



K-12 Curriculum Guide
Revised 2007



National Wildlife Refuge System
1011 E. Tudor Road
Anchorage, Alaska 99503
<http://alaska.fws.gov/fire/role/>



INTRODUCTION TO ROLE OF FIRE CURRICULUM

Fires burn thousands of acres in Alaska each year. Because fires affect all Alaskans, it is important that everyone understands the “Role of Fire in Alaska.” Fires caused by lightning are a natural part of the boreal forest and tundra ecosystems. They help maintain a diversity of vegetation ages and types, providing habitat for a greater abundance and diversity of wildlife.

This curriculum has been developed to help teach Alaskans about the role of fire in the boreal forest and tundra ecosystems. Although these two ecosystems are treated as separate units, it is important to emphasize that forest and tundra areas are often found mixed together throughout the state.

This curriculum contains three different sections. They each contain lesson plans and background information on both tundra and boreal forest ecosystems. They are arranged as follows:

- I. Forest and Tundra Ecology
- II. Fire’s Effects on the Ecosystem
- III. Fire Management

A glossary, and index of subject, setting, and Alaska State Content Standards are provided.

This curriculum was revised from the 1992 “Role of Fire in Alaska” curriculum to provide additional information for teachers. The curriculum borrows ideas and teaching techniques from many sources, such as the Alaska Wildlife Curricula. Each lesson now identifies the Alaska State Content Standards that are addressed, and provides grade levels, subject, skills, setting, the duration of exercise, group size, and vocabulary.

Reference materials for this curriculum are generally included within this website. However, a box of reference materials can be borrowed from the Fish and Wildlife Service. Please contact your nearest National Wildlife Refuge office for information or call the Alaska Resource Library and Information Services (ARLIS) at 907-272-7547.

Acknowledgments

In 2007, the State of Alaska Project Learning Tree program asked to combine The Role of Fire curriculum with the USDA FIREWORKS curriculum for their training classes. Through that effort, and the hard work of Lilly Goodman, the education standards have been revised in this 2007 edition. Matt Weaver from the Alaska Division of Forestry, Project Learning Tree, initiated this revision. This revised curriculum still contains most of the content and lessons developed from the 1992 curriculum. Janet Ady, Beverly Farfan, Heather Johnson, Pam Nelson, Sue Quinlan, Karen McKibbin, Cathy Rezabeck were the original authors and editors. They deserve credit for their work in developing a comprehensive curriculum. This revision could not have been completed without the support of Larry Vanderlinden and the editing work of Jennifer Coggins, Mary Timm, Karen Murphy and others. Kathy Sarns Irwin revised most of the artwork and Rose Primmer completed the layout, design and made the curriculum website compatible.



HOW TO USE THE ROLE OF FIRE CURRICULUM

Alaska forest and tundra fires burn thousands of acres each year, affecting Alaskans throughout the state. Whether these fires are a result of natural events, prescribed burns, or human accident, they affect Alaska's ecosystems, wildlife, and economy. This curriculum was designed to help Alaskan students learn about the role of fire in boreal forest and tundra ecosystems.

Role of Fire is divided into 3 units: 1) Forest and Tundra Ecology, 2) Fire Effects on the Ecosystem, and 3) Fire Management. Each unit begins with introductory teacher background pages that provide general information for that section. Additionally, activities may include a background section specific to the concept taught within.

This is a supplemental guide making it possible to add it to any part of your existing curriculum. Each lesson includes a planning box that correlates the activity to the Alaska State Content Standards, and includes grade levels, subjects, skills, duration, group size, setting, and vocabulary.

In the back of the book you will find a series of indexes that reference each activity by standard, grade, subject, skills, and setting. You will also find a glossary and a list of resources for both teachers and students.

Some of the activities in the guide may include the use of the Alaska Ecology Cards. These can be purchased for a minimal fee from Alaska Studies Center, PO Box 1125, Homer, AK 99603. (907) 235-8757 or www.alaskastudiescenter.com/



ROLE OF FIRE CONCEPTUAL OUTLINE

The following lists the concepts targeted in this curriculum by unit.

Unit I: Forest and Tundra Ecology

- Location of ecosystems in Alaska
- Non-living characteristics of each
- Living characteristics of each
- Identification of living things via dichotomous keys
- Food chains, food webs, producers, and consumers
- Wildlife population dynamics
- Natural agents of change boreal forest and tundra ecosystems
- Boreal forest succession
- Importance of vegetation mosaic to wildlife diversity
- Field trip ethics
- Use of a Field Notebook

Unit II: Fires Effects on the Ecosystem

- Fire triangles
- Types and characteristics of fuels in both ecosystems
- Types and characteristics of surface, ground and canopy fires
- Fire intensity
- Physical characteristics that affect fire intensity
- Fire impact on an ecosystem
- Fire effects on wildlife
- Fire effects on people
- Examination of a burn site

Unit III: Fire Management

- Fire effects on communities
- Why fires are managed
- How fires are managed
- Fire management issues
- Alaska Management Action Categories
- Public attitudes influencing fire management
- Informed decision-making
- Dilemmas in fire management
- Fire Plans and Defensible Space

