

# Natural Disturbances

Real World Ecosystems  
Learner Worksheet Answer Key  
Grade Level: 5-8



Name:

After reading the Natural Disturbance Backgrounder, answer the following questions.

**1. Give an example of how a plant or animal in Alberta's boreal forest can adapt to the occurrence of fire.**

Several examples are cited in the backgrounder. These include lodgepole pine (serotinous cones), aspen poplar, fireweed, dandelions, mosses, and other pioneer species that grow immediately after a fire.

**2. What positive effects do fires have in the boreal forest ecosystem?**

Fires release important nutrients that enrich the soil. They also create habitats for many species that thrive after fires.

**3. Can you think of natural disturbances in the boreal forest that were not mentioned in the backgrounder? Name as many as you can.**

Answers may vary but could include the scouring of riverbanks by ice during spring snowmelt, frost damage to trees, over-grazing or over-browsing by large mammals, flooding caused by beavers, and many others.

**4. What might be one benefit of spring flooding of Alberta rivers?**

Flooding brings mineral-rich silt to the soils of river valleys.

**5. If a disease wiped out all the hares in a part of the forest, how would the forest ecosystem change?**

Answers may vary, but ecosystem changes that might occur could include the growth of denser underbrush in the forest in the absence of hares, the decline of predators such as great horned owls and lynx, and the increase of other herbivores such as squirrels, mice, and deer.

**6. What are some of the most important forms of disturbance caused by humans?**

Human activities that produce disturbance in the forest include agriculture, oil and gas development, logging, road construction and urban sprawl, air and water pollution, mining, and recreation. In addition, these impacts may have “cumulative effects” in concert with natural disturbances.

**7. What are cumulative effects and how are they affecting the boreal forest?**

Cumulative effects are the sum of all the natural and human-caused disturbances in the forest ecosystem. The boreal forest is being altered by a combination of human and natural disturbances all operating at the same time.

**8. Compare the boreal forest and tropical rainforest. Describe a major difference in the natural disturbances that each experience.**

Major disturbance such as fire is rare in tropical rainforests. Disturbances in rainforests are usually local in nature. Mudslides and erosion are the most common types of disturbances in tropical rainforests.

**9. Of all human activities that alter ecosystems around the world listed in the backgrounder, which do you think has had the biggest overall impact? Why?**

Answers may vary, but agriculture is cited by most experts as the single most landscape-altering human activity in terms of scale. (Some experts agree that climate change exceeds agriculture because all global ecosystems are affected, not just those areas where agriculture is practiced.)