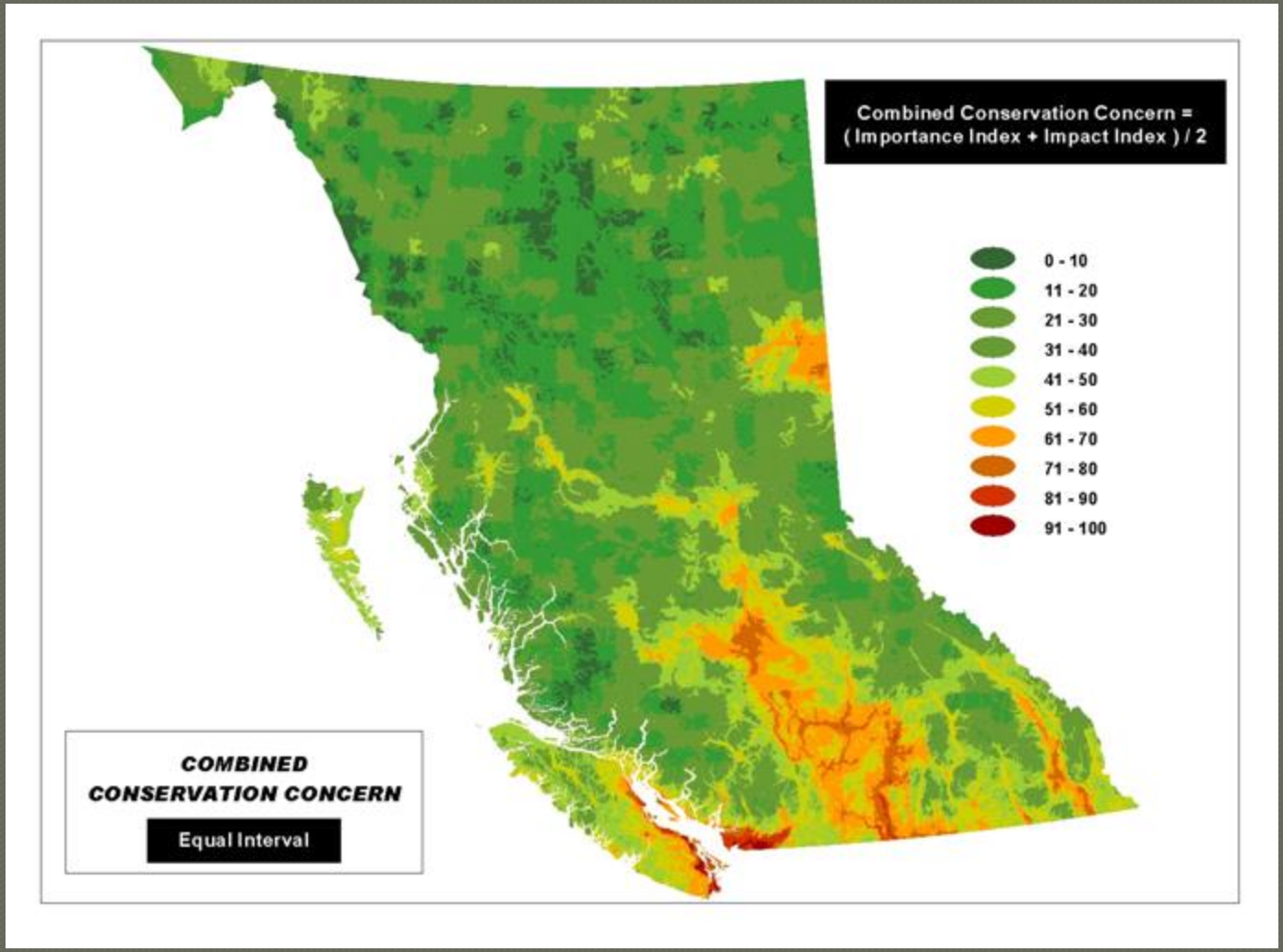
A Guide to Multi-species Restoration on the South Coast

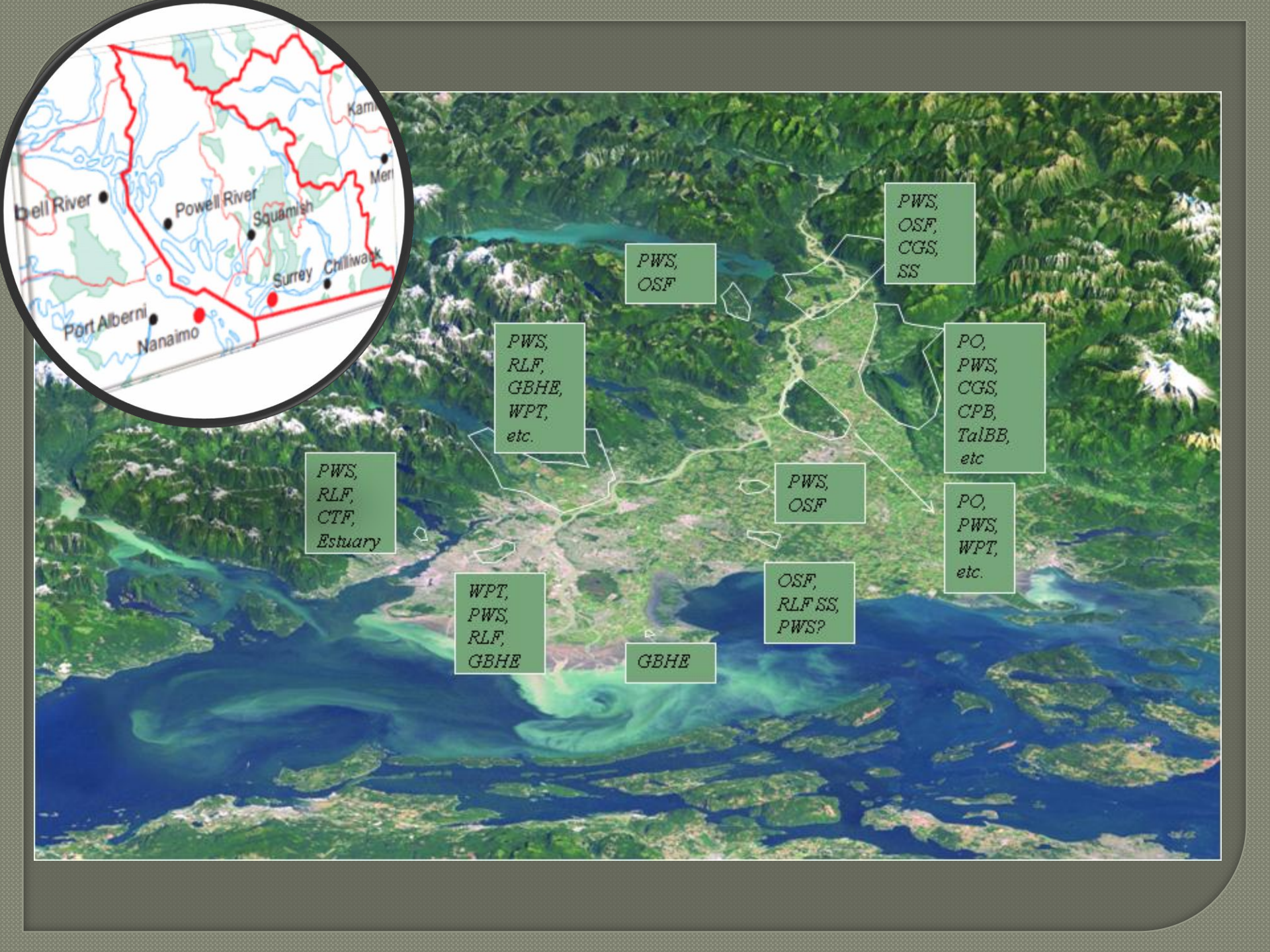
Why Multi-species Restoration on the South Coast?

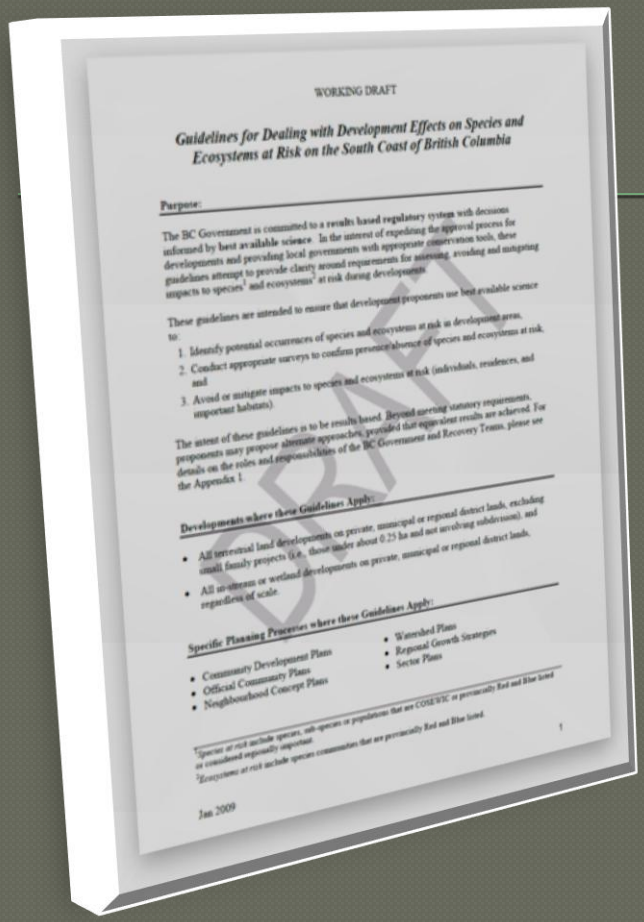

Combined Conservation Concern =
(Importance Index + Impact Index) / 2
0 - 10
11 - 20
21 - 30
31 - 40
41 - 50
51 - 60
61 - 70
71 - 80
81 - 90
91 - 100
COMBINED
CONSERVATION CONCERN
Equal Interval

SCCP – multi-species approach

South Coast Conservation Program Goal:

- Multi-species recovery implementation
- Actions that benefit the most number of species
- Extension of science-based management


Powell River
Squamish
Surrey
Chilliwack
Port Alberni
Nanaimo
PWS, OSF
PWS, OSF, CGS, SS
PWS, RLF, GBHE, WPT, etc.
PO, PWS, CGS, CPB, TalBB, etc
PWS, RLF, CTF, Estuary
PWS, OSF
PO, PWS, WPT, etc.
WPT, PWS, RLF, GBHE
OSF, RLF SS, PWS?
GBHE



WORKING DRAFT

Guidelines for Dealing with Development Effects on Species and Ecosystems at Risk on the South Coast of British Columbia

Purpose:

The BC Government is committed to a results based regulatory system with decisions informed by best available science. In the interest of expediting the approval process for developments and providing local governments with appropriate conservation tools, these guidelines attempt to provide clarity around requirements for assessing, avoiding and mitigating impacts to species[1] and ecosystems[2] at risk during development.

These guidelines are intended to ensure that development proponents use best available science to:

1. Identify potential occurrences of species and ecosystems at risk in development areas,
2. Conduct appropriate surveys to confirm presence/absence of species and ecosystems at risk, and
3. Avoid or mitigate impacts to species and ecosystems at risk (individuals, residences, and important habitats).

The intent of these guidelines is to be results based. Beyond meeting statutory requirements, proponents may propose alternate approaches, provided that equivalent results are achieved. For details on the roles and responsibilities of the BC Government and Recovery Teams, please see the Appendix 1.

Developments where these Guidelines Apply:

- All terrestrial land developments on private, municipal or regional district lands, excluding small family projects (i.e., those under about 0.25 ha and not involving subdivision), and
- All in-stream or wetland developments on private, municipal or regional district lands, regardless of scale.

Specific Planning Processes where these Guidelines Apply:

- Community Development Plans
- Official Community Plans
- Neighbourhood Concept Plans
- Watershed Plans
- Regional Growth Strategies
- Sector Plans

[1]Species at risk include species, sub-species or populations that are COSEWIC or provincially Red and Blue listed or considered regionally important.
[2]Ecosystems at risk include species communities that are provincially Red and Blue listed.

Jan 2009

1

Guidelines for Multi-Species Habitat Restoration on the South Coast of British Columbia

Purpose:

Whether you are planning a project related to habitat restoration for fish, invertebrates, amphibians or sand dune ecosystem or invasive species management, it is important to ensure that your project will not unacceptably impact non-target species and will have long-term ecological viability and integrity.

These guidelines are intended to ensure that restoration projects use best available science to:

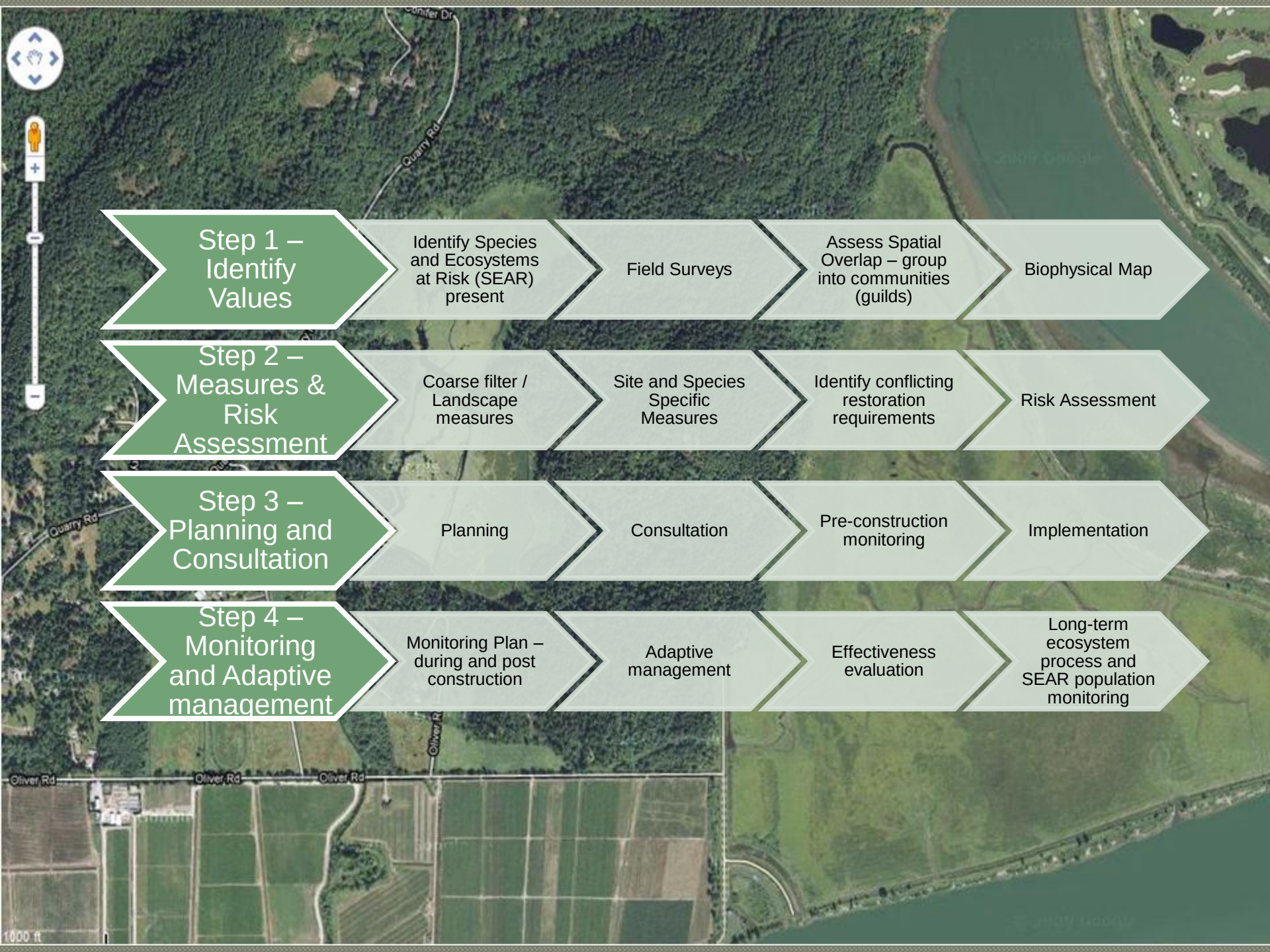
1. Identify potential occurrences of species and ecosystems at risk in development areas,
2. Conduct appropriate surveys to confirm presence/absence of species and ecosystems at risk, and
3. Avoid or mitigate impacts to species and ecosystems at risk (individuals, residences, and important habitats)
4. Monitoring the project long-term and adopt an adaptive management approach

Where and when do these guidelines apply?

- Any and all habitat restoration projects – terrestrial or aquatic, and
- All in-stream or wetland developments on private, crown, municipal or regional district lands regardless of scale

Species at risk **include species, sub-species or populations that are COSEWIC or provincially Red and Blue listed or considered regionally important.**

Ecosystems at risk **include species communities that are provincially Red and Blue listed.**


Step 1 – Identify Values
Identify Species and Ecosystems at Risk (SEAR) present
Field Surveys
Assess Spatial Overlap – group into communities (guilds)
Biophysical Map
Step 2 – Measures & Risk Assessment
Coarse filter / Landscape measures
Site and Species Specific Measures
Identify conflicting restoration requirements
Risk Assessment
Step 3 – Planning and Consultation
Planning
Consultation
Pre-construction monitoring
Implementation
Step 4 – Monitoring and Adaptive management
Monitoring Plan – during and post construction
Adaptive management
Effectiveness evaluation
Long-term ecosystem process and SEAR population monitoring
Quarry Rd
Oliver Rd
Oliver Rd
Oliver Rd
1000 ft

Step 1 – Identify Values

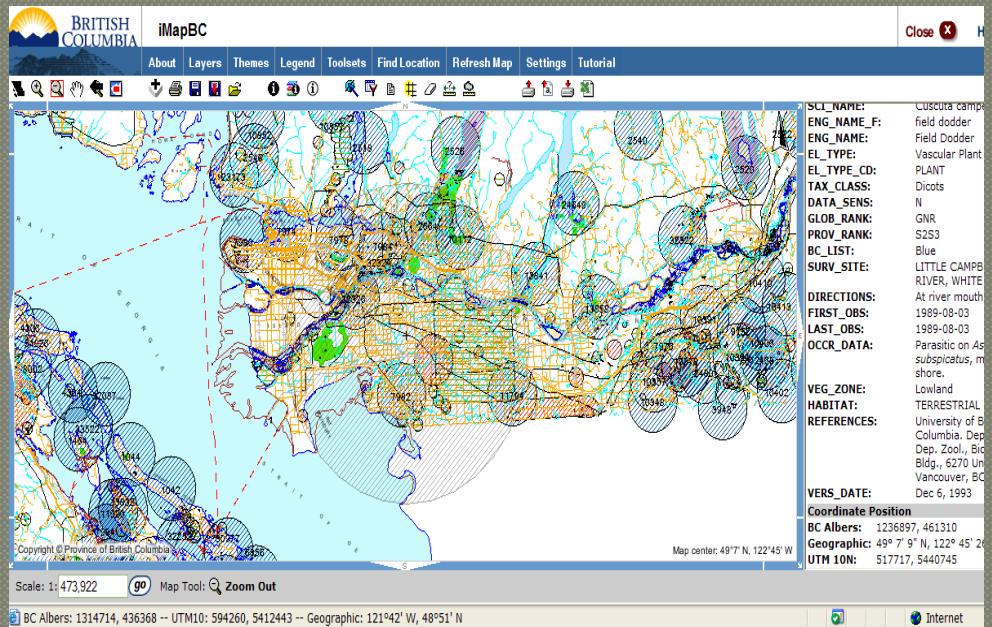
Identify Species and Ecosystems at Risk (SEAR) present

Identify potential occurrences of species and ecosystems at risk in proposed restoration areas

- Species Explorer, request to CDC and contact local experts
- Obtain occurrence data and survival habitat data from Recovery Teams**
- Conduct an initiate risk assessment to determine if the project should be initiated

Identify Species and Ecosystems within the footprint and potentially present

Non-sensitive and Sensitive Occurrences - Conservation Data Centre *incomplete



- Oregon Forestsnail
- Trowbridge's Shrew
- Vancouver Island beggarticks
- Red-legged Frog
- American Bittern
- Green Heron
- Pacific Water Shrew
- Nuttall's sunflower
- Field Dodder

Step 1 – Identify Values

Identify Species and Ecosystems at Risk (SEAR) present

Field Surveys

- Conduct appropriate surveys to confirm presence/absence of species and ecosystems at risk
- Qualified professional – credible data
- Standards recommended by MoE / Recovery Teams
- *Consultants responsible to obtain the most current
- If no detailed standards – default to Resources Inventory Standards Committee (RISC)
- Appropriate time of year
- Not detected ≠ absent – habitat modelling
- Avoid non-target species (e.g., minnow traps - PWS).
- Notification to MoE without delay
- Collect baseline data
- Records to CDC
- *Ensure elusive species are not overlooked – e.g. PWS, Phantom Orchid, Pacific Water Leaf, etc.

Step 1 – Identify Values

Identify Species and Ecosystems at Risk (SEAR) present

Field Surveys

Assess Spatial Overlap – group into communities (guilds)

Biophysical Map

Species	: old or with old-growth attributes		: young to late successional		edge/ open woodland/ shrub		Grassland/ herbaceous/ agricultural field/ "old field"		Open marsh/ tidal flats/ open shorelines	Cliff/ rock face/karst
		Riparian/ aquatic		Riparian/ aquatic		Riparian/ aquatic		Riparian/ aquatic		
Mammals:										
Long-tailed Weasel	x	x	x	x	x	x				
Mountain Beaver, rufa subsp.			x	x	x	x				
Snowshoe Hare			x	x	x	x				
Keen's Long-eared Bat	x	x	x	x						x
Townsend's Big-eared Bat					x	x				x
Pacific Water Shrew		x		x		x		x	x	
Townsend's Mole					x		x			
Birds:										
Great Blue Heron			x	x	x	x	x	x	x	
Horned Lark							x			
Barn Owl					x	x	x	x		
Northern Goshawk	x		x							
Peregrine Falcon									x	x
Short-eared Owl							x	x	x	
Spotted Owl	x									
Western Screech-Owl, kennicottii subsp.	x	x	x	x	x	x				
Amphibians:										
Coastal Giant Salamander	x	x	x	x		x				
Coastal Tailed Frog	x	x	x	x						
Spotted Frog				x	x	x	x	x		
Red-legged Frog	x	x	x	x	x	x	x	x		
Western Toad	x	x	x	x	x	x				
Fish:										
Nooksack Dace						x		x		
Salish Sucker						x		x		
Invertebrates:										
Forestsnail	x	x	x	x	x	x				
Dun Skipper						x		x		
Monarch							x			
Grappletail		x		x						
Plants (flowering):										
Cliff paintbrush										x
Phantom orchid	x		x							
Streambank lupine						x		x		
Tall bugbane	x	x	x	x	x	x				
beggarticks						x		x	x	
Plants (moss):										
Silver hair moss										x
Poor pocket moss	x									

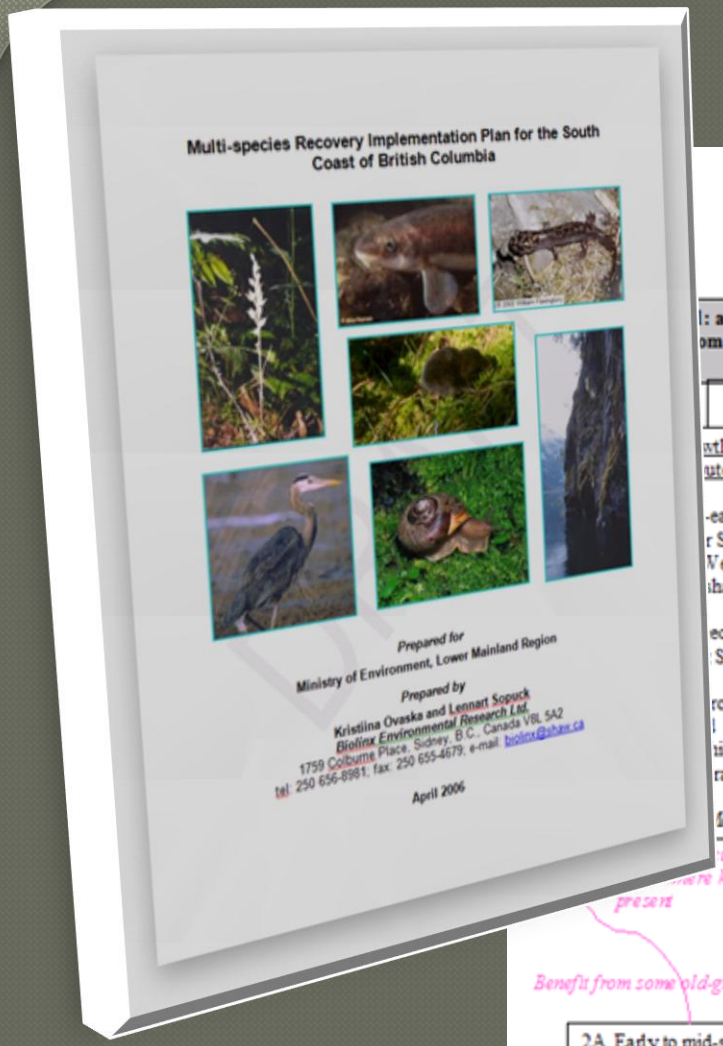


Figure 3A. Forest associated species

l: all species om similar

Subsets of species benefiting from similar measures

Finer subsets of species or individual species

wth or old- utes

-eared Bat
r Shrew
Weasel?
hawk
ech-Owl
Salamander
rog
id
rag onfly)
loss

1D. Extensive upland areas:
Northern Goshawk
Spotted Owl
Western Screech-Owl

1C. Nesting/ roosting/ shelter trees:
Keen's Long-eared Bat
Long-tailed Weasel?
Spotted Owl
Western Screech-Owl

1B. Riparian/semi-aquatic: see next column for species

1H. Upland/riparian forest microhabitats:
Phantom Orchid
Tall Bugbane
Poor Pocket Moss

May co-occur with riparian associates

1G. Riparian foraging areas:
Keen's Long-eared Bat
Western Screech-Owl

1F. Clear, fast-flowing streams:
Coastal Giant Salamander
Tailed Frog
Grappletail (dragonfly)

1E. Slow-moving stream sections, pools, wetlands:
Pacific Water Shrew
Red-legged Frog
Western Toad

Overlap in stream use

ur in younger ere key attributes are present

Benefit from some old-growth attributes

2A. Early to mid-seral forest:
Long-tailed Weasel
Snowshoe Hare
Mountain Beaver
Oregon Spotted Frog
Oregon Forestsnail

2C. Semi-aquatic, wetland:
Oregon Spotted Frog

Some overlap in wetland habitat requirements

2B. Upland/riparian:
Long-tailed Weasel
Snowshoe Hare
Mountain Beaver
Oregon Forestsnail

2D. Burrow use:
Mountain Beaver
Oregon Forestsnail
Long-tailed Weasel

Step 2 – Measures & Risk Assessment

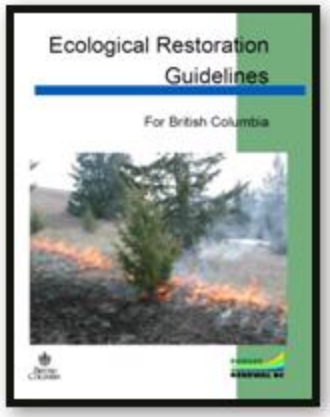
Coarse filter / Landscape measures

Site and Species Specific Measures

Identify conflicting restoration requirements

Risk Assessment

Restoration Scale	Examples
Restore Process	Re-introduction of natural disturbances Restoring the former hydrologic regime Initiating or speeding up *succession, to restore seral stage*
Restore Ecosystem	Restoration of specific structures/features within ecosystems: • Restoring *large woody debris in streams* • Restoring large-sized trees to managed forests •Restoration of soil in industrial areas, and in ecologically sensitive areas
Restore Critical Habitat Features	Restoration of wildlife habitat features, i.e. known critical / survival or rare habitat such Implementation of buffers and guideline recommendations *Apply survival habitat polygon protection* Protect individual nest, roost, and hibernation site - residence Address specific threats
Restore Species	Re-introduction of *extirpated species* Stabilization of decreasing populations Removal/management of invasive exotic species Restoring *keystone species (e.g. salmon, major tree species), and* rare and endangered species Restoring habitat for *umbrella species (e.g. grizzly bear, SPOW)*



Contact MoE (ME) - most current versions of BMPs

Guidelines for Dealing with Development Effects on Species and Ecosystems at Risk on the South Coast of British Columbia - working draft

Amphibians and Reptiles (Herptiles) BMPs

Raptors BMPs

Pacific Water Shrew BMP – Working Draft – January 2007

Mountain Beaver - Working Draft

Phantom Orchid - Working Draft

Vancouver Island Beggarticks - Working Draft

Recovery Implementation Plan/Multi-species BMP

- coming soon

Develop with care – aka Urban and Rural Land Development BMPs

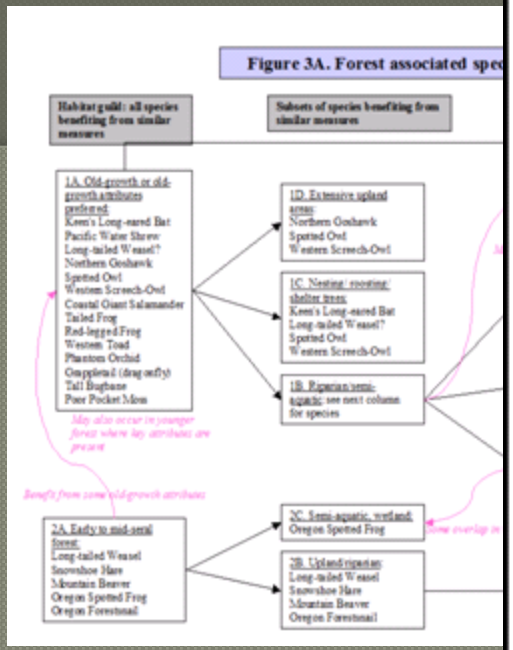
Step 2 – Measures & Risk Assessment

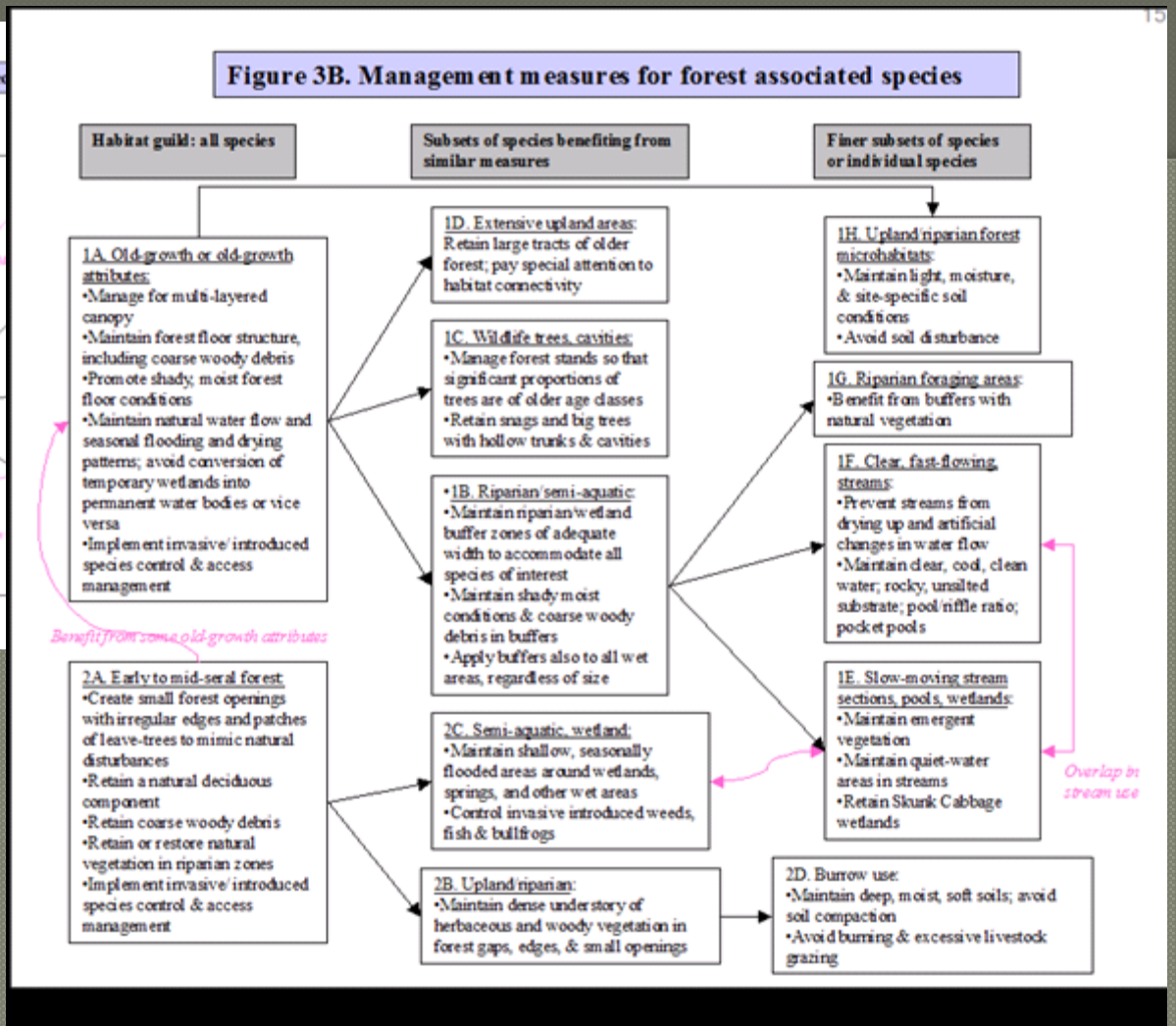
Coarse filter / Landscape measures

Site and Species Specific Measures

Identify conflicting restoration requirements

Risk Assessment

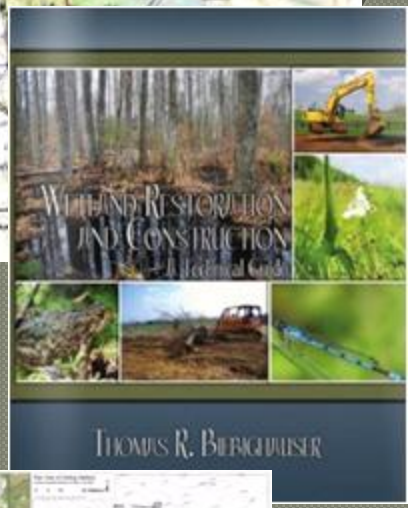





If it isn't broken don’t fix it

Step 3 – Planning and Consultation

Planning → Consultation → Pre-construction monitoring → Implementation



Planning

- Restoration goals and objective should be SMART ! - explicit and measurable
- Clearly layout how the project will avoid or mitigate impacts to species and ecosystems at risk, including avoidance of harm to individuals, residences, and critical habitat

Appropriate permits:
Wildlife Act, Water Act (any works in and about a water course), Species at Risk Act, etc.

Timing windows, plants, details!!! etc

Step 3 – Planning and Consultation | Planning | Consultation | Pre-construction monitoring | Implementation`

Consultation

- Notification of mitigation & monitoring plans to RA
- Landholder's permission
- Engagement of stewardship groups
- Partner with other projects

Pre- construction monitoring

- Ensure baseline data is available – setup as an experiment – e.g. measure water flows, amphibian surveys, temperature loggers, etc..

- Implementation!

Step 4 – Monitoring and Adaptive management

- Monitoring Plan – during and post construction
- Adaptive management
- Effectiveness evaluation
- Long-term ecosystem process and SEAR population monitoring

Long-term post construction monitoring - the effectiveness of the mitigation measures

Professional reliance and credibility
Are mitigation measures working?
What else needs to be done?
What can we learn (positive and negative)?
Have SAR persisted in the long-term


Northern Goshawk Conservation Regions


Vancouver
Island
Victoria
Coastal Douglas-fir, moist maritime (CDFmm)
Coastal Western Hemlock, very dry maritime (CWHxm1)
Coastal Western Hemlock, very dry maritime (CWHxm2) (shows only portion within study area)
Coastal Western Hemlock, moist maritime (CWHmm) (shows only portion within study area)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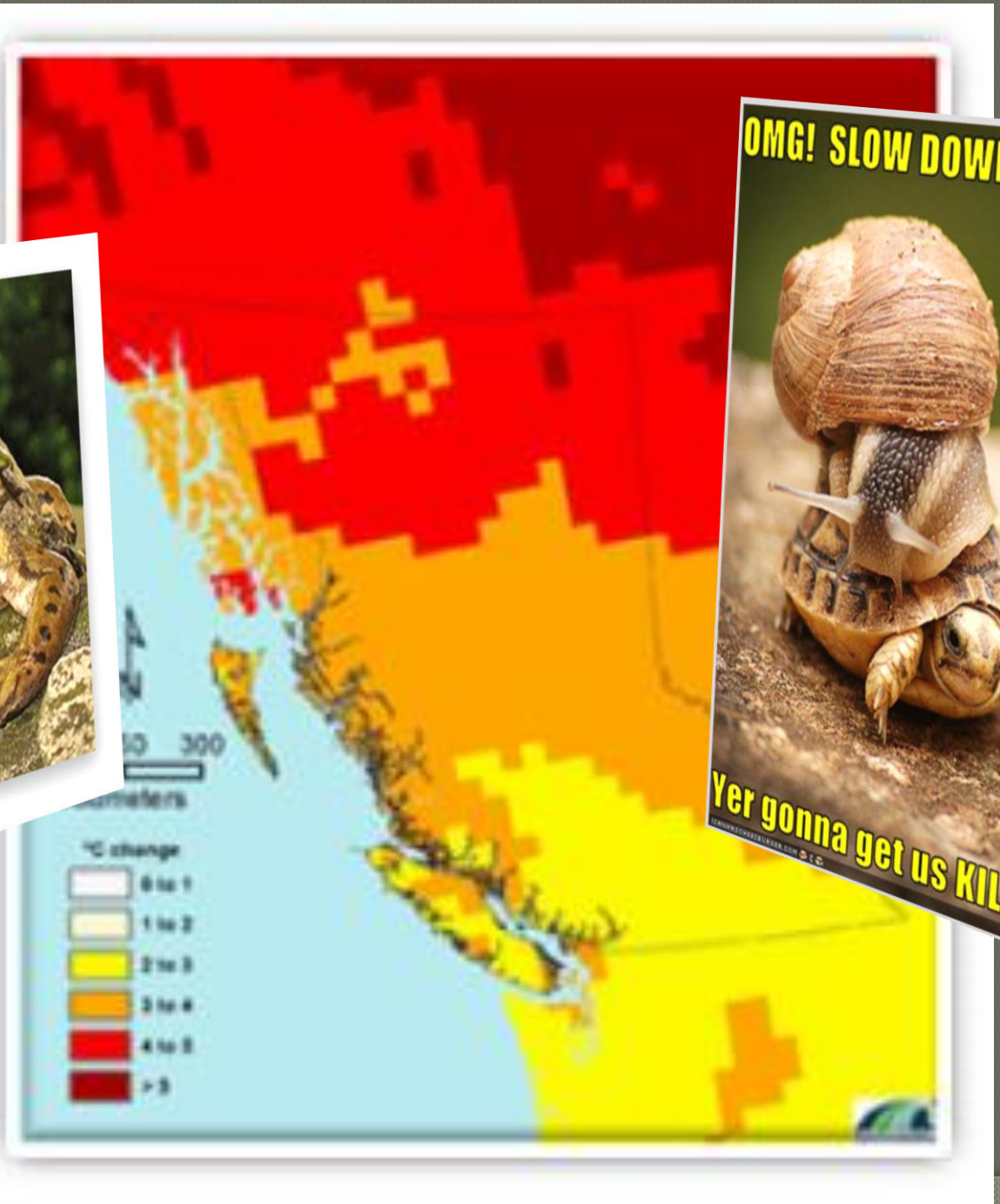
Shared Waters Alliance
Boundary Bay


°C change
6 to 1
1 to 2
2 to 3
3 to 4
4 to 5
> 5

OMG! SLOW DOWN!
Yer gonna get us KILLED!