

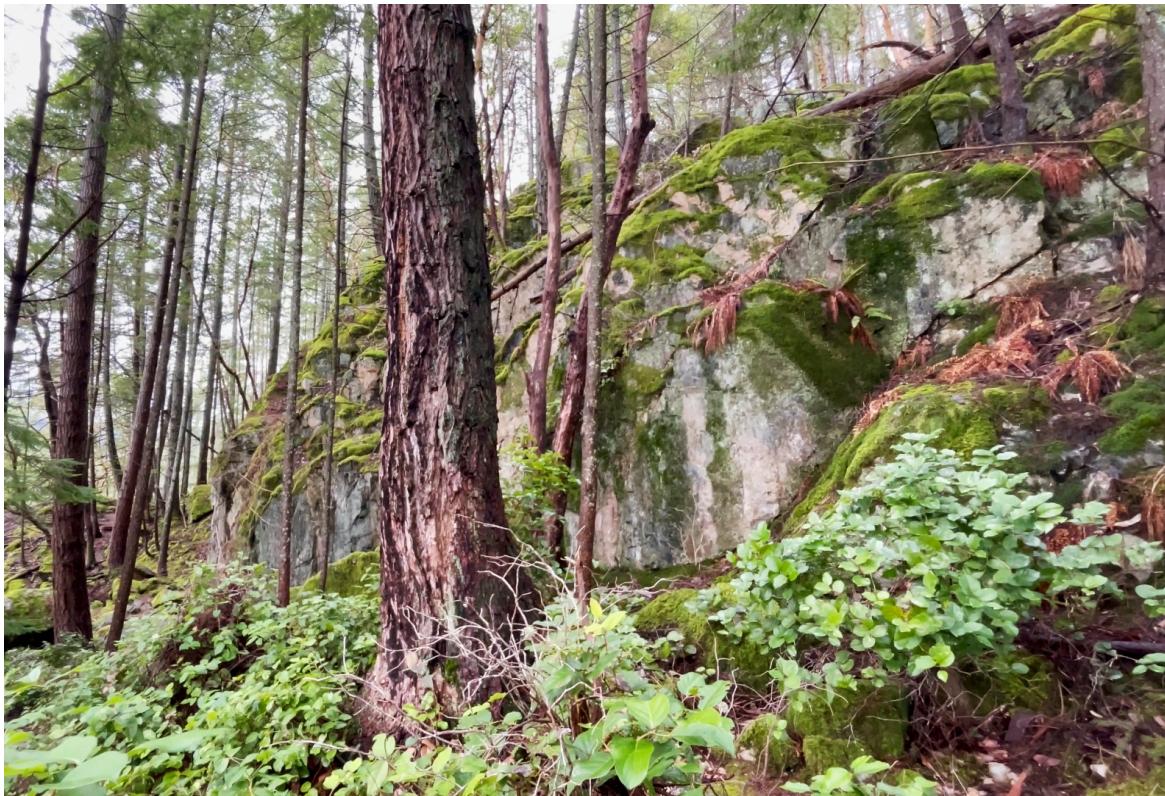


Bowen Island
Conservancy



DATA ATLAS:

In support of the development of a Bowen Island Biodiversity Plan



Prepared by:

Jay Matsushiba, MSc

Wendy Palen, PhD

Tom Sisk, PhD

Table of Contents

DATA ATLAS:	1
1. OVERVIEW.....	3
1.1 TRANSPORTATION NETWORK, BOWEN ISLAND	4
2. FOCAL VERTEBRATE SPECIES	5
2.1 BIRD SPECIES RICHNESS.....	6
2.2 SMALL MAMMAL SPECIES RICHNESS	7
2.3 AMPHIBIAN & REPTILE SPECIES RICHNESS.....	8
2.4 THREATENED & ENDANGERED SPECIES RICHNESS.....	9
2.5 TOTAL SPECIES RICHNESS	10
2.6 TOTAL SPECIES DIVERSITY	11
3. HABITATS.....	12
3.1 FRESHWATER HABITATS: STREAMS, WETLANDS, RIPARIAN CORRIDORS	13
3.2 OLD & LARGE FOREST: OLD FOREST, OLD GROWTH MANAGEMENT AREAS.....	14
3.3 OTHER HABITATS: SENSITIVE ECOSYSTEM INVENTORY	15
3.4 TOTAL HABITAT DIVERSITY: NUMBER OF HABITAT TYPES BY LOCATION.....	16
4. DERIVED DATA PRODUCTS	17
4.1 BIODIVERSITY VALUE: SPECIES & HABITATS COMBINED	18
4.2 TOP 30% BIODIVERSITY VALUE	19
4.3 BIODIVERSITY VALUE WITH PROTECTED AREAS	20
4.4 TOP 30% BIODIVERSITY VALUE WITH PROTECTED AREAS.....	21
4.5 BIODIVERSITY VALUE WITH PRIVATE LAND	22
4.6 TOP 30% BIODIVERSITY VALUE WITH PRIVATE LAND	23
4.7 CURRENT HUMAN DISTURBANCE: CATEGORIES	24
4.8 CURRENT HUMAN DISTURBANCE: CONTINUOUS.....	25
4.9 TOP 30% BIODIVERSITY VALUE WITH HUMAN DISTURBANCE: CONTINUOUS.....	26
5. APPENDIX: SPECIES & HABITAT DATA LAYERS.....	27
5.1 HABITAT LAYERS: SENSITIVE ECOSYSTEM INVENTORY & HUMAN FOOTPRINT	28
5.2 FOCAL VERTEBRATE SPECIES LAYERS.....	29
PROVINCIAL CONSERVATION STATUS RANKS.....	34
BC Red, Blue & Yellow Lists	35
COSEWIC STATUS DOMAIN VALUES	35
IUCN Red List Categories.....	35

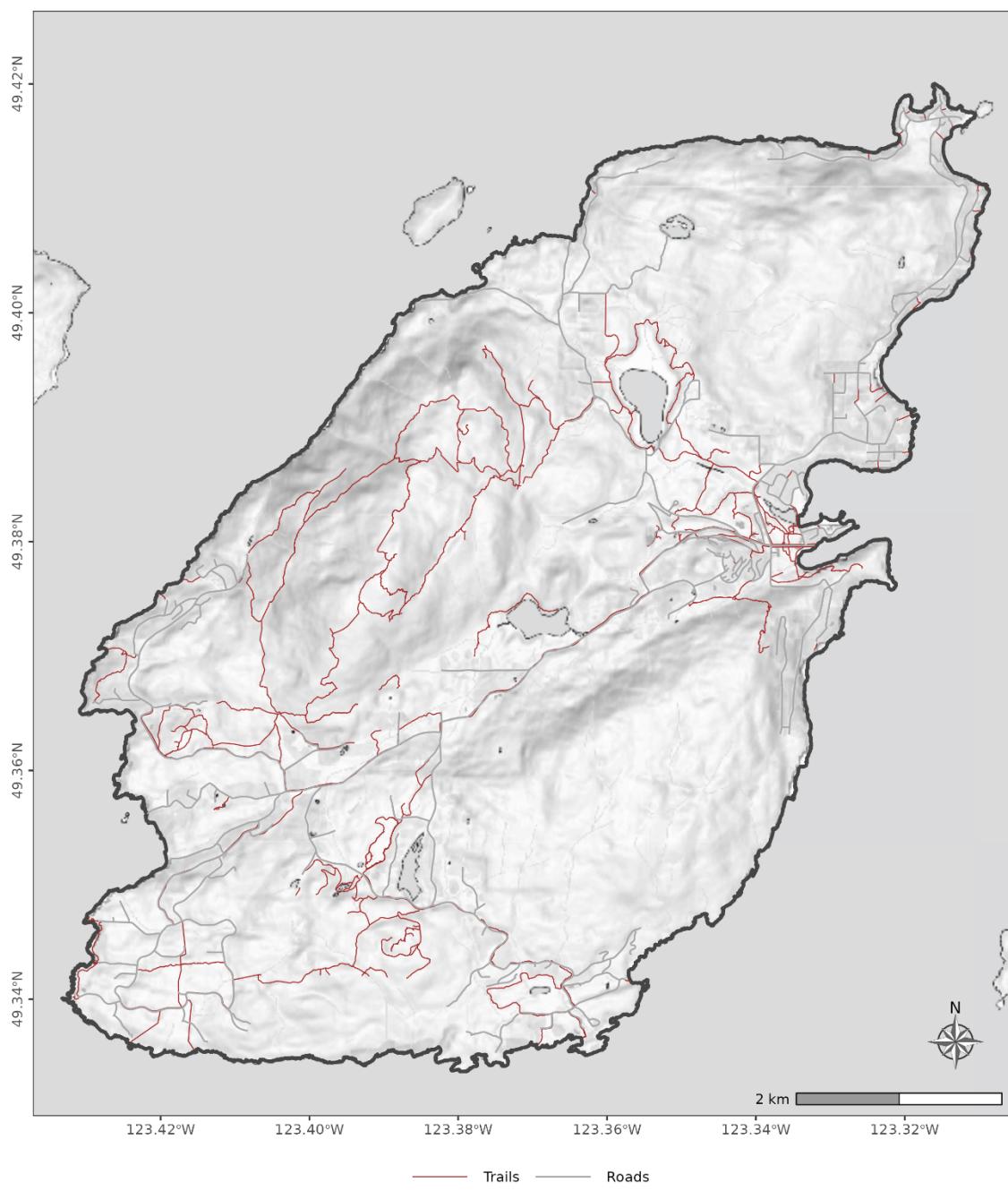


1. Overview

1.1 Transportation Network, Bowen Island

Transportation Network, Bowen Island

Base Bowen Island map with hillshade, roads, and trails.



Map created: Thu Jan 30 00:56:04 2025. Palen Lab. Created by Jay Matsushiba (jmatsush@sfu.ca)

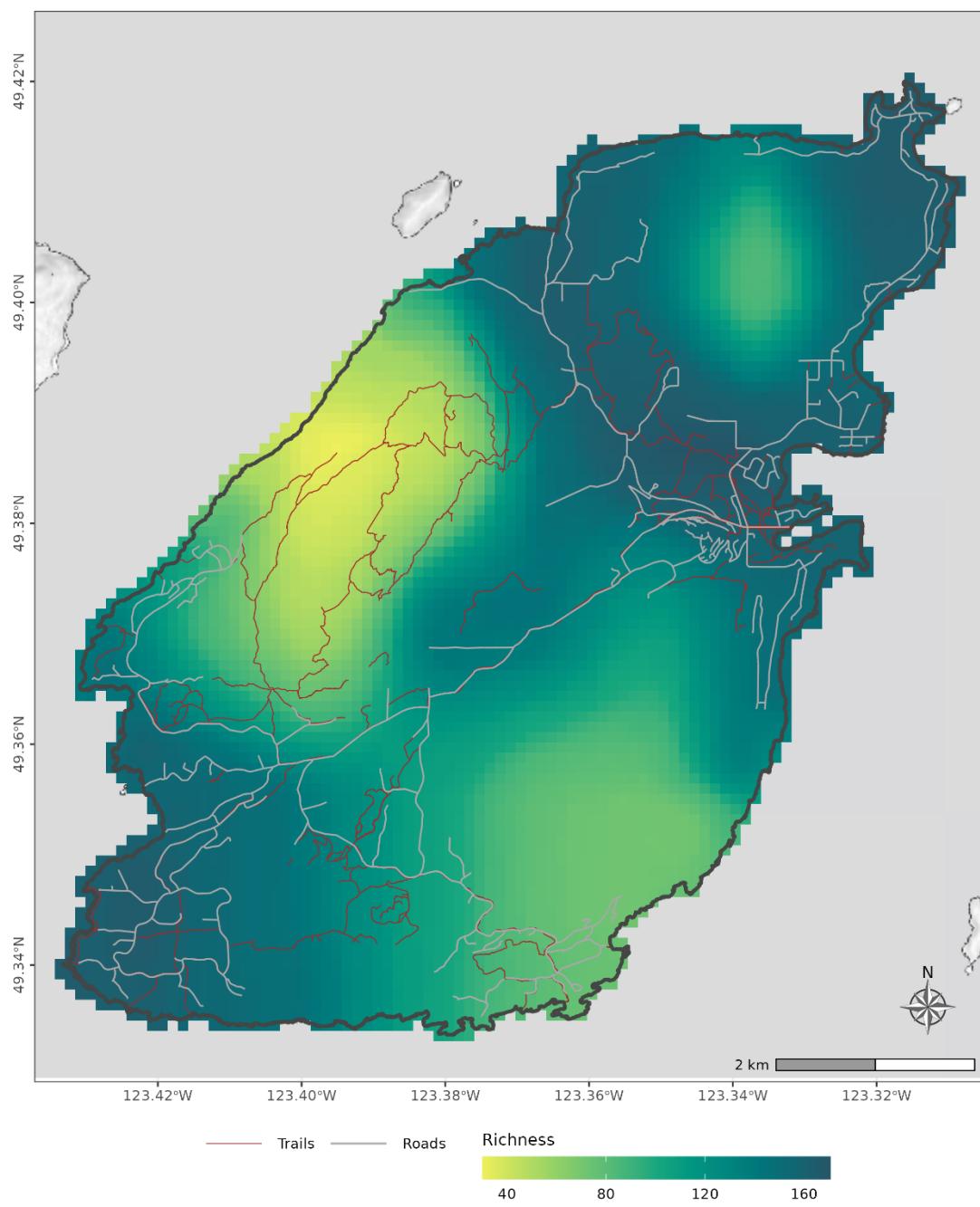


2. Focal Vertebrate Species

2.1 Bird Species Richness

Bird Species Richness

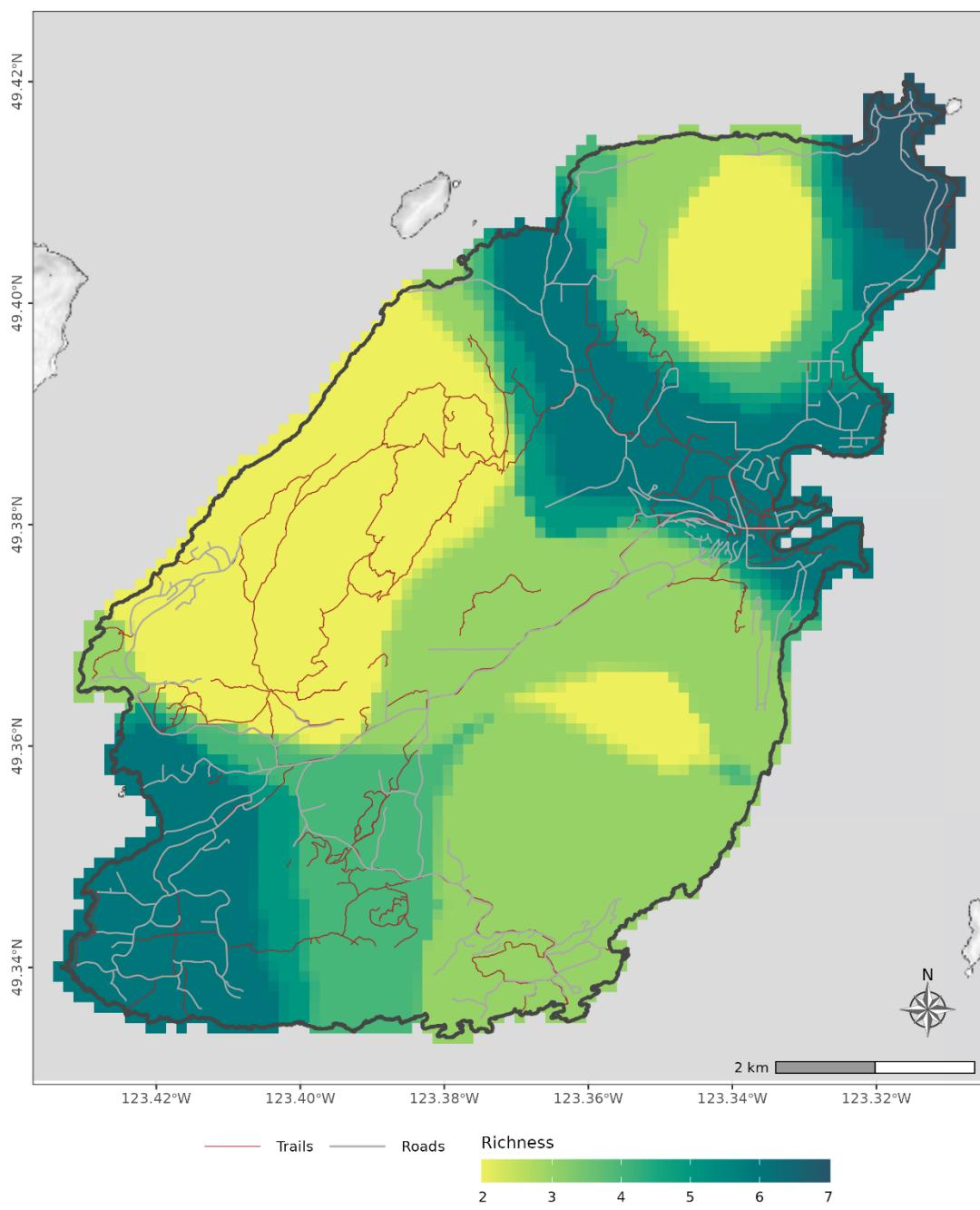
Based on >0.7 probability of occurrence in Species Distribution Models.



2.2 Small Mammal Species Richness

Small Mammal Species Richness

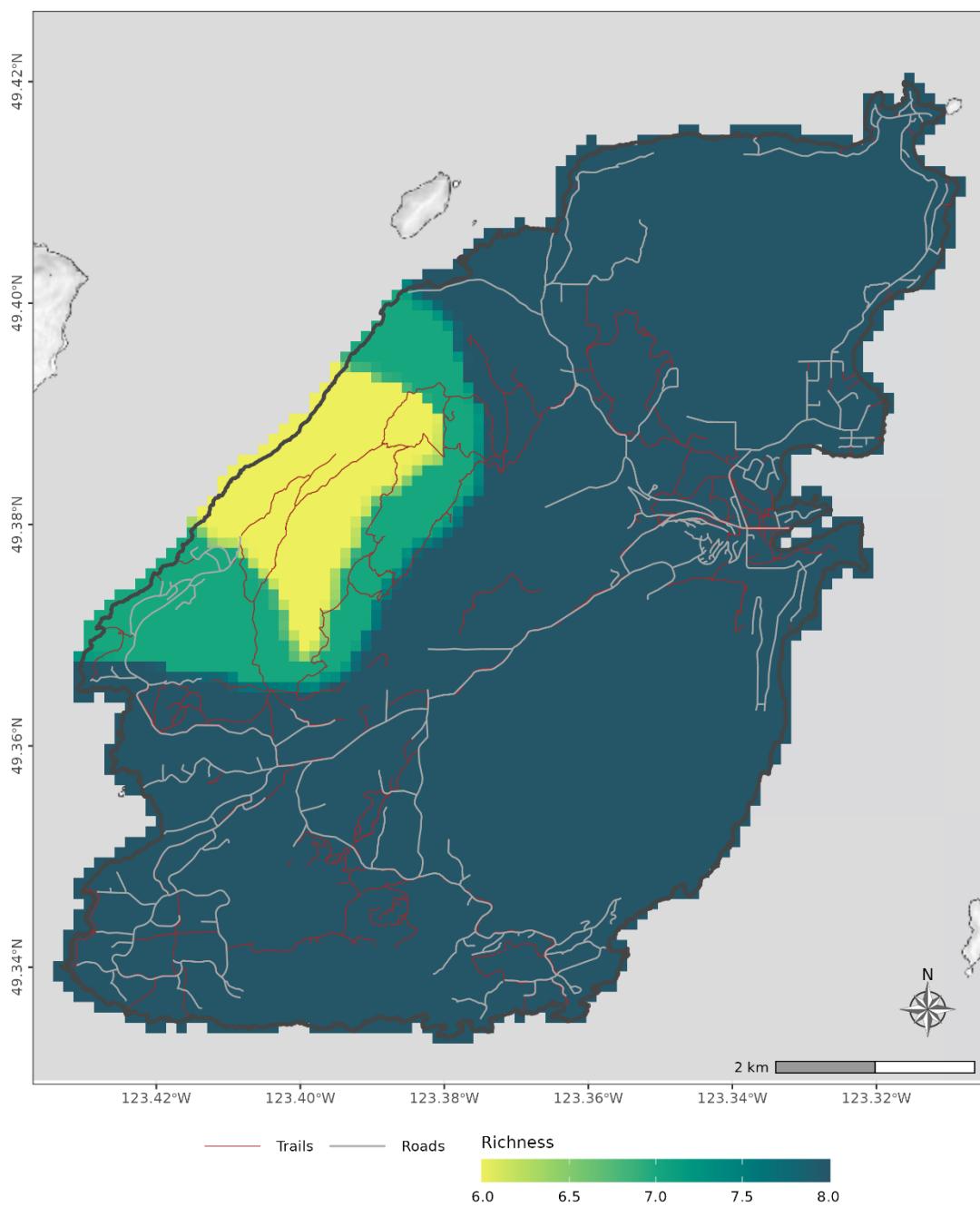
Based on >0.7 probability of occurrence in Species Distribution Models.



2.3 Amphibian & Reptile Species Richness

Amphibian & Reptile Species Richness

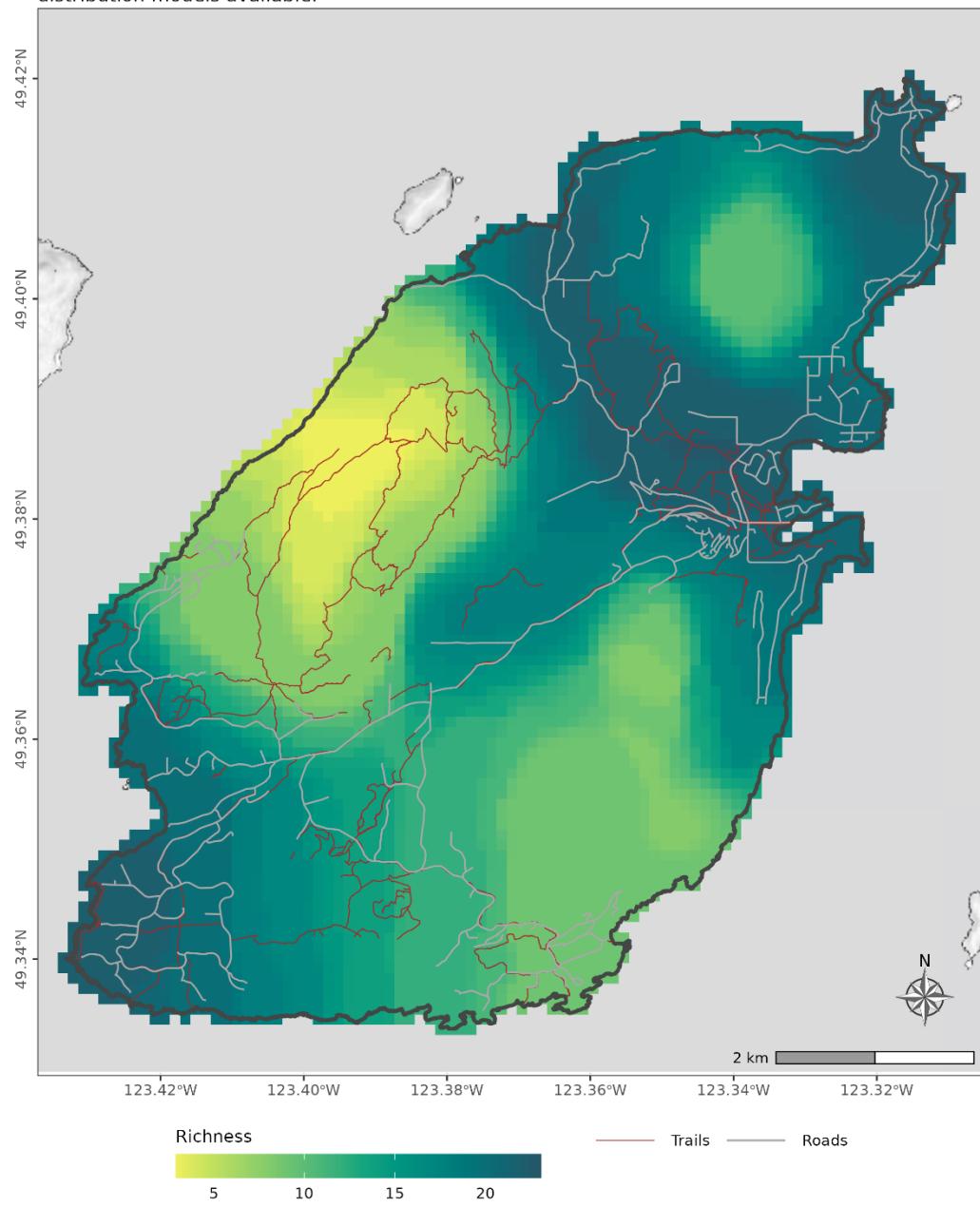
Based on >0.7 probability of occurrence in Species Distribution Models.



2.4 Threatened & Endangered Species Richness

Threatened & Endangered Species Richness

Based on >0.7 probability of occurrence in Species Distribution Models. Species that are listed under the Red or Blue Lists according to the British Columbia Conservation Data Centre are included in this map. There are 24 of these species present on Bowen Island with species distribution models available.



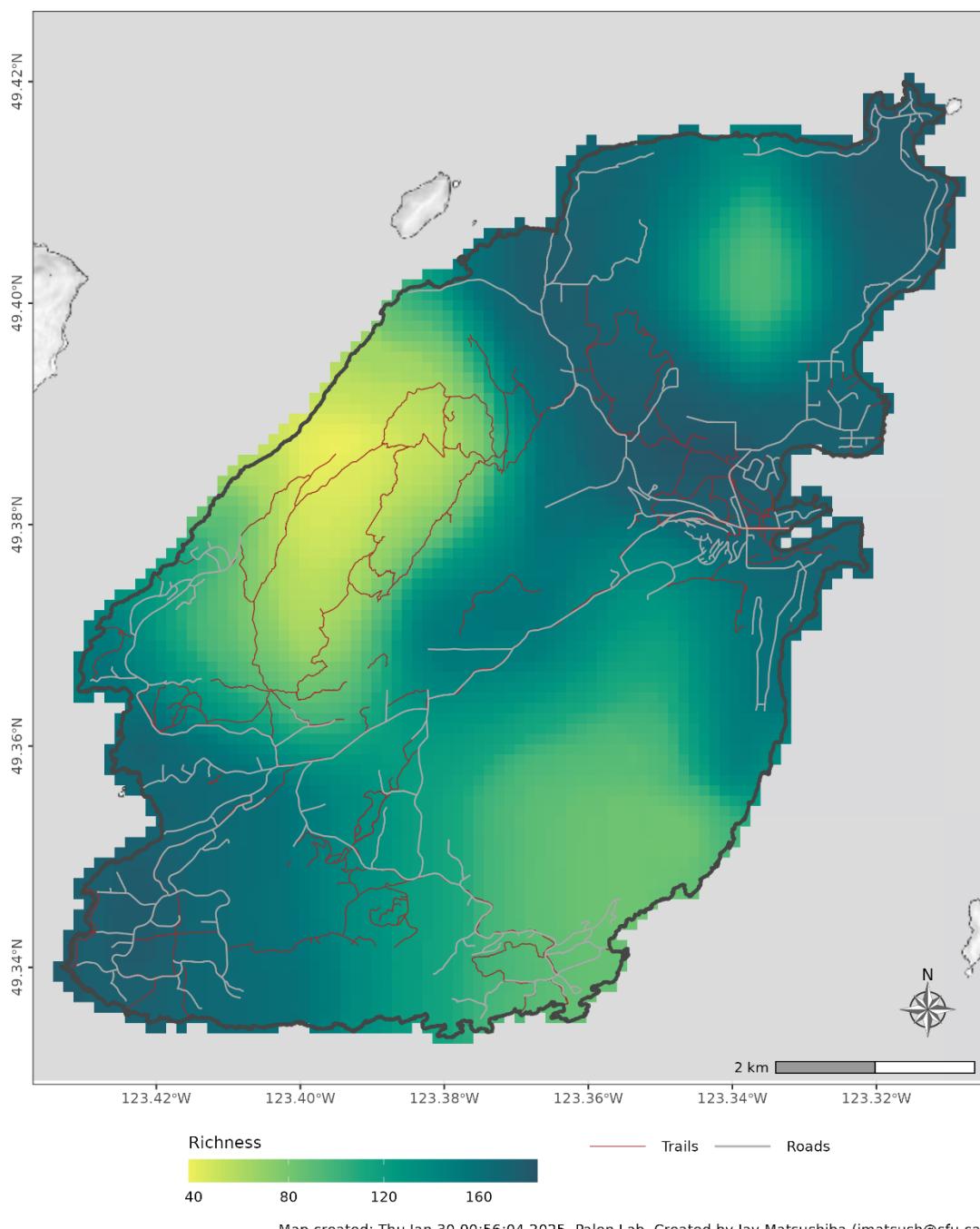
Map created: Thu Jan 30 00:56:04 2025. Palen Lab. Created by Jay Matsushiba (jmatsush@sfu.ca)



2.5 Total Species Richness

Total Species Richness

Based on >0.7 probability of occurrence in Species Distribution Models.

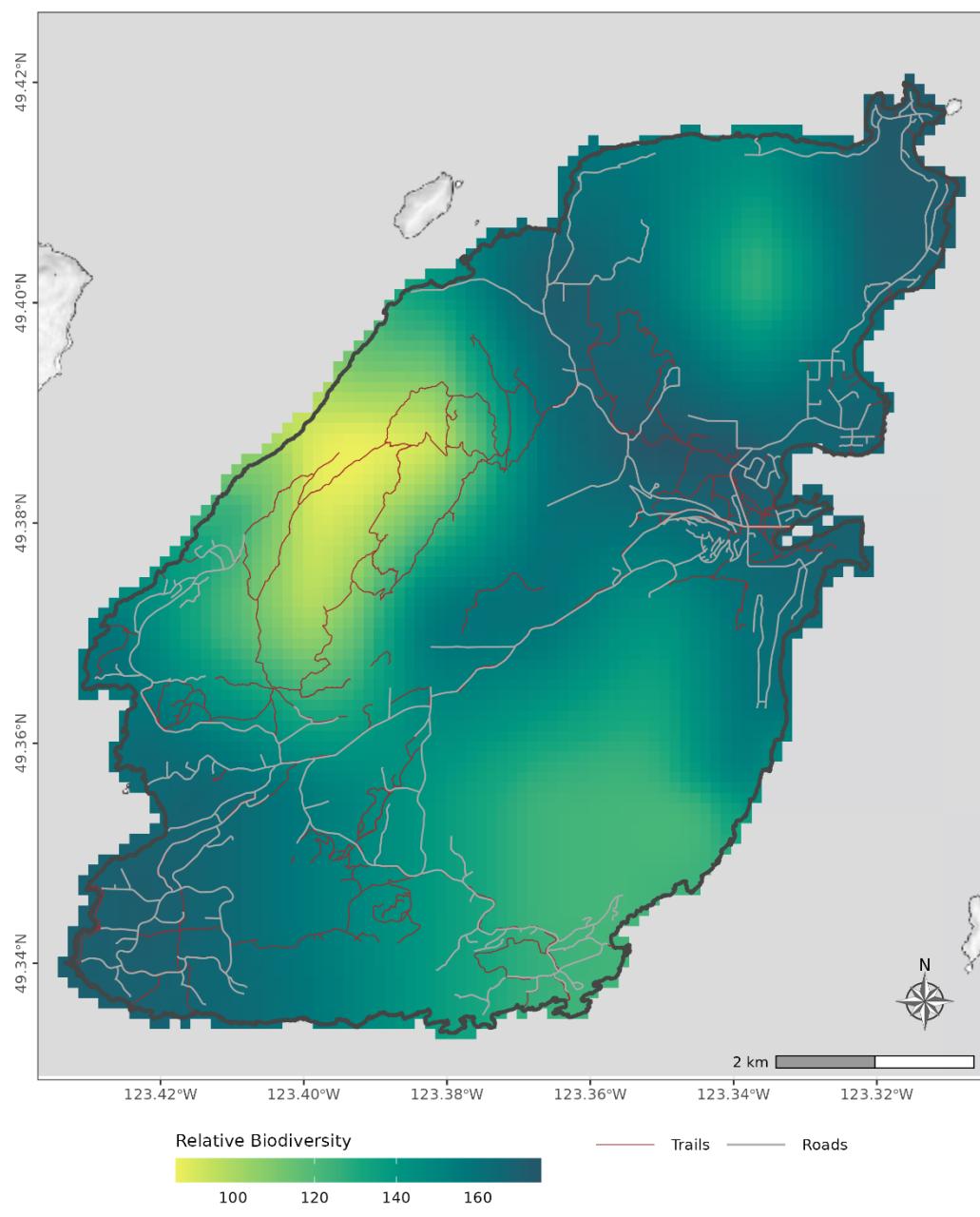


Map created: Thu Jan 30 00:56:04 2025. Palen Lab. Created by Jay Matsushiba (jmatsush@sfu.ca)

2.6 Total Species Diversity

Total Species Diversity

193 species included in this analysis. The values from each species distribution model (ranging from 0 to 1 as probability of occurrence in the cell) are summed to provide a relative biodiversity layer. Higher values correspond to cells with higher probability of species occurring, and vice versa.



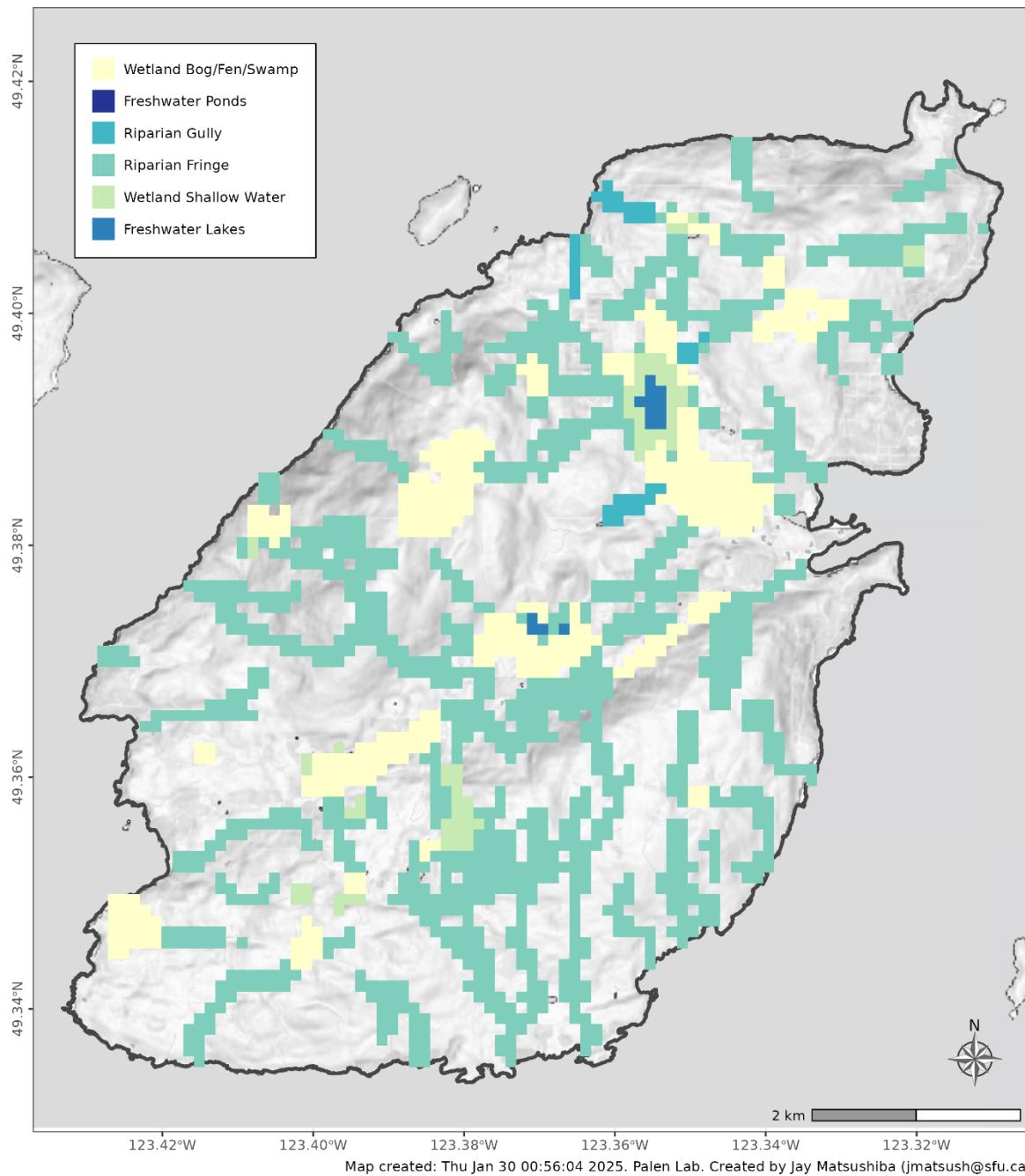
Map created: Thu Jan 30 00:56:04 2025. Palen Lab. Created by Jay Matsushiba (jmatsush@sfu.ca)

3. Habitats

3.1 Freshwater Habitats: streams, wetlands, riparian corridors

Freshwater Habitats: streams, wetlands, riparian corridors

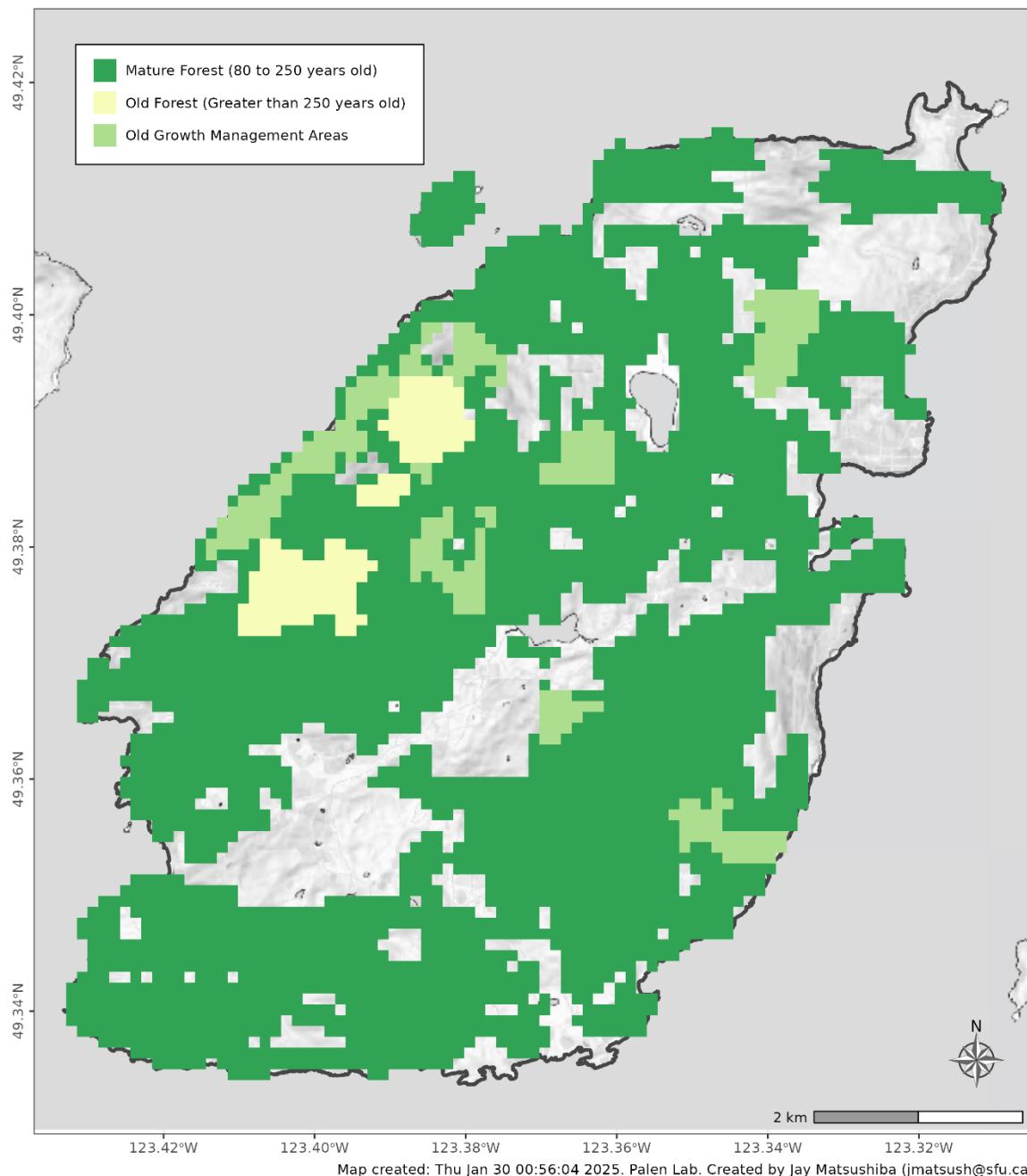
Freshwater features on Bowen Island, derived from Metro Vancouver Sensitive Ecosystem Inventory (2021).



3.2 Old & Large Forest: old forest, old growth management areas

Old and Large Forest: Old forest, Mature forest, Old growth management areas

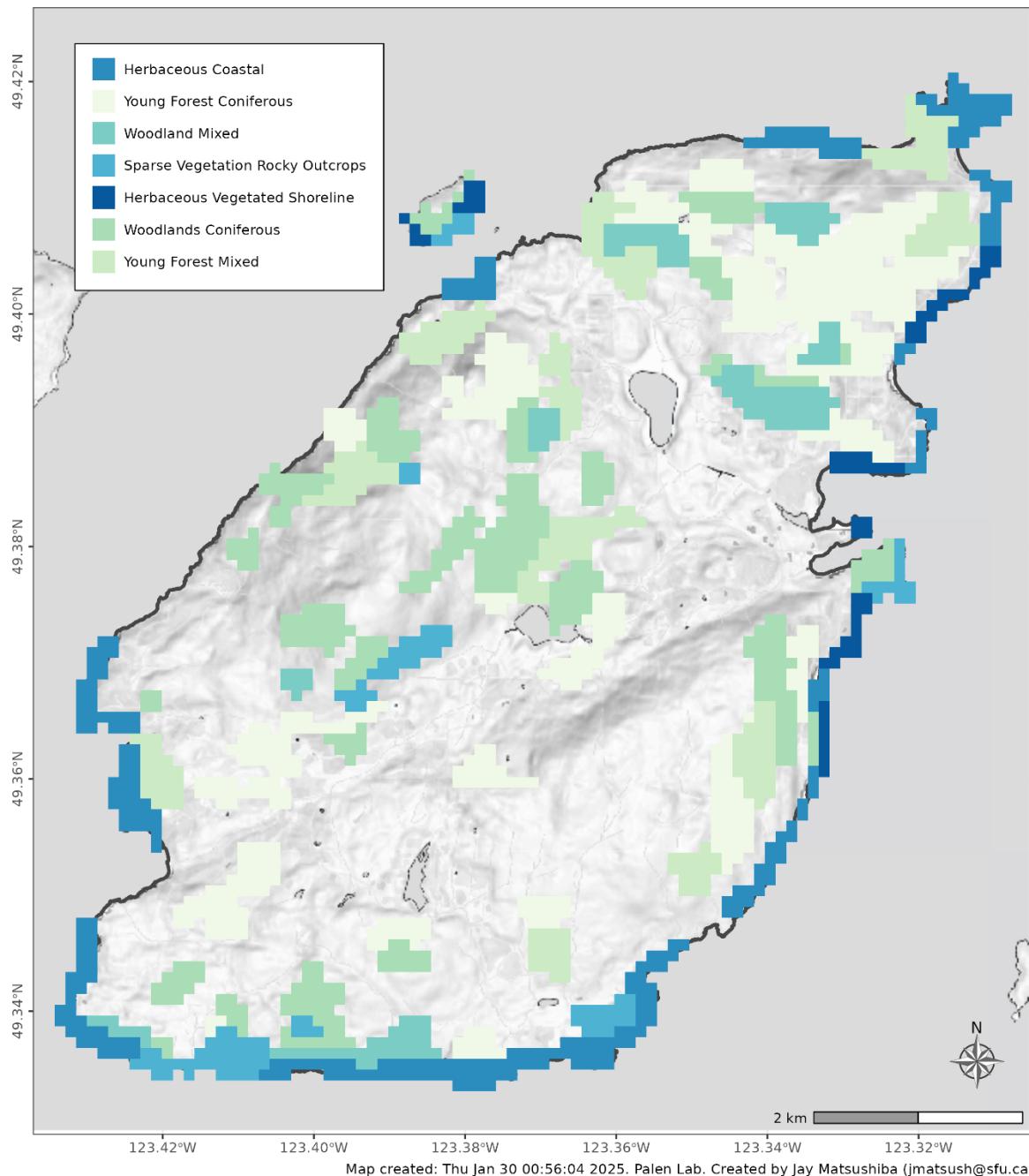
Forest features on Bowen Island, derived from Metro Vancouver Sensitive Ecosystem Inventory (2021).



3.3 Other Habitats: Sensitive Ecosystem Inventory

Other Habitats: Sensitive Ecosystem Inventory

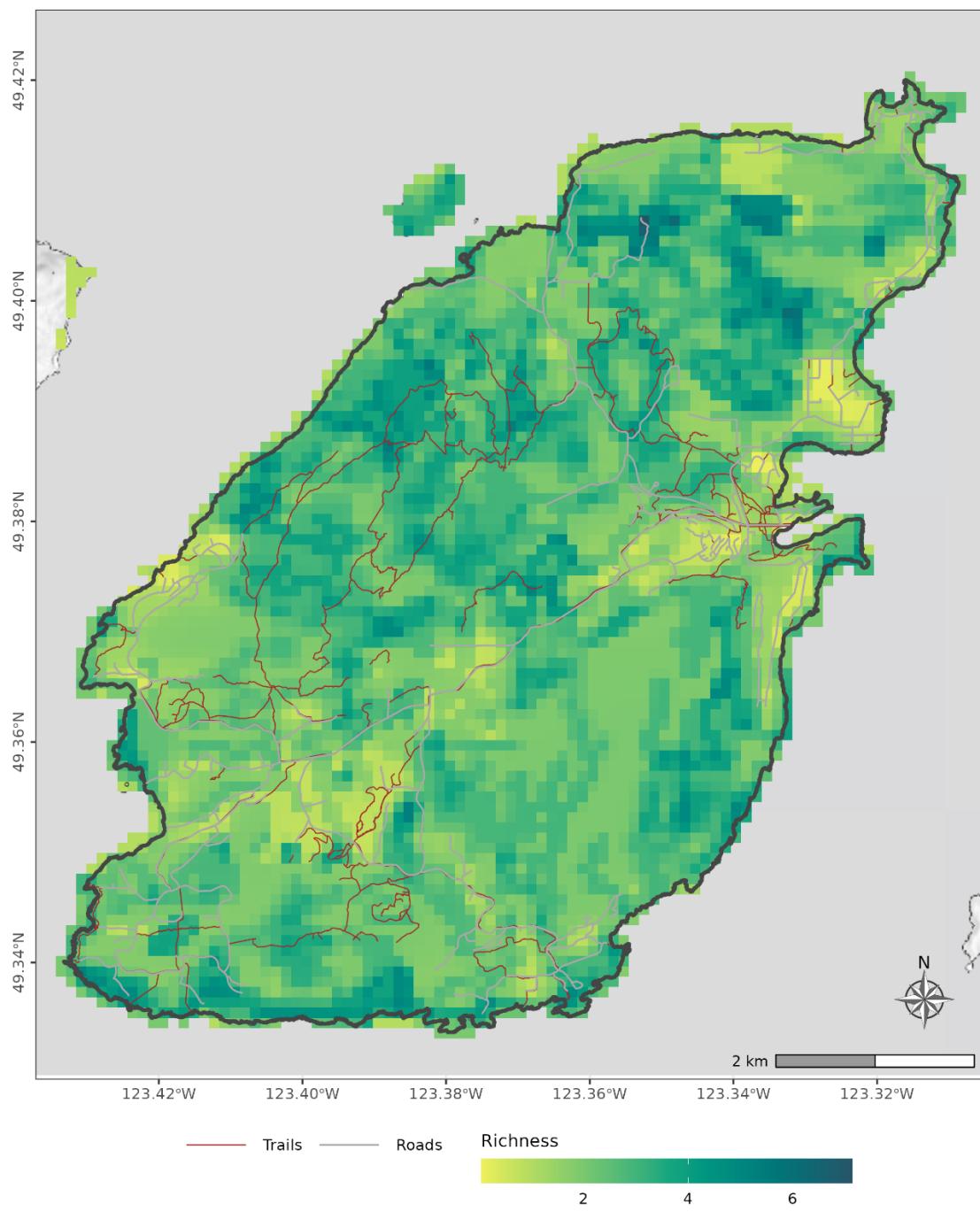
Habitat features on Bowen Island, derived from Metro Vancouver Sensitive Ecosystem Inventory (2021).



3.4 Total Habitat Diversity: Number of habitat types by location

Total Habitat Diversity: Number of habitat types by location

Total number of habitats found in each cell of the map. Habitats derived from Metro Vancouver Sensitive Ecosystem Inventory (2021).



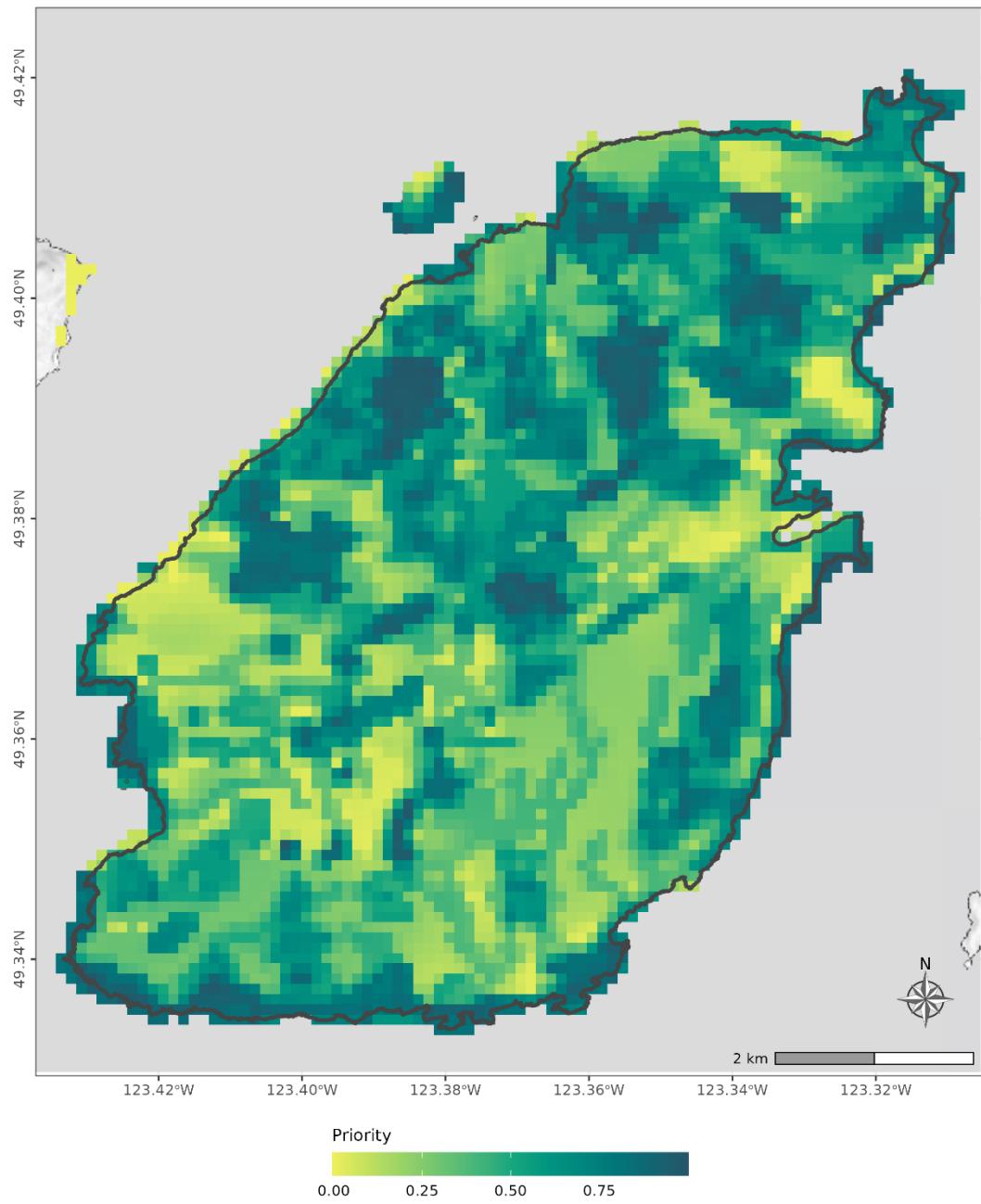
4. Derived Data Products

PRELIMINARY. DO NOT CITE OR DISTRIBUTE.

4.1 Biodiversity Value: Species & Habitats Combined

Biodiversity Value: Species & Habitats Combined

Zonation5 Prioritization Algorithm of Locations on Bowen Island. Environmental layers (n = 18) combined weighted 50%, with species layers (n = 193) combined weighted 50%.

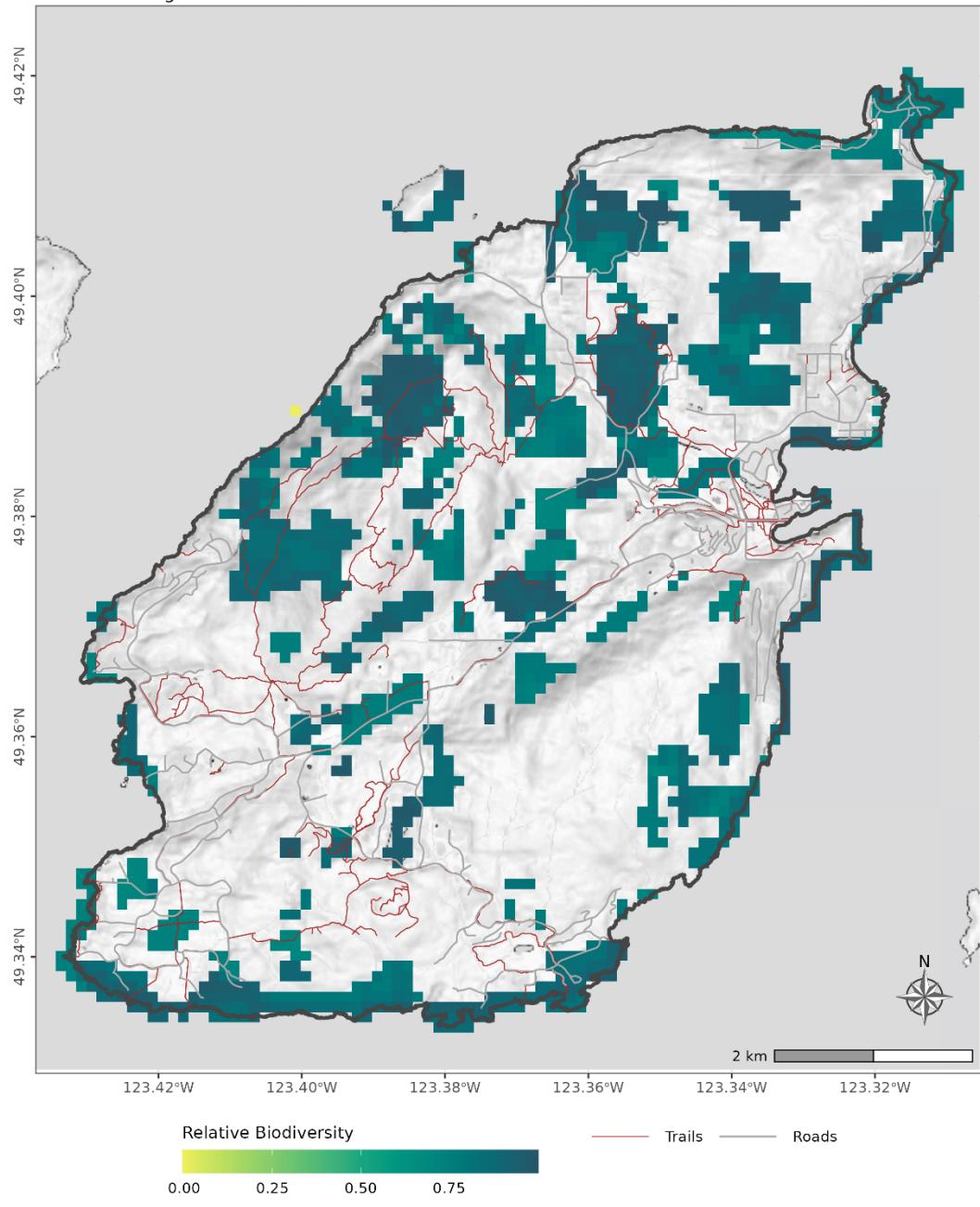


Map created: Thu Jan 30 00:56:04 2025. Palen Lab. Created by Jay Matsushiba (jmatsush@sfu.ca)

4.2 Top 30% Biodiversity Value

Top 30% Biodiversity Values

Top 30% of biodiversity locations on Bowen Island. Zonation5 Prioritization Algorithm of Locations on Bowen Island. Environmental layers (n = 18) combined weighted 50%, with species layers (n = 193) combined weighted 50%.

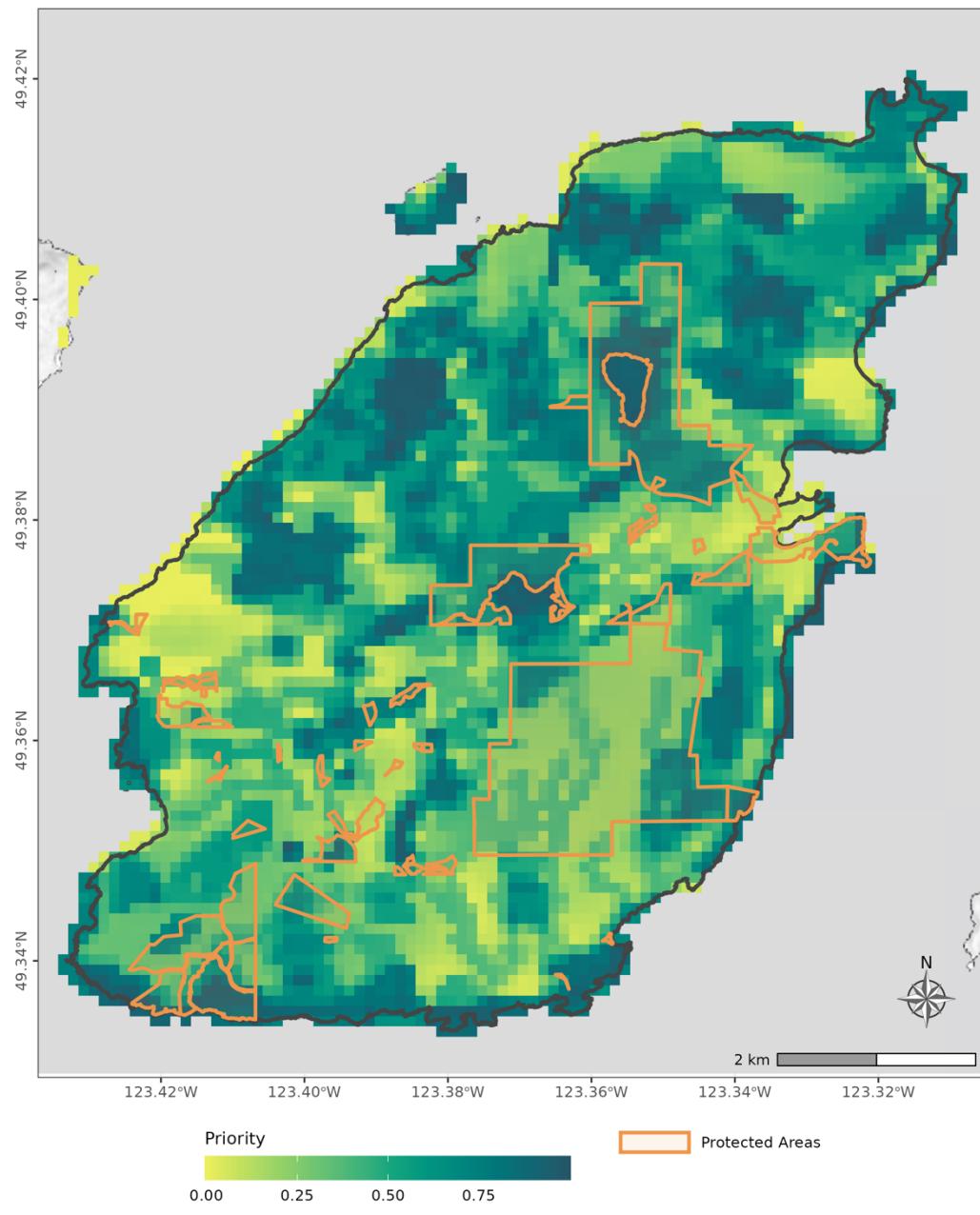


Map created: Thu Jan 30 00:56:04 2025. Palen Lab. Created by Jay Matsushiba (jmatsush@sfu.ca)

4.3 Biodiversity Value with Protected Areas

Biodiversity Value with Protected Areas

Biodiversity hotspots, with gradient scale corresponding to relative priority for conservation. Higher values, towards 1.0, indicate higher priority. Lower values, towards 0.0, show lower priority. Protected Areas are visualized as an overlay on top of the Zonation prioritization output.

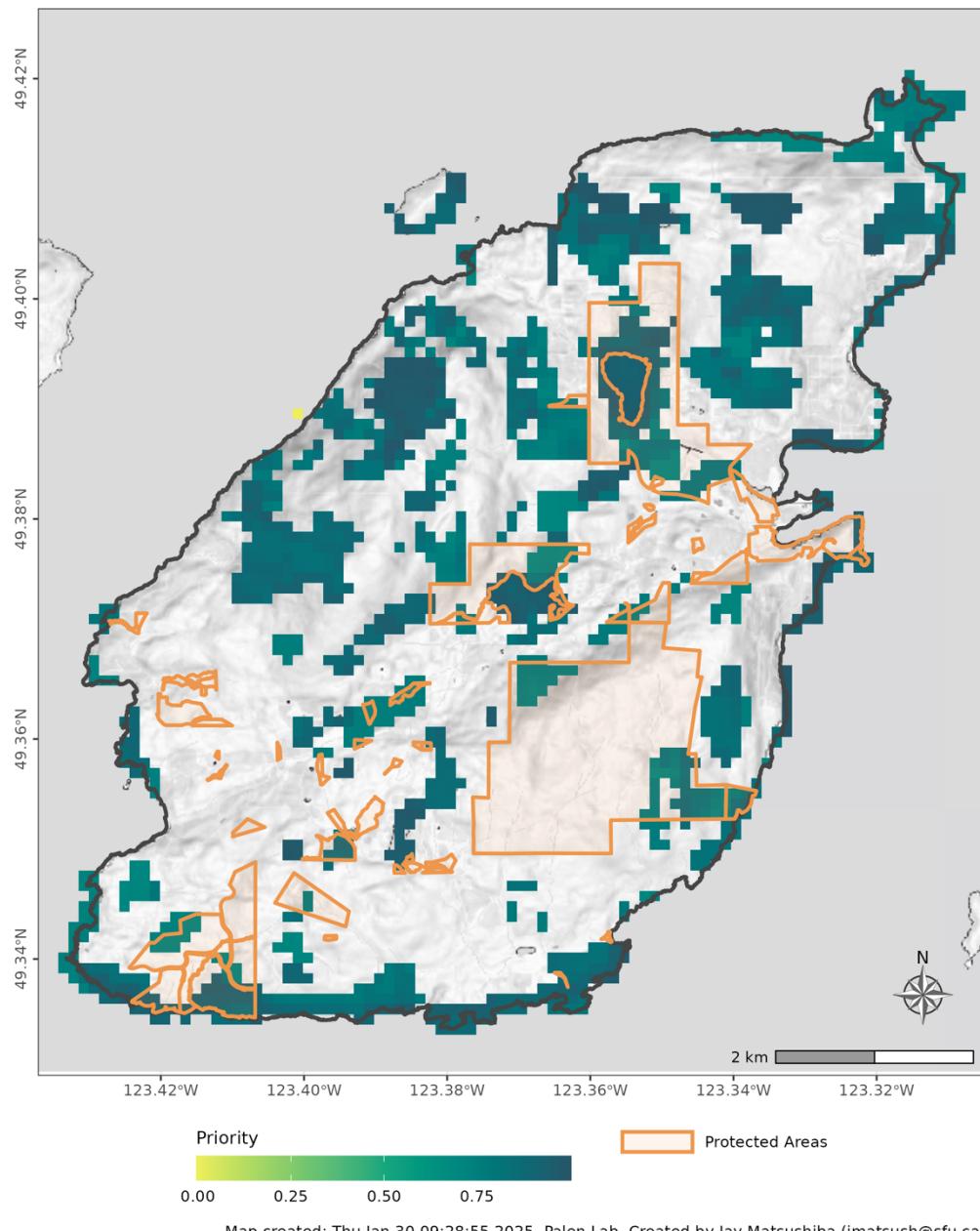


Map created: Thu Jan 30 09:23:16 2025. Palen Lab. Created by Jay Matsushiba (jmatsush@sfu.ca)

4.4 Top 30% Biodiversity Value with Protected Areas

Top 30% Biodiversity Value with Protected Areas

Biodiversity hotspots, with gradient scale corresponding to relative priority for conservation. Higher values, towards 1.0, indicate higher priority. Lower values, towards 0.0, show lower priority. Protected Areas are visualized as an overlay on top of the Zonation prioritization output. 21.5% of the top biodiversity value areas are found within protected areas.

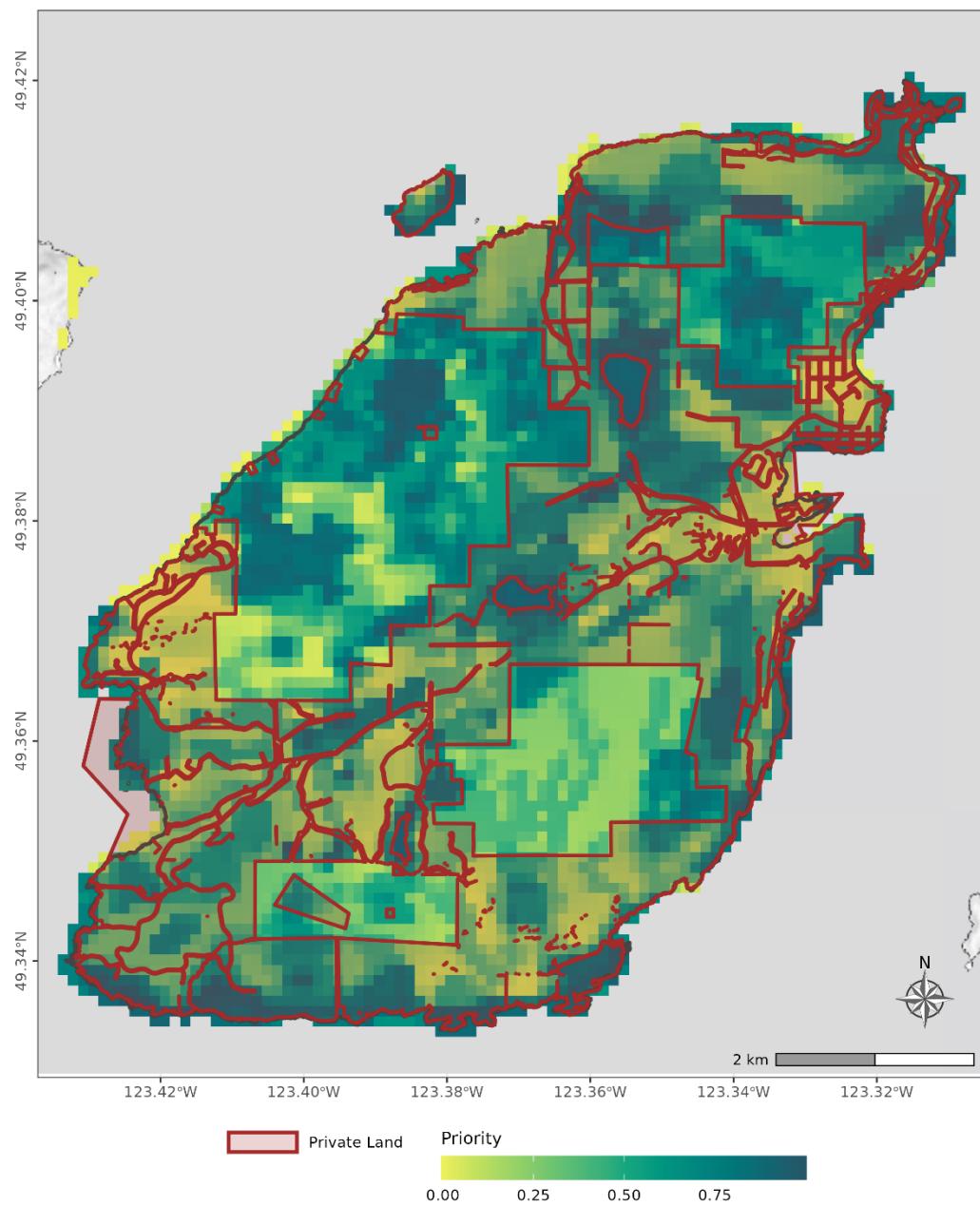


Map created: Thu Jan 30 09:28:55 2025. Palen Lab. Created by Jay Matsushiba (jmatsush@sfu.ca)

4.5 Biodiversity Value with Private Land

Biodiversity Value with Private Land

Biodiversity hotspots, with gradient scale corresponding to relative priority for conservation. Higher values, towards 1.0, indicate higher priority. Lower values, towards 0.0, show lower priority. Private Land is visualized as an overlay on top of the Zonation prioritization output.

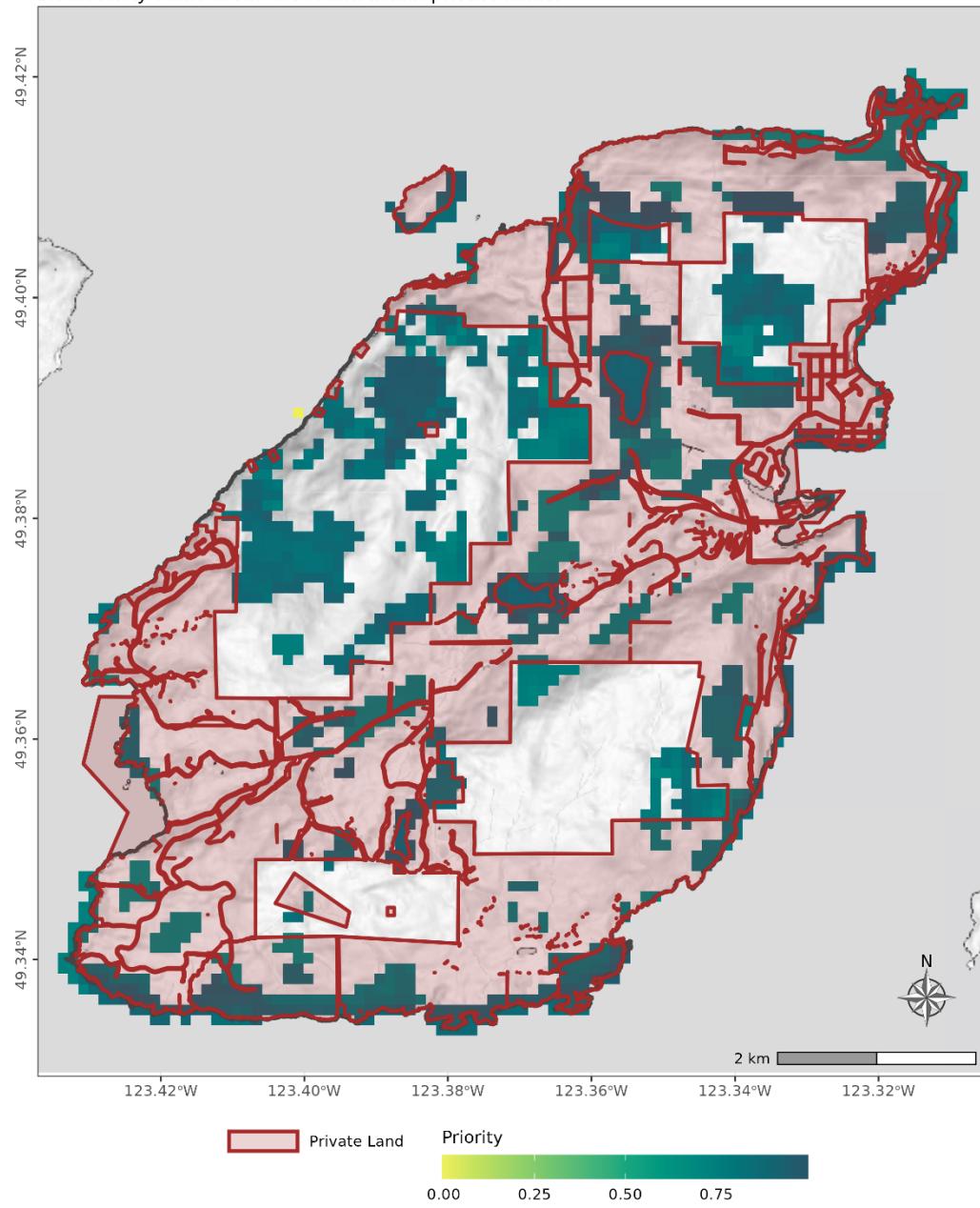


Map created: Thu Jan 30 00:56:04 2025. Palen Lab. Created by Jay Matsushiba (jmatsush@sfu.ca)

4.6 Top 30% Biodiversity Value with Private Land

Top 30% Biodiversity Value with Private Land

Biodiversity hotspots, with gradient scale corresponding to relative priority for conservation. Higher values, towards 1.0, indicate higher priority. Lower values, towards 0.0, show lower priority. Private Land is visualized as an overlay on top of the Zonation prioritization output. 67.4% of the top biodiversity value areas are found within private lands.

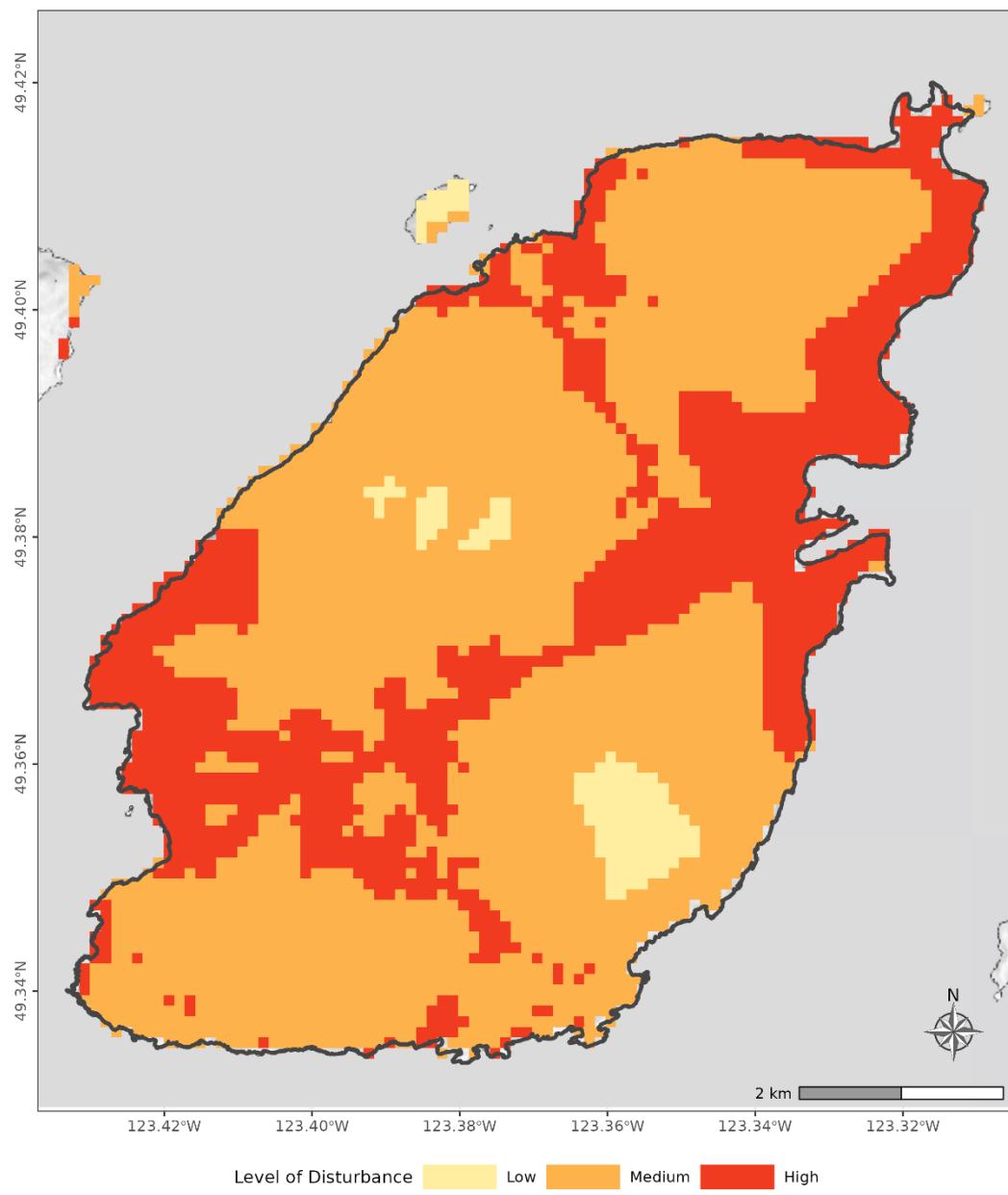


Map created: Thu Jan 30 00:56:04 2025. Palen Lab. Created by Jay Matsushiba (jmatsush@sfu.ca)

4.7 Current Human Disturbance: Categories

Current Human Disturbance

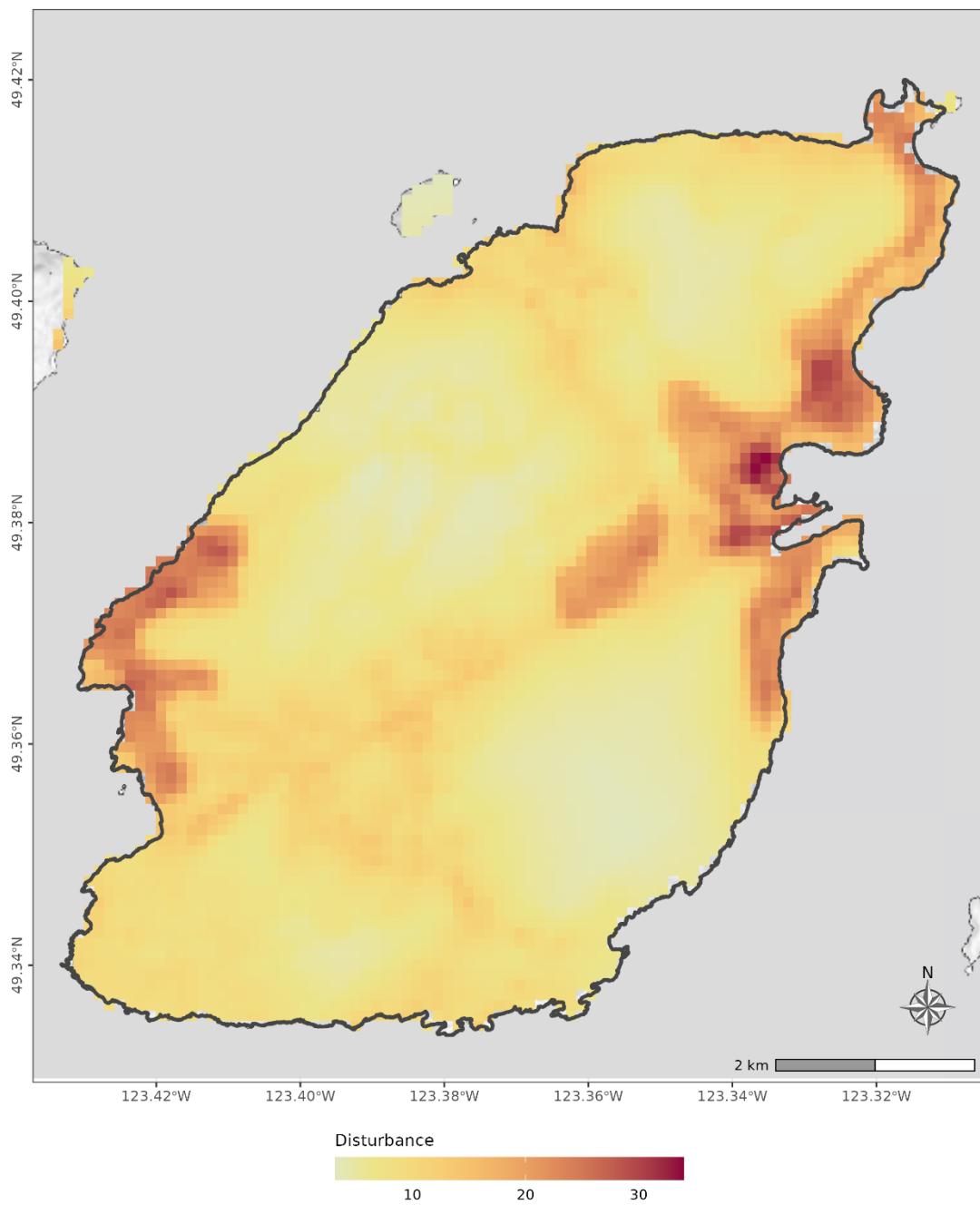
Categorical map of human disturbance on Bowen Island. Categorization of levels of human disturbance based on values from: Kristen Hirsh-Pearson, Chris J. Johnson, Richard Schuster, Roger D. Wheate, and Oscar Venter. 2022. Canada's human footprint reveals large intact areas juxtaposed against areas under immense anthropogenic pressure. FACETS. 7: 398-419.



4.8 Current Human Disturbance: Continuous

Current Human Disturbance

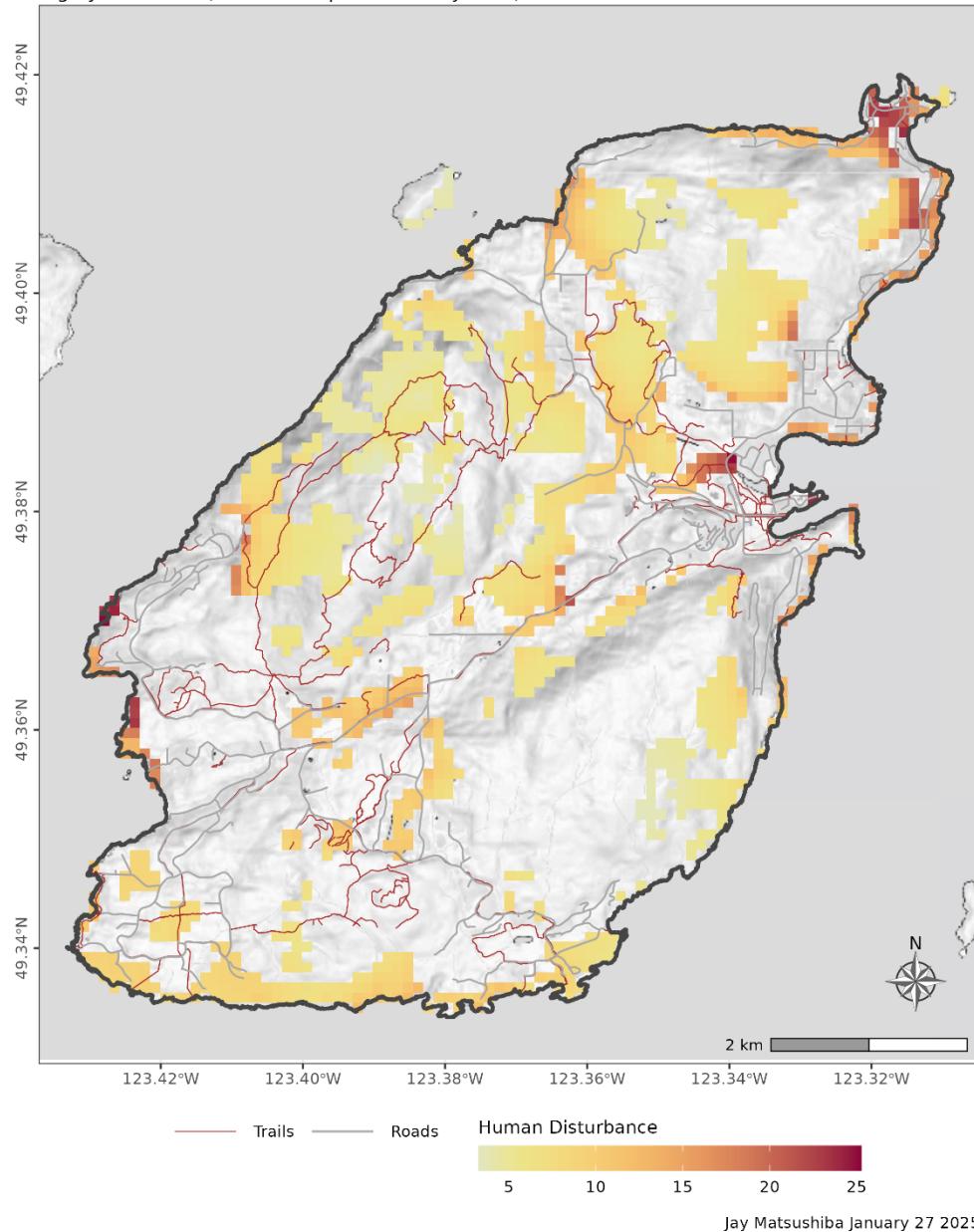
Continuous map of human disturbance on Bowen Island.



4.9 Top 30% Biodiversity Value with Human Disturbance: Continuous

Biodiversity Hotspots and Human Footprint

Top 30% of biodiversity locations on Bowen Island, with scale corresponding to relative human disturbance. Higher values indicate higher levels of disturbance from human activity. Lower values show lower levels of disturbance. Less than 1 considered intact (0% of top biodiversity cells). Between 1 and 4 considered Low Disturbance (2.1% of top biodiversity cells). Between 4 and 10 are considered Medium Disturbance (75.5% of top biodiversity cells). Above 10 are highly disturbed (22.4% of top biodiversity cells).



Jay Matsushiba January 27 2025

5. Appendix: Species & Habitat Data Layers

5.1 Habitat Layers: Sensitive Ecosystem Inventory & Human Footprint

HABITAT TYPE	CATEGORY	SUBCATEGORY
Freshwater (6)	Riparian	Fringe
	Riparian	Gully
	Wetland	Shallow Water
	Wetland	Bog, Fen, Swamp
	FW	Lake
	FW	Pond
Terrestrial (11)	Old Growth Management Areas	-
	Old Forest	Coniferous
	Mature Forest	Coniferous
	Mature Forest	Mixed
	Woodland	Coniferous
	Woodland	Mixed
	Young Forest	Coniferous
	Herbaceous	Coastal
	Herbaceous	Vegetated Shoreline
	Sparsely Vegetated	Rock outcrop, Bedrock
	Intertidal	Beach, Mudflat, Eelgrass
Disturbance (1)	Human Footprint	--

Note: Additional Sensitive Ecosystem Inventory and Human Footprint information provided in Species & Habitat Resources section below.

5.2 Focal Vertebrate Species Layers

Note: Bolded species indicate threatened, special concern, or endangered status (BC, Canada, IUCN)

Amphibians

SPECIES	PROVINCIAL	BC LIST	COSEWIC	IUCN
Ambystoma gracile	S4	Yellow	NAR	LC
Ambystoma macrodactylum	S5	Yellow	NAR	LC
Pseudacris regilla	S5	Yellow	NA	LC
Rana aurora	S3	Blue	SC	LC
Taricha granulosa	S4	Yellow	NA	LC

Mammals (small)

SPECIES	PROVINCIAL	BC LIST	COSEWIC	IUCN
Glaucomys sabrinus	S5	Yellow	NA	LC
Microtus townsendii	S5?	Yellow	NA	LC
Mustela erminea	S3	Blue	T	LC
Myotis lucifugus	S3S4	Blue	E	EN
Neovison vison	S5	Yellow	NA	LC
Peromyscus keeni	S5	Yellow	NA	LC
Peromyscus maniculatus	S5	Yellow	NA	LC
Sorex cinereus	S5	Yellow	NA	LC
Sorex monticolus	S5	Yellow	NA	LC

Reptiles

SPECIES	PROVINCIAL	BC LIST	COSEWIC	IUCN
Thamnophis elegans	S5	Yellow	NA	LC
Thamnophis ordinoides	S4	Yellow	NAR	LC
Thamnophis sirtalis	S5	Yellow	NA	LC

Birds

SPECIES	PROVINCIAL	BC LIST	COSEWIC	IUCN
<i>Accipiter cooperii</i>	S5	Yellow	NAR	LC
<i>Accipiter striatus</i>	S5B, S5N	Yellow	NAR	LC
<i>Actitis macularius</i>	S5B	Yellow	NA	LC
<i>Aechmophorus occidentalis</i>	S1S2B, S2N	Red	SC	LC
<i>Agelaius phoeniceus</i>	S5B, S5N	Yellow	NA	LC
<i>Aix sponsa</i>	S4B, S4N	Yellow	NA	LC
<i>Anas acuta</i>	S4B, S5N	Yellow	NA	LC
<i>Anas americana</i>	S5B, S5N	Yellow	NA	LC
<i>Anas clypeata</i>	S5B, S5N	Yellow	NA	LC
<i>Anas crecca</i>	S5B, S5N	Yellow	NA	LC
<i>Anas cyanoptera</i>	S4B	Yellow	NA	LC
<i>Anas discors</i>	S4S5B	Yellow	NA	LC
<i>Anas penelope</i>	SNRN	NR	NA	LC
<i>Anas platyrhynchos</i>	S5B, S5N	Yellow	NA	LC
<i>Anas strepera</i>	S5	Yellow	NA	LC
<i>Anser albifrons</i>	S4M	Yellow	NA	LC
<i>Anthus rubescens</i>	S5B, SNRN	Yellow	NA	LC
<i>Ardea herodias</i>	S3	NA	NA	LC
<i>Arenaria melanocephala</i>	S4N, S5M	Yellow	NA	LC
<i>Aythya affinis</i>	S5B, S5N	Yellow	NA	LC
<i>Aythya americana</i>	S4B, S5N	Yellow	NA	LC
<i>Aythya collaris</i>	S5B, S5N	Yellow	NA	LC
<i>Aythya marila</i>	S4N, S5M	Yellow	NA	LC
<i>Bombycilla cedrorum</i>	S5	Yellow	NA	LC
<i>Brachyramphus marmoratus</i>	S3	Blue	T	EN
<i>Branta bernicla</i>	S3M	Blue	NA	LC
<i>Branta canadensis</i>	S5	Yellow	NA	LC
<i>Branta hutchinsii</i>	S4S5M	Yellow	NA	LC
<i>Bubo virginianus</i>	S5	Yellow	NA	LC
<i>Bucephala albeola</i>	S5B, SNRN	Yellow	NA	LC
<i>Bucephala clangula</i>	S5	Yellow	NA	LC
<i>Bucephala islandica</i>	S4S5	Yellow	NA	LC
<i>Buteo jamaicensis</i>	S5	Yellow	NAR	LC
<i>Calidris alpina</i>	S4N	Yellow	NA	NT
<i>Calidris mauri</i>	S4M	Yellow	NA	LC
<i>Calidris melanotos</i>	S4M	Yellow	NA	LC
<i>Calidris minutilla</i>	S4?B	Yellow	NA	NT
<i>Calypte anna</i>	S5	Yellow	NA	LC
<i>Cardellina pusilla</i>	S5B	Yellow	NA	LC
<i>Carduelis flammea</i>	S4	Yellow	NA	LC

<i>Carduelis pinus</i>	S5B	Yellow	NA	LC
<i>Carduelis tristis</i>	S4	Yellow	NA	LC
<i>Carpodacus mexicanus</i>	S5	Yellow	NA	LC
<i>Carpodacus purpureus</i>	S5B	Yellow	NA	LC
<i>Cathartes aura</i>	S4	Yellow	NA	LC
<i>Catharus guttatus</i>	S5B	Yellow	NA	LC
<i>Catharus ustulatus</i>	S5B	Yellow	NA	LC
<i>Cephus columba</i>	S4	Yellow	NA	LC
<i>Cerorhinca monocerata</i>	S4	Yellow	NA	LC
<i>Certhia americana</i>	S5	Yellow	NA	LC
<i>Chaetura vauxi</i>	S4S5B	Yellow	NA	LC
Charadrius vociferus	S3S5B	Blue	NA	NT
<i>Chen caerulescens</i>	S4M	Yellow	NA	LC
Chordeiles minor	S3S5B	Blue	SC	LC
<i>Chroicocephalus philadelphia</i>	S5?	Yellow	NA	LC
<i>Circus cyaneus</i>	S4B	Yellow	NAR	LC
<i>Cistothorus palustris</i>	S5	Yellow	NA	LC
Clangula hyemalis	S2S3B, S4N	Blue	NA	VU
Coccothraustes vespertinus	S5	Yellow	SC	VU
<i>Colaptes auratus</i>	S5	Yellow	NA	LC
Contopus cooperi	S4B	Yellow	SC	NT
<i>Contopus sordidulus</i>	S5?B	Yellow	NA	LC
<i>Corvus brachyrhynchos</i>	S5	Yellow	NA	LC
<i>Corvus caurinus</i>	S5	Yellow	NA	LC
<i>Corvus corax</i>	S5	Yellow	NA	LC
<i>Cyanocitta stelleri</i>	S5	Yellow	NA	LC
<i>Cygnus buccinator</i>	S4B, S5N	Yellow	NAR	LC
Cygnus columbianus	S3N	Blue	NA	LC
Cypseloides niger	S2S4B	Blue	E	VU
<i>Dendragapus fuliginosus</i>	S4	Yellow	NA	LC
<i>Dendroica petechia</i>	S5B	Yellow	NA	LC
<i>Dendroica townsendi</i>	S5B	Yellow	NA	LC
<i>Dryocopus pileatus</i>	S5	Yellow	NA	LC
<i>Dumetella carolinensis</i>	S5B	Yellow	NA	LC
<i>Empidonax difficilis</i>	S5B	Yellow	NA	LC
<i>Empidonax hammondi</i>	S5B	Yellow	NA	LC
<i>Empidonax traillii</i>	S4S5B	Yellow	NA	LC
<i>Euphagus cyanocephalus</i>	S5	Yellow	NA	LC
<i>Falco columbarius</i>	S5	Yellow	NAR	LC
<i>Falco peregrinus</i>	S3	NA	NA	LC
<i>Falco sparverius</i>	S4S5B	Yellow	NA	LC
<i>Fulica americana</i>	S4S5B	Yellow	NAR	LC
<i>Gallinago delicata</i>	S5	Yellow	NA	LC

<i>Gavia immer</i>	S5	Yellow	NAR	LC
<i>Gavia pacifica</i>	S4B, S3S4N	Yellow	NA	LC
<i>Gavia stellata</i>	S4	Yellow	NA	LC
<i>Geothlypis tolmiei</i>	S5B	Yellow	NA	LC
<i>Geothlypis trichas</i>	S5	Yellow	NA	LC
<i>Glaucidium gnoma</i>	S4B	Yellow	NA	LC
<i>Grus canadensis</i>	S4B	Yellow	NAR	LC
<i>Haematopus bachmani</i>	S4	Yellow	NA	LC
<i>Haliaeetus leucocephalus</i>	S5B, S5N	Yellow	NAR	LC
<i>Hirundo rustica</i>	S4B	Yellow	SC	LC
<i>Histrionicus histrionicus</i>	S4B, S3N	Yellow	NA	LC
<i>Hydroprogne caspia</i>	S2S4B	Blue	NAR	LC
<i>Icterus bullockii</i>	S5B	Yellow	NA	LC
<i>Ixoreus naevius</i>	S5	Yellow	NA	LC
<i>Junco hyemalis</i>	S5	Yellow	NA	LC
<i>Larus argentatus</i>	S5?B	Yellow	NA	LC
<i>Larus californicus</i>	S1B, SNRN	Red	NA	LC
<i>Larus canus</i>	S4B	Yellow	NA	LC
<i>Larus delawarensis</i>	S4?B	Yellow	NA	LC
<i>Larus glaucescens</i>	S4S5	Yellow	NA	LC
<i>Larus occidentalis</i>	SUN	Unk	NA	LC
<i>Limnodromus scolopaceus</i>	S4N	Yellow	NA	NT
<i>Lophodytes cucullatus</i>	S5	Yellow	NA	LC
<i>Loxia curvirostra</i>	S5	Yellow	NA	LC
<i>Megacyrle alcyon</i>	S4S5	Yellow	NA	LC
<i>Melanitta fusca</i>	S4S5	Yellow	NA	VU
<i>Melanitta nigra</i>	S3S4N	Blue	NA	NT
<i>Melanitta perspicillata</i>	S3B, S4N	Blue	NA	LC
<i>Melospiza georgiana</i>	S4S5	Yellow	NA	LC
<i>Melospiza lincolni</i>	S5B, SNRN	Yellow	NA	LC
<i>Melospiza melodia</i>	S5	Yellow	NA	LC
<i>Mergus serrator</i>	S4B, SNRN	Yellow	NA	LC
<i>Molothrus ater</i>	S5	Yellow	NA	LC
<i>Myadestes townsendi</i>	S5B	Yellow	NA	LC
<i>Oreothlypis celata</i>	S5B	Yellow	NA	LC
<i>Oreothlypis ruficapilla</i>	S5B	Yellow	NA	LC
<i>Oxyura jamaicensis</i>	S5	Yellow	NA	LC
<i>Pandion haliaetus</i>	S5B	Yellow	NA	LC
<i>Passerculus sandwichensis</i>	S5B	Yellow	NA	LC
<i>Passerella iliaca</i>	S5	Yellow	NA	LC
<i>Patagioenas fasciata</i>	S3S4	Blue	SC	LC
<i>Petrochelidon pyrrhonota</i>	S4S5B	Yellow	NA	LC
<i>Phalacrocorax auritus</i>	S3S4	Blue	NAR	LC

<i>Phalacrocorax pelagicus</i>	S4	Yellow	NA	LC
<i>Phalacrocorax penicillatus</i>	S1B, S4N	Red	NA	LC
<i>Phalaropus lobatus</i>	S3B, SNRM	Blue	SC	LC
<i>Pheucticus melanocephalus</i>	S5B	Yellow	NA	LC
<i>Picoides pubescens</i>	S5	Yellow	NA	LC
<i>Picoides villosus</i>	S5	Yellow	NA	LC
<i>Pipilo maculatus</i>	S5	Yellow	NA	LC
<i>Piranga ludoviciana</i>	S5B	Yellow	NA	LC
<i>Podiceps auritus</i>	S4B, SNRN	Yellow	SC	VU
<i>Podiceps grisegena</i>	S5?B	Yellow	NAR	LC
<i>Podiceps nigricollis</i>	S3B	Blue	NA	LC
<i>Podilymbus podiceps</i>	S4	Yellow	NA	LC
<i>Poecile rufescens</i>	S5	Yellow	NA	LC
<i>Porzana carolina</i>	S5	Yellow	NA	LC
<i>Progne subis</i>	S3S4B	Blue	NA	LC
<i>Psaltriparus minimus</i>	S4B	Yellow	NA	LC
<i>Rallus limicola</i>	S4S5	Yellow	NA	LC
<i>Regulus calendula</i>	S5	Yellow	NA	LC
<i>Regulus satrapa</i>	S5	Yellow	NA	LC
<i>Riparia riparia</i>	S4?B	Yellow	T	LC
<i>Sayornis saya</i>	S4S5B	Yellow	NA	LC
<i>Selasphorus rufus</i>	S4?B	Yellow	NA	NT
<i>Setophaga coronata</i>	S5B	Yellow	NA	LC
<i>Setophaga nigrescens</i>	S4S5B	Yellow	NA	LC
<i>Sialia currucoides</i>	S4S5B	Yellow	NA	LC
<i>Sitta canadensis</i>	S5	Yellow	NA	LC
<i>Sphyrapicus ruber</i>	S5B	Yellow	NA	LC
<i>Spinus pinus</i>	S5B	Yellow	NA	LC
<i>Spinus tristis</i>	S4	Yellow	NA	LC
<i>Spizella passerina</i>	S5B	Yellow	NA	LC
<i>Stelgidopteryx serripennis</i>	S4S5B	Yellow	NA	LC
<i>Stercorarius parasiticus</i>	S1B, SUM	Red	NA	LC
<i>Strix varia</i>	S5	Yellow	NA	LC
<i>Synthliboramphus antiquus</i>	S2S3B, S4N	Blue	SC	LC
<i>Tachycineta bicolor</i>	S5B	Yellow	NA	LC
<i>Thryomanes bewickii</i>	S4	Yellow	NA	LC
<i>Tringa incana</i>	S3B	Blue	NA	LC
<i>Tringa melanoleuca</i>	S5B, SUN	Yellow	NT	LC
<i>Tringa solitaria</i>	S5B	Yellow	NA	LC
<i>Troglodytes aedon</i>	S5B	Yellow	NA	LC
<i>Troglodytes pacificus</i>	S5	Yellow	NA	LC
<i>Turdus migratorius</i>	S5	Yellow	NA	LC
<i>Vireo cassinii</i>	S5B	Yellow	NA	LC

<i>Vireo gilvus</i>	S5B	Yellow	NA	LC
<i>Vireo huttoni</i>	S4	Yellow	NA	LC
<i>Vireo olivaceus</i>	S5B	Yellow	NA	LC
<i>Zenaida macroura</i>	S4?B	Yellow	NA	LC
<i>Zonotrichia albicollis</i>	S5	Yellow	NA	LC
<i>Zonotrichia atricapilla</i>	S5?B	Yellow	NA	LC
<i>Zonotrichia leucophrys</i>	S5	Yellow	NA	LC

Additional Information

PROVINCIAL CONSERVATION STATUS RANKS

TYPE OF RANK	MEANING
S	Subnational ranks assigned & maintained by the B.C. Conservation Data Centre
N	National ranks assigned by national & international conservation authorities
G	Global ranks assigned by national & international conservation authorities

MODIFIER CODE	MEANING
a	Presumed extirpated
H	Historical (species) / possibly extirpated (ecological communities)
1	Critically imperiled
2	Imperiled
3	Special concern, vulnerable to extirpation or extinction
4	Apparently secure, with some cause for concern
5	Demonstrably widespread, abundant and secure
NA	Not applicable
NR	Not yet assessed
U	Unrankable
##	Range Rank—Used to indicate the range of uncertainty about conservation status (e.g. S2S3)
?	Inexact or Uncertain—Denotes inexact or uncertain numeric rank

BC RED, BLUE & YELLOW LISTS

LIST	MEANING
Red	List of ecological communities, native species and subspecies in B.C. that are at the greatest risk of being lost.
Blue	List of ecological communities, native species and subspecies in B.C. that are of special concern (formerly vulnerable).
Yellow	List of ecological communities and native species in B.C. that are apparently secure or secure (least risk of being lost).

COSEWIC STATUS DOMAIN VALUES

STATUS	MEANING
X	Extinct
XT	Extirpated
E	Endangered
T	Threatened
SC	Special Concern
NAR	Not at Risk
NA	Not assessed

IUCN RED LIST CATEGORIES

STATUS	MEANING
EX	Extinct
EW	Extinct in the wild
CR	Critically endangered
EN	Endangered
VU	Vulnerable
NT	Near threatened
LC	Least concern
DD	Data deficient
NE	Not evaluated

Species & Habitat Resources

BC Species & Ecosystems Explorer - <https://a100.gov.bc.ca/pub/eswp/>

BC Red, Blue & Yellow Lists -

<https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre/explore-cdc-data/red-blue-yellow-lists>

Provincial Conservation Status Ranks -

<https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre/explore-cdc-data/status-ranks>

IUCN Red List categories and criteria, version 3.1, second edition -

<https://portals.iucn.org/library/node/10315>

Sensitive Ecosystem Inventory for Metro Vancouver & Abbotsford. 2010-2012.

Technical Report. Meidinger Ecological and Metro Vancouver.

<https://metrovancouver.org/services/regional-planning/Documents/sensitive-ecosystem-inventory-technical-report.pdf>

Kristen Hirsh-Pearson, Chris J. Johnson, Richard Schuster, Roger D. Wheate, and Oscar Venter. 2022. Canada's human footprint reveals large intact areas juxtaposed against areas under immense anthropogenic pressure. *FACETS*. 7: 398-419. <https://doi.org/10.1139/facets-2021-0063>