



## **Coastal Douglas Fir Zone Workshop**

**Monday, March 1, 2010**

**Silver Bridge Inn, 140 Trans Canada Highway, Duncan**



*Image courtesy Bear Bay Stewardship Alliance  
<http://www.bearbay.ca/index.php/bearbay/photograph/64/>*

# Coastal Douglas Fir Zone Workshop



**Monday, March 1, 2010 10:00 am to 4:00 pm**

**Silver Bridge Inn, 140 Trans Canada Highway, Duncan**

**Hosted by the BC Ministry of Environment**

## *Agenda*

- 9:30 – 10:00 am      *Refreshments and registration*
- 10:00 am              **Welcome and introductions** (Judith Cullington, Facilitator)  
**Purpose of workshop** (Mary Jo Hamey, Ministry of Environment)
- 10:15 am - noon      Presentations:  
**The need for CDF conservation** (Andy McKinnon, Research Ecologist, Ministry of Forests and Range)  
**Provincial legislation initiatives for CDF protection on Crown forest land:**  
                         **Old Growth Management Areas** (Ron Cotton, Land and Resource Specialist, Ministry of Forests and Range)  
                         **Wildlife Habitat Areas** (Ron Diederichs, Ecosystems Section, Ministry of Environment)  
**The provincial government's CDF Land Use Order on Crown land** (Bill Zinovich, Land and Resource Specialist, Ministry of Forests and Range)  
**International Vegetation Classification Correlation** (Carmen Cadrin, Program Ecologist, Conservation Data Centre)
- 12:00 – 12:45 pm      *Lunch (provided)*
- 12:45 – 1:45 pm      Presentations (cont'd):  
**Nature Conservancy of Canada's Salish Sea Conservation Plan** (Pierre Iachetti, NCC Director of Conservation Science & Planning)  
**Wildlife Tree Stewardship Program on East Vancouver Island** (Ian Moul, BC WiTS Coordinator and Vancouver Island Coordinator)  
**One local government approach: The Cowichan Valley Regional District's State of Environment Report** (Kate Miller, Manager, Regional Environmental Policy, Cowichan Valley Regional District)
- 1:45 – 3:15 pm      Small group discussions: Issues and Solutions  
Discussion: **What challenges are workshop participants having in conserving the CDF? How can we work together better?**
- 3:15 – 4:00 pm      Report out and **discussion of next steps**

# Workshop Notes

## Purpose of Workshop

Unlike other areas of British Columbia, the land base of the Coastal Douglas-fir (CDF) is 90% private land. The pressure on the naturally functioning ecosystems is extreme, with land in demand for logging, housing and farming.

The purpose of workshop was to hear about some of the initiatives being undertaken to conserve the CDF and to open a discussion on a CDF conservation strategy. The request for this workshop arose from a multi-ministry initiative of the provincial government to foster shared stewardship for the CDF.

Workshop participants included private forest land and woodlot owners and managers, professional foresters and biologists working in the CDF, staff from local and senior governments, conservation and land trust organizations, and other stakeholders.

## Summary of Presentations

The speakers' PowerPoint presentations are included as an attachment.

- ◆ **Andy MacKinnon** defined the CDF and presented the facts pointing to the need for additional CDF conservation;
- ◆ The provisions for CDF protection in Forest and Range Practices Act were explained by **Ron Cotton** (Old Growth Management Areas) and **Ron Diederichs** (Wildlife Habitat Areas);
- ◆ **Bill Zinovich** spoke about the Land Use Order for the CDF;
- ◆ **Carmen Cadrin** explained how the global ranking for ecosystems is determined;
- ◆ **Ian Moul** gave a summary of BC Nature's Wildlife Tree program;
- ◆ **Pierre Iachetti** presented the Nature Conservancy of Canada's Salish Sea Conservation Area Plan; and
- ◆ **Kate Miller** spoke about the role of local governments in protecting CDF.

## Summary of Discussion

Participants broke into small groups to discuss: *Were you aware of the plight of the CDF before the workshop? How can we address the problem? What are the barriers and how do we measure success?*

## Local Government Group

- ◆ Most people were aware of CDF issues, some increase in knowledge
- ◆ Reduced taxes for conservation covenants, conservation organizations, e.g., NAPTEP (Natural Areas Protection Taxation Exemption Program)
- ◆ Parkland acquisition: Choose ecological attributes (identify what's there)
- ◆ Consider trails or no trails
- ◆ Partnerships private/public
- ◆ Create community support
- ◆ Fundraising
- ◆ Park management – fire management/conservation of coarse woody debris/trail safety/risk management
- ◆ Local Government can access a pool of biologists
- ◆ Role of the OCP – zoning; other land use policies
- ◆ Private Forest Land Management-- Urban Forestry Plans—subject to audit, reporting requirement, downzone these lands prior to sale of land.

- ◆ Oriented to all forest types—connectivity—restorative development—daylighting creeks—Tree Protection Bylaws; bylaw enforcement
- ◆ Sales of Forest Land—conservation percentages and identification of most valuable ecosystems
- ◆ Use of Terrestrial Ecosystem Mapping; inventories
- ◆ Protection of Riparian Zones
- ◆ Soft Policies to Protect—Buffers, Development Permit Areas
- ◆ Identify Growth Areas—Density—Urban Containment
- ◆ ALR
- ◆ 5-10 acre minimums
- ◆ Eagle Tree/heron tree designated areas
- ◆ Hydrology and water/stormwater management
- ◆ Good communication with council and staff

### **Measures of Success**

- ◆ Better bylaws, better Official Community Plan
- ◆ Using best baseline data and mapping—SEI, TEM, local knowledge, aquifers
- ◆ Work to achieve buy-in from all parties
- ◆ Adopt the ecological target for ecosystem health from the Rachel Holt Report—30% old and mature forest needed in the CDF.
- ◆ Communicate with senior managers
- ◆ Using Salish Sea Plan

### **Crown and Private Land Forest Managers**

- ◆ Have we formulated what a successful strategy would look like?
- ◆ What are the broad objectives?
- ◆ Goals—not to have more species red-listed, recover those that are now listed
- ◆ There is not enough Crown land for normal conservation measures to protect the CDF
- ◆ Identify broad ecosystem function as an objective then give land use limits to achieve
- ◆ Consider Models that have worked—Conservation Easements in the Willamette Valley, selling conservation credits that are taxation related.
- ◆ Garry oak recovery strategy—there may be a similar opportunity for the CDF
- ◆ Funding to defray the costs of converting land to a conservation status—Savory Island model of Quinn Family Trust
- ◆ Money to acquire land is the key
- ◆ Large private forest land—real estate sales require a certain portion dedicated to conservation or parkland (5 – 50%? In some places)
- ◆ Not a lot of time is left before action is needed to capture stands to build mature and old.
- ◆ Capital Region Parkland Acquisition Levy is a good model—The Parkland Acquisition Fund has acquired 2500 ha (Sooke Hills Park) by levying a \$10 tax every year per household.
- ◆ 90 acres acquired by CVRD by Federal Ecological Gifting program
- ◆ TimberWest’s experience creating parkland in Englishman River—too much administrative effort required.
- ◆ Section 99—under the Land Act, disposition of land and its transfer, too complicated, and with liability issues -- Occupiers Liability Act of BC
- ◆ Private Forest conservation plans
- ◆ Habitat set asides (non-legal), once they are designated through certification—Sustainable Forestry Initiative (SFI) they would be legal

- ◆ Don't want to have covenants because they retain liabilities
- ◆ Re-zoning changes (sale of forest land for development) in exchange for conservation land.
- ◆ possibility of NCC and private forest companies working together
- ◆ Existing riparian areas—50 m wide and 2 km long might be the starting point in adding private forest land to other lands in a CDF conservation strategy.
- ◆ What would it take to break down confidentiality barriers of what private landowners are protecting through certification (SFI) and adding data to a CDF strategy?

### **Measure of Success**

- ◆ SFI Certification areas identified.
- ◆ Forestry practitioners identifying their Biodiversity Index—how much area are they keeping in old and mature in CDF and CWHxm1?
- ◆ Storing data of conservation contributions in a common data base (Salish Sea? Regional Districts?)
- ◆ Setting a target maximum of the amount of forest land that will be converted to development by forest companies is another measure (like the Marbled Murrelet target set by the recovery team that caps the maximum amount of habitat loss that can be tolerated measured from the amount of habitat recorded in 2002). The number of species or ecosystems that come off the list or are added is another measure.
- ◆ Need an NCC Salish Sea Conservation Plan approach—both the CDF and the CWHxm1 ecosystems need measures of success.

### **Consultants**

- ◆ Generally aware but with existing legislation, how to protect?
- ◆ There are multiple land use issues/interests
- ◆ There is a need to provide incentives to private landowners. Landowners have multiple goals, so need to educate them and consultants.
- ◆ In private forest land need incentive for sustainability—avoid regulatory-based options
- ◆ Potential opportunities will increase for carbon offsets, economic values in leaving functioning systems.
- ◆ Need to educate landowners and consultants about the need for Old Growth and mature forest in the CDF.
- ◆ Need easier format developed to explain incentives, benefits and challenges. The lack of a regulatory base requires clear incentives to motivate.
- ◆ Need demonstration of opportunities and success stories to explain the restoration of ecosystem services.
- ◆ It needs to be easier to trade land (acquisition swapping) to acquire highest value land for conservation.
- ◆ Comprehensive Development Permit package from local government.
- ◆ Barriers—lengthy process, money, costs and property values, difficulty accessing information, e.g. covenant incentives. Fear of outcomes, encumbrances, liabilities, generational or cultural perceptions/language and threats to rights of private ownership.
- ◆ Lack of valuation of ecosystem goods and services and lack of understanding of the value of ecosystem goods and services.
- ◆ Overlapping jurisdictions e.g., Right to Farm vs. Local Government Act
- ◆ Lack of political will
- ◆ Success?—creative methods for sustainable harvesting; clients understand the impacts of their actions

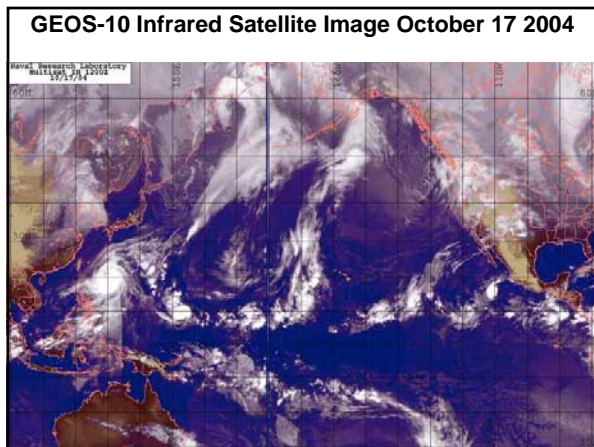
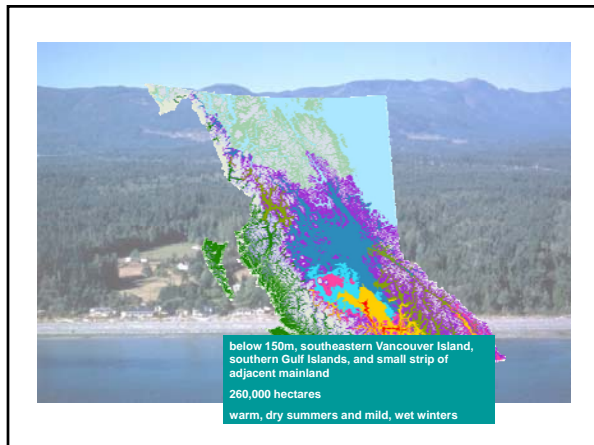
### **Land Trust Groups**

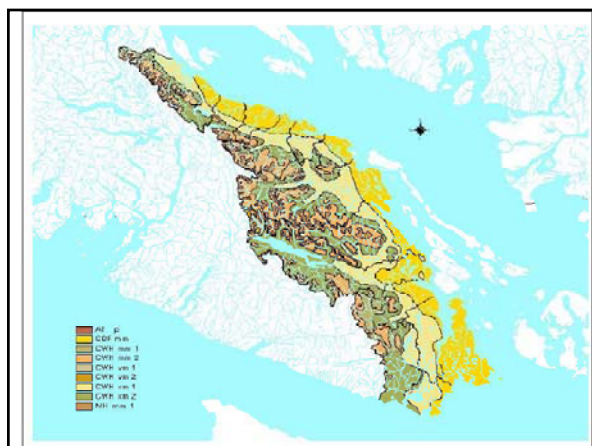
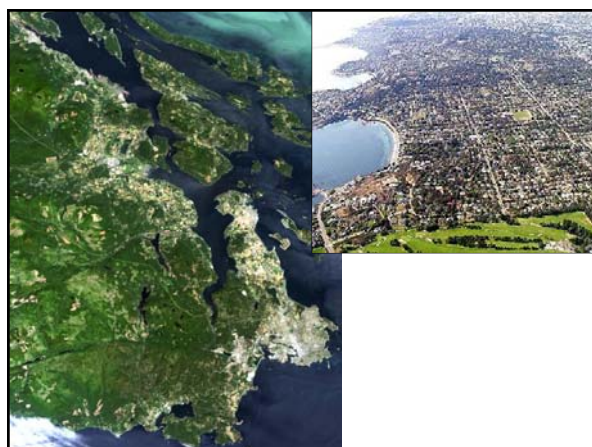
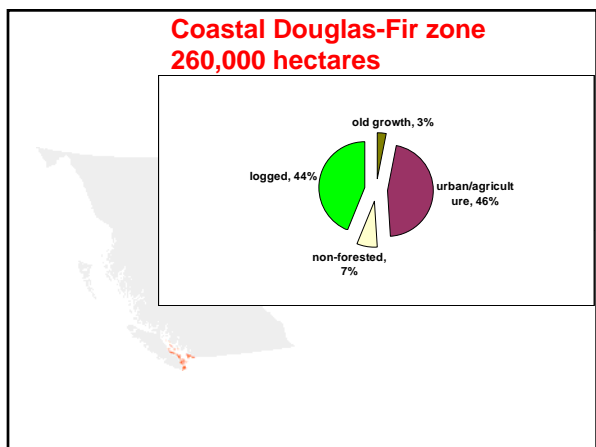
- ◆ The public is not aware of the problem or the options for solutions
- ◆ Strategies and plans —how to make politicians approve adequate measures
- ◆ Tax issues—need money to keep trees on the land

- ◆ Opportunities—educate the young
- ◆ Get active in forest certification (FSC, SFI)
- ◆ Taxes, carbon offsets
- ◆ Raising the bar
- ◆ Barriers – Archaic bylaws
- ◆ No money for monitoring

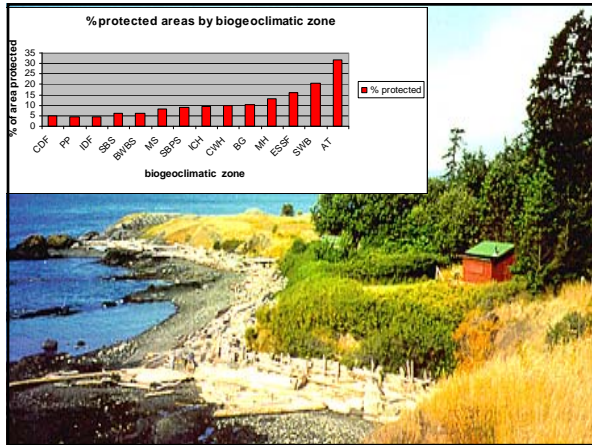
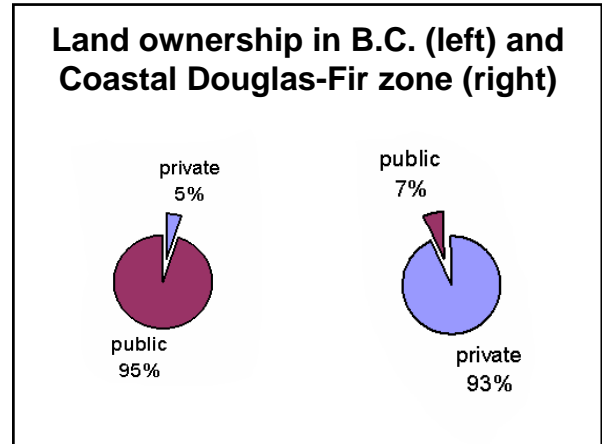
## Suggested Next Steps

1. Establish a network/ link/secretariat/umbrella organization. Continue to build on the workshop to make a network to share information/expertise, and collaborate, and generate funds. Learn from success stories such as East Kootenay Conservation Program, and Garry Oak Ecosystems Recovery Team (GOERT). Create a multi-agency/multi-representative committee to develop a Conservation Strategy that applies to all of the CDF and decision-makers including land-owners, forestry people, all 3 levels of government, conservation organizations, consultants, etc.
2. Link the CDF to other initiatives that overlap: Species at Risk, Conservation Framework of Ministry of Environment , Invasive Plant strategies.
3. Raise the profile of the CDF through media coverage, talking about the CDF more often, asking questions about forest certification in the CDF.
4. Raise the awareness of other endangered ecosystems that are equally as depleted as the CDF, particularly CWHxm1 (coastal western hemlock very dry maritime zone) just upland from the CDF.
5. Ask the provincial government to send out letters explaining the issue, advocating stewardship.
6. *Water Act* Modernization—ask it to address watersheds, including healthy ecosystems.
7. Share information with First Nations, as important landowners in the shared stewardship process.



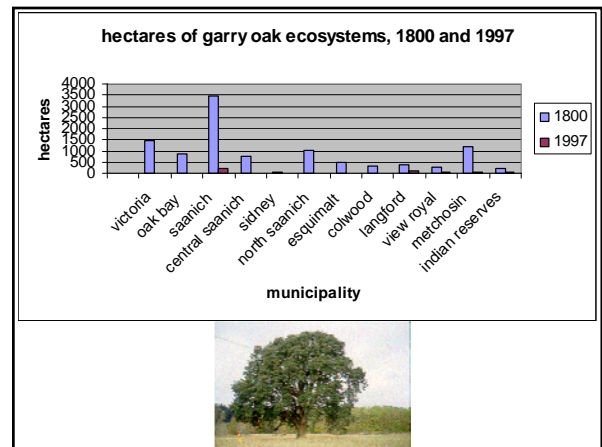
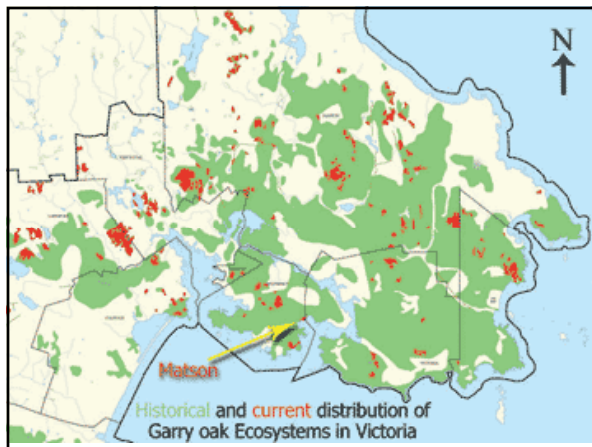






### Protected Area of CDF

Provincial – 116.6 km<sup>2</sup>  
 Regional District (CRD) - 23.9 km<sup>2</sup>  
 Gulf Islands National Park - 28.3 km<sup>2</sup>

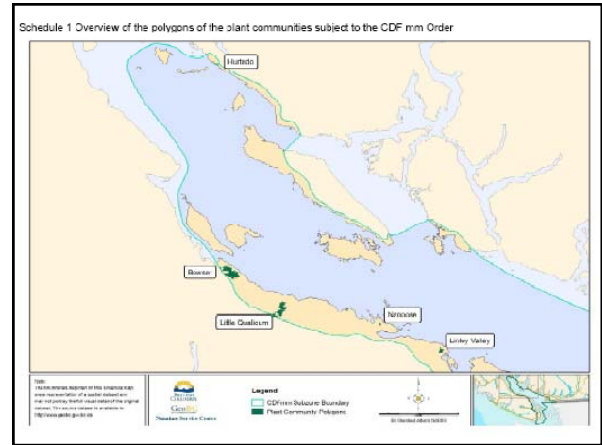


### Species & Ecosystems at Risk in the CDF

- 127 Plants (29 COSEWIC listed, 26 SARA listed)
- 81 Animals (36 COSEWIC listed, 31 SARA listed)
- 36 Ecological Communities

### What's required?

- More conservation areas
- Better management practices for motivated landowners/managers
- Education



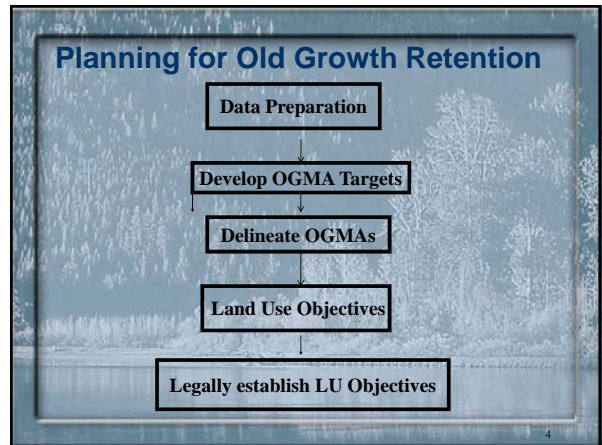
# LANDSCAPE UNIT PLANNING FOR OLD GROWTH MANAGEMENT AREAS (OGMAS)

## Planning for Old Growth Retention

**Goals**

- Spatially locate and map OGMA in the Vancouver Island East Coast
- Legally establish objectives for OGMA

- ### Acronyms
- CFLB = Crown forested land base
  - THLB = timber harvesting land base
  - NC = non-contributing land base
  - OGMA = old growth management area
  - BEC variant = biogeoclimatic variant
  - TSR = timber supply review
  - DDM = delegated decision maker
  - WTR = wildlife tree retention



- ## Planning for Old Growth Retention
- Steps**
- Step 1: Identify and classify Crown forested landbase
  - Step 2: Prepare OGMA targets
  - Step 3: Delineate Draft OGMA
  - Step 4: Mitigate timber supply impact
  - Step 5: Advertise

- ## Data Preparation
- Landscape Unit boundaries have been defined
  - OGMA Targets for LU by BEC variant
  - Classify the landbase
  - Prepare Colour themed maps
  - Analysis

### Data Preparation - old growth retention report

- provides an overview of the LU by BEC variant
    - Non Contributing to meet old growth target
    - Partial Contributing next
    - Contributing or THLB to meet targets, if required
- allows for monitoring of impact

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### STEP 3: Delineate draft OGMAs

#### Information required :

- OGMA Targets report
- colour themed maps (from Data Preparation process)
- relevant higher level plan direction (e.g. RMZ objectives)
- Any other values e.g. Cultural heritage info
- approved operational plans
- air photos, ortho-photos, satellite images

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### Biological considerations

Review "old" or the oldest available stands first

Primary biological considerations (core values):

- size (interior/no interior habitat)
- connectivity
- species composition
- representation/rare ecosystems

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### Step 4: Mitigate Impact

Minimize impacts to forest licences by:

- where suitable, use most constrained THLB first
- avoid locating OGMAs over approved cutblocks
- avoid locating OGMAs where they will impact main access routes or isolate harvestable timber

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### Operational Considerations

Operational activities permitted in OGMAs which should proceed in a manner sensitive to old growth values:

- mineral or gas exploration and development activities
- haul road construction (only if no other reasonable and cost effective options exist)
- Amendment Policy

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### Legal Objectives

Standard legal objectives for OGMAs allow flexibility for harvest and replacement with similar area within the scope of the allowable changes listed in the objective. For the CDF as they are part of the overall conservation strategy the objectives for them will essentially be to leave them in place as part of the overall strategy with any amendments having to be approved by ILMB.

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**Step 5: Advertise**

- FN consultation/ engagement throughout process
- Public review and comment
- Legal establishment

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**First Nations**

Treaty selections will lead to deletion of OGMAs as this will the area is no longer part of the CFLB. The CDF OGMAs have been selected to avoid known conflicts with treaty areas. However this does not mean that none of them will be impacted as there are many treaties being considered on the South East portion of Vancouver Island.

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### Wildlife Habitat Areas

- Wildlife Habitat Areas (WHAs) are spatially defined land designations that protect important habitat for species and ecosystems at risk on crown land
- Establishment of WHAs is a Ministry of Environment authority under the *Forest and Range Practices Act (FRPA)*
- WHAs are established through the *Government Action Regulation (GAR)* after significant collaboration and consultation with affected stakeholders
- Planning thresholds (land budgets) for WHAs are defined and utilized within each forest district

### Coastal Douglas Fir (CDF) WHAs

- Establishing WHAs is one part of a CDF Conservation Strategy
- Two CDF plant communities listed as *Identified Wildlife* under *FRPA*:
  - Douglas Fir / Oregon-grape
  - Douglas Fir / Alaska Oniongrass

### Schooner Cove

- 22 ha WHA
- Established 2002
- Protects CDF/ Garry Oak / Alaska Oniongrass plant community
- Only CDF WHA to date

### CDF WHA Planning

- WHA planning is a collaborative effort between MOE, MOFR and forestry licensees
- CDF WHA planning will proceed after CDF Land Use Objective

### CDF WHA Planning

- CDF plant communities are associated with CDF Site Series (moisture & nutrient conditions)
- MOE biologists are analyzing Terrestrial Ecosystem Mapping (TEM) data to identify areas with associated Site Series.
  - GIS Analysis of TEM is complicated due to the mosaic nature of CDF ecosystem
- Ground-truthing of areas will be required

## CDF WHAs

- For additional information or to become involved please contact:
  - **Darryn McConkey**
  - MOE Ecosystem Biologist
  - [Darryn.McConkey@gov.bc.ca](mailto:Darryn.McConkey@gov.bc.ca)
  - (250) 751-3104

## Land Use Objectives

## Legal Context

- In 2003, the *Land Act* was amended (*Land Amendment Act 20032*) to provide the Minister of Agriculture and Lands with the authority to establish legal land use objectives (LUO) under section 93.4.
- The *Land Use Objectives Regulation* (LUOR), under the *Land Act*, authorizes the Minister to establish legal land use objectives for the purposes of the *Forest and Range Practices Act* (FRPA).
- Land use objectives only have legal effect within FRPA, and are recognized as the highest order of objectives within this legislative framework.

## Content requirements of an order

- The content requirements of an order are addressed in s. 6 (1) of the LUOR and are as follows.
- A section 93.4 order that establishes or amends a land use objective must be in writing and must specify all of the following:
  - (a) the land use objective;
  - (b) the geographic location to which the land use objective applies, including a map showing the location of the area to which the land use objective applies;
  - (c) the date on which the land use objective is to take effect if that date is different than the date the order is published in the Gazette;
  - (d) the period that is to apply under s. 8(2)(b) of FRPA if the period is other than 2 years;
  - (e) if section 16(2) of FRPA will be disapplied.

## Tests for Decision Makers

- The Land Use Objectives Regulation specifies several criteria that the minister must consider or must be satisfied before a LUO may be establish or significantly amended.

## Tests for Decision Makers

- **1. Consider Land Use Plan or Relevant Information**
- **2. Add Value**
- **3. Specify Conflicts**
- **4. Provide Balance**
- **5. Importance Outweighs Adverse Impacts**
- **6. Consider Comments**

## Consultation with holders of Forest Stewardship Plans

- For non-urgent orders, s. 3 (4) of the LUOR states that an official of the ministry **must consult with the holder of a forest stewardship plan, woodlot license plan, range use plan or range stewardship plan if the following two conditions are met:**
  - 1. *the proposed land use objective or amendment as proposed would have a material adverse impact on the holder<sup>10</sup>, in relation to any:*
    - a. *intended result or strategy specified in the plan, or*
    - b. *matters specified in their plan;*
  - 2. *the holder gives written notice to the minister within the specified period referred to section 3(2)(e), requesting the consultation and stating the material adverse impact.*



## CDF LUO

- Ministry of Agriculture and Lands
- Ministerial Order
- Coastal Douglas-fir moist maritime (CDFmm) Biogeoclimatic Subzone

**Part 1: Interpretation**

1. **Relationship with Forest and Range Practices Act objectives**
  - (1) Pursuant to section 33.6 of the Forest Act, the objective set out in paragraph 3 of this order is established as a land use objective for the purposes of the Forest and Range Practices Act, and applies to the Crown lands within the mapped polygons shown on Schedules 1 to 6 attached to this order.
  - (2) Nothing, under or arising out of this order either separately or otherwise from any aboriginal rights, aboriginal title or treaty rights of any applicable First Nation, nor releases the Province of any obligation to consult with any applicable First Nation.
2. **Definitions**
  - (1) In this order, "plant communities" means vegetation that possesses a similar vegetation structure and native species composition, and occurs repeatedly on similar habitats within the Coastal Douglas-fir moist maritime biogeoclimatic subzone.

Words and expressions not defined in this order have the meaning given to them in the Forest and Range Practices Act, the Range Act and the regulations made there under, unless the context indicates otherwise.

3. **Objective for CDFmm biogeoclimatic subzone plant communities**

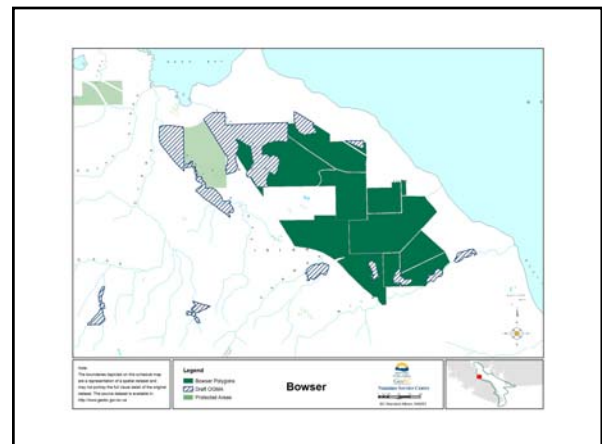
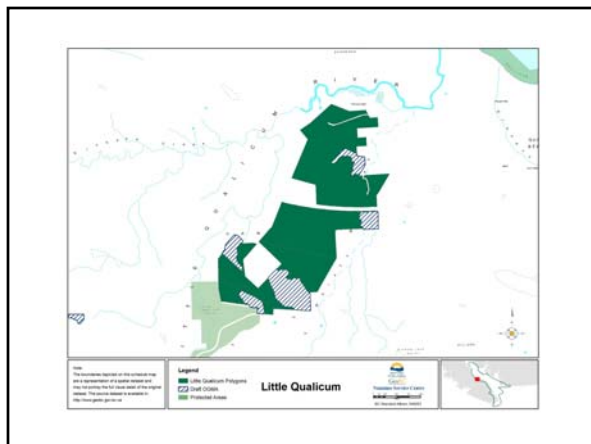
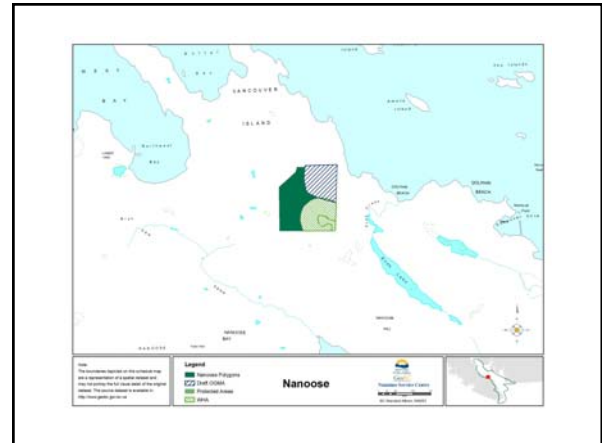
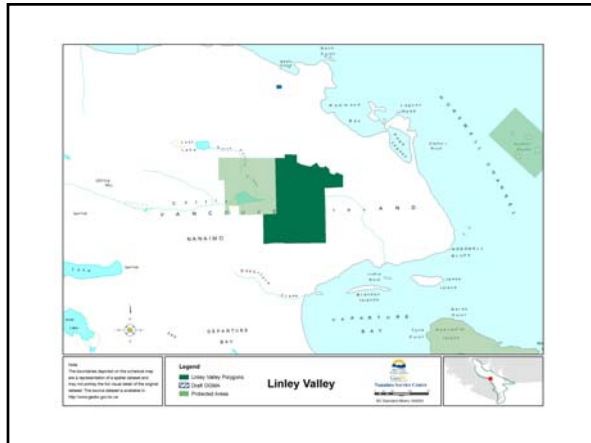
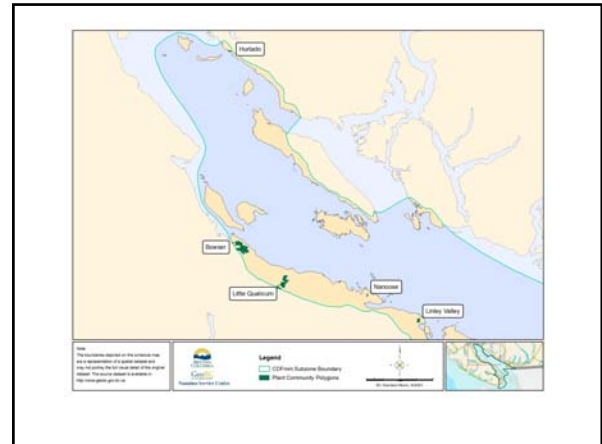
Protect all CDFmm biogeoclimatic subzone plant communities within the polygons identified in Schedules 1 to 6 attached to this order.

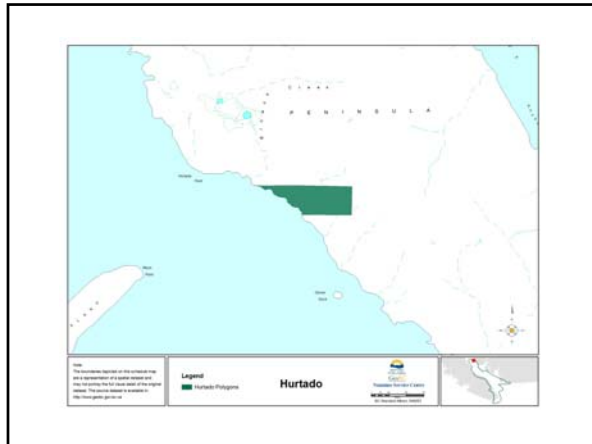
Despite subsection (1), up to 5% of a polygon may be disturbed if there is no practicable alternative for road access or other infrastructure or to address a safety concern.

Where the objective refers to an area shown on a schedule and the area is also defined by a spatial dataset, the boundaries of the area as defined by the spatial dataset apply in the event of any inconsistency. All spatial datasets are available at <http://www.wa.gov.bc.ca>


**Part 2: Transition**

4. **Application of this order**
  - (1) This order takes effect on the date that the notice of the order is published in the Gazette.
  - (2) The applicable period under 82(1)(b) of the Forest and Range Practices Act is 12 months starting on the date this order comes into effect.







# International Ecosystem Classification & Globally Significant Ecosystems



## BC Conservation Data Centre

- BC CDC – 19 yr program
- Member of NatureServe International network
- Collect, analyze and disseminate information on species and ecosystems




## Conservation Status Assessment

Conservation Status Assessment =  
Assessment of Risk of Loss (Extinction)

- 1 – Critically Imperiled
- 2 – Imperiled
- 3 – Special Concern
- 4 – Apparently Secure
- 5 – Secure

Global, National, Subnational (G, N, S)




## Conservation Status: Rarity Factors

- Rarity:
  - Range
  - Area of Occupancy
  - # of Occurrences
  - Percent of Area of Occupancy or # of Occurrences with Good Ecological Integrity
  - Environmental Specificity



## Conservation Status: Risk Factors

- Threats:
  - Threat Impact (direct & indirect);
  - Intrinsic Vulnerability
- Trends:
  - Short term (~30-40 years);
  - Long term (~150 years)




## Other Relevant Information

- Other Information for consideration:
  - area with adequate protection;
  - critical habitat for imperiled and critically imperiled species;
  - biodiversity representation;
  - geologic and hydro-geomorphological representation;
  - climate change vulnerability



## Ecosystems at Risk in BC

## A Few Facts

**Ecosystems:**

- Number of S1, S1S2, S2 Ecosystems in BC = 161
- Number of G1, G1G2, G2 Ecosystems = 52
- # Ecosystems in CDF zone = 39
- Number of S1, S1S2, S2 Ecosystems = 28
- Number of G1, G1G2, G2 Ecosystems = 19
- % G1, G2 CDF Ecosystems = High Priority in Conservation Framework = 100%

**Species:**

- S1, S1S2, S2 Species within the CDF = 147
- G1, G2 Species within the CDF = 15



## International Ecosystem Correlation

**Existing Initiatives:**


- Pacific Coastal Ecological Correlation (TNC)
- Western Canadian Boreal & Montane (CFS)
- BC CDC supporting South Interior/US correlation
- IVC and the CNVC supported by national and international forest ecosystem datasets

**Goal:**

- Validate expert opinion global ecosystem crosswalking by analysing international and national datasets



**Partners in Global Assessments:**

- Provincial Ministries of Forests/Natural Resources (SK, AB, YK, BC)
- NatureServe Network: CA, BC, AK, WA, OR, MT, ID
- The Nature Conservancy
- Canadian & U.S. Forest Service

## Findings of Correlation Projects



- Coastal:**
  - BC MoFR, AK, WA, OR, USFS, TNC
  - ~90/300 ecological communities in BC, >50 endemic
  - Ranking supported by TEM data
- Boreal:**
  - Western Canadian Boreal (SK, AB, BC, YK)
  - ~25 ecological communities in BC, one endemic
- Montane and Interior (In progress):**
  - CFS, USFS, BC MoFR, AB, WA, MT, ID
  - ongoing, 9 confirmed BC endemics

*Pseudotsuga menziesii* - (*Abies grandis* - *Thuja plicata*) / *Mahonia nervosa* - *Gaultheria shallon*

One subunit from BC (CDFmm/01) and minor representation in San Juan Islands on cool sites



East Vancouver Island  
Mature Forest

## NatureServe Explorer Documentation

*Pseudotsuga menziesii* - (*Abies grandis*, *Thuja plicata*) / *Mahonia nervosa* - *Gaultheria shallon* Forest (G2, N2, S2)


Douglas-fir – (grand Fir, western red-cedar) / dull Oregon-grape - salal Forest (CDFmm / 01)



### Global Conservation Status FIA projects 2004-2006




- Response to 2002 Agreement between NatureServe (NS) and Sustainable Forests Initiative (SFI)
- BC Conservation Data Centre supporting correlation initiatives and follow up with status ranking of internationally recognized ecosystems to identify G1 and G2 forests of exceptional conservation value.
- Conservation status supported by ecosystem inventory data (TEM/SEI)


### Data Source: Ecosystem Mapping

- RISC Standard: MEaR
- Apply ecosystem mapping projects to CDC methodology

Douglas-fir - ponderosa pine / bluebunch wheatgrass







<http://archive.lmb.gov.bc.ca/iscpubs/seeclor/>




### Factors assessed with TEM data

- Area of Occupancy (AoO) = total of all site units, at mid to late succession
- Short-term Trend = Loss ~ mapped area early successional stage
- Long-term Trend = Loss ~ mapped area early and mid successional stage





### Ecosystem Mapping: Trend Analysis

*Tsuga heterophylla - Pseudotsuga menziesii - Thuja plicata - (Abies amabilis) / Achlys triphylla - Gymnocarpium dryopteris Forest CW/Hmm1/05 (G2 S2)*




Successional Class	Area % (km <sup>2</sup> )
1	45
2	25
3	5
4	25





### Results


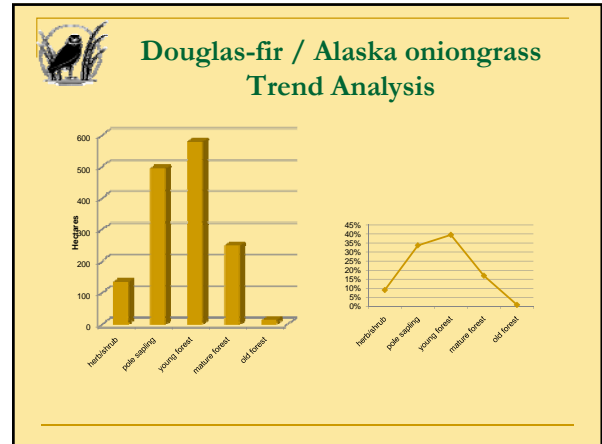
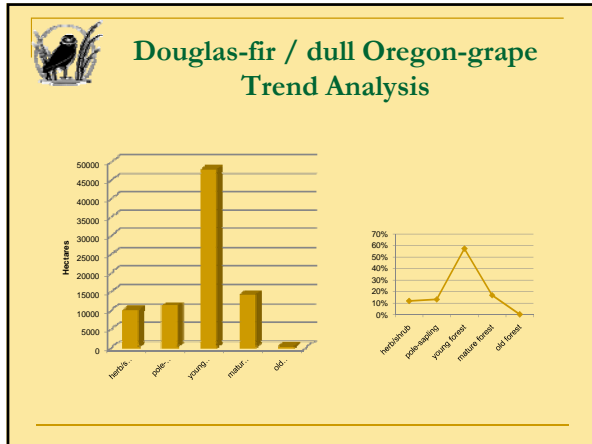
Of 29 ecological communities with >20% of range with TEM mapping:

- 50% increased at-risk status
- 35% reduced at-risk status
- 15% retained existing at-risk status
- At-Risk Status Range: G1 to G4G5



### CDFmm TEM Analysis



**QUESTIONS?**

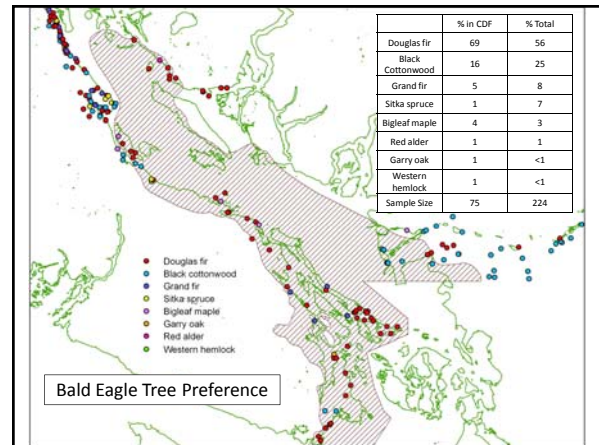
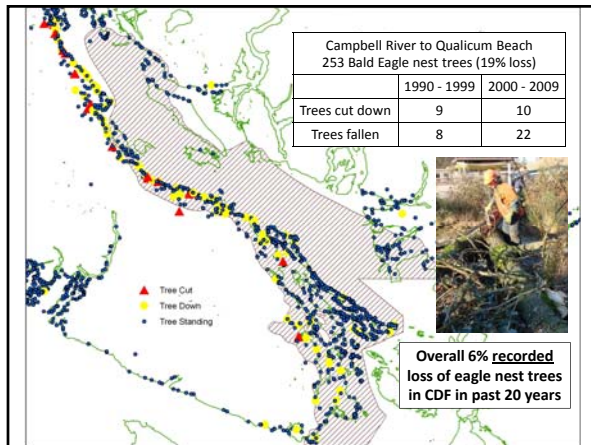
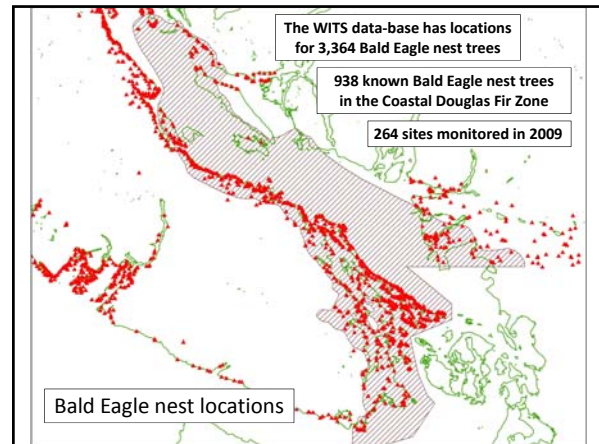
## Wildlife Tree Stewardship

a BC Nature program

The WITS program began in 2000 as a partnership between  
 Ministry of Environment  
 Canadian Wildlife Service  
 BC Hydro  
 Federation of BC Naturalists

WITS began with a data base that combined  
 Bald Eagle and Great Blue Heron nesting  
 information originating from MOE, CWS,  
 MacMillan Bloedel, Scott Paper,  
 Timber West, and several Naturalist Clubs

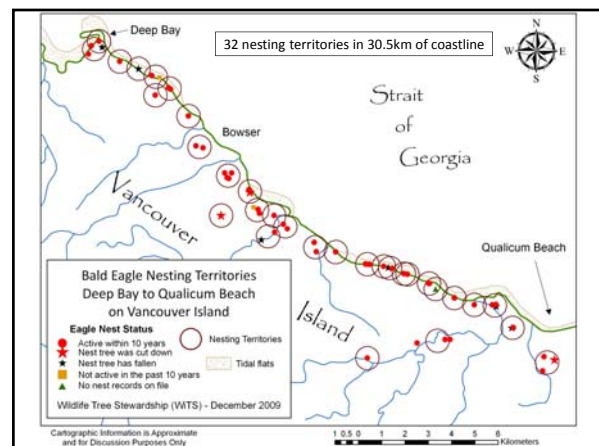
Photo by John Elliott

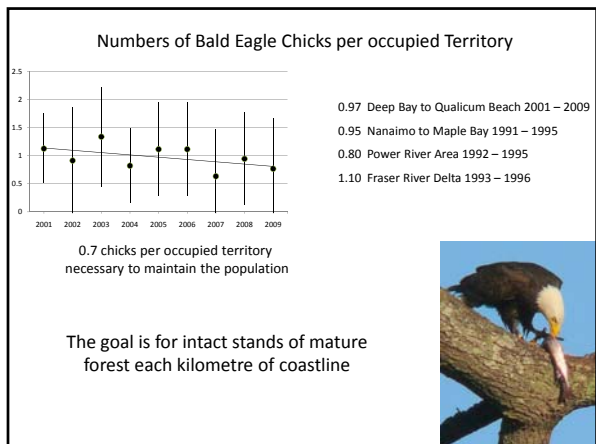


**Bald Eagles like large trees in locations with commanding views of the ocean – their food source**

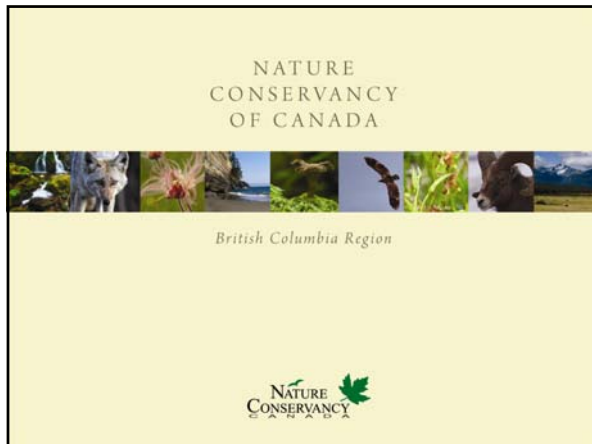
	Sample size	DBH (m)	Range (m)
Douglas fir	62	1.3	0.8 – 4.0
Black cottonwood	37	0.9	0.5 – 1.4
Big leaf maple	3	1.0	0.7 – 1.6
Garry oak	1	1.1	
Grand fir	4	0.9	0.8 – 1.0
Sitka Spruce	5	1.3	1.1 – 1.6

We are losing eagle nest trees far faster then they are growing









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**Our Mission**

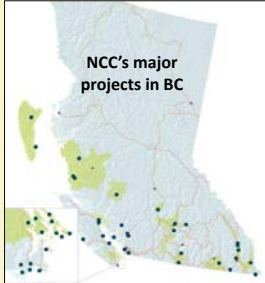
To protect ecologically significant land and water through purchase, donation and conservation agreements.

To steward these lands for their intrinsic value, for now and forever.

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**NCC's major projects in BC**

**NCC in British Columbia**

- First acquisition: 1974
- Projects completed: over 75
- Area protected: more than 600,000 acres (240,000 hectares)

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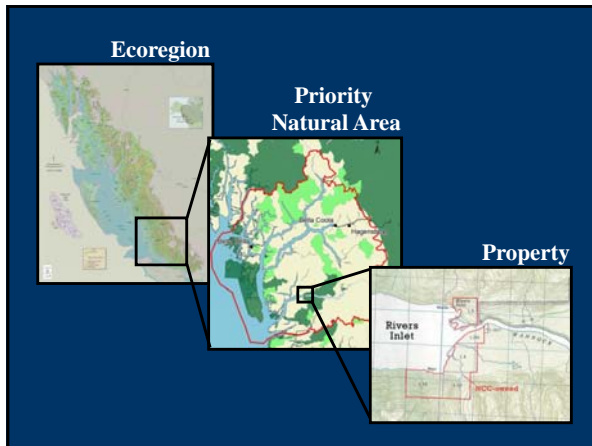
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**Conservation Planning**

- Science-based planning provides the foundation for all our strategic conservation actions.
- Together with partners, NCC produces widely-used planning tools:
  - Ecoregional Assessments (also called Conservation Blueprints)
  - Natural Area Conservation Plans

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<p><b>Salish Sea Natural Area Conservation Plan</b></p> <p><b>Core Team Terms of Reference</b></p> <p><b>Purpose</b></p> <p>Produce a NACP that identifies the most important places for biodiversity conservation within the Salish Sea. The Salish Sea NACP will be designed so other agencies, governments, and organizations can use it as a resource to inform decision-making.</p>	<p><b>Core Team Composition</b></p> <p>Entities represented on the Core Team to date are: Nature Conservancy of Canada (NCC), Islands Trust Fund (ITF), BC Ministry of Environment (MoE), BC Ministry of Forests and Range (MFR), Parks Canada - Gulf Islands National Park Reserve (GINPR) and The Nature Trust of BC (TNT).</p>
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<p><b>Basic Outcomes</b></p> <p>The Core Team will work together to produce the following outcomes by February 18, 2010:</p> <p><b>A Salish Sea Natural Area Conservation Plan</b></p> <p>The Salish Sea Plan will meet the requirements of NCC's Natural Area Conservation Planning process including:</p> <ul style="list-style-type: none"> <li>•A vision statement</li> <li>•Conservation goals</li> <li>•Biodiversity targets</li> </ul>	<ul style="list-style-type: none"> <li>•Assessment of biodiversity threats</li> <li>•Recommended conservation actions</li> <li>•Proposed budget &amp; financing plan</li> </ul> <p><i>Note:</i></p> <p><i>Core Team member organizations are not obliged to follow through on any action items outside of the planning process. Upon completion of the Salish Sea Natural Area Conservation Plan, Core Team members may consider drafting follow-up agreements related to plan execution.</i></p>
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**Biodiversity Targets**

1. Forest & Woodland
2. Estuaries
3. Salmonids
4. Herbaceous Ecosystems
5. Intertidal Habitats

6. Subtidal Habitats
7. Forage Fish
8. Freshwater Systems
9. Islets & Small Islands



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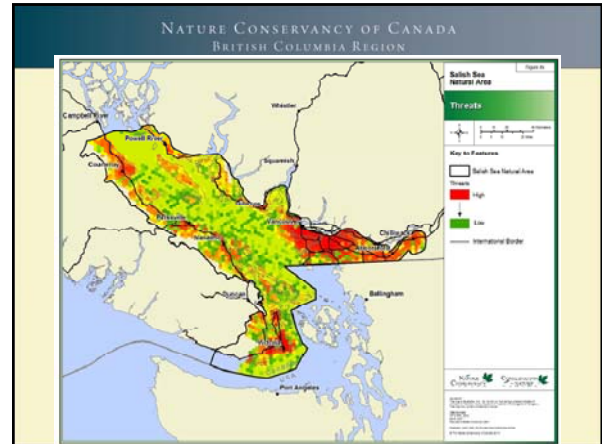
Biodiversity Targets	Habitat / Species Type	Ecological Justification	Size	Condition	Landscape Context	Viability Rank	Viability Rationale	Nested Targets*
Forest & Woodland	Forest - Temperate	Representative of the Natural Area. Globally rare and endangered; home to numerous species of global and provincial conservation concern.	Fair	Poor	Fair	Fair	CDF rare globally (CWC ranked CWH as more widespread in BC and in WA. Study area is 56% CDF and 44% CWH). 25% CDF converted to agriculture, 10% to urban. Still reasonable opportunity for connectivity.	Douglas-fir / dull Oregon-grape; Trembling aspen / Pacific crab apple; slough sedge; Garry Oak / California Brome; Kent's Myrtle; Clark's Sphern; Moth
Estuaries	Limnal - Estuaries	Used by an estimated 80% of all coastal wildlife.	Good	Fair	Poor	Fair	Fraser River largest and most important, although heavily impacted and modified. As much area in the Fraser estuary has been impacted as all the other estuaries. Most could use restoration to improve functioning. Most surrounded by urban, agriculture, industry.	Fraser River estuary-Nanaimo River estuary; Shoehorn; mud aggregated
Salmonids	Species Assemblage - Fish	Keystone species	Poor	Poor	Fair	Poor	Poor marine conditions. Impacts to freshwater habitat. Degraded habitats. Riparian habitat still remains.	Sockeye, Chinook, Coho, Pink, Chum, Steelhead, Coastal Cutthroat Trout

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Biodiversity Targets\*

Threats	FOR	ES	SAL	HE	IT	ST	FF	FW	ISI	Overall Threat Magnitude Rank	Notes on Current/ Future Condition*
<b>1. Residential and Commercial Development</b>											
1.1 Housing and Urban Areas	VH	VH	H	H	VH	--	M	H	M	Very High	72% of the people in B.C. live in the Natural Area. Metro Vancouver projected to grow to 3.2 million people in the next 25 years. Capital Region to 462,000, Nanaimo Region to 208,000, and Fraser Valley to 408,000. Coastal lowland, under intense development pressure. Natural habitat removal/fragmentation due to housing development. Foreshore modification - seawalls, jetties, impacts to marine from increased effluent, runoff, septic systems.
1.2 Commercial and Industrial Areas	H	H	H	H	VH	--	M	--	M	High	Terrestrial: private forest companies selling surplus lands for real estate development. Urban expansion for industrial and commercial use. Impacts on terrestrial areas. Marine: cruise ships and freighters - fuel spills, dumping sewage, introduction of invasive species, impacts from anchoring.
1.3 Tourism and Recreation Areas	L	L	L	L	H	--	M	VH	H	High	Increased use of recreational areas. Min biking and ATVs, off-roading, erosion, fuel spills. Increased interaction between people and wildlife - perceived threats to human safety; deer collisions; beaching mammals driven away. Fire hazards from increased recreational use.

\*Responses from team members and workshop participants representing scientific and local expertise from federal (Parks Canada, Canadian Wildlife Service), provincial

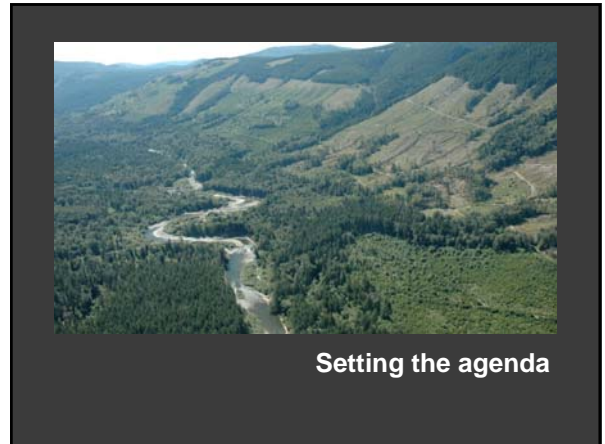


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**Conservation Actions**

- 1. Securement - Land/ Water Protection**
  - 1.1 Site/Area Protection
    - 1.1.1 Investigate and identify key opportunities for securement linked to targets and threats by 2011.
    - 1.1.2 Secure at least 40 hectares of Priority 1, Priority 2, or Priority 3 lands, with preference given to Priority 1 and 2, respectively, while also recognizing that Priority 3 lands may contain important targets. This action shall be pursued primarily through supporting "Other Qualifying Organizations" in applying for OQO funding, and shall be completed by 2011.
    - 1.1.3 NCC continues to support Parks Canada in priority acquisitions in Gulf Islands NPR by 2010.
- 2. Stewardship - Land/ Water Management**
  - 2.1 Site/Area Management
    - 2.1.1 Prepare Property Management Plans for any secured properties within 2 years of securement and Interim Stewardship Statements within one year, and conduct short-term stewardship actions on acquired properties through first year of ownership.
    - 2.1.2 Conduct baseline inventories of any acquired properties within first year of property acquisition.
    - 2.1.3 Complete Baseline Documentation Reports for the purposes of monitoring restrictions for all properties secured under conservation covenant, following NCC's approved Stewardship Performance Standards for covenant/assessment properties, and monitor all.
    - 2.1.4 Design and start implementing effectiveness monitoring program pilot by 2012.
    - 2.1.5 NCC drafts, registers and monitors "Landholding Agreements" or equivalent agreements for any lands funded by the OQO program by 2015.
  - 2.2 Invasive/Problematic Species Control
    - 2.2.1 Implement Management Plan actions on James Island
- 4. Communications, Education and Awareness**
  - 4.3 Awareness and Communications
    - 4.3.1 In accordance with NCC's mission, make NCC data, planning products and decision support tools easily available to interested parties with a focus on partners who have an ability to designate or create protected areas on an ongoing basis.
    - 4.3.2 Ensure media coverage of significant NCC-related conservation activities within the Natural Area.
    - 4.3.3 Pursue media opportunities that promote awareness of conservation activities and ecological values of the Natural Area.
    - 4.3.4 Partner with groups involved in ecological education when appropriate opportunities arise.
    - 4.3.5 Promote work in the Natural Area through the NCC website on an ongoing basis.
- 7. Publicity, Marketing and Capacity Building**
  - 7.3 Conservation Finance





Five stages of policy development

**Phase of applied problem solving**

- \*Problem recognition
- \*Proposal of solution
- \*Choice of solution
- \*Putting solution into effect
- \*Monitoring results

**Stage in policy cycle**

- \*Agenda setting
- \*Policy formulation
- \*Decision making
- \*Policy implementation
- \*Policy evaluation

