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OBJECTIVES AND STRATEGIES

The Future Forest Ecosystems Initiative (FFEI) has six objectives, which will be achieved through a number of high-level strategies.

1. Understand the **functional constraints** for key species and ecological processes to establish a baseline of information for forecasting and monitoring ecosystem changes.

   High Level Strategies to Achieve Objective

- Identify the **key species** and ecological processes most likely to be impacted by climate change.
- Determine how identified key species and **ecological processes** will respond to a changing climate, and the controlling variables causing the responses.

2. Forecast how a range of climate change scenarios might alter key species and ecological processes over time.

   High Level Strategies to Achieve Objective

- Forecast climate changes for B.C. (by regional area and biogeoclimatic unit) and include explicit descriptions of the level of confidence in the forecasts.
- Determine the expected probability and magnitude of climate change impacts on B.C.'s forest and range resources.
- Determine the risks and benefits associated with implementing climate change adaptation strategies and practices.

3. Monitor key species and ecological processes to detect changes over time, and determine the agents of change.

   High Level Strategies to Achieve Objective

- Determine the indicators or measures to be used to monitor climate change and changes to identified key species and ecological processes.
- Determine an appropriate monitoring design to detect climate changes and the responses of species, processes and agents of change to climate change.
- Determine whether the current monitoring framework (e.g., programs, systems, network of monitoring sites) is adequate to meet FFEI objectives, and adapt it as necessary.

Functional constraints are the limited capacity of species characteristics (e.g., morphology, phenology, genetics) to facilitate adaptation to changing environmental considerations.

Key species are species that have a disproportionate influence on determining the composition and structure of ecosystems. Their loss would cause a greater than average change in populations of other species and ecosystem processes.

Ecological processes are continuous actions that operate directly or indirectly, and in concert, to determine composition and structure of ecosystems. Examples include: vegetation succession following disturbance; nutrient cycling, such as the redistribution of carbon; soil development; and hydrological cycling.

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4. Evaluate existing and new approaches to forest and range management for their ability to maintain and enhance ecological resilience and **ecosystem services**, products and benefits under changing ecological conditions.

   High Level Strategies to Achieve Objective

- Determine how the biogeoclimatic classification system will be impacted by climate change and what can be done to update/revise the system so it continues to support forest and range management.
- Determine how future timber supply will be impacted by climate change, and what can be done to maintain the supply of timber.
- Determine how management for ecological services, biodiversity, wildlife, fish, riparian, watersheds, soil, terrain, timber and forest plant species and their genetics, forage and range plant communities, biotic and abiotic agents, exotic and invasive species, and fire can be adapted to incorporate effective responses to changing climate and associated ecological changes.
- Determine what can be done to integrate prompt adaptive management into forest and range management in response to climate change.

5. Adapt the forest and range management framework to maintain and enhance ecological resilience and **ecosystem products**, services and **benefits** under changing ecological conditions.

   High Level Strategies to Achieve Objective

- Determine which aspects of the forest and range management framework should be adapted, and how, in response to climate change.

6. Communicate knowledge gained and changes to the **forest and range management framework**.

   High Level Strategies to Achieve Objective

- Determine how land managers, partners and stakeholders can be kept informed of climate change-related forest and range management adaptation issues and responses.
- Develop tools to facilitate understanding and implementation of changes to the forest and range management framework by land managers, partners and stakeholders.

Ecosystem services are nutrient cycling; carbon storage; soil formation; climate, disease, fire and flood mitigation; water purification.

Ecosystem products are water, timber, non-timber forest products, forage, and fuel.

Ecosystem benefits are recreation; spiritual, aesthetic, and educational values.

Forest and range management framework is legislation, regulations, policies, procedures and systems under or supporting *Ministry of Forests Act*, *Forest Act*, *Range Act*, *Forest and Range Practices Act*, and *Wildfire Act*.

Environmental and ecological aspects of forest and range management are biogeoclimatic classification, timber supply, ecosystem services, biodiversity, wildlife, fish, riparian, water, soil, terrain, timber/forest plant species, genetics, forage and range plant communities, biotic and abiotic agents, exotic and invasive plant species, and fire.