

Focus on Forests



A Forest Ecosystem Education Guide

Activities and Lesson Plans for Teachers and Resource Educators

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Exploring Ecosystems

Lesson Summary

Interactions of plants, animals and fungi in a forest ecosystem will be explored.

INTERMEDIATE FOF24



Objectives

- To discuss the relationship among different species in an ecosystem
- To analyze the requirements of species and select ecosystems that meet these needs
- To discuss how human activities impact ecosystems, and manage to minimize the negative impacts

Species connections

- Food web and food chains
 - Portray numerous interactions that occur between plants and animals in a forest community
 - Chains: sequential dependence of plants and animals on each other for food
 - Webs: many different species of plants and animals are interdependent (they eat a number of foods)

Food Chain

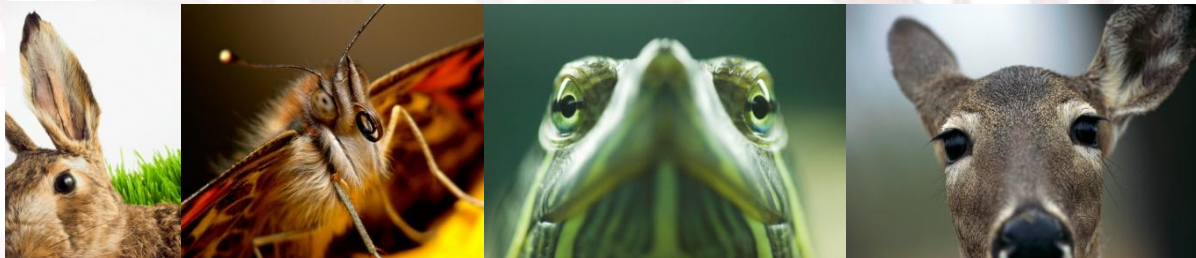
Sun



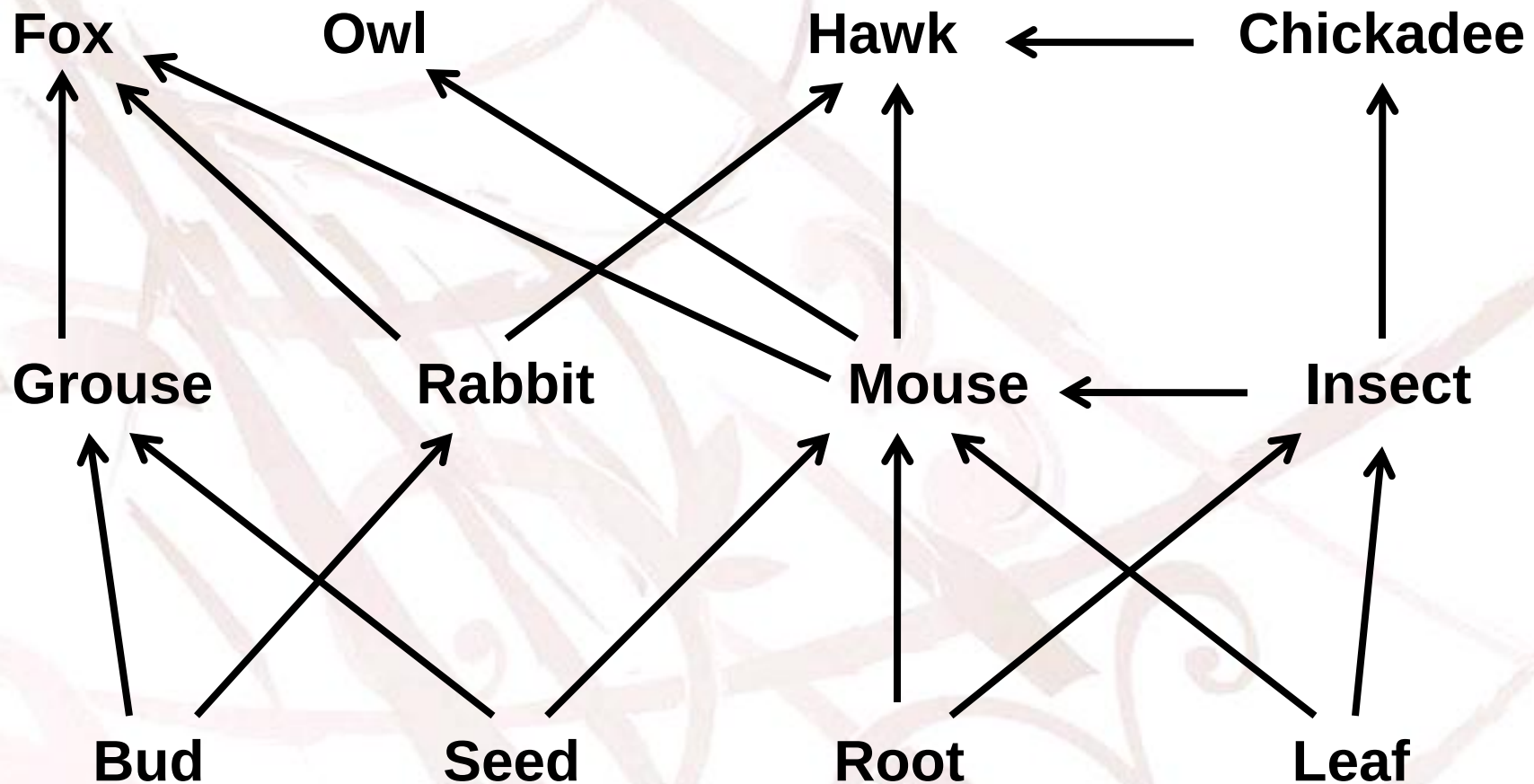
Green Plants



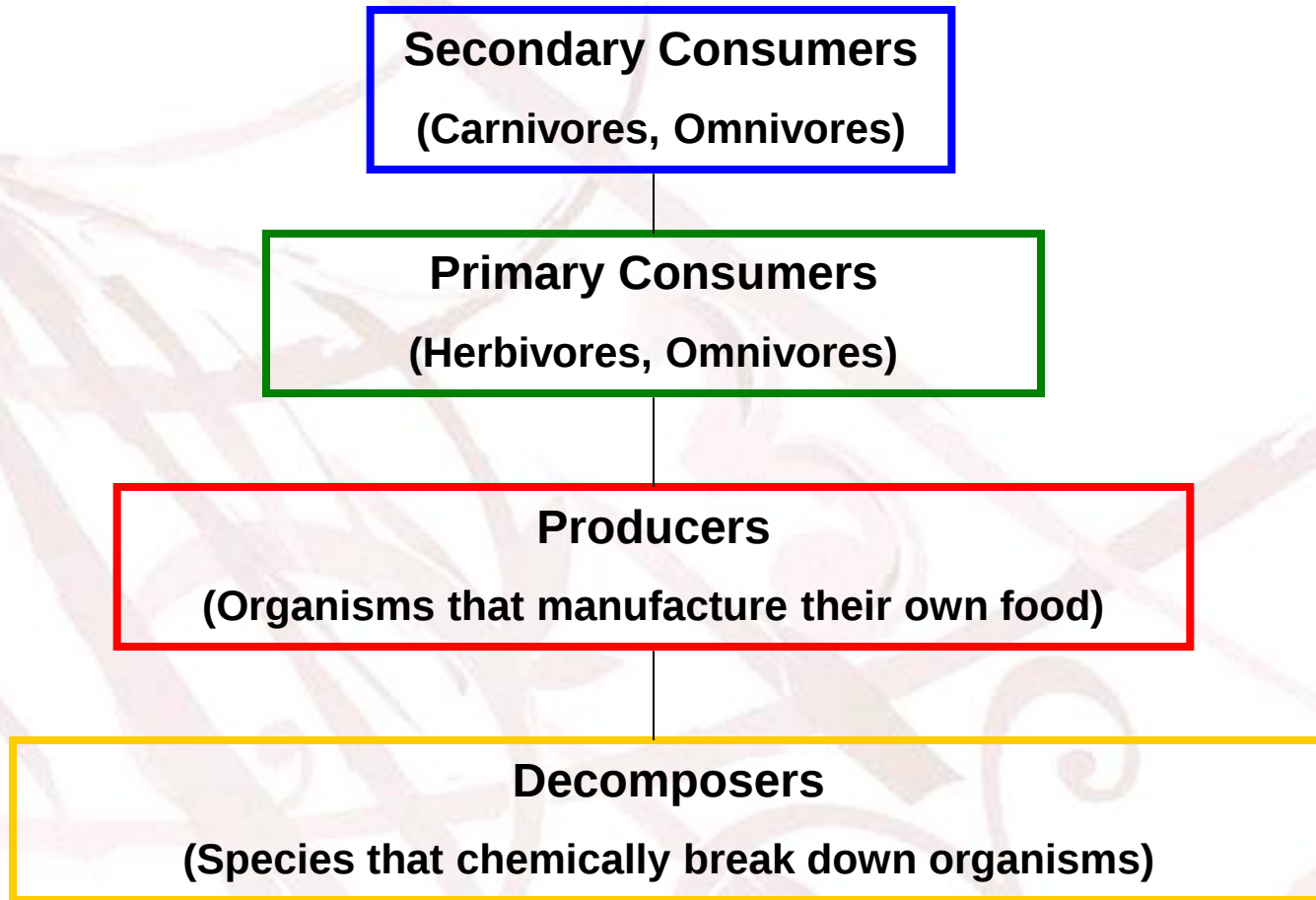
Animals



Food Web



Biomass Pyramid

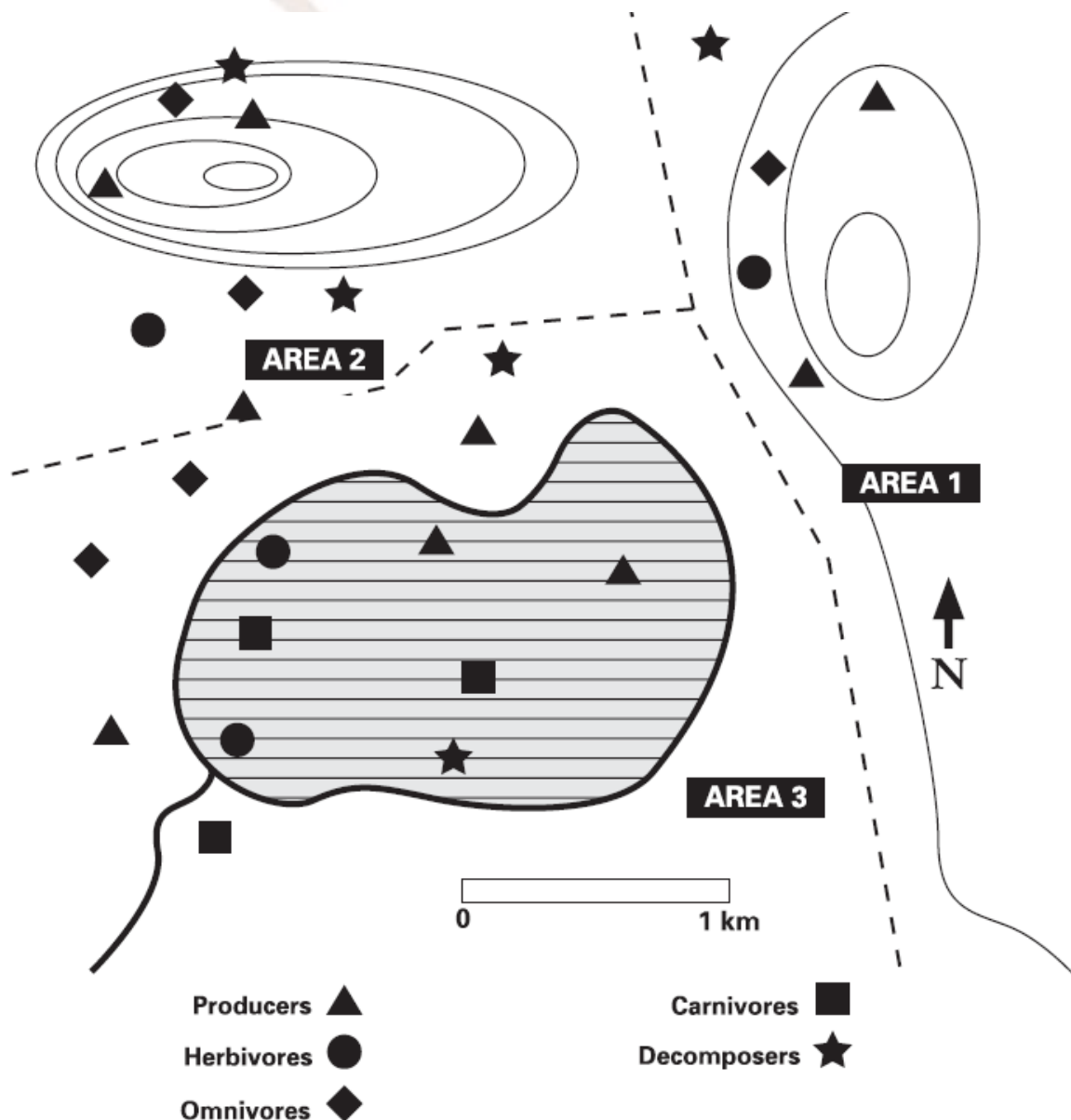


Handouts

- Ecosystem Base Map
 - Describes characteristics of the areas
- Ecosystem Element List
 - Lists organisms, trophic levels and their requirements

Activity- Part One

- Match the species to their most suitable habitat
- *Adaptations*
 - Process by which an organism becomes better suited to its habitat, allows organism to thrive
 - Red oaks do not do well in swampy areas, while black spruce are better adapted to wet conditions



Area 1: raised flat ground with well-drained sandy soil sloping gradually southwest

Area 2: hilly area with moderately moist well-drained soil with rock outcrops

Area 3: lake environment with shallow, marshy section at northern end of lake, rocky shoreline to south, single outflow at southwest corner

Activity- Part Two

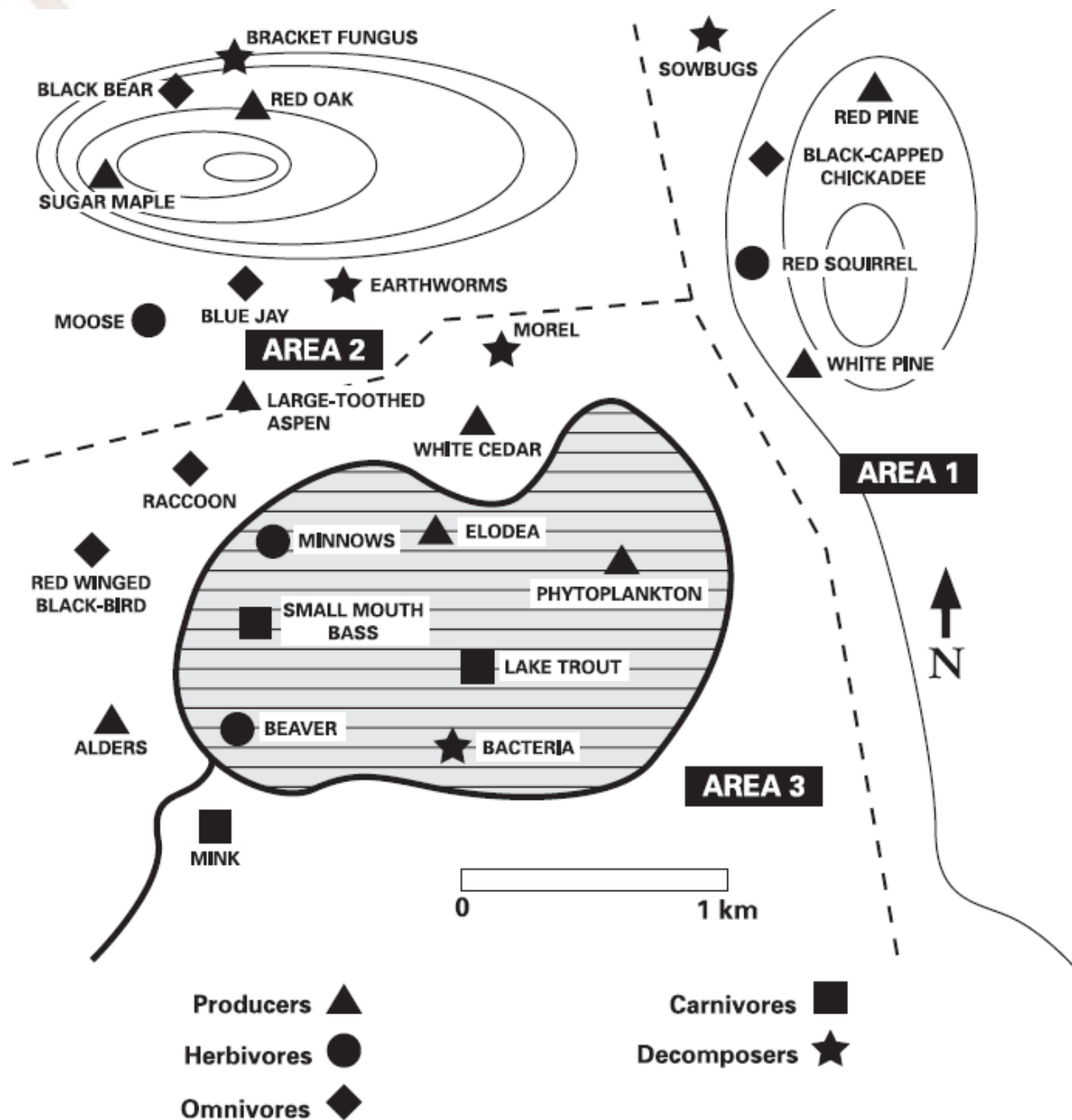
- Habitats sensitive to change
 - Altered by: fire, weather change, parasites
 - Invasive species!
 - Compete with native species
 - Human activity
 - Resource extraction
 - Pollution
 - Recreational activities

Activity- Part Two

- Each team assigned one activity:
 - *Wildlife management unit popular for hunting and trapping (Areas 1 and 2)*
 - *Resort development promoting skiing, remote hiking, fishing in summer and hunting in fall (Area 2)*
 - *Small sawmill producing pine lumber (Area 1)*
 - *Recreational fishing area, summer and winter (Area 3)*

Resource Management

- How does this activity impact the ecosystem?
- What are the issues related to the effects of the activity on the ecosystem?
- How can these impacts be mitigated?



Review

- Organisms depend on their environment to meet their specific needs
- Although species can adapt to change, some change is too drastic and beyond the species ability to adapt
- Human activities need to be done in a way to minimize negative impacts to various species