

GIS layers in ArcView database created for Helliwell Provincial Park

FILE NAME	TYPE	SOURCE	SCALE	DESCRIPTION
Base map layers				
TEM	Polygon	2	1:5,000	Terrestrial Ecosystem Mapping polygons
Mar_sediment	Polygon	5	1:5,000	Marine Sediments
Mar_sed_samples	Points	5	1:5,000	Point locations for marine sediment samples
Mar_depth_p	Points	6	1:30,000	Point depths digitized from CHS field sheets
MEM	Polygon	1	1:250,000	Marine Subtidal Ecosystem Mapping Polygons
Bathy_NRM	Line	7	1:250,000	CHS Natural Resource Map series 15794; 1:250,000; 10 m intervals
Wildlife and marine resource layers				
Eelgrass	Polygon	1-AH	1:5,000	Areas of eelgrass beds
Herring_spawn	Line	7	1:100,000	Relative abundance of Spawn assigned to coastline
Clam_beds	Polygon	7	1:70,000	Location of clam beds from DFO clam atlas
Otters	Polygon	1-AH/JB	1:5,000	Areas where river otters or their scat have been observed
PWSD	Polygon	1-AH	1:5,000	Areas where Pacific White-sided Dolphins have been observed
Sealions	Polygon	7, 1-AH	1:5,000	Location of sea lion haul outs or rafting areas
Seals	Polygon	7, 1-AH	1:5,000	Location of Harbour seal haul outs or rafting areas
Shark_a	Polygon	1-AH	1:5,000	Key area where concentrations of six-gilled sharks are known to occur
Shark_p	Point	1-AH	1:5,000	Point locations for sightings of six-gilled sharks
Mar_bird_area	Polygon	3, 1-AH	1:5,000	Key areas of marine bird concentrations – species, timing and activities
Mar_bird_pnt	Point	3, 1-AH	1:5,000	Current/ abandoned marine bird nest sites – DCCO, BLOY, GWGU, FIGU
Terrestrial Point Features				
BAEA	Point	10,1-JAB/AH	1:5,000	Bald Eagle Nest Sites
CDC_rare	Point	11	1:50,000	Locations of Red and Blues listed species listed with the CDC
Bio_features	Point	1-JB/JAB	1:5,000	Special land based biological features in and around Helliwell Park from GPS survey
Arch_sites	Point	9	1:50,000	Archaeological Sites (Borden number and site type)
Human Use Layers				
Divearea	Polygon	1-AH	1:5,000	Areas of high use by divers
Divesites	Point	1-AH	1:5,000	Key dive sites

Fishery1	Polygon	7, 1-AH	1:80,000	Recreational Groundfish Fishery
Fishery2	Polygon	7	1:40,000	Commercial Geoduck/Horse clam Fishery
Fishery3	Polygon	7, 1-AH	1:40,000	Commercial Pink scallop Fishery
Fishery4	Polygon	7	1:40,000	Former Invertebrate fisheries (Abalone, Sea Cucumber, Rock Scallop)
Fishery5	Polygon	7, 1-AH	1:80,000	Commercial Shrimp and Prawn Fishery
Fishery6	Polygon	7	1:80,000	Commercial Groundfish Trawl Fishery
Fishery7	Polygon	7, 1-AH	1:80,000	Recreational/Commercial Salmon Fishery
Trail_GPS_line	Line	1-JAB	1:5,000	Trail through Helliwell Park (georeferenced using GPS)
Trail_GPS_pnts	Point	1-JAB	1:5,000	GPS reference points and trail features along park trail (from GPS)
Designated Boundary Layers and Georeferencing layers				
Cadastral	Line	4	?	Property boundaries (note discrepancy with GPS survey)
Park_B_Land	Polygon	4	?	Helliwell Park Boundary – Land portion
Park_B_Marine	Polygon	8	1:5,000	Helliwell Park Boundary – Marine portion (from legal description)
GCP_GPS	Point	1-JAB	1:5,000	GPS Ground control points for air photo rectification

Sources:

1. Personal observations/data collection: AH – Amanda Heath, JB – Jennifer Balke, JAB - Jacqueline Booth
2. TEM field survey 2000/2001
3. Published Survey Records (see text for details)
4. Comox-Strathcona Regional District
5. Interpretation of CHS Side Scan Sonar survey by Coastal and Ocean Resources Inc
6. CHS field sheets
7. DFO fishery officers and scientists
8. Created from legal description
9. Ministry of Small Business, Tourism and Culture Archaeological Branch
10. MELP bald eagle surveys 1991
11. BC Conservation Data Centre

GIS layers provided by LUCO from the Marine Resource Atlas and their use in this project.

Unless stated otherwise, scale is 1:40,000. File names as provided by LUCO and as included in BC Parks database are shown.

FILE NAME	FILE TYPE	USED ¹	DESCRIPTION	LUCO NAME
LUCOshunits	Line	✓	Physical Shore-Zone Units	shunits
LUCObathy	Line	✓	Unclosed bathymetric contours from CHS Chart 3513 1:80,000; 20 m intervals	bathy
LUCOlwwater	Line	✓	Low water mark from CHS charts	lwwater
LUCOanchor	Point	✓	Anchorage	anchor
LUCOmarinas	Point	✓	Marinas	marinas
LUCOshellfrm	Polygon	✓	Shellfish tenures	shellfrm
LUCOhseal	Point	☒	Harbour seal haul outs and numbers	hseal
LUCOkwhale	Polygon	☒	Relative Abundance of Killer whales	kwhale
LUCOdalporp	Polygon	☒	Relative Abundance of Dall's porpoise	dalporp
LUCObirdcol	Point	☒	Bird colonies – location and species	birdcol
LUCObirds	Polygon	☒	Relative Abundance of Alcids in three general areas covered by park	alcid
<i>Individual layers were merged as polygons were identical</i>	Polygon	☒	Relative Abundance of Dabbling Ducks in three general areas covered by park	diving
	Polygon	☒	Relative Abundance of Diving Ducks in three general areas covered by park	dabbling
	Polygon	☒	Relative Abundance of Gulls in three general areas covered by park	gulls
	Polygon	☒	Relative Abundance of Loons and Grebes in three general areas covered by park	loonsgreb
	Polygon	☒	Relative Abundance of Shorebirds in three general areas covered by park	shrbirds
	Polygon	☒	Relative Abundance of Cormorants in three general areas covered by park	cormnt
LUCOcslmnt	Polygon	☒	Relative Importance of areas for commercial salmon net fisheries (gillnet, seine)	cslmnt
LUCOcslmnn	Polygon	☒	Relative Importance of areas for commercial salmon troll fishery	cslmnn
LUCOcherr	Polygon	☒	Relative Importance of areas for commercial herring fishery	cherr
LUCO_MEC	Polygon	✓	Marine Ecosystem Classification Units at 1:250,000	MEC

¹ Layers were not used in Map Atlas when a more recent and/or accurate layer was available. ☒ means that layer was not used; ✓ means that it was used.

GIS data layers provided by or derived from TRIM I at a map scale of 1:40,000 and their use in the project.

NAME ²	TYPE	DESCRIPTION	OLDNAME ³
T_Marsh	Polygon	Marsh	marsh_a
T_Coast	Line	Coastline of Vancouver Island and other islands and islets	coast
T_River	Line	River/Stream (definite), River/Stream (indefinite)	triv
T_SandBar	Polygon	Sand/gravel bar	sandbara
T_Lake	Polygon	Lake	tlake_a
T_Land	Polygon	Hornby Island, portion of Denman Island and Islets	hornby_a
T_Culture_P	Point	Point locations for Man Made Structures: Building, Transmission Tower, Microwaves Tower, Lighthouse, Beacon, Horizontal Control Point, Pier, Photo Centre, Tank	tculp
T_Culture_L	Line	Outlines of Man Made Structures: Building, Campground/Campsite, Cemetery, Cutline/Seismic Line, Dump, Ferry Dock, Park/Picnic Area, Pier, Pit, Abandoned Pit, Trailer Park, Transmission Line	tcull__1
T_Roads	Line	Road (loose,1 lane,Undivided), Road (loose,1 lane,Undivided,U/C), Road (loose,2 lanes,Undivided), Road (paved,1 lane,Undivided), Road (paved,2 lanes,Divided), Road (paved,4 lanes,Undivided), Road (rough)	troad__1
T_Rail	Line	Railway line (single track)	
T_Trail	Line	Trail along south shore of Helliwell Park (extracted from T_Transport_L)	trail
T_Woods	Polygon	Wooded Areas	tevrl_a
T_Contours	Polygon	Elevation contours in 20 m intervals	contours
T_SpotHeight	Point	Spot Height, Mountain Top	tspht
T_Symbol	Polygon	Symbolized point for Swamp, Marsh, San/Gravel Bar	tsymb
T_Transport_L	Line	Outlines of transportation features: Air Field, Bridge, Ferry Route, Trail	trnl__1
T_FerryTerminal	Point	Ferry Terminal (symbolized)	ttrnp
T_Island_P	Point	Island (symbolized), Island (symbolized) approximate	twtrp__p
T_PlaceNames	Text	Toponymy – place names (text letters individually placed)	ttopn
T_SymbolText	Text	Text for symbols	ttext

² Name as incorporated into BC Parks GIS database.

³ Name as provided by MELP.