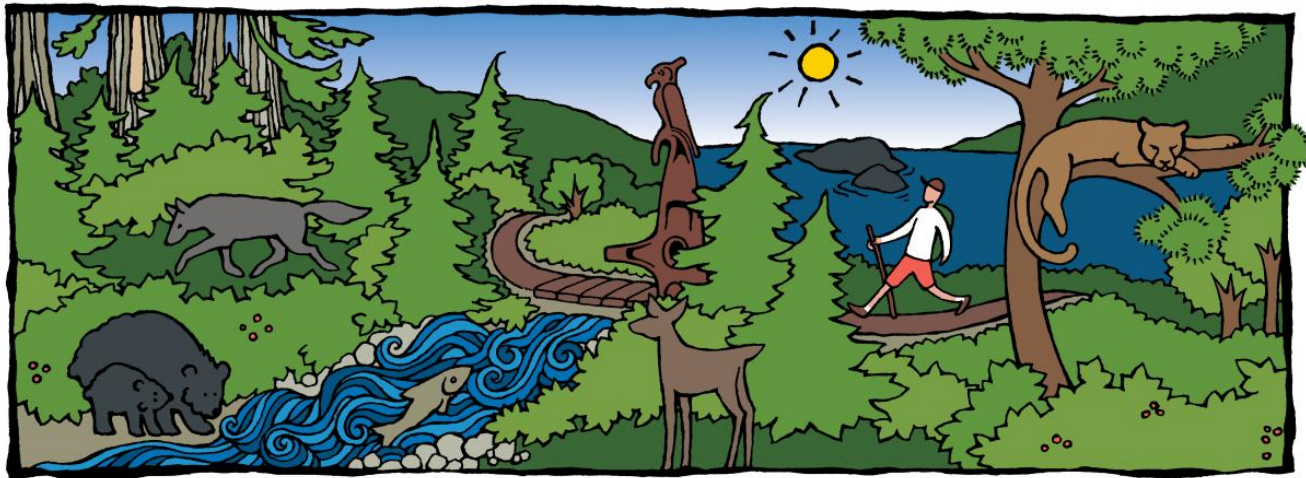




Projet Côte Sauvage

Prédateurs, Proies et Personnes



WildCoast Project

Predators, Prey and People





WildCoast Project

Context

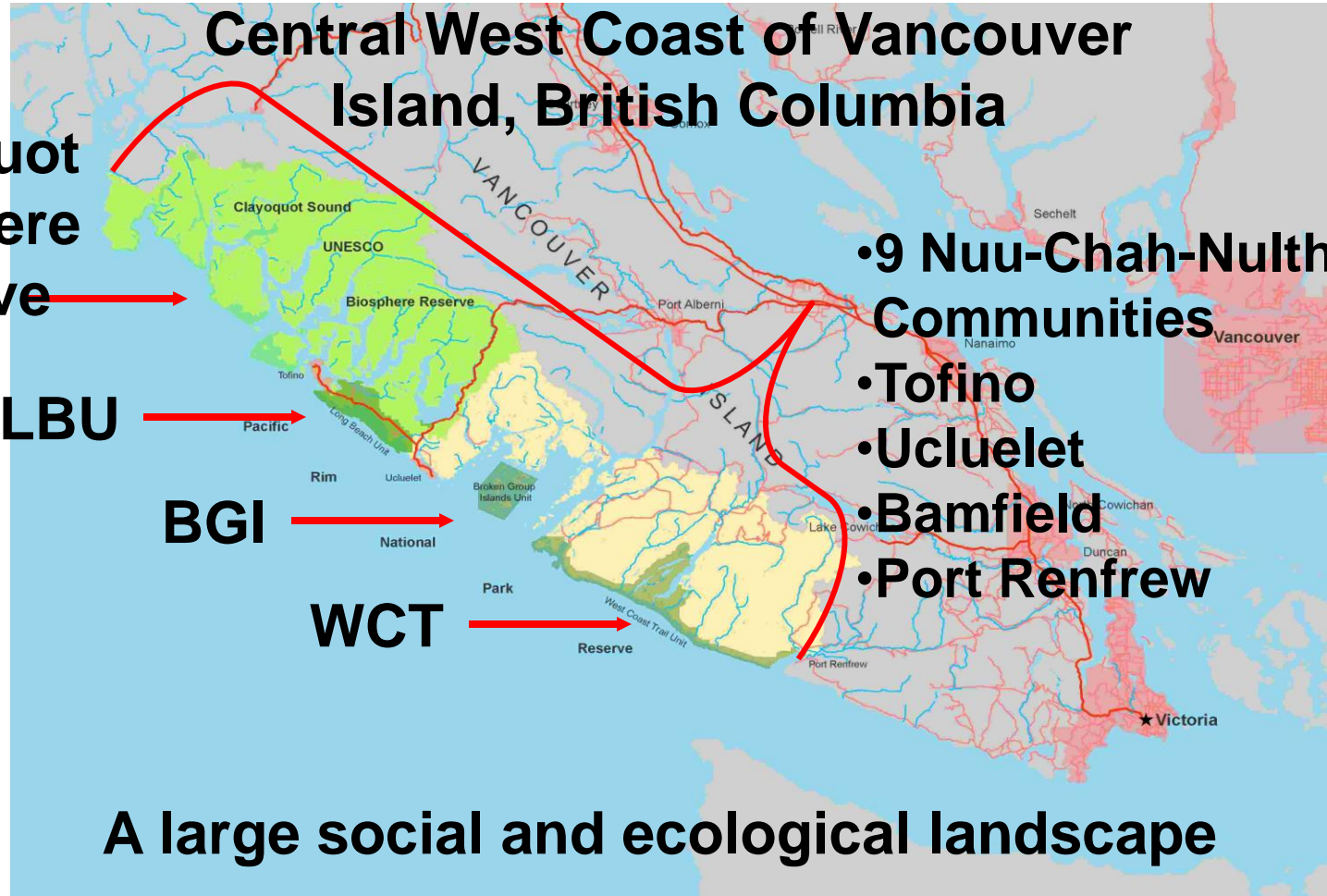
- A research initiative that is trying to understand the increase of carnivore-human interactions by studying predators, prey and people
- A key part of the predator research:
 - to understand the ecologies of wolves and cougar
- To address this knowledge gap:
 - the project has developed and employed a technique to search systematically for carnivore signs within the study area





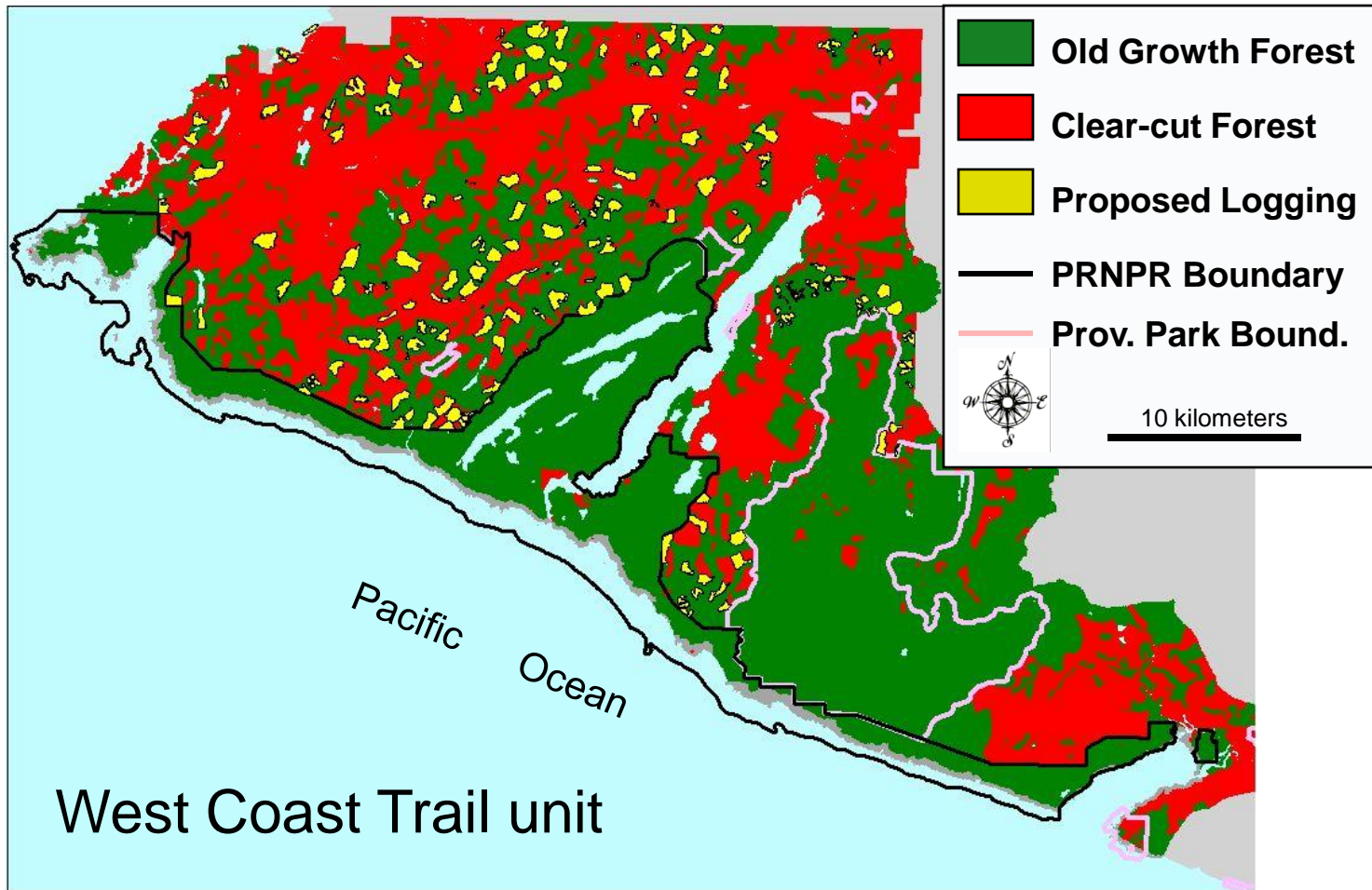
STUDY AREA

Central West Coast of Vancouver Island, British Columbia





EVER-CHANGING LANDSCAPE





INCREASED CARNIVORE - HUMAN INTERACTIONS

Raise Many Questions:

- Can we co-exist in the long term?
- What underlying dynamics contribute to interactions?
- Due diligence - human safety?
- Communities - Parks - Mortality Sinks for Carnivores?
- Increase Communication – Education Effectiveness?

The WildCoast Project - pursuit of a greater understanding to reduce carnivore-human conflict





CHALLENGES

- With all these complicating factors, what can be done to help build the picture and fill the knowledge gaps?
- Perform surveys in the field – “Sign-surveys” to see which habitats are being used by predators and prey and how.
- Maintain a wildlife database and perform queries.
- Use non-invasive methods to gain understanding about the ecologies of these apex predators





RESEARCH METHODS:

- non-invasive techniques:
- the forests are thick and the rains are heavy. . .
but
we can look for animal sign:
 - tracks and scats

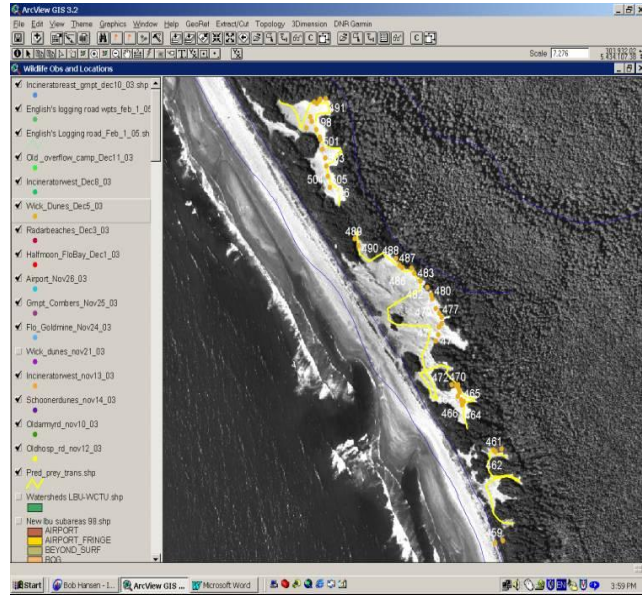




METHODS

- Regular sign-surveys conducted along predetermined transects, in and around the LBU
- Surveys performed in all seasons by trained technicians
- Search for carnivore signs
 - Wolf and Cougar
- Search for prey sign
 - Deer
 - Small Mammals
 - Black Bear
- Detection versus non-detection (**not absence**)





Wickaninnish Dunes



Prey – River Otter



Predator tracks





TRANSECTS

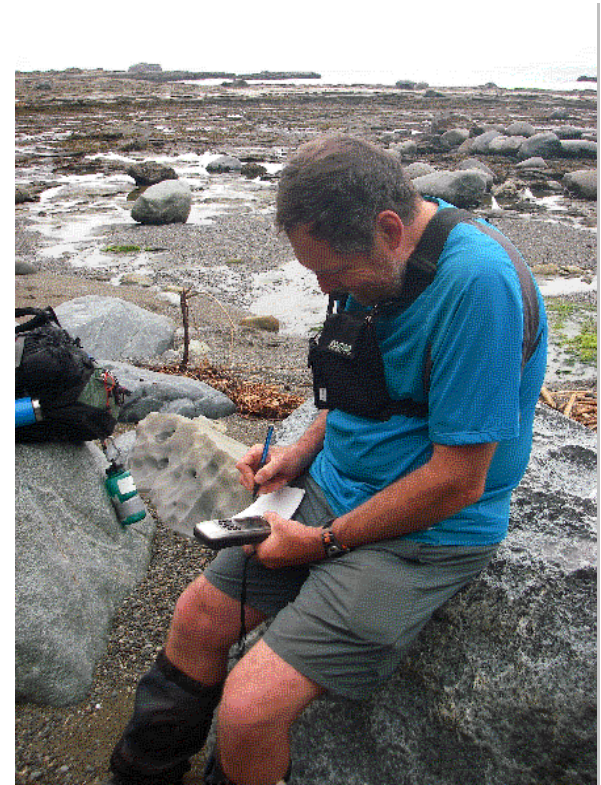
- Each of the 3 units of the national park, the LBU, the BGI, and the WCT, has been surveyed in attempt to detect the presence of large terrestrial carnivores as well as their prey
- Since 2003 – 17 different transects surveyed in the LBU
 - preliminary study in 2003, 13 transect within LBU
- 19 transects on the BGI and 5 transects on the WCT
- Transects 1.2 km – 14.5 km
- Shift in focus based on productivity, resources availability, & ability to move along transect (non-random)



DATA COLLECTION

- Biological Data
 - Species Identification
 - Track Measurement
 - Scat Sample
- Habitat Data
- Surveys conducted using GPS
 - Location
 - Distance Surveyed
 - Time Spent Surveying
- Detection/Non-Detection of Predatory and Prey Signs

} Search
Effort





THE PRNPR WILDLIFE DATABASE

- The PRNPR makes use of an MS Access database to help manage the massive amount of wildlife information recorded
- Each reported observation of a wildlife sighting or observations of animal sign is entered as a separate record
- Each record is compiled of a series of common fields of information such that the entire database can be queried based on any combination of field criteria
- This database was queried to find records of wolf and cougar



WOLVES

PRNPR WILDLIFE DATABASE

- Records from each of the 3 park units as well as from the Clayoquot Sound (CS) are represented
- Between 2005 and 2007, more than 750 records of wolves
- Of these records, 88% are of individual wolves
- The remaining records are of groups of 2 – 4 wolves





COUGAR PRNPR WILDLIFE DATABASE

- Cougar records from 2 of the 3 park units as well as from the Clayoquot Sound (CS) are represented, there are no records of cougar activity from the BGI
- Between 2005 and 2007, there were 122 records of cougar
- Of these records, 95% are of individual cougar
- The remaining records are of pairs of cougar





PRELIMINARY SIGN-SURVEY RESULTS FOR LBU IN 2003

Wolves in 9 of 13
Transects – 69%

Deer in 6 of 13
transects – 46%

Cougar detected
on 1 transect –
8%

Transect	N	Wolf	Deer	Cougar	Bear
Itattsoo Trail	0				
Willow brae/Half moon	1	Detected	Detected	Not Detected	Not Detected
Information Trail	1	Not Detected	Not Detected	Not Detected	Detected
Florencia Bay	2	Detected	Not Detected	Detected	Detected
Goldmine Trail	2	Detected	Not Detected	Not Detected	Detected
Wick Beach/Dunes	2	Detected	Not Detected	Not Detected	Detected
KCR Road	1	Not Detected	Not Detected	Not Detected	Detected
Combers /Green Pt.	1	Detected	Not Detected	Not Detected	Not Detected
Incinerator E./Long Beach	1	Not Detected	Detected	Not Detected	Not Detected
Schooner/Greenpoint	0				
Old Hospital Road	0				
Incinerator West/Schooner	2	Detected	Detected	Not Detected	Detected
Airport	1	Detected	Not Detected	Not Detected	Detected
Old Camp Overflow	1	Not Detected	Detected	Not Detected	Not Detected
Old Army Road	1	Detected	Detected	Not Detected	Detected
Radar Beaches	1	Detected	Detected	Not Detected	Not Detected
English's Logging Road	0				





SIGN-SURVEY RESULTS 2005 FOR LBU

Wolves
detected in 6 of
12 transects –
50 %

Deer on 1 of 12
transects – 8%

Cougar on 1 of
12 transects –
8%

Transect	N	Wolf	Deer	Cougar	Bear
Itattsoo Trail	0				
Willow brae/Half moon	1	Detected	Not Detected	Not Detected	Not Detected
Information Trail	0				
Florencia Bay	1	Detected	Not Detected	Not Detected	Not Detected
Goldmine Trail	1	Not Detected	Not Detected	Not Detected	Not Detected
Wick Beach/Dunes	1	Not Detected	Not Detected	Not Detected	Not Detected
KCR Road	0				
Combers /Green Pt.	1	Not Detected	Not Detected	Not Detected	Not Detected
Incinerator E./Long Beach	0				
Schooner/Greenpoint	0				
Old Hospital Road	1	Detected	Not Detected	Not Detected	Not Detected
Incinerator West/Schooner	1	Detected	Detected	Not Detected	Not Detected
Airport	1	Detected	Not Detected	Not Detected	Not Detected
Old Camp Overflow	1	Not Detected	Not Detected	Not Detected	Not Detected
Old Army Road	1	Not Detected	Not Detected	Not Detected	Not Detected
Radar Beaches	1	Not Detected	Not Detected	Not Detected	Not Detected
English's Logging Road	1	Detected	Not Detected	Detected	Not Detected



SIGN-SURVEY RESULTS 2006 FOR LBU

Wolves on 10 of 12 transects – 83%

Deer on 9 of 12 transects – 75%

Cougar on 5 of 12 transects – 42%

Collection of non-ungulate, small prey data

Transect	N	Wolf	Deer	Cougar	Bear	Other
Itattsoo Trail	3	Detected	Detected	Detected	Detected	Raccoon/Mink
Willow brae/Half moon Bay/Flo Bay	6	Detected	Detected	Detected	Not Detected	Marten/River Otter
Information Trail	0					
Goldmine Trail	3	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Wick Beach/Dunes	6	Detected	Detected	Detected	Detected	Marten/Mink
KCR Road	0					
Combers /Green Pt.	16	Detected	Not Detected	Not Detected	Not Detected	Raccoon/River Otter
Incinerator East/Long Beach	5	Detected	Not Detected	Not Detected	Not Detected	Not Detected
Schooner/Greenpoint	9	Detected	Detected	Not Detected	Detected	River Otter
Old Hospital Road	0					
Incinerator West/Schooner	6	Detected	Detected	Not Detected	Not Detected	Raccoon/River Otter
Airport	16	Detected	Detected	Detected	Detected	Not Detected
Old Camp Overflow	3	Not Detected	Detected	Not Detected	Detected	Not Detected
Old Army Road	4	Detected	Detected	Not Detected	Detected	Mink
Radar Beach to Incinerator West	0					
English's Logging Road	14	Detected	Detected	Detected	Detected	Not Detected

-7 of 12 transects – 58%

Increased search effort in 2006



SIGN-SURVEY RESULTS 2007 FOR LBU

- Wolves detected on 5 of 11 transects – 46%

- Deer on 9 of 11 transects – 82%

- Cougar on 2 of 11 transects – 18%

- Small prey on 7 of 11 transects – 64%

Transect	N	Wolf	Deer	Cougar	Bear	Other
Itattsoo Trail	4	Detected	Detected	Detected	Detected	River Otter
Willow brae/Halfmoon/Flo Bay	6	Detected	Detected	Not detected	Detected	Raccoon/River
Information Trail	0	Not detected	Not detected	Not detected	Not detected	Not detected
Goldmine Trail	2	Not detected	Not detected	Not detected	Not detected	Not detected
Wick Beach/Dunes	7	Detected	Detected	Not detected	Detected	Raccoon/River
KCR Road	0	Not detected	Not detected	Not detected	Not detected	Not detected
Combers /Green Pt.	1	Not detected	Not detected	Not detected	Not detected	River Otter
Incinerator E./Long Beach	0	Not detected	Not detected	Not detected	Not detected	Not detected
Schooner/Greenpoint	0	Not detected	Not detected	Not detected	Not detected	Not detected
Old Hospital Road	0	Not detected	Not detected	Not detected	Not detected	Not detected
Incinerator West/Schooner	6	Not detected	Detected	Not detected	Detected	Raccoon/River
Airport	4	Detected	Detected	Not detected	Not detected	Not detected
Old Camp Overflow	3	Not detected	Detected	Not detected	Not detected	Not detected
Old Army Road	3	Not detected	Detected	Not detected	Detected	Not detected
Radar Beach to Incinerator West	1	Not detected	Detected	Not detected	Detected	River Otter/Mink
English's Logging Road	8	Detected	Detected	Detected	Detected	Raccoon/River



SIGN-SURVEY RESULTS 2005 FOR BGI

- Wolves detected on 17 of 19 transects – 90%
- Deer on 10 of 19 transects – 53%
- No Cougar activity detected
- Small prey on 13 of 19 transects – 68%

Transect	N	Wolf	Deer	Cougar	Bear	Other
Gilbert Island	2	Detected	Detected	Not detected	Not detected	River Otter
Dicebox Island	1	Detected	Detected	Not detected	Not detected	Not detected
Wouwer Island	3	Detected	Detected	Not detected	Not detected	River Otter
Cooper Island	3	Detected	Not detected	Not detected	Not detected	River Otter, Mink
Effingham Island	3	Detected	Detected	Not detected	Not detected	Not detected
Howell Island	1	Detected	Not detected	Not detected	Not detected	Not detected
Clarke Island	2	Detected	Detected	Not detected	Not detected	Raccoon, Mustelid, Mink obs
Benson Island	2	Not detected	Detected	Not detected	Not detected	Mustelid
Bauke Island	1	Detected	Not detected	Not detected	Not detected	Mink, bird carcasses
Raymond Island	2	Detected	Not detected	Not detected	Not detected	River Otter, Mink
Willis Island	2	Detected	Detected	Not detected	Not detected	River Otter, Mink
Cataract Lake Road	1	Not detected	Detected	Not detected	Detected	Raccoon, shrew, frog
Turret Island	1	Detected	Not detected	Not detected	Not detected	Not detected
Lovett Island	1	Detected	Not detected	Not detected	Not detected	River Otter
Trickett Island	1	Detected	Not detected	Not detected	Not detected	Raccoon, River Otter
Equis Beach	1	Detected	Not detected	Not detected	Detected	Mink
Mayne Bay	1	Detected	Not detected	Not detected	Not detected	Not detected
Dodd Island	1	Detected	Detected	Not detected	Not detected	Not detected
Nettle Island	1	Detected	Detected	Not detected	Not detected	River Otter
Total surveys	30					
Total Detected		89.5%	52.6%	0.0%	10.5%	68.4%



SIGN-SURVEY RESULTS 2005 FOR BGI

- Of particular interest:

River Otter or Raccoon detected on 10 of 19 transects – 53%





SIGN-SURVEY RESULTS 2006 FOR BGI

- Wolves detected on 8 of 18 transects – 44%
- Deer on 14 of 18 transects – 78%
- No Cougar activity detected
- Small prey on 9 of 18 transects – 50%

Transect Location		Wolf	Deer	Cougar	Bear	Other
Gilbert Island	1	Detected	Not detected	Not detected	Not detected	Not detected
Dicebox Island						
Wouwer Island	1	Detected	Detected	Not detected	Not detected	Not detected
Cooper Island	1	Detected	Not detected	Not detected	Not detected	Not detected
Efingham Island	1	Detected	Detected	Not detected	Not detected	Mink
Howell Island	2	Not detected	Not detected	Not detected	Not detected	Not detected
Clarke Island	1	Not detected	Detected	Not detected	Not detected	Mink
Benson Island	2	Not detected	Detected	Not detected	Not detected	Not detected
Bauke Island						
Raymond Island						
Willis Island	1	Not detected	Detected	Not detected	Not detected	Not detected
Cataract Lake Road	1	Not detected	Detected	Not detected	Detected	Not detected
Turret Island	1	Detected	Detected	Not detected	Not detected	Mink
Lovett Island	1	Not detected	Detected	Not detected	Not detected	Mink
Trickett Island	3	Detected	Detected	Not detected	Not detected	Mink
Equis Beach	1	Detected	Detected	Not detected	Not detected	Not detected
Mayne Bay						
Dodd Island	2	Not detected	Detected	Not detected	Not detected	Mink
Nettle Island	1	Not detected	Detected	Not detected	Not detected	River Otter, Mink
Turtle Island	1	Detected	Not detected	Not detected	Not detected	Not detected
Hand Island	1	Not detected	Detected	Not detected	Not detected	River Otter, Mink
Brabants Island	1	Not detected	Detected	Not detected	Not detected	Mink
Total Surveys	23					
Total Detected		44.4%	77.8%	0.0%	5.6%	50.0%



SIGN-SURVEY RESULTS 2006 FOR BGI

•Of particular interest:
Wolf detection **decreased** ~ 50%
from 2005 to 2006

•Of particular interest:
River Otter or Raccoon detected
on 2 of 18 transects – 11%

•Of particular interest:
Deer detection **increased** ~ 50%
from 2005 to 2006





SIGN-SURVEY RESULTS 2006 FOR WCT

- Wolves detected on 7 of 8 transects – 88%

- Deer on 6 of 8 transects – 75%

- Cougar detected on 3 of 8 transects – 38%

Transect	N	Wolf	Deer	Cougar	Bear	Other
Gordon - Thrasher	5	Not Detected	Not Detected	Detected	Detected	River Otter, Mink, Elk, Marten
Thrasher - Camper	5	Detected	Detected	Not Detected	Detected	River Otter, Mink, Raccoon
Camper - Walbran	5	Detected	Detected	Not Detected	Detected	Mink
Walbran - Carmanah	5	Detected	Detected	Not Detected	Detected	River Otter, Raccoon, Mink,
Carmanah - Cheew aht	5	Detected	Detected	Detected	Detected	River Otter, Raccoon, Mink,
Cheew aht - Klanaw a	5	Detected	Detected	Detected	Detected	River Otter, Mink, Raccoon,
Klanaw a - Pachena Light	5	Detected	Detected	Not Detected	Detected	River Otter, Mink, Raccoon,
Pachena Light - Pachena Bay	5	Detected	Not Detected	Not Detected	Detected	River Otter, Mink
Total Surveys	40					
Total Detected		37.5%	75.0%	37.5%	100.0%	100.0%

- Small prey on all transects – 100%



SIGN-SURVEY RESULTS 2005 FOR CS

- Wolves detected on all of 6 transects – 100%

- Deer on 5 of 6 transects – 83%

- Cougar detected on 1 of 6 transects – 17%

Transect	N	Wolf	Deer	Cougar	Bear	Other
Ginnard Pt./Tsapee Narrows	1	Detected	Detected	Detected	Detected	Not Detected
Deer Bay	1	Detected	Detected	Not Detected	Detected	Not Detected
Vargas Island	3	Detected	Detected	Not Detected	Not Detected	River Otter
Meares Island 'Big Tree Trail'	1	Detected	Not Detected	Not Detected	Not Detected	Not Detected
Fortune Main2 Logging Rd.	2	Detected	Detected	Not Detected	Detected	Mustelid
Tranquil Creek Main Logging Rd.	3	Detected	Detected	Not Detected	Detected	Raccoon, Mustelid
Total Surveys	11					
Total Detected		100.0%	83.3%	16.7%	66.7%	50.0%

- Small prey on 3 of 6 transects – 50%



TRENDS

- Large predators and prey are present if only intermittently in each of the 3 units of the park
- Sign-surveys can be used to show which areas of the park are utilized by wildlife
- Wolves tend to be traveling alone when detected
- Wolf activity within the units of the park fluctuate from year to year





Wolves detected on 5 of 11 transects surveyed

Deer detected on 9 of 11 transects

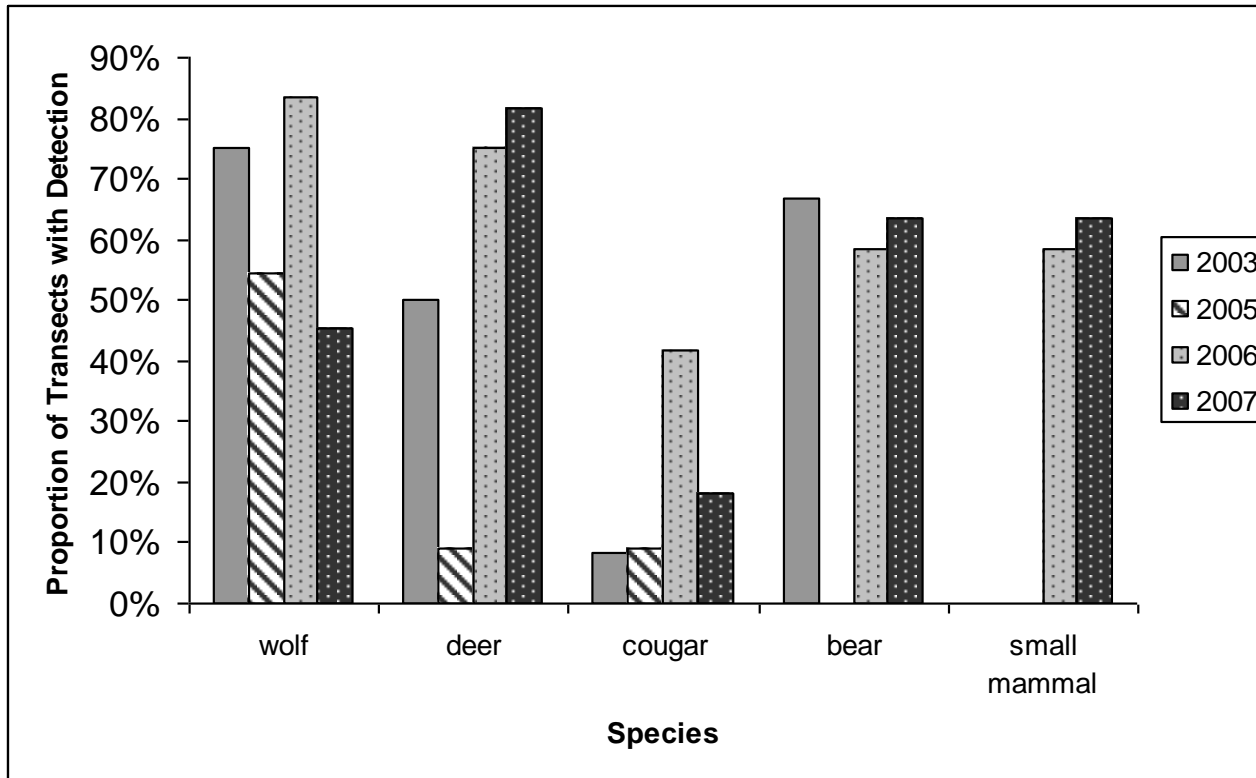
Cougar detected on 2 of 11 transects

Black Bear detected on 7 of 11 transects

Small mammalian prey detected on 7 of 11 transects



GRAPH





TOTAL SURVEYS

2005 – 32 surveys in the BGI, 17 in LBU, 11 in the CS
180 scats collected during 61 surveys

2006 – 91 LBU sign-surveys, 30 BGI, 5 WCT
82 scats collected during 126 surveys

2007 – 45 sign-surveys to date in LBU, 1 CS
30 scats collected during 45 surveys throughout Park