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# *Welcome to the Klamath Basin Birding Trail Lava Beds National Monument Education Kit!*

Welcome to the Klamath Basin Birding Trail Lava Beds National Monument Education Kit! Here you will find exciting new resources and lesson plans that will guide your teaching about birds. The purpose of the kit is to provide place-based, science, and natural resources lesson plans to encourage the study and conservation of local birds and habitats. Thus, the kit has been specially designed to fit Lava Beds National Monument and the birds and habitats there. In the following pages, you will find an array of lesson plans focusing on three subjects: What is a Bird?, Birding and 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. The lesson plans are aligned to Oregon and California State Science Standards, allowing you to meet them. Student journal sheets are provided to advance critical thinking and scientific inquiry learning for each lesson. We encourage you to collate these journal sheets and have students make personalized journal cover sheets for their final products. 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](http://www.KlamathBird.org)) with support from Lava Beds National Monument, Klamath Wingwatchers, Inc., OSU Klamath Basin Research and Extension Center, Tulelake School District, and members from the Klamath Tribes. Funding for curriculum development, teacher training, and resources was provided by a Klamath County Title III Forest Education Grant. Photographic images used throughout curriculum and resources were donated by Southern Oregon resident, Jim Livaudais and Sean Bryan Smith, California resident Tom Grey, and the National Parks Service. A complete kit (with same content) will be available from OSU Klamath Basin Research and Extension Center in Klamath County for local teachers, non-formal educators, and community members to use. To check out kits for up to two weeks, call 541-883-7131, or reserve online (<http://oregonstate.edu/dept/kbrec/>).

Klamath Bird Observatory would like to thank you for your interest in the Klamath Basin 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 KBBT Education Kit please contact us:

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Sincerely,

Ashley Dayer  
Education & Outreach Director

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# *Importance of Studying & Teaching About Birds*



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## **Scientific Discovery**

Birds are fascinating creatures and are found in almost every habitat, ranging from wilderness areas 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, helping protect bird populations.

## **Ecological Services**

Birds play an important role in the ecosystem. Birds disperse seeds, control insects, and small mammals, pollinate plants, and serve as prey for predators.

## **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 relationships 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. For example, if you find ample Yellow Warblers in a riparian habitat you know it includes ample insect populations. 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 Klamath Basin Birding Lava Beds National Monument Education Kit provides lesson plans focusing on the relationship between birds and habitats.

## **Stimulating the Local Economy**

Birding has become one of the fastest growing 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 benefit 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 nationally and internationally are being developed to encourage birding in local areas and its resulting economic benefit for communities. The Klamath Basin Birding Trail aims to bring an economic boost to local communities from birding tourists.

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# How to Use the KBBT Lava Beds National Monument Kit

## Part One: KBBT Kit Introduction

*The KBBT Kit provides resources and the following introductory information to help you select KBBT lesson plans for your needs.*

### **\*KBBT Lava Beds NM Information**

Learn about the Klamath Basin Birding Trail and Lava Beds NM trails and where to take students when studying about the birds and habitats of the Klamath Basin.

### **\*Standards Checklist**

Browse the checklist to find a KBBT Lava Beds NM lesson plan aligned to a standard and grade level you need to fulfill. The KBBT 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. Choose a lesson plan or follow the suggested sequence. See below for more information.

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## Part Two: KBBT Lesson Plans

*Each KBBT 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. You can adopt these.

### **\*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 overview the basic steps to teach the lesson. Procedures allow you to prepare for the lesson (Getting Ready!), conduct an indoor pre-lesson (Discuss!), and lead an outdoor lesson (Investigate!).

### **\*Teacher Tips**

Most lesson plans provide teacher tips to guide teaching of the lesson plan. Teacher tips include advice about how to best present 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 appropriate 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.

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## **Part Three: Appendices**

*Additional resources are provided in the KBBT Lava Beds NM Binder to help with lesson plans and field trips.*

### **\*Appendix A**

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

### **\*Appendix C**

A detailed description of National, Oregon and California Science Standards cited in the lesson are provided.

### **\*Appendix B**

A field trip checklist is provided to help you prepare your classroom for a field trip in your schoolyard or on a Lava Beds NM field trip.

### **\*Appendix D**

Vocabulary from KBBT Lava Beds NM lesson plans are defined here.

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## **Part Four: Bird Education Resources**

*The KBBT Lava Beds National Monument Kit includes bird resources listed below to help you teach about birds. Some are used in lesson plans and others are for education enrichment!*

### **\*KBBT Lava Beds National Monument Curriculum Binder**

#### **\*Binoculars**

#### **\*“Life of Birds” DVD**

#### **\*Laminated Bird Focus Cards**

#### **\*Laminated Birds of Lava Beds National Monument Field Guide**

#### **\*Laminated Klamath Basin Birding Trail Map**

#### **\*Laminated Cards of Cave Species**

#### **\*Common Birds of Lava Beds National Monument PowerPoint CD and Script**

#### **\*Raptor Along the Road PowerPoint CD and Script**

#### **\*Bird Olympics Station Cards**

#### **\*Bird song CD**

#### **\*Clipboards**

#### **\*Audubon stuffed birds**

#### **\* “Birds of Oregon” field guide**

#### **\* “Fine Feathered Friends”– All about Birds book**

#### **\* Hand lenses**

#### **\* Feathers**

#### **\* Props for Migration Obstacle Course (available for separate checkout)**

# Ten Reasons to Use KBBT Lava Beds NM Kit

## 1. Place-based

Lesson plans provide activities about birds and habitats of Lava Beds NM. Using a KBBT activity is a great way to guide a student's learning about and interest in the local environment.

## 2. Fun & Exciting

The KBBT Lava Beds NM kit provides hands-on resources and interactive lesson plans to be used in your schoolyard or on a Lava Beds NM field trip.

## 3. Easy to Use

The KBBT Lava Beds NM 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 KBBT Lava Beds NM lesson plan and have all the information and resources at your finger tips.

## 4. Engaged Students

Students actively participate in learning with student journal pages. Completed journals are a great way for students to share their scientific discoveries with family and friends.

## 5. Easy to Modify

The KBBT Lava Beds NM 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 KBBT Lava Beds NM lesson plans as a guide for your teaching of birds. Original copies of student journals can be found on KBBT Lava Beds NM kit CD's for you to edit.

## 6. Scientific Inquiry

Lesson plans have been designed by a science and education organization. Thus, they have scientific accuracy and offer innovative ways to encourage scientific inquiry and learning. Through the use of the KBBT Lava Beds NM lesson plans students will engage in bird counts, collect bird data, create graphs, and make conclusions about their studies.

## 7. Science Standards

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



## Sample KBBT Lava Beds NM Lesson Plan

## 8. Citizen Science

Students can become citizen scientists through recording and archiving “real data.” Citizen science allows you to contribute this data to real scientists and help them answer conservation questions.

## 9. Non-formal education

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

## 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.



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## *What is the Klamath Basin Birding Trail?*



The Klamath Basin Birding Trail is a network of nature sites where you can easily observe birds and other wildlife. Thirty-eight sites are located in Southern Oregon and nine sites are found in Northern California. The unique landscape provides a diverse range of habitats including mixed-conifer forest, sagebrush-steppe, juniper woodlands, riparian areas, and grasslands. Here you will find numerous resident birds throughout the year and also 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 group 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. Lava Beds National Monument is site number 43. The KBBT website <http://www.klamathbirdingtrails.com/> and brochure offer KBBT trail maps, detailed descriptions of sites, and suggested driving routes.

**How to read the State Standards:**

- 1) California Science Standards are noted first on the top row
- 2) Oregon Science Standards are noted second on the bottom row
- 3) California has Investigation and Experimentation (I&E) as well as Life Science (L.S.)
- 4) Oregon has Life Science (L), Scientific Inquiry (S), Engineering and Design (D), and Earth and Space Science (E)
- 5) In California Science Standards the grade level is listed first followed by a dash denoting the standard
- 6) In Oregon Science Standards the grade level is listed first followed by a dot then a number indicating the core standard (1= Structure & Function; 2= Interaction & Change; 3= Scientific Inquiry; 4=Engineering & Design) and the discipline followed by a dot denoting the content standard number

**How to read National Standards:**

- 1) Standard A: Scientific Inquiry— participate in some aspect of the inquiry process
- 2) Standard C: Life Science

**Science Standard Education Correlations**

Activity	Grade Level	California/Oregon 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 3.1L.1, 3.2L.1, 3.4D.3 / 4.2L.1 / 5.2L.1 / 8.1L.1	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 1.1L.1 / 4.2L.1 / 5.2L.1 / 8.2L.1	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 2.2L.1 / 3.2L.1 / 4.2L.1 / 5.2L.1 / 6.2L.2	Standard C	Spring/Fall
Lava Beds National Monument Habitats	3rd-8th	L.S.: 3-3.b.c.d, 4-3.b; I & E: 7-7.c 4.2L.1 / 5.1L.1 / 6.2L.2	Standard A & C	All Seasons
Petroglyph Point and Owls	4th-12th	L.S.: 5-6.a.g 5.1L.1, 5.2L.1, 5.3S.1 / 6.2L.2	Standard A	Spring/Summer
Binoculars Bonanza!	All Ages	I&E: 6-7.b, 7-7.a.d. 1.3S.1 / 2.3S.3 / 3.4D.3	Standard A	All Seasons
Bird ID Experts	1st-8th	I&E: 1-4.a, 2-4.c; L.S.: 3-3.b 1.1L.1, 1.3S.1 / 2.3S.3 / 5.1L.1, 5.3S.1 / 8.1L.1	Standard A & C	All Seasons
Using Bird Field Guides	3rd-12th	I&E: 6-7.b, 7-7.a.c 4.2L.1 / 8.1L.1	Standard A	All Seasons
Using Plant Field Guides	3rd-12th	I&E: 6-7.b; 7-7.a.c 8.1L.1	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. 2.3S3 / 4.3S.2 / 6.3S.2 / 8.1L.1 / H.3S.2	Standard A & C	Spring/Summer
Counting Birds	2nd-12th	I&E: 5-6.c, 6-7.a.b, 7-7.a.c, 8-9.a.c 2.3S.2,3 / 3.3S.2 / 4.2L.1, 4.3S.1,2 / 6.2L.2, 6.3S.2 / 7.3S.1,3 / H.3S.1,2	Standard A	All Seasons
Raptors Along the Road	3rd-5th	L.S.: 3-2.a; 4-3.b. 4.2L.1 / 5.2L.1	Standard A	Winter/Spring

## Science Standard Education Correlations

Activity	Grade Level	California/Oregon State Standards	National Standards	Best Season
Create a Field Journal!	3rd-12th	I&E: 6-7.b, 7-7.a.c. 4.3S.2,3 / 5.3S.1	Standard A	All Seasons
Birds and Caves	3rd-8th	L.S.: 3-3.b.c.d, 4-3.b; I & E: 7-7.c 3.3S.2 / 4.2L.1 / 5.3S.2 / 7.3S.3	Standard A & C	Fall/Spring
Birds, Plants and People	2nd-8th	L.S.:4-3.c, 6-5.c 2.4D.1 / 4.2L.1 / 5.2L..1	Standard A + Social Studies	Late May-July
Bird Banding Reveals	3rd-12th	I&E: 6-7.b, 7-7.a.b 3.3S.2 / 4.3S.2,3	Standard A	Fall/Spring
Citizen Science	4th-12th	I&E: 6-7.b, 7-7.a.b 6.2L.2, 6.4D.1 / 7.3S.1,3 / H.3S.1,2	Standard A	All Seasons
Birding Economics	7th-12th	I&E: 6-7.b, 7-7.a.c. 6.3S.2 / 8.3S.2 / H.3S.4	Standard A + Math and Social Studies	All Seasons
Take Action!	4th-12th	I&E: 6-7.b; 7-7.a.b 4.2L.1, 6.2L.2	Standard A	All Seasons
Juniper and Sagebrush	3rd-8th	L.S.:3-3b.c.d, 4-3b; I&E.:7-7c 4.2L.1 / 6.2L.2	Standard A	Fall/Spring
Habitat Assessment				
Fire and Western Juniper	4th-12th	L.S.: 3-3.b.c.d, 4-3.b; I & E: 7-7.c 4.2L.1 / 5.2L.1 / 6.2L.2, 6.4D.1 / H.2L.2	Standard A & C	Fall/Spring