

Basin & Range Birding Trail Education Kit



**Forest and Bird Resources
for Formal and Non-formal Educators**

**Teach students about local birds and the
habitats they need to survive!**

www.KlamathBird.org/Education/BRBT

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Welcome to the Basin & Range Birding Trail Education Kit!

Welcome to the Basin and Range Birding Trail Education Kit! Here you will find exciting new resources and lesson plans that will guide your teaching of birds. The purpose of the kit is to provide place-based, science, and environmental education lesson plans to encourage the study and conservation of local birds and habitats. Thus, the kit has been specially designed to fit Modoc County and the birds and habitats here. In the following pages, you will find an array of lesson plans focusing on three subjects: What is a bird?, Birding & Studying Birds, and Bird Conservation.

The curriculum contains four sections: 1) lesson plans 2) student journals, 3) teacher answer keys, and 4) appendices with additional resources and websites. Each lesson plan provides background information, simple and clear procedures, helpful teacher tips, supplementary extensions, fun fact side panels, and other field trip ideas. To accompany the curriculum are all of the resources necessary for teaching about birds. Essentially, you should be able to pick a lesson plan and have all the information you need without additional research. While the lesson plans are aligned to California State Science Standards, they can be easily adapted to fit your teaching needs. Student journal sheets are provided to advance critical thinking and scientific inquiry learning for each lesson. Journals may be incorporated throughout the school year and at the end students can make personalized journal cover sheets for their final products. Even though the lesson plans will be complete, students can share their birding experiences with family and friends far into the future.

The kit was designed by Klamath Bird Observatory (KBO) educators (www.KlamathBird.org) with support from The River Center staff and board (www.centralmodocrivercenter.org/) and Modoc County teachers. Funding for curriculum development, teacher training, and resources was provided by a Modoc County Title III Forest Education Grant. Photographic images used throughout curriculum and resources were donated by Southern Oregon resident, Jim Livaudais. Two complete kits (with same content) will be available from The River Center for local teachers, non-formal educators, and community members to use. To check out kits call 530-233-5085.

Klamath Bird Observatory would like to thank you for your interest in the Basin and Range Birding Trail Kit. Klamath Bird Observatory is a non-profit organization advancing bird and habitat conservation through science, education, and partnerships. If you have additional questions about KBO or the BRBT Education Kit please contact us:

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Importance of Studying & Teaching About Birds



Scientific Discovery

Birds are fascinating creatures and are found in almost every habitat, ranging from natural wilderness to urban landscapes. For this reason, birds are easily observable and open the doorway to scientific and wildlife study. By studying birds, students can engage in scientific inquiry and critical thinking. Additionally, students can become citizen scientists by sharing their scientific bird data with biologists across the world, and, thereby help protect bird populations.

Ecological Services

Not only are birds enjoyable to watch and easy to observe, they play an important role in the ecosystem. Birds disperse seeds, control insects, pollinate plants, and serve as prey for predators. For instance, a goldfinch eats thousands of tiny insects each day while a sparrow eats several seeds a week. By feeding, the goldfinch helps keep pesty insect populations down. At the same time the sparrow helps plants and trees disperse their seeds.

Indicator Species

Birds are also great indicators of habitat health. They are highly sensitive to environmental change. If they are living in an unhealthy habitat their populations will quickly decline. Also, their relationship with aspects of their habitat is well-known. Each bird species can be thought of as a “measuring stick” for an element of a healthy habitat. They are also relatively easy to observe and study. For these reasons, scientists use birds to monitor the health of forests and other environments. The Basin and Range Birding Education Kit provides a few lesson plans focusing on the relationship between birds and habitats.

Stimulating the Local Economy

Birding has become one of the fastest growing and environmentally sound outdoor recreational activities. Unlike some other recreational outdoor sports, birding often generates little ecological impact or wildlife disturbance. In addition, birding can provide substantial economic benefits to local communities. Not only do birders invest large amounts of money on birding gear such as binoculars, field guides, and spotting scopes, but they also support local businesses during their birding trips. They stay in hotels, dine in local restaurants and cafes, and join local birding tours. Birding trails across the country are being developed to encourage birding in local areas and its resulting economic benefit for communities. The Basin and Range Birding Trail in Lake and Modoc Counties hopes to bring an economic boost to local communities from birding tourists.

How to Use the BRBT Kit

The BRBT Kit is simple and easy to use. Use this summary to guide you through the contents and organization of the BRBT Kit.

Part One: BRBT Kit Introduction

The BRBT Kit provides resources and the following introductory information to help you select a BRBT lesson plan(s) fit for your classroom.

***BRBT Information**

Learn about the Basin and Range Birding Trail sites and where to take students when studying about the birds and habitats of Modoc County.

***Standards Checklist**

Browse the checklist to find a BRBT lesson plan aligned to a standard and grade level you need to fulfill. The BRBT Kit also provides detailed science standard information covered by each lesson plan in Appendix C.

***Three Topics**

Lesson plans are divided into What is a bird?, Birding and Studying Birds, and Bird Conservation. Chose a lesson plan or follow the suggested sequence layout. See below for more information.

Part Two: BRBT Lesson Plans

Each BRBT kit lesson plan is formatted in a similar fashion and provides the following information to help guide your teaching of birds.

***Introductory Side Panel**

The left side panel is a brief guide to the lesson plan and includes lesson plan overview, materials included and/or needed, science standards covered, & lesson vocabulary.

***Background Information**

You do not need to be a bird expert to teach about the local birds! Read the background information provided in each lesson plan to help guide your teaching of birds.

***Learner Objectives**

A summary of the learner objectives are included on each front page of each lesson plan.

***Connections**

Many of the lesson plans complement each other as indicated by the *Connections* box in the right side panel. For instance, *Binoculars Bonanza!* could be used with *Creating Field Journals*.

***Procedures**

Lesson plan procedures include the basic steps needed to teach the subject. Each lesson plan provides information on how to prepare for the lesson (Getting Ready!), an indoor pre-lesson (Discuss!), and an outdoor lesson (Investigate!).

***Teacher Tips**

Most lesson plans provide teacher tips to guide teaching of the lesson plan. Teacher tips include important and significant information about the given bird-related topic.

***Fun Fact Side Panels**

Fun facts are presented throughout the lesson plan in right side panels and provide information to ensure accurate teaching of the bird related topic.

***Student Journals**

Each lesson plan provides a journal for students to use. Journals are appropriated for nestlings only (grades K-3) and/or fledglings (grades 4-up).

***Teacher Keys**

Answers or suggestions to the student journals are available for each lesson plan.

Part Three: Appendices

Additional resources are provided in the BRBT Binder to help with lesson plans and field trips.

***Appendix A**

Supplemental bird books and websites are suggested. Browse the list of extensions and additional projects.

***Appendix B**

A field trip checklist is provided to help you prepare your classroom for a field trip in your schoolyard or at a BRBT site.

***Appendix C**

A detailed description of Science Standards are included provided.

***Appendix D**

A Take Action! petition is provided to encourage students to take bird conservation action.

***Appendix E**

Vocabulary from BRBT lesson plans are defined here.

Part Four: Bird Education Resources

The BRBT Kit includes bird resources listed below to help you teach about birds. Some are used in lesson plans, others are for education enrichment, but all are for the fun and love of birds!

- *BRBT Curriculum Binder**
- *Binoculars**
- *“Life of Birds” DVD**
- *Bird Focus Cards**
- *Laminated Bird Field Guide**
- *Common Birds PowerPoint**
- *Birding By Ear Picture Cards**
- *Bird Olympics Station Cards**
- *Bird song CD**
- *Clipboards**
- *Audubon stuffed birds**
- *Props for Migration Obstacle Course**
- *Basin and Range Trail Maps**
- *International Migratory Bird map**
- * “Birds of Northern California” field guide**
- *”Winged Critters” coloring book**
- * “Fine Feathered Friend”– All about Birds book**
- *Modoc County Wildlife Refuge Brochure**
- *The River Center Brochure**
- *Adopt-A-Watershed Intermediate Unit on Birds**
- *Duck’s Unlimited “Puddler” Magazines**
- * “Pocket Guide to Creek Birds of California”**

Ten Reasons to Use BRBT Kit

1. Place-based

Lesson plans provide activities about birds and habitats of Northern California. Using a BRBT activity is a great way to guide a student's learning about the local environment.

3. Easy to Use

The BRBT kit includes simple and clear procedures that can be easily used. You do not have to be a bird expert to teach about birds! You will be able to pick a BRBT lesson plan and have all the information and resources at your finger tips.

5. Easy to Modify

The BRBT lesson plans can be easily modified to fit your classroom style or age group. You are the teacher and know your students best! Use the BRBT lesson plans as a guide for your teaching of birds.

8. Citizen Science

By using the BRBT kit, students can become citizen scientists and help local bird populations. Students will engage in bird counts, bird field identifications, and field journaling.

2. Fun & Exciting

The BRBT kit provides hands-on resources and interactive lesson plans to be used in your schoolyard or on a BRBT trail.

4. Aligned with Standards

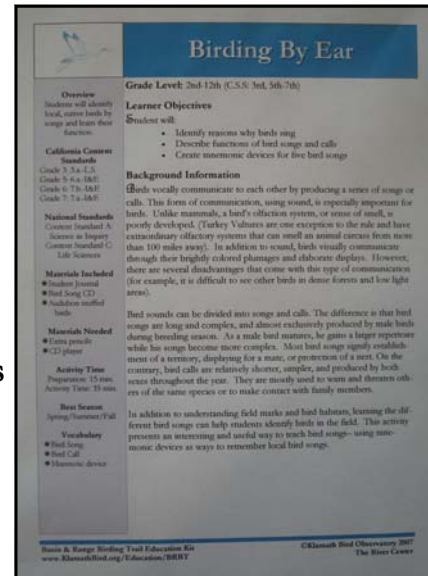
Having trouble teaching Science Standards in your classroom? The BRBT Kit is here to help! Each BRBT lesson plan is specially designed and correlated to California State and National Science Standards.

6. Scientific Inquiry

Lesson plans have been designed by a science organization and present ways to encourage scientific inquiry. Through the use of the BRBT lesson plans students will engage in bird counts, design scientific graphs, and collect bird data.

9. Non-formal education

The BRBT lesson plans can also be used with non-school groups or by non-formal education centers as well.



Sample BRBT Lesson Plan

7. Student Journals

Student can record and document their bird data and scientific findings in a student journal provided in the kit. Journals are a great way for students to share their scientific discoveries with family and friends.

10. Additional Resources

In addition to the hands-on resources included in the kit, additional resources such as book references, websites, and word definitions are provided.

What is the Basin & Range Birding Trail?



The Basin and Range Birding Trail is a network of nature sites where you can easily observe birds and other wildlife. A section of 17 sites are located in Modoc County (California) and a section of 19 sites are located in Lake County (Oregon). The unique landscape provides a diverse range of habitats including sagebrush-steppe, juniper woodlands, and grasslands. Here you will find numerous resident birds throughout the year including an abundance of waterfowl and seasonal visitors such as the Lesser Sandhill Crane and Swainson's Hawk. The Birding Trail was initiated by Klamath/Lake/Modoc/Siskiyou Outdoor Recreation working groups and variety of partners including federal agencies, non-profit organizations, and local Chambers of Commerce. Birding trail sites include parks, recreation areas, National Wildlife Refuges, reservoirs, and privately owned lands. The BRBT website and brochure offer BRBT trail maps, detailed descriptions of sites, and suggested driving routes.

Science Standard Education Correlations

Activity	Grade Level	California State Standards*	National Standards*	Best Season
What Makes a Bird a Bird?	3rd-8th	I&E: 5-6.g,6-7.b,7-7.a	Standard A & C	All Seasons
Bird Olympics	K-8th	L.S.: 1-2.a.b.c., 2-2.c, 3-3.b, 4-3.b, 7-3.a	Standard C	All Seasons
Migration Obstacle Course	K-6th	L.S.: K-2.a, 1-2.a.b, 2-2.b, 3-3.a.c.d	Standard C	All Seasons
BRBT Habitats	3rd-8th	L.S.: 3-3.b.c.d, 4-3.b; I & E: 7-7.c	Standard A & C	Spring/Summer/Fall
Binoculars Bonanza	All Ages	I&E: 6-7.b, 7-7.a.d.	Standard A	All Seasons
Bird ID Experts!	1st- 8th	I&E: 1-4.a, 2-4.c; L.S.: 3-3.b	Standard A & C	All Seasons
Using Field Guides	3rd-12th	I&E: 6-7.b, 7-7.a.c	Standard A	Spring/Summer
Birding By Ear	All Ages	L.S.: 3-3.a.; I & E: 5-6.a.; 6-7.b., 7-7.a.	Standard A & C	Spring/Summer/Fall
Counting Birds	2nd-12th	I&E: 5-6.c, 6-7.a.b., 7-7.a.c, 8-9.a.e	Standard A	All Seasons
Raptors Along the Road	5th-12th	L.S.: 3-2.a.; 4-3.b.	Standard A	Spring/Summer/Fall
Creating a Field Journal	3rd-12th	I&E: 6-7.b, 7-7.a.c.	Standard A	All Seasons
Citizen Science	4th-12th	I&E: 6-7.b, 7-7.a.b	Standard A	All Seasons
Birding Economics	7th-12th	I&E: 6-7.b, 7-7.a.c.	Standard A	All Seasons

* I & E: Investigation & Experimentation

* L.S.: Life Sciences

* Standard A: Scientific Inquiry

* Standard C: Life Sciences