



AKU-E-88-001 C3

**alaska
sea week**
Curriculum Series: V



**Birds and
Wetlands of Alaska**



CIRCULATING COPY
Grant Depository March, 1988
University of Alaska

Alaska Sea Week Curriculum Series: V

BIRDS AND WETLANDS OF ALASKA

By:

James G. King and Mary Lou King

Revised by:

Belle Mickelson and Peggy Cowan

Editor:

Nina Mollett

Associate Field Guide Editor: Sue Cooper

Graphics and Layout:

Karen Stomberg

Illustrators:

Todd Sherman

Karen Stomberg, Claudia Kelsey, Laurie Weidlich, Bill Fairall

Table of Contents

INTRODUCTION	v
TIPS FOR TEACHERS	vii
SEA WEEK PLANNING SHEET	xii
OBJECTIVES	xv
TEACHER'S GUIDE	
UNIT ONE: Birds You Know	1
UNIT TWO: Definition of a Bird	7
UNIT THREE: Parts of a Bird	11
UNIT FOUR: Bird Watching	15
UNIT FIVE: Migration	23
UNIT SIX: Wetland Habitats	25
UNIT SEVEN: Nests	37
UNIT EIGHT: Wetland Animals and Plants	43
UNIT NINE: Wetlands Field Trip	47
UNIT TEN: Birds Benefit People	55
UNIT ELEVEN: Wetlands Benefit People	61
UNIT TWELVE: Birds and Wetlands Review	65
BIBLIOGRAPHY	67
STUDENT WORKSHEETS	87
GLOSSARY	157
FIELD GUIDE TO COMMON ALASKA BIRDS	163

Acknowledgements

The seven volumes comprising the new Alaska Sea Week Curriculum Series are an expansion and revision of a curriculum project begun by Juneau parents 18 years ago. Publication of this volume is the result of work sponsored by the Alaska Sea Grant College Program, cooperatively supported by the National Oceanic and Atmospheric Administration's Office of Sea Grant and Extramural Programs under grant number NA86AA-D-SG041, projects E70-08 and A75-01, and by the University of Alaska with funds appropriated by the State of Alaska; Alaska Department of Environmental Conservation, Alaska Department of Fish and Game, Alaska Department of Education, National Marine Fisheries Service, University of Alaska Cooperative Extension Service, and the University of Alaska College of Human and Rural Development.

Special acknowledgements for assistance in preparing material for this guide go to Dr. Pete Mickelson, ornithologist; Pete Isleib, ornithologist; Sue Quinlan, Nongame Program, Alaska Department of Fish and Game; George Franklet, Department of Environmental Conservation; Bruce Batten, U.S. Army Corps of Engineers; Dennis Bromley, Anchorage School District Career Center; Pat Partnow, Anchorage School District Indian Education; Marcia Oswalt, East Elementary, Kodiak; Vern Kornstad, Redoubt Elementary, Soldotna; and Sandy Poor, Mt. Eccles Elementary, Cordova.

Introduction

Sea Week is a celebration. It is one of those rare school programs that can saturate a class with learning opportunities without intimidating a single child. The hundreds of teachers now participating in Sea Week throughout Alaska have found it to be a highlight of the year--a week of delight and awe, intrigue and excitement. It's a week that translates classroom science, mathematics, language, history, social studies, art, and music into the flight of a bird, the crash of a wave, the scuttle of a crab, the drift of a kayak, the bark of a sea lion, the taste of smoked salmon, the scent of a pier. The only frustration we've found is among educators who discover that a week isn't enough. Many teachers have expanded their programs to a month. Several have simply given up on trying to confine Sea Week to a time, and now make use of the curriculum throughout the year. However you design your own program, we're confident that its primary ingredients--Alaska's kids, rivers, and coastlines--come to you satisfaction guaranteed!

The seven volumes of the Sea Week Curriculum Guide escort youngsters along Alaska's coastline, which lies along two oceans and three seas and, together with the shoreline along the numerous islands, inlets, bays, fjords, and delta regions, forms a total of 34,640 miles of saltwater shoreline--a distance almost equal to twice the circumference of the earth.

Sea Week also takes students to Alaska's vast interior, which includes hundreds of thousands of miles of rivers and streams, and 390,941 square miles of wetlands. That's two thirds of the state, all linked to the coastline by freshwater systems that serve as nurseries for Alaska's salmon and waterfowl, as transportation arteries to and from the coast, and as the nutrient-rich replenishers of the ocean currents.

Sea Week introduces students to the state's marine and wetlands-related resources. More than 90 percent of the fish caught in the United States come from Alaska's waters. Alaska's coastal zones contain an estimated 50 percent of the nation's remaining petroleum reserves. There are over 5½ million acres of commercial-quality timber in the state's coastal rain forests. Alaska's marine mammals have provided sustenance for Alaska's coastal populations throughout the centuries. Impressive concentrations of waterfowl breed in the tundra ponds and river deltas, along with an awesome population of, well, mosquitoes, that also thrive in wetlands and feed some of those birds.

And, finally, Sea Week talks about Alaska's people, from Native populations living traditional lifestyles to modern urban dwellers. More than three-quarters of Alaska's inhabitants live near the coastline and many of them have fish-related careers. The remaining quarter are consumers of sea products, beneficiaries of seacoast oil wealth and, most importantly, are linked to the sea by Alaska's myriad rivers and wetlands.

It is because of such interconnections between wetlands and the sea that, with this edition, the Sea Week Curriculum Guide series has been expanded to include units on Alaska's wetlands and the people with traditional and contemporary lifestyles who inhabit them.

Birds and Wetlands of Alaska is the fifth of seven Sea Week curriculum guides. The study program was developed for a fourth grade curriculum, but it has been adapted effectively to other elementary grades, and to secondary and adult education. You do not need to be an expert to use these materials. Students may work on the student workbook alone or in small groups. However, teacher discussion is most effective. No additional materials are required, although bird books, filmstrips, movies, bird pictures, or the Audubon Alaskan Bird Chart can add to the program.

There are several good field guides available in bookstores or libraries. A New, Expanded Guide to the Birds of Alaska by Robert A. Armstrong has pictures of all 405 birds found in Alaska (includes 50 accidentals). Birds of North America by Robbins, Bruun and Zim, A Field Guide to Western Birds by Roger Tory Peterson, and Field Guide to the Birds of North America by the National Geographic Society include pictures of all the common birds of Alaska. The bibliography lists these and other books that will be relevant to your studies.

Informal bird study (bird watching) is a hobby enjoyed by millions of people all over the world. There are clubs for birders in Alaska's larger cities and in most American cities outside. The National Audubon Society has chapters in Fairbanks, Anchorage, and Juneau. Anyone can join. The Alaska Department of Fish and Game, the U.S. Fish and Wildlife Service, the Department of Environmental Conservation, and the U.S. Army Corps of Engineers distribute informative publications and have employees knowledgeable about birds and wetlands. Every year the Alaska Department of Fish and Game's Nongame Program publishes Wildlife Week materials that include activities on birds and wetlands. These organizations are all resources that can be helpful to you in your studies.

One objective of this book is to allow students to discover that they already know something about birds. Students can learn from each other as well as from this book. Although the material is designed to fill a classroom need, the information is of high quality and can serve as an introduction to Alaska's birds for people of any age. It is our hope that teachers will have as much fun with this as their students.

We hope, too, that you will find the entire Sea Week series as valuable and motivating as it is intended to be, and that through Sea Week, the youngsters of your classrooms will come to more deeply respect the environments for which they will soon be responsible. The insights they gain in your classrooms will become the votes and legislation, the lifestyles and attitudes, the wisdom and understanding--the sea harvest--of tomorrow.

Tips for Teachers

Welcome to Sea Week! Here's a checklist of tips designed to help familiarize you with the contents of Birds and Wetlands of Alaska and to assist your Sea Week planning.

In Your Classroom

- If you haven't scanned the book already, we suggest you get a sense of its format by glancing through the table of contents, the teacher's guide, bibliography, student workbook, and student field guide. Objectives are outlined at the beginning of the teacher's guide.

The student activity sheets, glossary and student field guide have been placed at the back of the book. These are designed to be copied en masse, back-to-back, and bound. If possible, each student should receive a copy of the student workbook and field guide.

- Enough ideas are included for a month or a year of study. However, if time is limited, select the units you feel are most important to your students. And be sure that one of the lessons is a field trip.

TIME FRAME FOR USE OF STUDENT BOOK

<u>Units</u>	<u>Title</u>	<u>Lessons</u>
1	Birds You Know Your Bird List 1A Class Bird List 1B Use Your Field Guide 1C	2 lessons
2	Definition of a Bird What is a Bird? 2A Make a Feather Pen 2B How Birds Fly 2C Flight Strategies 2D	2 lessons
3	Parts of a Bird Making a Living 3A Types of Beaks 3B Types of Feet 3C	1 lesson
4	Bird Watching Make a Bird Feeder 4A Field Marks 4B Name and Color these Birds! 4C Alaska Bird Regions 4D	2 lessons
5	Migration Alaska Bird Migrations 5A Bird Wintering Areas 5B Alaskan Bird Migration Map 5C	1 lesson

<u>Unit</u>	<u>Title</u>	<u>Lessons</u>
6	Wetland Habitats What Makes a Habitat? 6A Coastal Wetlands 6B Estuary: A Very Special Place 6C Wet Tundra 6D Rivers, Lakes, and Marshes 6E Muskeg 6F Other Bird Habitats 6G Habitat Choice 6H	2 lessons
7	Nests Altricial or Precocial? 7A Coastal Wetland Nest Sites 7B River, Lake, and Marsh Nest Sites 7C Canada Geese: Precocial Birds 7D The Bald Eagle: An Altricial Bird 7E	2 lessons
8	Wetland Animals and Plants Wetland Crossword 8A Wetland Plants Game 8B	1 lesson
9	Wetlands Field Trip Map Time 9A Field Notes 9B Wetlands Checklist 9C Wetlands Field Trip Summary 9D	2 lessons
10	Birds Benefit People Birds and People 10A Habitat and Protection for Wild Birds 10B Problems of Spring Birds 10C Seabird Conservation 10D	2 lessons
11	Wetlands Benefit People Wetland Values 11A Wetland Habitat Protection 11B Wetlands Development 11C	2-3 lessons
12	Birds and Wetlands Review Bubble Bird 12A Bird Watcher's Special 12B Wetlands Magic 12C	1 lesson

- **Make lesson plans.** Plan to include local history and culture. Note that there are activities to sharpen skills in language arts, science, social studies, math, music, art, and physical education so that all aspects of education during Sea Week can focus on Alaska's ocean, river and wetland environments. The entire school day can be spent studying birds and wetlands as students write themes on birds for language arts, figure migration problems during mathematics, use wetland terms during spelling, make a bird collage for art, and so on.

- **Field trips and other Sea Week activities make bright news features. Consider contacting your local newspaper, television, or radio station. Teachers usually find that reporters enjoy going bird-watching as much as the students!**

Follow-up

- **Write thank you notes to speakers.**
- **Ask students, teachers, parents, and community participants to evaluate Sea Week.**

The sea is important to me because.. .

To me, the best part of Sea Week was.. .

The part of Sea Week I didn't like was.. .

My suggestions for making Sea Week better are. . .

Overall, Sea Week was:



Poor



okay



great

- **Write a brief report including samples of student work, evaluation forms, and news articles for your administrators. Send a copy to Sea Week Program, College of Human and Rural Development, 7th floor Gruening , University of Alaska, Fairbanks, Alaska 99775. We like to keep informed of what you are doing! We'll share your good ideas with other students, teachers, and administrators, and put you on our newsletter mailing list.**
- **Photocopy your lesson plans and stick them in this guide, so you'll be ready for next year.**
- **If you'd like to learn more, consider requesting a Sea Week inservice or l-credit course for your school. Contact Alaska Sea Week/ River Week, College of Human and Rural Development, 7th floor Gruening , University of Alaska, Fairbanks, Alaska 99775; or the School of Extended and Graduate Studies, Outreach Division, University of Alaska, Juneau, Alaska 99802; or Talent Bank, Department of Education, Pouch F, Juneau, Alaska 99811.**

- **Check through the materials list for each activity. Then make, buy, scrounge, or send for any equipment you might need.**
- **Order films early!**
- **Talk to your librarian about books to back up your studies. Suggestions are included in the bibliography at the end of the teacher's guide.**

In the Field

- **Plan at least one field trip, as outlined in Unit 9. Decide on a place, time, and means of transportation. Bird watchers, biologists, long-time residents, parents, or bilingual staff may have field trip suggestions. Invite knowledgeable people to go along on your field trip. Also arrange to take parents or older students as helpers. The most successful trips usually have at least one helper for every six students.**
- **Write a letter to parents. Include requests for field trip assistants, resources, ideas--and permission slips.**

Dear Parents :

Eagle Elementary is celebrating Sea Week May 6-11. All our classes that week will focus on the sea. Our grade will be emphasizing birds and wetlands; we'll be reading stories and writing themes about birds, doing related math problems, eating a seafood snack and taking a field trip to the marsh. Can you help with any of the following items?

- provide a seafood snack** _____
- help with the field trip** _____
- assist with a Sea Week art project** _____
- talk to the class on the following topics (connected to birds or wetlands)** _____

- show the class your collection of** _____
- help with Sea Week planning** _____

Thanks so much! And happy Sea Week!

I give my permission for _____ to go to Potter Marsh one day (depending on weather) during the week of May 6-11.

signature of parent

- If you're taking a bus, develop a learning atmosphere for the trip by making up a game or checklist of things to watch for.

In Your School and Community

- One of the best parts of Sea Week is involving students, teachers, and community residents so that everyone works together. An air of excitement pervades halls and classrooms: the whole school is decorated; one class inspires another; older students do programs for younger ones and vice versa; community residents help with field trips and speakers. But don't hesitate to try Sea Week on your own or with a few other teachers. By next year, when they've had a chance to see what you've done, others will be ready to follow suit.
- Plan your school's Sea Week at a time best suiting your location. Teachers in southwestern, southcentral and southeastern Alaska are finding it best to consult tide tables and plan beach trips at low tide. In northcentral and western Alaska, Sea Week activities are proving most successful when there's open water, or when the program is planned to coincide with a longstanding community fishing or whaling season. Bird-watching field trips tend to be most exciting during spring and fall migration, but unusual events can occur during any season.
- Brainstorm Sea Week ideas with other teachers and parents. Use the Sea Week Planning Sheet in this book to list the names of parents and local resource people who can help make your Sea Week a success. You'll find most people are pleased to be asked, and more than happy to help.
- Involve your bilingual staff as you identify such community resources as speakers (bird watchers, wildlife biologists, hunters, taxidermists, village elders, artists, musicians) and field trip sites (beaches, rivers, harbors, ponds, marshes, salmon spawning streams, bird feeders, museums). Try to get someone with a pet bird to bring it in to class.
- One or more parents or teachers can be appointed to coordinate speaker schedules, movies and field trip transportation, and to present your Sea Week plan to school district officials for approval.
- Contact your chamber of commerce, village council/borough government, community groups and encourage them to sponsor Sea Week events such as festivals, seafood dinners, slide shows, speakers.
- If your school is inland, consider exchanges with coastal schools. Send them a selection of items found on your field trips, a class story, or perhaps photos. Maybe they can send you bird stories, feathers, salt marsh grasses, pieces of net, floats, seaweed, shells, beach sand. Your school may be able to obtain a saltwater aquarium for classes studying intertidal life. However, most activities in this book are designed for inland as well as coastal communities.

Books :

Call Number	Title	Source	Rating
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Equipment:

Type	Purpose	Source
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Objectives

To help students:

- . Gain an appreciation for Alaska's birds and wetlands (Units 1-12).
- . List birds they know (Unit 1).
- . Use a field guide (Units 1, 3, 4, 5, 7, 9, 12).
- . Define the unique characteristics of a bird (Unit 2).
- . Connect kinds of feathers with their functions (Unit 2).
- . Make a feather pen (Unit 2).
- . Demonstrate how birds fly (Unit 2).
- . Compare flight strategies of pilots and birds (Unit 2).
- . Label parts of a bird (Unit 3).
- . Learn about birds' specialized types of bills and feet (Unit 3).
- . Make a bird feeder (Unit 4).
- . Write to the Alaska Department of Fish and Game for their Wildlife Watcher Reports (Unit 4).
- . Describe field marks of a specific bird (Unit 4).
- . Label the different bird regions of Alaska on a map (Unit 4).
- . Mark Alaska bird migrations on a map (Unit 5).
- . Draw a local winter bird (Unit 5).
- . Make a birds and wetlands badge to wear during Sea Week (Unit 6).
- . Read about Alaska's wetlands and other bird habitats (Unit 6).
- . Mark potential nesting sites on drawings of wetland habitats (Unit 7).
- . Read about the nesting habits of Canada Geese and the Bald Eagle (Unit 7).
- . Identify local birds and other wetland animals and plants (Units 8 and 9).
- . Visit a nearby wetland to observe birds (Unit 9).
- . Identify local birds and other wetland animals and plants (Unit 9).
- . Record and summarize field trip data (Unit 9).
- . Learn about the benefits of birds and wetlands (Units 10 and 11).
- . Compute and compare figures for the number of people and the number of ducks in North America, and for the differences between spring and fall bird populations (Unit 10).
- . Discuss the effects of potential industrial development on seabird colonies (Unit 10).
- . List things that people do that are harmful or not harmful to wetlands (Unit 11).
- . Write to the U.S. Army Corps of Engineers and the Department of Environmental Conservation to find out about wetland permits (Unit 11).
- . Prepare alternative wetland development plans and discuss them with local village or city officials (Unit 11).
- . Review Birds and Wetlands content and concepts (Unit 12).
- . Use a glossary (Units 1-12).