

Biodiversity Facts

What is Biodiversity?

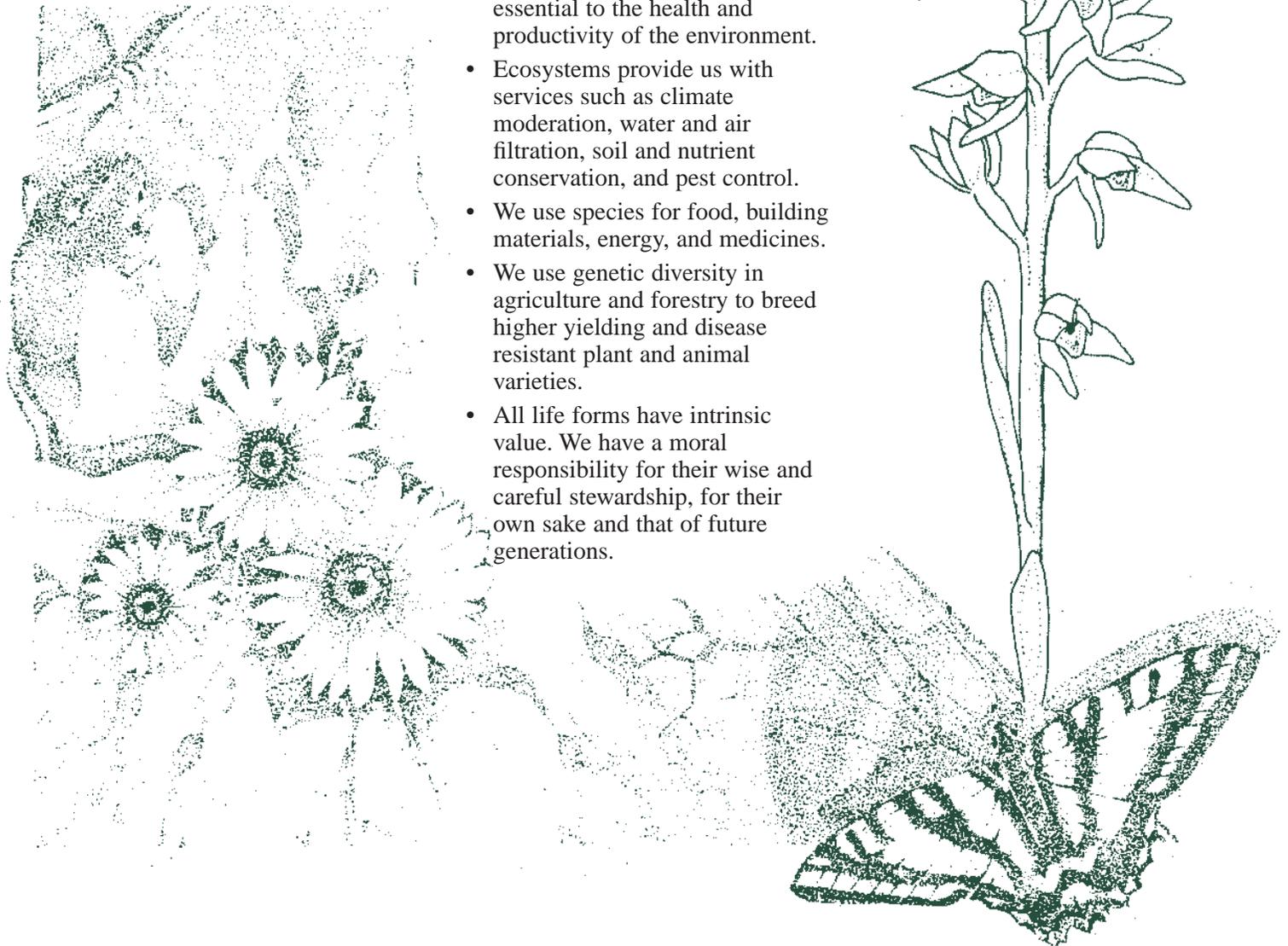
- Biodiversity, or biological diversity, is the full variety of life in an area. Biodiversity includes:
 - species diversity: the number and relative abundance of different plants, animals, fungi, bacteria, and protozoa present;
 - genetic diversity: the genetic variation among individuals of the same species; and
 - ecosystem diversity: the variety of different ecosystems present and the myriad ways these ecosystems function.

Biodiversity Statistics

- Scientists estimate that there are 10–30 million species worldwide — the vast majority of which are inconspicuous invertebrates (e.g. insects, worms, fungi, bacteria).
- Only about 1.4 million species have been named.
- Although tropical rain forests cover only 6% of the earth's surface, over half of all species live there.

Values of Biodiversity

- Scientists consider the conservation of biodiversity essential to the health and productivity of the environment.
- Ecosystems provide us with services such as climate moderation, water and air filtration, soil and nutrient conservation, and pest control.
- We use species for food, building materials, energy, and medicines.
- We use genetic diversity in agriculture and forestry to breed higher yielding and disease resistant plant and animal varieties.
- All life forms have intrinsic value. We have a moral responsibility for their wise and careful stewardship, for their own sake and that of future generations.



How Diverse is British Columbia?

- British Columbia is Canada's most biologically diverse province or territory — encompassing 14 ecological zones and a wide range of ecosystems, from coastal rain forests, to dry interior grasslands, to alpine tundra and northern boreal forest.
- British Columbia is home to an impressive diversity of plant and animal species, including:
 - 70% of Canada's native breeding bird species;
 - 70% of Canada's native mammal species; and
 - 75% of Canada's bryophyte (moss and liverwort) species.

Why is British Columbia Diverse?

- Climate is a major factor in British Columbia. Because of its large size and varied topography, the province encompasses many different climate regions.
- Within broad climatic regions, local terrain and soil characteristics influence biodiversity by creating a variety of different habitats.

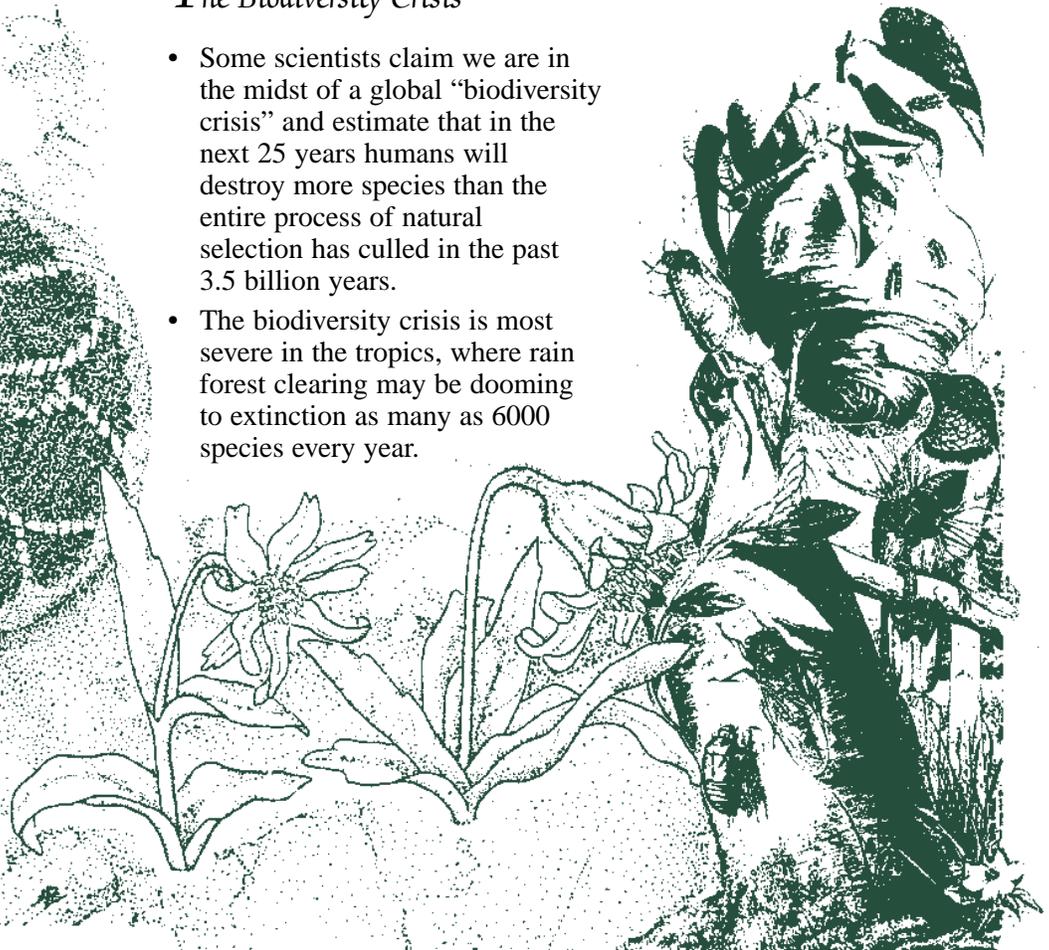
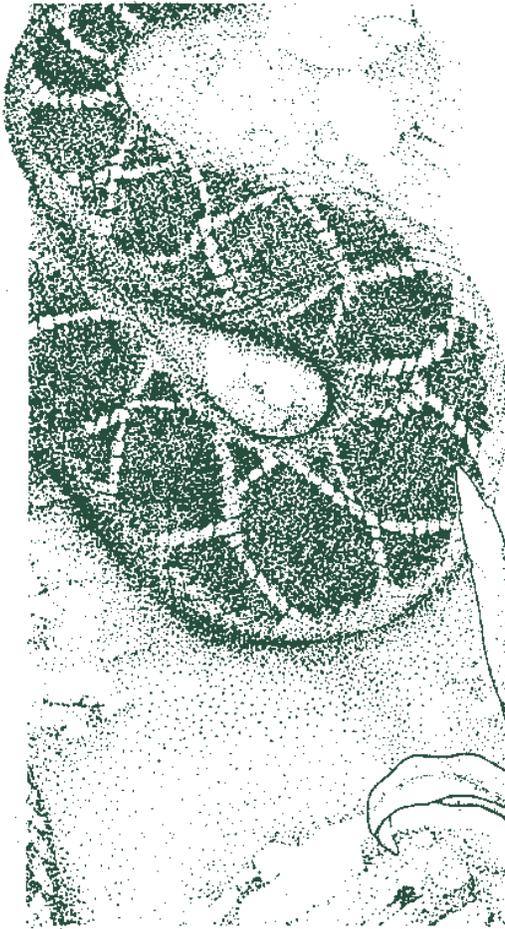


Biodiversity and Old Forests

- Old forests contain habitat elements (e.g., snags, fallen logs, large trees) not common in younger forests.
- Many British Columbia plant and animal species require old forest habitat for some part of their life cycle.
- For example, many amphibians and mammals, and more than 90 bird species depend on snags for nesting, denning, or food.

The Biodiversity Crisis

- Some scientists claim we are in the midst of a global “biodiversity crisis” and estimate that in the next 25 years humans will destroy more species than the entire process of natural selection has culled in the past 3.5 billion years.
- The biodiversity crisis is most severe in the tropics, where rain forest clearing may be dooming to extinction as many as 6000 species every year.



Are we Losing Biodiversity in British Columbia?

- The British Columbia Ministry of Environment, Lands and Parks keeps track of species at risk in B.C. through its red and blue lists. As of February 1991 there were:
 - 23 animal species on the red list (considered endangered); and
 - 82 species on the blue list (considered sensitive).
- There are about 600 rare vascular plant species in British Columbia; 119 of these are considered threatened or endangered.



Causes of the Biodiversity Crisis

- Loss of biodiversity is usually related to the loss and degradation of habitat due to pollution, invasion of exotic species, over-exploitation, environmental change (e.g., climate change), and habitat fragmentation (the breaking up of large areas of habitat into small and isolated patches).



Biodiversity Hot Spots

- Many endangered species and ecosystems are found in the southern Interior and on the southwest coast, where the climate is warmer and where development pressure is greatest.
- Increasingly rare Garry oak ecosystems of southern Vancouver Island contain many rare plant species.
- Grassland ecosystems of the southern Interior have been adversely affected by over-grazing and the invasion of exotic species. Many wildlife species dependent on this habitat are at risk.

Managing Forests to Maintain Biodiversity

- Managing forests for biodiversity means maintaining the native diversity of genes, species, populations, habitats, and ecosystems.
- Maintaining a diversity of structures (e.g., snags, downed logs) within stands and a diversity of ecosystems and seral stages across the broad landscape should meet the habitat needs of most of the native species of the forest.
- A network of protected areas (Forest Ecosystem Network) can help protect biodiversity and important habitat.

Biodiversity Research in British Columbia

- Research projects underway in British Columbia are helping to increase our understanding of biodiversity. This research is focussing on:
 - developing biodiversity inventories, and identifying areas of high diversity and components of biodiversity that are most threatened;
 - assessing the extent, diversity, and function of older forests; and
 - studying the impacts of forestry activities on various aspects of biodiversity and finding ways to minimize these impacts.



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