

The Framework for Developing British Columbia's Biodiversity Strategy

Draft for Review
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B.C. Conservation Lands Forum
Conservation Planning Tools Committee

Disclaimer: This document was developed at an early stage in the planning process and was meant to outline steps for building a strategy and Action Plan. The BC Conservation Planning Tools Committee (also known as Biodiversity BC Steering Committee) has since revised the framework and as such this framework is no longer completely accurate.

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1. Introduction

In October 2004, the provincial government announced the contribution of \$8 million to create the B.C. Trust for Public Lands to support biodiversity conservation in British Columbia. The B.C. Conservation Lands Forum is a five-year partnership of government and conservation organizations that was created as the sole delivery agent for the B.C. Trust for Public Lands. The Forum was established to coordinate priority setting, identify shared interest and opportunities, and arrange partnerships to support improved conservation planning and more efficient private land acquisitions and management of private lands for biodiversity conservation. The minimum requirement for non-provincial government matching dollars will result in a \$32 million conservation investment in the province in five years.

Government, research institutions, conservation organizations, and private industry have recognized the need for a systematic approach to biodiversity conservation in British Columbia. The development of a common British Columbia Biodiversity Strategy to determine key priorities at a provincial scale is recognized through an objective in the provincial Ministry of Environment's 2005 – 2008 Service Plan Update recognizing the need for *"clear strategies and legislation to protect and restore species and their habitats"*, is a key recommendation in the Forest Practices Board special report on the Implementation of Biodiversity Measures under the Forest Practices Code (March 2004); and is a component of the mandates of many conservation organizations.

The development of British Columbia's Biodiversity Strategy is a broader partnership than that of the main, more focused work of the Forum. The B.C. Conservation Lands Forum's charter includes an independent Conservation Planning Tools Committee (CPTC) with the mandate to develop and facilitate implementation of a comprehensive, science-based Biodiversity Strategy for British Columbia. The members of the CPTC are: Ducks Unlimited Canada, The Land Conservancy of B.C., Nature Conservancy of Canada, Pacific Salmon Foundation, The Nature Trust of British Columbia, Environment Canada, Ministry of Environment, Ministry of Agriculture and Lands, Habitat Conservation Trust Fund, World Wildlife Fund and the Union of B.C. Municipalities.

The Biodiversity Strategy is intended to inform policy development and decision-making processes for both government and non-government organizations in British Columbia.

2. Scope of the Provincial Biodiversity Strategy

The scope for the development of B.C.'s Biodiversity Strategy includes:

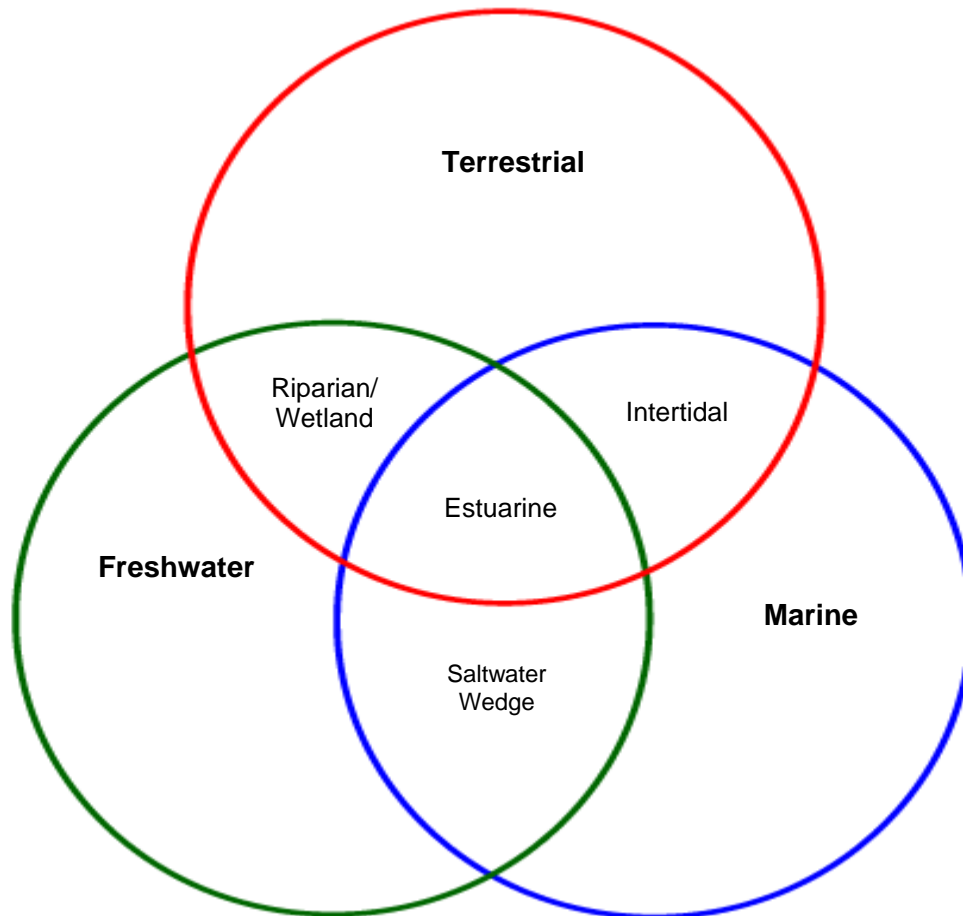
➤ **Geographical/jurisdictional breadth**

- The terrestrial and freshwater realms within the province (see 'Developing Meaning Around "Biodiversity"')
- Interface between both terrestrial and freshwater with saltwater including the nearshore, intertidal zone and estuaries¹
- The portions of the atmospheric and phreatic (below ground) realms directly above and below the areas described above

¹ The CPTC will seek to ensure coordination with DFO and others on biodiversity-related planning processes in the marine realm.

- Human activities that affect the range of biodiversity (including those happening outside the province or in the marine realm within the province)

Figure 1. Spatial overlap of the terrestrial, freshwater and marine ecological realms^{2,3,4}.



➤ **Range of biodiversity**

- The full range of terrestrial and freshwater biodiversity in B.C. (see 'Developing Meaning Around "Biodiversity"')
- Elements of terrestrial and freshwater biodiversity that rely on the marine realm (e.g. salmon, seabirds etc.)

➤ **Time frame**

² The atmospheric and phreatic realms are not shown but respectively cover the full spatial extent above and below those combined realms.

³ Fraser, D. F., A. Banner, and A. Harcombe. 1995. A framework for ecological classification in British Columbia, Unpublished Report. Resource Inventory Committee. Victoria, B.C. 27 pp

⁴ Silk, N. and Ciruna, K.A. (eds). 2005. Practitioner's Guide to Freshwater Biodiversity Conservation. Island Press. 452 pgs.

- Looking forward 100 years recognizing that the strategy should be revised at regular intervals over that time period (e.g. every ten years)
- **Reference point**
 - Consideration of human impacts to biodiversity will be in reference to changes following European contact (including divergence from how elements of biodiversity would have changed naturally)
- **Range of options**
 - All potential steps to reduce human impacts and conserve biodiversity including legislation, policy, and programs (e.g. land securement, ecosystem restoration)
- **Audience**
 - All levels of government including First Nations, industry, conservation groups, other stakeholders and the general public in British Columbia

3. Principles for the Development of a Provincial Biodiversity Strategy

The development of the Biodiversity Strategy will be based on the following principles.

- Focused on **achieving objectives**. B.C.'s Biodiversity Strategy will include specific, measurable, achievable, realistic, and time-limited objectives.
- Developed and implemented using the **best available science and information** (including traditional ecological knowledge).
- Based on recognition of the need to operate at **multiple spatial and temporal scales**.
- Based on **sharing of information**. This will be done in accordance with the B.C. Trust for Public Lands Memorandum of Understanding on Data Sharing.
- Based on **shared responsibility**. Successful development and implementation of B.C.'s Biodiversity Strategy will be determined in large part by the degree to which society adopts its vision and principles and contributes to achieving its goals. It requires the support and participation of all levels of government including First Nations, industry, citizen groups, and the general public.
- The British Columbia Biodiversity Strategy will be **consistent with the Canadian Biodiversity Strategy**⁵.
- Based on **consideration of contributing to national and global conservation of biodiversity**. B.C.'s Biodiversity Strategy will consider the relative priorities of conserving British Columbia's biodiversity in relation to the conservation of both Canada's and the globe's biodiversity.
- Developed with **consideration of values and trade-offs**. B.C.'s Biodiversity Strategy will consider ecological and socio-economic values and trade-offs.

⁵ Anonymous. (1995). Canadian Biodiversity Strategy: Canada's Response to the Convention on Biological Diversity. Environment Canada's Canadian Biodiversity Information Network: <http://www.cbin.ec.gc.ca>

4. Developing Meaning Around “Biodiversity”

The British Columbia Biodiversity Strategy incorporates the Canadian Biodiversity Strategy's definition of biodiversity: “the variety of species and ecosystems on Earth and the ecological processes of which they are a part—including ecosystem, species, and genetic diversity components”.

Given the broad definition and inherent complexity of characterizing biodiversity, it will be helpful to consider the concept in smaller components in the Biodiversity Strategy⁶. To begin this process, three primary attributes are recognized that constitute the biodiversity of an area: composition, structure, and function⁷. Each of these attributes is multi-scalar and includes both spatial and temporal dynamics. As such these attributes may also be examined at different scales (e.g. genetic, population/species, community/ecosystem and regional landscape).and considered for each of the terrestrial and freshwater ecological realms—while recognizing important areas of overlap (see Figure 1).

Table 1 defines the three interrelated attributes and their relationship to biodiversity.

Table 1. Primary Attributes of Biodiversity

Composition:	Deals with the identity and variety of elements in a collection, and includes species lists and measures of species diversity and genetic diversity.
Structure:	The physical organization or pattern of a system, from habitat complexity as measured within communities to the pattern of patches and other elements at a landscape scale.
Function:	Involves ecological and evolutionary processes, including gene flow, disturbances, and nutrient cycling.

⁶ Noss, R. (1990). Indicators for Monitoring Biodiversity: A Hierarchical Approach. *Conservation Biology* 4, 355-364.

⁷ Franklin, J.F., K. Cromack, W. Denison. (1981). Ecological characteristics of old-growth Douglas-fir forests. USDA Forest Service. General Technical Report PNW-118. Pacific Northwest Forest and Range Experiment Station, Portland, Oregon.

5. The Five Phases of the Development and Implementation of B.C.'s Biodiversity Strategy

The relationships among the five phases described below are illustrated in Figure 2.

Phase 1 Preparing for Strategy Development

The purpose of the strategy development process is to deliver a provincial Biodiversity Strategy that will be implemented by the full range of parties (all levels of government including First Nations, industry, conservation groups etc.) and substantially improve the conservation of biodiversity in British Columbia.

The Biodiversity Strategy will be developed in the context of a **problem statement** that describes the compelling need for a Biodiversity Strategy in British Columbia. The problem statement will also summarize critical issues affecting biodiversity in the province.

Given the complexity of the issues to be faced in the development of the Biodiversity Strategy and the challenges of planning with a wide spectrum of interests, it is critical that a set of **ecological principles, concepts and approaches to conservation** be developed to guide the process. Ecological principles will help to define assessment and analysis priorities and guide the overall development of the strategy.

The completion of an **ecological assessment** is an important step in the preparation phase leading up to the development of the strategy. The assessment will describe the current status of biodiversity in British Columbia including key impacts and trends that may affect biodiversity in the future. The assessment will also identify a range of options for addressing key biodiversity issues in British Columbia. First Nation traditional ecological knowledge will be an important consideration in the development of the Biodiversity Strategy and may need to be considered in the ecological assessment.

Defining the process for developing the Biodiversity Strategy is another critical step in the preparation phase. **Planning for strategy development** will help to define the steps for developing and implementing the strategy including the process for engaging stakeholders, developing a vision and goals, developing and assessing biodiversity scenarios, communicating with the broader public, and developing an action plan.

The main components in Phase I are described below:

A. Ecological Principles, Concepts and Approaches to Conservation Report

The Ecological Principles, Concepts and Approaches for Conservation Report will set the broad context and provide direction for the development of the Biodiversity Strategy. It will guide other activities such as the ecological assessment during Phase 1 and the will help set the stage for developing the strategy in Phase 2.

- Scope:** Develop a report that includes:
1. A definition of biodiversity
 2. Ecological principles and their implications to a biodiversity strategy
 3. Ecological concepts and their implications/application to a biodiversity strategy
 4. Approaches to ecological conservation based on ecological principles
- Process:**
- The Ecological Principles and Assessment Subcommittee (EPAS) will oversee the development of the Ecological Principles, Concepts and Approaches for Conservation Report
 - External experts will be invited to provide advice to the subcommittee

B. Ecological Assessment Report

The Ecological Assessment Report will be guided by the Ecological Principles, Concepts and Approaches for Conservation report. It will provide an overview of the current status of biodiversity in British Columbia including impacts and threats to biodiversity, B.C.'s global responsibility for species and ecosystems, key elements, components and processes that support biodiversity in B.C. and the extent of overlap with the marine realm and other jurisdictions. The report will also identify data gaps that may affect the development and implementation of the biodiversity strategy. The report will conclude a summary of the range of options for addressing British Columbia biodiversity issues and will serve as a foundation to support development of the Biodiversity Strategy in Phase 2.

- Scope:** Develop a report that includes:
1. Past trends and future projections (e.g. human population growth, climate change, State of Environment reporting)
 2. "Safety-net" gap analysis (an assessment of the present level of residual impact to biodiversity despite the current mitigative measures (i.e. legislation, policy and programs) in place)
 3. Spatial analysis (mapping of each area's relative importance/irreplaceability to the conservation of biodiversity as well as the current level of relative impact/threat/pressure to biodiversity)
 4. Data gaps (a description of the extent to which our ability to conserve biodiversity is limited by our lack of knowledge (e.g. poorly understood taxonomic groups and ecological processes, effects of cumulative impacts)
 5. Species/ecosystem status and global responsibility (information that could be used to prioritize species and ecosystems for conservation action)
 6. Key elements/components/processes (information that could be used to prioritize species and ecosystems for conservation action (e.g. keystone species that have a disproportionate effect on other elements of biodiversity)

7. Overlap with the marine realm and other jurisdictions (an explanation of the areas and elements of biodiversity whose conservation is linked to these places outside the geographic scope of the CPTC's work)
8. Range of options for mitigating human impacts and conserving biodiversity

- Process:**
- The Ecological Principles and Assessment Subcommittee (EPAS) will oversee the preparation of the Ecological Assessment Report
 - External experts will be invited to provide advice to the subcommittee

C. Planning for Strategy Development

Another key outcome from Phase 1 will be the design of the process that will be used to develop, approve and implement the Biodiversity Strategy. Development of a communication strategy including recommendations for public outreach and communication and stakeholder engagement will also be incorporated into planning for strategy development.

- Scope:** Develop a report with process design recommendations for strategy development including:
1. Communication, education and public outreach
 2. Stakeholder engagement
 3. Developing a vision and goals
 4. Advance preparation of planning products by experts (e.g. biodiversity options and scenario(s))
 5. Scenario development and trade-off
 6. Information and analysis requirements including the need for socioeconomic assessment
 7. Completion and approval process for key components of the strategy including the final strategy
 8. Developing an action plan
 9. Implementation and monitoring

- Process:**
- The Planning for Strategy Development (PSD) Subcommittee will lead the process
 - External experts will be invited to provide advice to the subcommittee
 - A communication strategy will be developed in Phase 1
 - Public education and outreach will begin during Phase 1

At the end of Phase 1, all draft products and recommendations prepared by the subcommittees will be reviewed and approved by the CPTC.

Phase 2 Biodiversity Strategy Development

Development of the Biodiversity Strategy will begin in early 2007 based on the information and process design recommendations developed in Phase 1. The outcome of Phase 2 will be a draft Biodiversity Strategy that includes a vision, goals, objectives, and priority actions for conserving biodiversity in the British Columbia. As illustrated in Figure 2, the development of the draft Biodiversity Strategy will include the involvement of all levels of government including First Nations, conservation organizations, academia, industry, and other stakeholders. A scenario based on the scientific information in the Ecological Principles, Concepts and Approaches for Conservation Report and Ecological Assessment Report may be prepared in advance of Phase 2 based on recommendations from the Planning for Strategy Development Subcommittee.

Phase 3 Public Consultation

Broad-based consultation will be undertaken before British Columbia's Biodiversity Strategy is finalized, and will include consultation with the full spectrum of groups described in Phase 2 as well as the public.

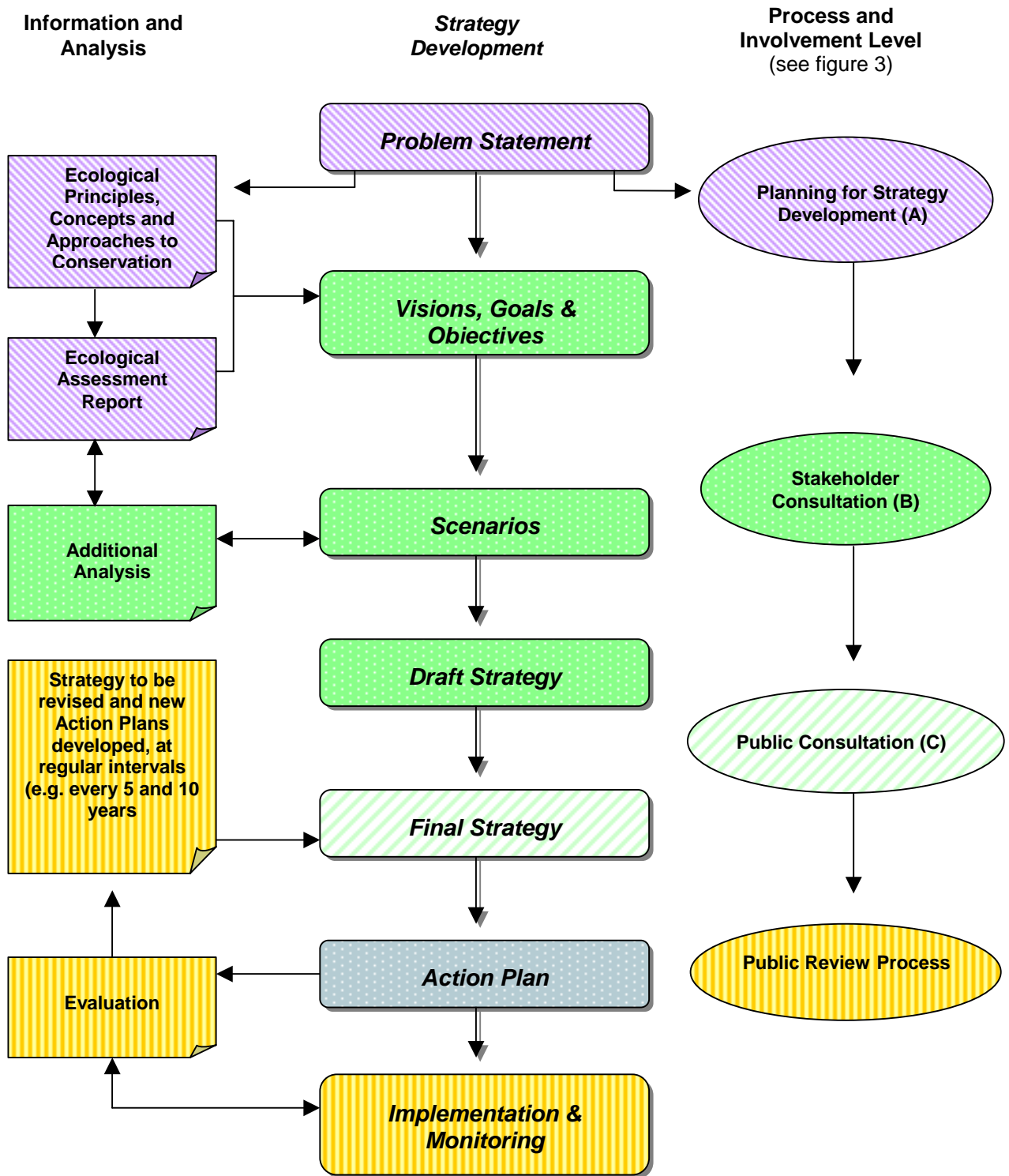
Phase 4 Action Planning

After finalizing the strategy, a five-year Action Plan for implementing B.C.'s Biodiversity Strategy and monitoring the results will be developed. It will include specific tasks, responsibilities and effectiveness indicators. Completion of this phase will be determined through a process involving the full range of groups participating in the development of the Action Plan.

Phase 5 Implementation and Monitoring

Implement B.C.'s Biodiversity Strategy through the Action Plan, monitor the outcomes to check on predictions/assumptions and effectiveness, and apply the information gained to adapting its implementation, developing subsequent Action Plans and revising the Biodiversity Strategy. Initiation of the development of subsequent Actions Plans and revision of the Biodiversity Strategy will be the responsibility of the full range of groups participating in the implementation of the Action Plan.

Figure 2. Framework for Developing B.C.'s Biodiversity Strategy



Phase 1 Completed 2006
 Phase 2 Completed Dec. 2008
 Phase 3 Completed June 2009
 Phase 4 Completed Dec. 2009
 Phase 5 Ongoing

Figure 3. Level of Technical, Stakeholder and Public Involvement

