Where Shrews Walk on Water: Diversity by Design for British Columbia's South Coast

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SOUTH COAST CONSERVATION PROGRAM

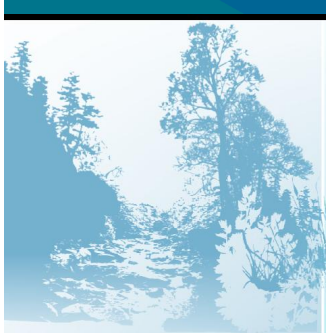
Protecting and Restoring at Risk Species and Ecological Communities on BC's South Coast

R. W. Barbour

Context Setting:

- Endangered Times in Canada & BC
- British Columbia's South Coast & the SCCP
- Diversity by Design – a whole system approach to critical habitat restoration

A little background: The Canadian Species at Risk Act (SARA)



ASSESSMENT

LISTING RECOMMENDATION/DECISION

RECOVERY PLANNING

IMPLEMENTATION & MONITORING

STEWARDSHIP ACTIVITIES

CONSERVATION AGREEMENTS

STEWARDSHIP ACTION PLANS

VOLUNTARY ACTIONS & STEWARDSHIP

CANDIDATE LISTING PRIORITIZATION ASSESSMENT

MINISTER RESPONSE RECOMMENDATION TO GIC

SPECIES IS LISTED

SPECIES OF SPECIAL CONCERN

MANAGEMENT PLAN

ONGOING IMPLEMENTATION ACTIVITIES

THREATENED ENDANGERED EXTIRPATED

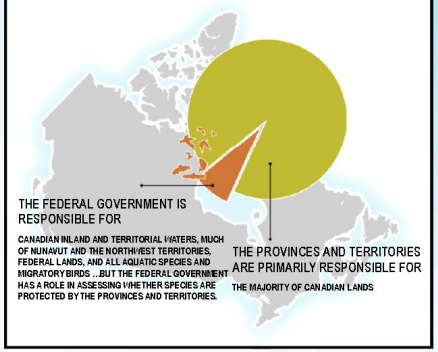
RECOVERY STRATEGY

ACTION PLAN

CRITICAL HABITAT IDENTIFIED

SPECIES NOT LISTED

SPECIES AT RISK CONSERVATION IS A SHARED RESPONSIBILITY IN CANADA



PROTECTIONS

PROHIBITIONS ON INDIVIDUALS & RESIDENCES

EMERGENCY MEASURES

CRITICAL HABITAT PROHIBITIONS

REGULATIONS

CRITICAL HABITAT PROTECTION

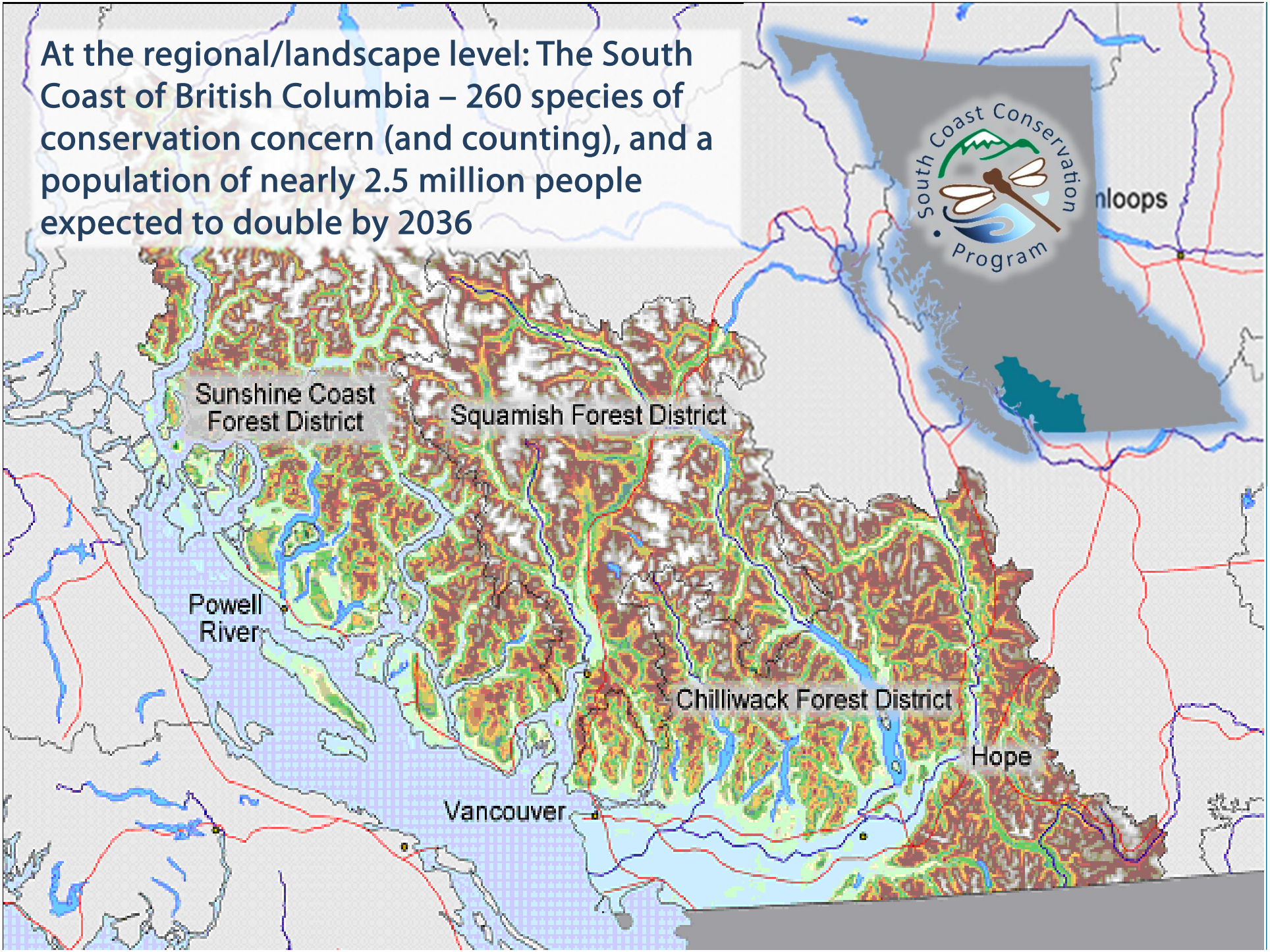
ACTION PLAN IMPLEMENTATION

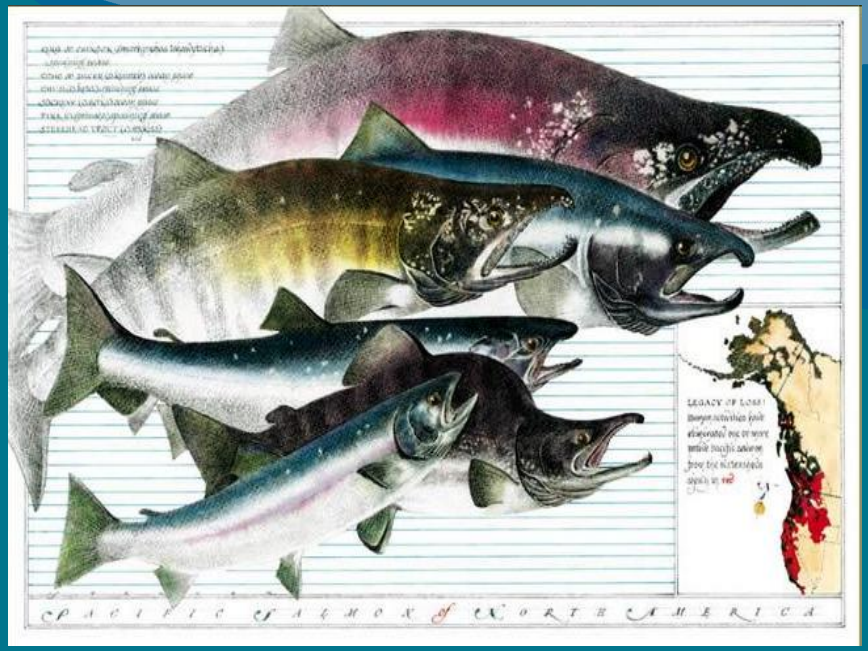
MANAGEMENT PLAN IMPLEMENTATION

EXEMPTIONS

PERMITS

At the provincial level: Endangered times in BC


At the regional/landscape level: The South Coast of British Columbia – 260 species of conservation concern (and counting), and a population of nearly 2.5 million people expected to double by 2036
South Coast Conservation Program
nloops
Sunshine Coast Forest District
Squamish Forest District
Powell River
Chilliwack Forest District
Hope
Vancouver



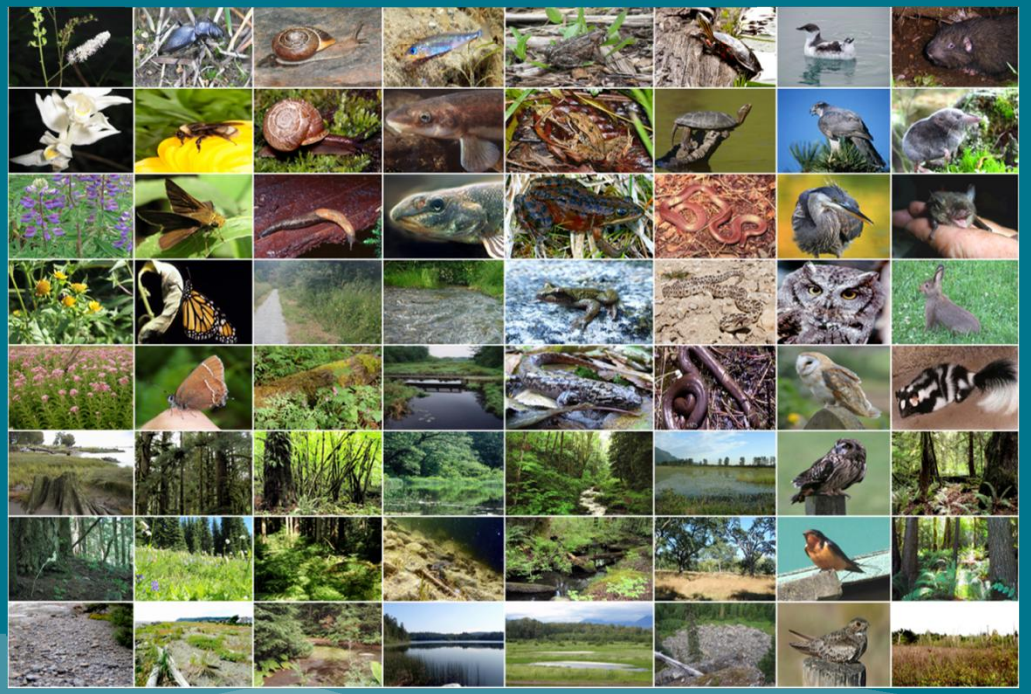
Single Species Thinking

Multi-species Thinking

Ecosystem Thinking

Whole Systems Thinking

On the South Coast, a holistic approach is seen as integral to address the complex challenges of protecting species at risk and the critical habitat they need for long-term recovery



The Approach: A “Diversity By Design” Toolkit

•Primary audiences:

- **Stewardship organizations and community groups**
- **Park, environmental, and urban forestry departments**
- **Municipal planners and engineers**
- **Private landowners**
- **First Nations**

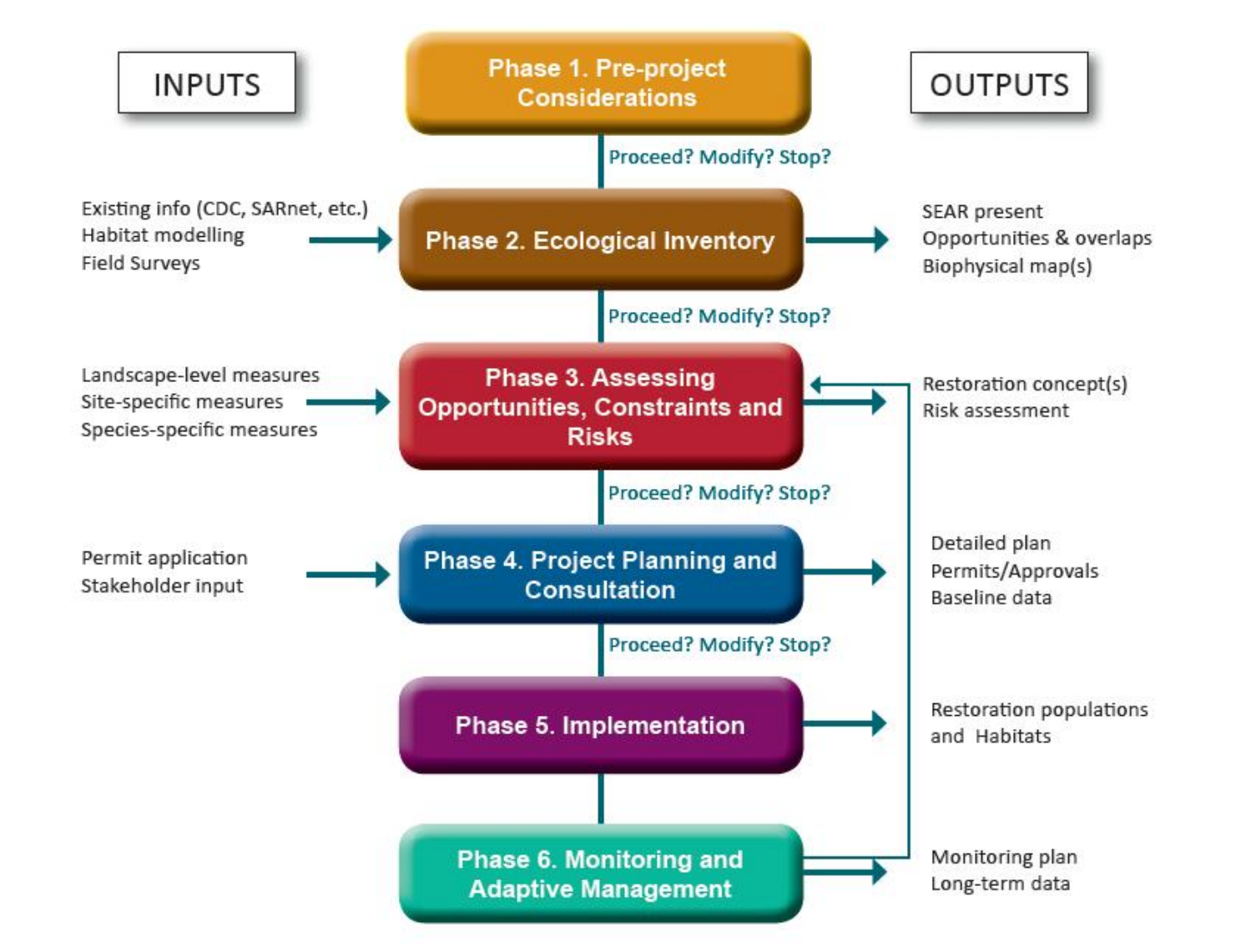
Secondary audiences:

•Developers

•Consultants (professional practitioners)

The roadmap that got us to Diversity by Design:

The Diversity by Design Template: A standardized 'Project Planning Framework'



1. Pre-project Considerations

- Initial consultation – seek expert advice (e.g., recovery team chairs)
- Choosing your site – does it have long-term protection?
- Know your organizational capacity – what can you take on?
- Partnerships – who can we collaborate with and learn from?

2. Ecological Inventory

- Gather existing information – CDC data, SARnet, critical habitat maps, air photos, etc.
- Make a list of potential species
- Conduct a field inventory
- Habitat suitability/capability mapping
- Understand the role of ecosystem processes
- Identifying multi-species
- restoration opportunities

3. Assessing Opportunities, Constraints, and Risks

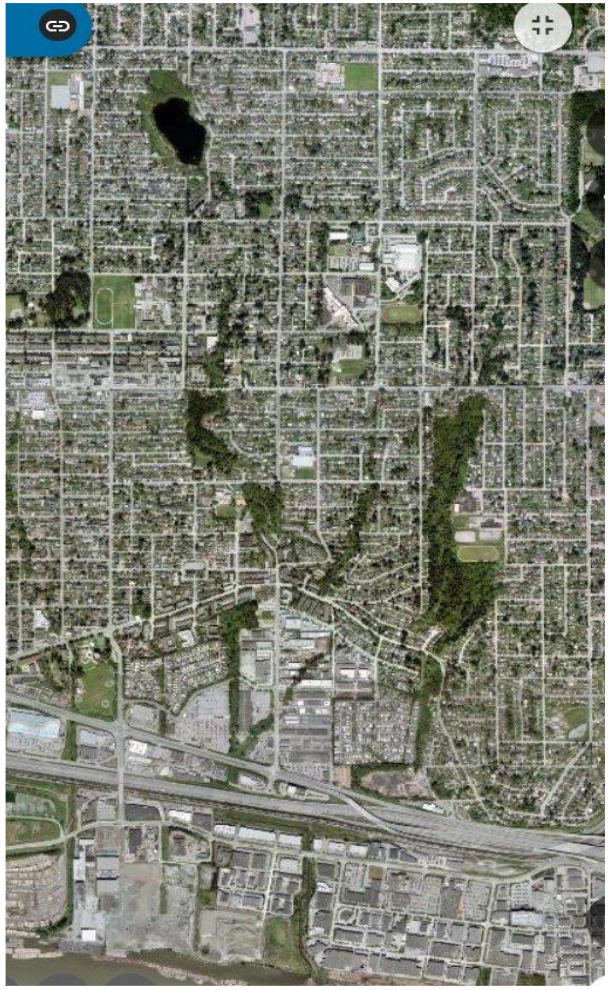
- Is restoration best? Is “doing nothing” better?
- Understand the capacity of your site
- Avoid inter-species restoration conflicts
- Picking a reference site
- Conduct a risk assessment
- Consider cumulative effects

4. Project Planning and Consultation

- Do you have a plan? (goals and objectives, work plan, maps or design drawings, schedule, budget)
- Do you have the necessary permits and approvals?
- Do you have permission from the landowner?
- Do you need insurance?
- Do you need funding?
- Have you consulted with all of the stakeholders?
- Are there opportunities for public education and outreach?

5. Project Implementation

Collect pre-project baseline data, example Como Creek Watershed, typical rural to urbanized landscape of southwest BC



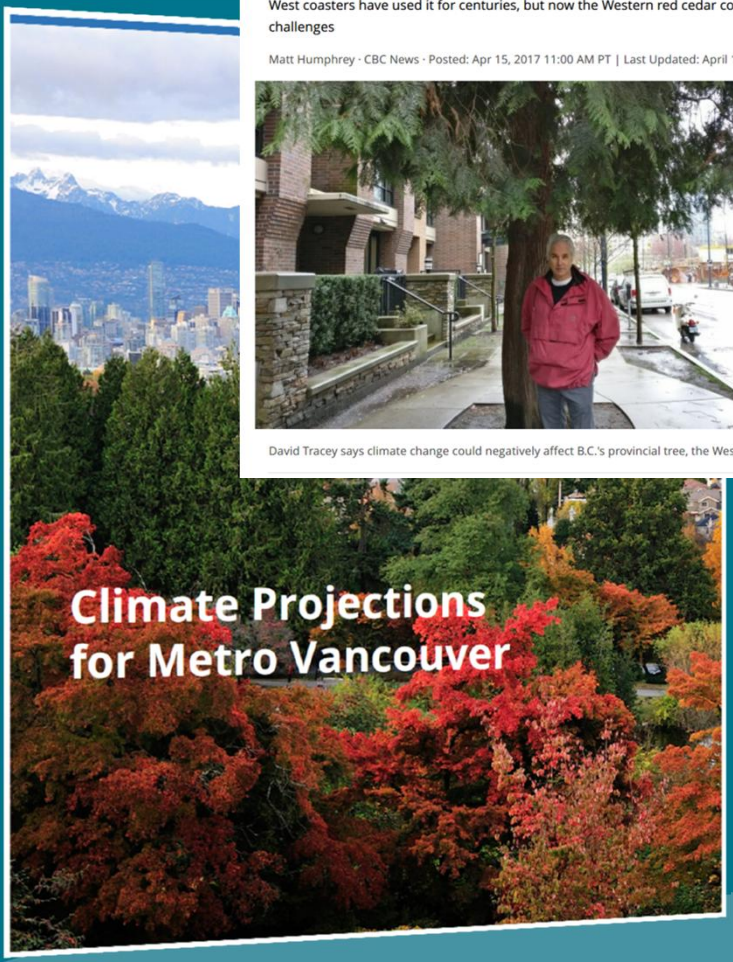
1948 1979 2017

6. Monitoring and Adaptive Management

- What to monitor:
  - Species at risk populations?
  - Ecological processes (e.g., vegetation succession)?
  - Flow and water quality?
  - Photo-point monitoring?
- Monitoring plan = pre, during, and post-construction
- Manage adaptively – a good way to deal with uncertainty!

And consider the Winners and Losers…

"Goodbye Vancouver, hello San Diego."



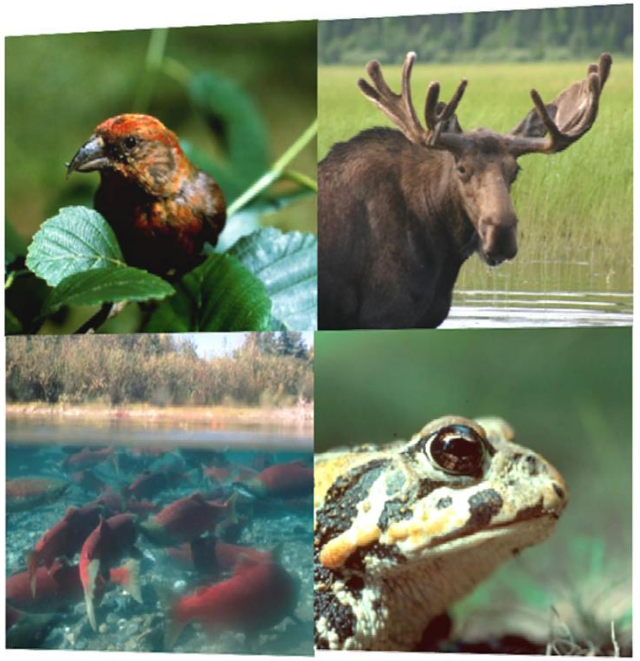
B.C.'s provincial tree threatened by climate change, expert says

West coasters have used it for centuries, but now the Western red cedar could face new challenges

Matt Humphrey · CBC News · Posted: Apr 15, 2017 11:00 AM PT | Last Updated: April 15, 2017

David Tracey says climate change could negatively affect B.C.'s provincial tree, the Western red cedar. (CBC)

Climate Change Vulnerability of BC's Fish and Wildlife: First Approximation



This first approximation describes and tests an approach for assessing vulnerability. An Excel database with comments and detailed ratings accompanies this report. Please refer to the database for further information on the 63 species assessed to date. The database is intended to be refined and expanded.

June 8, 2016

BRITISH COLUMBIA

Learning Outcomes (and some guiding principles)

1. Put protection over restoration
2. Take a long-term view
3. Design for diversity
4. Adopt a socio-ecological approach
5. Apply the best available knowledge
6. Set clear objectives
7. Apply adaptive management
8. Document your results

The South Coast supports an incredible level of biodiversity. BC is home to the largest number of species at risk in Canada. Neglecting to consider a Diversity by Design (whole systems) approach to restoring habitat for species at risk will only result in costly projects likely to miss the mark when it comes to species at risk recovery.

- **Resources and further information:**

- **SARA (choose English or French!) https://www.registrelep-sararegistry.gc.ca/**
- **Species At Risk BC: http://engage.gov.bc.ca/bcspeciesatrisk/**
- **South Coast Conservation Program: www.sccp.ca (subscribe to our newsletter and RSS feeds, downlaod our endangered species finder app for Android and IOS)**
- **SCCP YouTube channel: View previous webinars about species at risk issues with a southwest BC context:**
- **https://www.youtube.com/channel/UClaFkFYYC2TP0-2H5vdmscQ/videos**
- **Facebook: Local to international conservation postings, events and more: https://www.facebook.com/SCCPSpeciesAtRisk/**

- **Contact me: pamela@sccp.ca**

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