	14
Long 3700+ km	Hawaii	12

	Mexico	10
	Puerto Vallarta	3
	Europe	14
	UK	4
	Geneva	2
	France	4
	Germany	3
	Austria	2
	Nicaragua	3
	Cuba	2
	Dominican Republic	2
	Hong Kong	3
	Asia	5
	Japan	6
	Africa	5
	Uruguay	2
	New Zealand	2

20 part-time residents provided information on their annual flying habits. We assumed that all flights departed from YVR.

Below is a summary of part-time resident responses to the questions: "In a typical non-Covid year, how many one-way flights do you personally take per year (including seaplanes)?" and "Where are the flights to? (If possible please provide the city or country)."

Table 28.

Flight Distance	Destination	One-Way Trips
Medium 500-3700km+	Kitchener, On	4
	Ottawa	2
	Montreal	2

	Fredericton, NB	2
	Halifax	20
	San Francisco	2
	Orlando	2
	New York	4
Long 3700+ km	Amsterdam	5
	Germany	1
	Europe	2
	Asia	2

Energy

Below is a summary of responses to the questions: “What is your household’s estimated annual consumption of wood?”, “What is your household’s estimated annual consumption of heating oil?”, and “What is your household’s estimated annual consumption of propane?”

Table 29.

Fuel	Full-time residents (115 HH)	Part-time residents (20 HH)
Wood (cords)	196.61	16.8
Propane (lbs)	5784	770
Heating Oil (G)	5784	0

Sustainability

Below is a summary of responses to a question about participation in various “sustainable lifestyle choices.” Respondents were able to select multiple responses.

Table 30.

Sustainable Lifestyle Choices	Respondents	Percentage of Respondents
Preserve my own Food	96	71.11%
Hunt/fish locally	28	20.74%
Own an e-bike	18	13.33%
On-grid Solar	14	10.37%
Off-grid Solar	9	6.67%

Wind Turbine	4	2.96%
Compost Toilets	21	15.56%
Personal Compost	98	72.59%
Dual System Toilets	23	17.04%
Rain Barrels	69	51.11%
Greywater Systems	23	17.04%
Cistern (Rainwater)	51	37.78%
Well	109	80.74%

Qualitative Questions

Below is the spread of responses to the question: “Do you think climate change will personally affect you?”

Table 31.

Answer	Responses
Yes	132
No	0
Not Sure	1

Below is a summary of responses to the follow-up questions: “If yes, how do you anticipate it will affect you? Are you already being impacted? If so, how?” Respondents were able to select multiple answers, and were also able to provide their own answers to the question.

Table 32.

Response Theme	# of Respondents	Response Theme	# of Respondents
Water Accessibility	69	Mental Health	4
Heat Waves/Temp	46	Less Travel	4
Fire	39	Lifestyle Change	4
Agriculture Water Supply/Poor growing conditions	36	Harsh Winters	4
Extreme Weather	29	Every Aspect	4
Food Production/Availability	25	Decreased Hunting and Fishing	3

Air Quality and Smoke	18	Power Outages	3
Increased Food Prices	14	Immigration & World Conflict	3
Biodiversity/Wildlife	13	Increased Insurance	3
Cedar (negative impacts)	11	"We should all work together"	1
Food Diversity	9	Climate Migration	1
Rising Tides	8	Will affect my Job	1
Increase energy consumption and cost	8	Pressure on Emergency Services	1
Marine (negative impacts)	6	Misinformation	1
Firs (negative impacts)	5		

Below is the spread of responses to the question: "Do you think that Galiano Residents are living sustainably?"

Table 33.

Response	# of Respondents
Yes	11
No	48
Other (I don't know)	58

Below is a summary of responses to the follow-up question: "Where do you think the Galiano Island Community can improve?" Respondents were able to select multiple answers, and were also able to provide their own answers to the question. 108 respondents provided answers.

Table 34.

Response Theme	# of Respondents	Response Theme	# of Respondents
Transit	19	Forest Thinning	2
Bike Paths	16	Less Tourism	2

Increased Programs and Awareness*	15	Rainwater Catchment	1
More Food Production	15	Car Pooling	1
Electric Cars	12	Electric Boats/Ferry	1
Water Conservation	10	More Local Economy	1
Solar	9	Easier Rezoning	1
Affordable Housing	7	Sustainable Forestry	1
Reduce Waste	5	Indigenous Practices	1
EV Charging Stations	3	Land Back	1
Improve Heating Systems	3	Wind Turbines	1
Increase Energy Production	2	Public Docks	1
Hunting and Foraging	2	Limit Population	1
Gardening	2	Affordable Food On Island	1

*Below are comments that were provided with some of the “Increased Programs and Awareness” responses.

- “Discussion/education about sustainability”
- “Education for all landowners to conserve, resume & whatever we have to do to be able to all live together on Galiano Island.”
- “Better education by locals who have short term visitors so the visitors conserve more”
- “We need more education about our freshwater resources and the fact that we are all holding hands on our aquifers’ ability to sustain us.”
- “Very concerned about the lack of knowledge and awareness of freshwater resources by our PT, FT residents, and visitors.”
- “Learn about ecosystem capacity”
- “Having more on-island resources”
- “I’d like to see programs and awareness seminars around water conservation, local ecology including land restoration and sustainable foraging, fire risk reduction, burning consequences.”

Data Extracted from ArcGIS Datasets

Below is the data extracted from datasets that were provided by the Islands Trust using ArcGIS pro: Structure Points, 2017 and Zoning, 2019.

Table 35.

Zoning	# of Structures
Residential	1771
Commercial	65
Institutional	37
Agricultural	14

Below is the data extracted from the Islands Trust, 2019 Zoning dataset and the GCA's 2021 Land Use Map.

Table 36.

Zoning	Area (km ²)
Residential	6.30
Commercial	0.14
Institutional	0.11
Agricultural	0.13

Below is the data extracted from the following datasets: CRD Roads, the Galiano Trail Network Master, 2020 and MLC Trails, 2021.

Table 37.

Transportation	Area (km ²)
Trails	0.12
Paved Roads	0.25
Non-Paved Roads	2.78

Appendix E : Community Surveys

Odometer Survey - Part 1

1. Date (include day, month, year):
2. What is your email? (We will use this email to invite your family to record your odometer reading again in Fall 2021)
3. In a typical week, how many days do you spend on Galiano Island?
4. How many vehicles does your family own?
5. Depending on how many vehicles your family owns, complete the boxes below:

Vehicle 1

What is the odometer reading of your family's vehicle? _____

What unit is your odometer reading expressed in? (please check the correct box)

- ☐ ☐ Kilometers
☐ ☐ Miles

What is your vehicle Year, Make and Model? (e.g., 2010 Ford Explorer, 2006 Honda Civic, 2018 Nissan Leaf)

What is the primary use of your family's vehicle? (please check the correct box)

- ☐ ☐ Personal

☐ Commercial

What is the Year, Make, and Model of your family's vehicle? _____

Vehicle 2 (if your family has two vehicles)

What is the odometer reading of your family's vehicle? _____

What unit is your odometer reading expressed in? (please check the correct box)

☐ Kilometers

☐ Miles

What is your vehicle Year, Make and Model? (e.g., 2010 Ford Explorer, 2006 Honda Civic, 2018 Nissan Leaf)

What is the primary use of your family's vehicle? (please check the correct box)

☐ Personal

☐ Commercial

What is the Year, Make, and Model of your family's vehicle? _____

Vehicle 3 (if your family has three vehicles)

What is the odometer reading of your family's vehicle? _____

What unit is your odometer reading expressed in? (please check the correct box)

☐ Kilometers

☐ Miles

What is your vehicle Year, Make and Model? (e.g., 2010 Ford Explorer, 2006 Honda Civic, 2018 Nissan Leaf)

What is the primary use of your vehicle? (please check the correct box)

- ☐ ☐ Personal
☐ ☐ Commercial

What is the Year, Make, and Model of your family's vehicle? -----

Odometer Survey - Part 2

Thank you for participating in the Galiano Conservancy's data collection initiative to estimate the amount of vehicle kilometers traveled by the Galiano community! All information collected will remain anonymous.

You are receiving this survey because you submitted your odometer reading in the Winter/Spring (Part 1). Now we are asking you to resubmit your odometer reading to complete Part 2. We will calculate the difference between your two odometer readings to estimate how many kilometers the Galiano community drives in a year.

The data collected in this study will be used to contribute to the calculation of Galiano Island's ecological footprint. Only aggregated data will be presented - no individual information or data will be distributed. Study results will be presented at public events and in public reports, and may be submitted for publication in scientific journals.

If you do not wish to have your data included in this study, please exit the survey now. If at any point in the future you wish to have your results removed from the study, please email oneisland@galianoconservancy.ca.

1. Date (include day, month, year):
2. What is your email? (We will use this email to invite your family to record your odometer reading again in Fall 2021)

Vehicle 1

a) What is the odometer reading of your family's vehicle? -----

b) What unit is your odometer reading expressed in? (please check the correct box)

☐ ☐ Kilometers

☐ ☐ Miles

c) What is your vehicle Year, Make and Model? (e.g., 2010 Ford Explorer, 2006 Honda Civic, 2018 Nissan Leaf)

d) What is the primary use of your family's vehicle? (please check the correct box)

☐ ☐ Personal

☐ ☐ Commercial

e) What is the Year, Make, and Model of your family's vehicle? -----

Vehicle 2 (if your family has two vehicles)

a) What is the odometer reading of your family's vehicle? -----

b) What unit is your odometer reading expressed in? (please check the correct box)

☐ ☐ Kilometers

☐ ☐ Miles

c) What is your vehicle Year, Make and Model? (e.g., 2010 Ford Explorer, 2006 Honda Civic, 2018 Nissan Leaf)

d) What is the primary use of your family's vehicle? (please check the correct box)

☐ ☐ Personal

☐ ☐ Commercial

e) What is the Year, Make, and Model of your family's vehicle? -----

Vehicle 3 (if your family has three vehicles)

a) What is the odometer reading of your family's vehicle? _____

b) What unit is your odometer reading expressed in? (please check the correct box)

☐ ☐ Kilometers

☐ ☐ Miles

c) What is your vehicle Year, Make and Model? (e.g., 2010 Ford Explorer, 2006 Honda Civic, 2018 Nissan Leaf)

d) What is the primary use of your vehicle? (please check the correct box)

☐ ☐ Personal

☐ ☐ Commercial

e) What is the Year, Make, and Model of your family's vehicle? _____

One Island One Earth

Summer Food Diary Initiative

Thank you for participating in the Galiano Conservancy's Food Diary activity and contributing to the *One Island One Earth* Ecological Footprint Initiative. The instructions and data recording sheets for the activity are included in this package.

Food Diary Datasheet Instructions

Step 1: Read over the Food Diary Data Recording Sheet to familiarize yourself with how foods are grouped, and how serving sizes are defined. Generic serving size guidelines are provided for food groups as a whole; these sometimes differ from serving size guidelines provided for specific items. When there is a discrepancy, use the serving size guideline for the specific items (e.g., rice) rather than the group (e.g., Grains & Cereals).

Step 2: Put the Data Recording Sheet on your fridge (or somewhere else accessible) with a pen nearby. You can use the same Data Recording Sheet for your entire household.

Step 3: Each time you eat something, place a tick mark in the corresponding box on the Data Recording Sheet. One tick mark is equal to one serving size. Please only tally **once**.

- If you eat one Galiano Produced serving (Ingredients) place a tick in the box on the right.

If you eat one Off-Island serving, place a tick in the left box.

Definitions for the purpose of this study

Off-Island Food: All food (ingredients) produced off of Galiano Island.

Galiano Produced Food: Food grown on Galiano Island – foraged or hunted on Galiano, grown in your backyard, harvested from a community garden, purchased from the local farmers market, or labeled as produced on Galiano at the grocery store.

Step 4: Continue to track everything you eat for **1 week**.

Important Notes:

- (a) Do not track partial servings. If you eat less than half a serving, do not count it. If you eat over half a serving, count it as one. Spices and condiments are generally less than half a serving, so you do not need to track them.
- (b) For processed food items, such as chips, salsa, jam/jelly, or ice cream, only include the item in the category of the primary ingredient (i.e., each processed food item goes in one category). For example, the primary ingredient for many ice cream brands is either milk or cream. Ice cream is not listed as an example under the dairy product categories, so use the generic dairy product serving size, $\frac{1}{2}$ a cup. Depending on if the primary ingredient is cream or milk, place one tick in the appropriate box for every $\frac{1}{2}$ cup you consume.
- (c) If there is something you would like to share about your eating habits that you feel isn't captured (e.g., you make efforts to purchase food from local BC food producers, you bake your own bread etc.), please share in your answer to the survey question on page 15: Is there anything else we should know?

Tips:

- (1) If you are cooking a dish for the week, such as soup, it can be easier to add your tick marks ahead of time when cooking, rather than each time you eat a serving of the soup.
- (2) You may find that using a different colour pen for different people in your household, or for different days of the week, will help you to keep track of what has been recorded (this is optional based on your preference).

Step 5: After 1 week, count the tick marks in each box, and neatly write the number of ticks in the bottom corner of the box.

**All information collected as a part of this activity will remain anonymous. Only aggregated data will be presented in our public results. The food groupings, serving size information, and definitions presented on the Data Recording Sheet are provided by the BCIT Centre for Ecocities.*

Galiano Food Consumption Summer Survey

Please write your response to each question in the boxes below and fill out the Data Recording Sheet.

1. During a typical week, how many days do you spend on Galiano Island? (highlight the correct response, if it depends on the season, please specify)

1 2 3 4 5 6 7

2. How long have you lived on Galiano? (please highlight the correct answer)

Less than 1 year 1-4 years 5-10 years 11-20 years more than 20 years

3. How many people are represented on your Data Tracking Sheet? What are their ages and gender identities?

4. How many people live in your household, and what type of dwelling(s) do you live in? (e.g., single detached home, mobile home, motor home, other)

Number of people in your household:

Type of dwelling(s):

5. What part of the island do you live on?

North Middle South



6. If you produce your own food, how much land area is used for production?

7. Typically, what portion of your food do you purchase (or forage/hunt/grow) on island, and what portion do you purchase (or forage/hunt) off island?

% on Galiano:

% off island:

8. Were there any food items missing from the Data Tracking Sheet? (Please list)

9. What worked well with the food diary activity, what could be improved?

10. Is there anything else we should know?

11. What is your email? (we will use this to enter you in a monthly draw)

Summer Food Diary - Data Recording Sheet

Please track the number of food servings you eat over **one week** using the categories listed below:

	Notes/Examples of One Serving	Off-Island Servings	*Galiano Produced Servings
FRUITS AND VEGETABLES	<p>1 serving = 0.5 cups raw or 0.25 cups dried (roughly 66g)</p> <p><i>This is equivalent to:</i> 8 cups of popped popcorn, 20 potato chips, 6 asparagus spears, 4 cauliflower/broccoli/gai lan florets, 1 apple/orange/banana/ear of corn/large carrot/stalk of celery, ½ avocado/mango/ grapefruit/potato/pepper, or 1 cup of raw (1/2 cup cooked) lettuce/spinach/leafy greens.</p> <p><i>Include fresh/frozen corn as a vegetable (products made from corn flour are included with grains).</i></p>		
GRAINS & CEREALS	<p>1 serving = 0.5 cup or 1 slice of bread (roughly 40g)</p> <p><i>This is equivalent to the examples listed below:</i></p>		
Rice	<p><i>Include products with the primary ingredient of rice.</i></p> <p>1/4 cup of cooked rice.</p>		
Wheat & Other Cereals	<p><i>Include products with the primary ingredient wheat, corn, quinoa, millet, barley, rye, oats, spelt, kamut and all other grains (other than rice). Do not include cookies or cake (they are counted with sweeteners).</i></p> <p>1 cup of breakfast cereal, a slice of bread, half a bagel or pita, a granola bar, 13 soda crackers, ½ cup of cooked pasta or ramen noodles, ¼ cup of cooked quinoa, millet, or barley.</p>		

FISH/SEAFOOD, MEAT, EGGS	1 serving = 0.5 cup (cooked) or 2 eggs <i>This is equivalent to the examples listed below:</i>		
Fish/Seafood	1 piece of cooked fish similar in size to a deck of playing cards (cooked serving weight=75g, raw serving weight=130g – excluding bone)		
Beef or Veal	1 piece of cooked beef or veal similar in size to a deck of playing cards (cooked serving weight=75g, raw serving weight=130g – excluding bone)		
Pork	1 piece of cooked pork similar in size to a deck of playing cards (cooked serving weight=75g, raw serving weight=130g – excluding bone)		
Lamb/other	1 piece of cooked lamb similar in size to a deck of playing cards (cooked serving weight=75g, raw serving weight=130g – excluding bone)		
Poultry	1 piece of cooked chicken, turkey, duck similar in size to a deck of playing cards (cooked serving weight=75g, raw serving weight=130g – excluding bone)		
Venison/Wild Game Meat	1 piece of cooked venison/wild game meat similar in size to a deck of playing cards (cooked serving weight=75g, raw serving weight=130g – excluding bone)		
Eggs	2 eggs		
DAIRY PRODUCTS	<i>This does not include products derived from soy, almond, coconut or other alternatives to dairy products (which are included in beverages), nor chocolate (which is counted with sweeteners).</i> 1 serving = 1/2 cup, one-inch cube, or 1 ‘pat’ <i>This is equivalent to the examples listed below:</i>		

Milk, Yogurt, Cottage Cheese	½ cup of any animal milk, yogurt, or cottage cheese (cow, goat, sheep, all fat levels, lactose reduced, etc.)		
Cream	1 tbsp of cream or 1 individual container		
Cheese	1 one-inch cube of cheese or cream cheese		
Butter	1 ‘pat’ or 1 tsp of butter		
OILS, NUTS, SEEDS, LEGUMES	1 serving = 1 tbsp, 0.5 cup or a handful <i>This is equivalent to the examples listed below:</i>		
Oils	1 tbsp of oil		
Seeds	1 tbsp of shelled seeds		
Nuts	20 (1/2 cup) almonds or a similar sized handful of shelled tree nuts or peanuts, 5 tbs nut butter		
Legumes	1/2 cup of cooked beans, lentils, soybeans/tofu		
SWEETENERS	1 serving = 2 tsp of sugar/sweetener (8g) <i>This is equivalent to the examples listed below:</i>		
Sugar	2 tsp of sugar, 1 square inch of chocolate, 2 regular sized cookies, or ½ of a slice of cake		

Honey	2 tsp of honey		
Maple Syrup	2 tsp of maple syrup		
COFFEE, TEA, COCOA	1 serving = 1 cup of tea, coffee or cocoa <i>This is equivalent to the examples listed below:</i>		
Coffee	1 tbsp of coffee grounds		
Tea/Kombucha	1 teabag, 1 tsp of loose tea, 1 cup of Kombucha		
Cocoa	1 tbsp of cocoa		
OTHER BEVERAGES	1 serving = 1 cup/250 ml, or 1 can/bottle <i>This is equivalent to the examples listed below:</i>		
Wine	250 ml		
Beer/Cider	1 can/bottle of beer/Cider (340-355 ml)		
Spirits	1 single shot or 44 ml		
Soft drinks/Sugar sweetened beverages	1 can/bottle of pop (340-355 ml)		

Juice	1 individual juice box (~ 250 ml)		
Bottled Water	1 bottle		
Soy, almond, coconut or other dairy product alternatives	250 ml		

Notes: - **Do not track partial servings.** If you eat less than half a serving, do not count it. If you eat over half a serving, count it as one. Since spices and condiments are often less than half a serving, you do not need to track them.

- For processed food items, such as chips and salsa, **only** include it in the category of the primary ingredient. For example, potato chips, corn chips and salsa would each be listed under the vegetable category; chocolate, cookies, and cake would be listed under the sugar category.

***Galiano Produced Food:** Include food grown on Galiano – foraged or hunted on Galiano, grown in your backyard, harvested from a community garden, purchased from the local farmers market, or labeled as produced on Galiano at the grocery store.

Do not include food prepared on Galiano with ingredients from elsewhere (e.g., bread you made with flour from off-island).

The food groupings, serving size information, and definitions presented on this sheet are provided by the BCIT Centre for Ecocities.

Waste Tracker

Summer Household Waste Tracking Initiative

Please write your response to each question in the boxes below and fill out the Data Recording Sheet.

1. During a typical week, how many days do you spend on Galiano Island? (highlight the correct response, if it depends on the season, please specify)

1 2 3 4 5 6 7

2. During the two-week waste tracking program, how many days did you spend on Galiano Island? (please highlight the correct response)

1 2 3 4 5 6 7 8 9 10 11 12 13 14

3. How many people live in your household? What are their ages and gender identities?

4. What type of dwelling(s) do you live in? (e.g., single detached home, mobile home, motor home, other)

5. What part of the island do you live on?

(please highlight the correct answer)



North Middle South

6. Typically, what portion of your recycling do you bring to the Galiano Recycling Centre, and what portion do you bring off island?

% Galiano Recycling Centre:

% off island:

7. If you have a wood stove, how many cords of wood do you typically burn over the course of a year?

8. Over the course of a year, what volume of yard waste do you typically burn, compost, and dispose of? (see images to help with your estimate of volume)

- Burn –

- Compost –

- Dispose –



9. Please list any large appliances or household items (e.g., a couch, washing machine) you disposed of over the course of 2020, and indicate how you disposed of it (e.g., sold to someone on Galiano, brought to landfill off island, storing for future disposal):

10. Please list any small appliances or electronics (e.g., toaster, computer, phone) you disposed of over the course of 2020, and indicate how you disposed of it (e.g., recycled, sold to someone on Galiano, brought to landfill off island, storing for future disposal):

11. Over the course of 2020, approximately how much of the following materials did you get rid of?

- *Tires* - disposed _____; recycled _____
- *Batteries* – Disposed (please list type and quantity):

Recycled (please list type and quantity):

- *Hazardous Materials* (cans of paint, automotive fluids etc.):

Disposed (please list each item and specify estimated volume):

Recycled (please list each item and specify estimated volume):

12. What is your email? (we will use this to enter you in a monthly draw)

13. Is there anything else we should know?

Thank you for your participation!

Start Date:

End Date:

Data Recording Sheet - Household Waste Tracking

Please indicate the weight of the waste you collected over two weeks. *Make sure to include which unit you are reporting in (e.g., lbs, kg)*

Category	Description/Examples	Weight (unit: lbs, kg etc.)
Garbage - Solid Waste Disposed of that will end up in a landfill		
Garbage	Anything you dispose of via garbage drop-off on Galiano, garbage pick-up at your Galiano residence, and garbage you take from Galiano to dispose of off-island.	
Recycling and Compost - Solid Waste Diverted from the landfill		
Paper Products: fibre paper/boxboard, corrugated cardboard, mixed paper	coffee cups, milk cartons, juice cartons , frozen food boxes, cereal boxes, egg cartons, drink trays, pulp produce trays, pizza boxes, mail delivery/ product packaging boxes, brown retail/grocery bags, printed paper, magazines, telephones directories, newspaper, envelopes, office paper, etc.	
Metals: ferrous food/drink packing, ferrous other, non-ferrous and bimetallic, mixed metals	soft drink cans, beer cans, food cans (beans, soup, peaches etc.), metal parts, etc.	
Glass	food/drink packaging (pickle jars, sauce jars, wine bottles, liquor bottles), etc.	

Plastic: PET, HDPE, durable plastic, film, other	bottles and jugs (drinks, cooking oil, shampoo, etc.), yoghurt containers, clear food containers (muffins, berries etc.), flexible film (bread bags, grocery bags etc.), etc.	
Food Compost	uneaten food, fruit and vegetable peels & cores, bones, etc.	
Natural Fiber Textiles	wool, cotton, silk, etc.	
Other: Please specify		
Waste Accumulated that you Plan to Burn - do not include yard waste		
Paper Products: fibre paper/boxboard, corrugated cardboard, mixed paper	see examples listed above	
Wood Waste	A wooden bowl, box, picture frame etc. <i>Not</i> construction or demolition waste (e.g., Pallets, furniture), <i>not</i> wood chopped specifically for the wood stove (this is captured later)	
Other: Please specify		

Note: The following items are not listed in the table above as they will be captured in the survey, where you will provide an annual estimate: tires, batteries, electronics, appliances, furniture, hazardous waste, yard waste, wood chopped for wood stove.

Community Mail-Out Survey

Project Description

This year, the Galiano Conservancy is working with the BCIT Centre for Ecocities to document the **Ecological Footprint of Galiano Island**. The project will capture the impacts that our community places on natural resources, including: resources needed to grow food, regenerate timber, build infrastructure, and absorb greenhouse gas emissions from burning fossil fuels.

We need your help to do this! Existing ecological footprint methodologies are currently tailored towards the urban context, requiring access to centralized data records which Galiano doesn't have. That's where you come in - helping us build these records from the ground up.

How will your data contribute?

By participating in this survey, you are:

- Helping Galiano be the first Island in North America to document its Ecological Footprint
- Starting the conversation about Galiano Island's own Climate Action Plan
- Creating a blueprint for other small island communities to follow our lead

Survey Details

The survey will take about 10 minutes to complete. Both part-time and full-time residents can participate. All information and data collected will remain anonymous. Only aggregated data will be presented publicly - no individual information or data will be distributed. If you do not wish to have your data included in this study, please do not submit your results. If you decide you would like your results removed from the study after submission, please contact the GCA.

Demographic Information

1. How many people live in your **household**? What are their ages and gender identities?

2a. During a typical week, how many days do **you** spend on Galiano Island? (highlight the correct response, if it depends on the season, please specify)

1 2 3 4 5 6 7

2b. What months of the year do you occupy this residence?

3. Please identify how many people in your **household** self-identify as an Indigenous person.

0 1 2 3 4 5 6 7 8

4. Please identify how many people in your **household** self-identify as a visible minority.

0 1 2 3 4 5 6 7 8

Transportation

5. What percent of on island trips do **you** personally use active transport? (walking or biking)

0% Less than 10% 11%-25% 26%-50% 51%-75% 76%-99% 100%

6. Do **you** personally feel safe _____ on public roads around the island?

Biking Yes No

Walking Yes No

7a. In a typical non-COVID year, how many **one-way** flights do **you** personally take per year?

7b. Where are the flights to? (If possible please provide the city or country)

8a. In a typical non-COVID year, how many trips by ferry, do **you** personally make off island per year?

8b. Where are the majority of the trips to?

8c. Where are the other trips to?

8d. What is the primary purpose of those trips? (Select all that apply)

- ☐ Groceries & Products
- ☐ Vacation
- ☐ Visit Family
- ☐ Work
- ☐ Waste Disposal
- ☐ Medical Appointments
- ☐ Other

Energy, Water, Waste, and Food

9a. Where does your **household** get the majority of your potable water

- Well – Untreated
- Well – Treated (Filtration system, water softener, distillation systems, disinfectant)
- Bottled Water
- Rainwater Harvesting

9b. Do you ever run out of water?

Yes

No

10. Does your **household** have a septic tank?

Yes

No

11. What is the square footage of your residence on Galiano Island?

12. In the Fall, Winter and Spring – Estimate what percent of your total household food consumption is Galiano produced?

13. In the Summer – Estimate what percent of your total household food consumption is Galiano produced?

14a. How do you heat your home? (Check all that apply)

- ☐ Heat pump
- ☐ Wood stove
- ☐ Electric heater(s)
- ☐ Heating oil
- ☐ Propane
- ☐ Other

14b. What is your **household's** estimated annual consumption of:

Propane (lbs):

Heating Oil (Tank Size or Gallons):

Wood (Cords):

15. Typically, what portion of your recycling does your **household** bring to the Galiano Recycling Center, and what portion do you bring off island?

% Galiano Recycling Center:

% off island:

16. If someone in your household produces/grows their own food, how much land area and greenhouse square footage is used for production?

17a. What are the barriers for **you** to buy food locally? (Tick all that apply)

	First Choice	Second Choice	Third Choice
No barriers, I buy locally as much as possible			
Kinds of food available			
Year-round availability			
Cost			
Lack of processed or pre-made foods			
Lack of connection to local producers			
Other			

17b. If other, please specify.

18a. Do you or anyone in your **household** own a personal boat(s)?

No

Yes – 1 Boat

Yes – Multiple Boats

18b. How much fuel does your boat(s) consume in a typical year? (Please specify if your answer is in Liters or Dollars)

18c. What type of fuel?

Sustainability

19a. Do you think climate change will personally affect **you**?

Yes

No

19b. If yes, how do you anticipate it will affect you? Are you already being impacted? If so, how?

20a. Select all that apply to your household:

- ☐ Preserve my own food
- ☐ Hunt/fish locally
- ☐ Own an e-bike
- ☐ On-Grid Solar Panels
- ☐ Off-Grid Solar Panels
- ☐ Wind Turbine
- ☐ Compost Toilet(s)
- ☐ Use a personal Compost
- ☐ Dual System Toilets
- ☐ Rain Barrels
- ☐ Greywater Systems
- ☐ Cistern/Tanks
- ☐ Well

20b. If you have solar panels or wind turbines, please estimate how much energy (kWh) your household produces in a year?

21a. Are there any sustainable lifestyle changes that **you** would like to make but are currently out of reach? E.g Electrical car, solar panels, grow your own food

21b. What barriers are **you** currently facing? (Select all that apply)

	First Choice	Second Choice	Third Choice
Lack of knowledge			
Cost			
Not the property owner			
Geographical			
Time and Capacity			
Accessibility of Contractors and Trades workers			
Other			

21c. If others please specify.

22a. Do you think Galiano Island residents are living **sustainably**?

Yes

No

Other

22b. Where do you think the Galiano Island community can improve?

23. Is there anything else that you think we should know? We would love to hear your comments and ideas.

24. We will be conducting Oral History interviews to highlight the voices of those whose experience can provide insight on the past, present, and future of the Galiano Island Community. Do you know someone that we should interview?

Contact Information

25. What is your email address? (we will use this to enter you in a monthly draw)

26. Would you like us to email you about our other data collection initiatives? The first 40 households to complete all 4 initiatives will get a **\$20 gift card** to the GCA.

Yes

No

Thank you for your participation!

Glossary

Key Terms

Biocapacity - Biocapacity represents the productive potential of an area's biologically productive land and water surface; in other words, the capacity for ecosystems to regenerate plant matter. Biocapacity is measured in global hectares (gha).

BCIT Centre for Ecocities - An arm of the British Columbia Institute of Technology with the mission "to help cities and communities close their sustainability gap."

Tonnes of Carbon Dioxide Equivalent (tCO₂e) - Carbon Dioxide Equivalence expresses the impact of each different greenhouse gas in terms of the amount of CO₂ that would create the same amount of warming when released into the atmosphere. This enables reporting total greenhouse gas emissions with one measurement.

Carbon Sequestration - A natural or artificial process by which carbon dioxide is removed from the atmosphere and held in solid or liquid form.

Carrying Capacity - The number of people, animals, or crops which a region can support without environmental degradation.

Climate Crisis - Refers to the planetary threat posed by continued anthropogenic emissions of greenhouse gases into the atmosphere; the term has come to replace 'climate change' and 'global warming' in discourses concerning global climate.

Consumption-based Emissions Inventory (CBEI) - A form of greenhouse gas emissions inventory that enables a region to quantify the emissions that are attributable to activities of individuals that reside within that region. CBEIs do not replace traditional 'territorial' inventories (see below), but rather they are complementary to them. CBEIs include the emissions that are generated during the production, shipping, use and disposal of all goods consumed in the region, regardless of where they are produced, as well as the impacts of residents and local businesses while they are travelling outside the community's borders.

ecoCity Footprint Tool - A tool developed by Dr. Jennie Moore, with the capacity to create multiple outputs for a community using "bottom-up" data sets: a territorial greenhouse gas emissions inventory, a consumption-based greenhouse gas emissions inventory, and an ecological footprint. See ecocityfootprint.org

Ecological Fingerprint - An evaluation of the particular attitude, self-image and intrinsic values a community adopts with respect to global resource use.

Ecological Footprint - An estimate of how much biologically productive land and water area an individual or population needs to produce all the resources it consumes and to absorb the waste it generates; in other words, the area that would be required to support a defined human population and material standard indefinitely. It is measured in global hectares (gha), where a global hectare is a biologically productive hectare with globally averaged productivity for that year.

Ecosystem Services - The direct and indirect contributions of ecosystems to human well-being. Ecosystems services including provisioning, regulating, supporting, and cultural values.

Embodied Energy - Energy used in creating and delivering a material (e.g., consumable good or infrastructure), including energy used for extraction of raw materials, manufacturing and transportation of the end product.

Embodied Emissions - Greenhouse gas emissions associated with creating and delivering a material (e.g., consumable goods or infrastructure), including those associated with energy used for extraction of raw materials, manufacturing and transportation of the end product.

Exclusive Economic Zone (EEZ) - The area of the sea in which a given nation state asserts special rights regarding the exploration and use of marine resources. In Canada, the EEZ extends 370 kilometers offshore.

Food Miles - The distance food travels from where it is grown or made to where it is purchased or consumed by the end user.

Global Hectares (gha) - A global hectare (gha) is a unit of biocapacity, representing the productivity of a bioproductive hectare on earth with average productivity. There are just over 12 billion biologically productive hectares on Earth. Global hectares are often expressed in terms of global hectares per capita (gha/ca).

Global Footprint Network - An international nonprofit organization founded in 2003 with a mission “to help end ecological overshoot by making ecological limits central to decision-making.”

Islands Trust - The Islands Trust is a special purpose government mandated to preserve and protect over 450 Islands in the Salish Sea. The Province of British Columbia created the Islands Trust in 1974 in response to the potential environmental effects of dense residential subdivisions that were in development in the Gulf Islands. The mandate of the Island 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 British Columbia in cooperation with municipalities, regional districts, improvement districts, First Nations, other persons and organizations and the government of British Columbia.”

Net Primary Production - The difference between the energy fixed by autotrophs and their respiration; most commonly equated to increments in biomass per unit of land surface and time.

One Planet Living - A lifestyle that, if adopted by everyone, could be supported indefinitely by the regenerative capacity of Earth's ecosystems.

Operating Energy - The energy used in the function of a product, building, vehicle, etc.

Operating Emissions - The greenhouse gas emissions associated with operating energy.

Overshoot - Global overshoot occurs when humanity's demand on nature exceeds the biosphere's regenerative capacity or supply. Such overshoot leads to a depletion of Earth's life-supporting natural capital, including the buildup of waste such as ocean acidification from excessive CO₂ or climate change from greenhouse gas accumulation in the atmosphere.

Rockfish Conservation Areas - Areas designated by Fisheries and Oceans Canada where any fishing activities that impact on rockfish, lingcod, or their habitat (including activities resulting in bycatch of these species) are prohibited.

Senior Government Services - Services provided by Federal and Provincial governments to the citizenry; in Canada, this includes military, health care, administrative, and other high-level services that aren't accounted for at the local level.

Sustainability Gap - The difference between the estimated Ecological Footprint of a population and the Ecological Footprint that would achieve "One Planet Living" (see above).

Territorial Emissions Inventory - Also known as a Sectoral Inventory, a territorial inventory identifies direct greenhouse gas (GHG) emissions from all sources within a region. This is the standard type of GHG emissions inventory compiled by local, regional, provincial and federal governments.

A standardized approach to territorial inventories is prescribed by the GPC (Global Protocol for Community-Scale Greenhouse Gas Emissions Protocol).

Two-eyed seeing - According to Mi'kmaw Elder Albert Marshall: "to see from one eye with the strengths of Indigenous ways of knowing, and to see from the other eye with the strengths of Western ways of knowing, and to use both of these eyes together"

Acronyms

BCIT - British Columbia Institute of Technology

CBEI - Consumption-based Emissions Inventory

CRD - Capital Regional District

CSPGS - Coast Salish Peoples of Galiano Society

CO₂/Co₂e - Carbon dioxide/Carbon dioxide equivalent

EF - Ecological Footprint

eF Tool - ecoCity Footprint Tool

EEZ - Exclusive Economic Zone

GCA - Galiano Conservancy Association

GFN - Global Footprint Network

gha - Global Hectares

gha/ca - Global Hectares per Capita (person)

ghg - Greenhouse Gas

GIRR - Galiano Island Recycling Resources

GPC - Global Protocol for Community-Scale Greenhouse Gas Emissions Protocol

ICBC - Insurance Corporation of British Columbia

MSW - Municipal Solid Waste

NPP - Net Primary Production

RCA - RockFish Conservation Area

SSREC - Salish Sea Renewable Energy Co-op