# BIRDS WITHOUT borders

Investigating Populations, Habitats, and Conservation of Birds in the U.S. and Abroad

**by Nancy M. Trautmann, James G. MaKinster, and the Crossing Boundaries Team**

# Birds Without Borders

## Investigating Populations, Habitats, and Conservation Needs of Birds in the U.S. and Abroad


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CROSSING boundaries

HOBART AND WILLIAM SMITH COLLEGES

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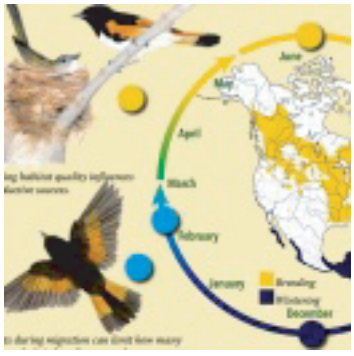
# 8 investigation

## Creating a Conservation Plan



In this final Investigation, students select one of six conservation action pathways and then create a plan for protection or restoration of a specific bird species or critical habitat of concern in the U.S. and our neighboring countries.

## Essential Questions

- What threats do birds face, in the U.S. and beyond our borders?
- What can be done to protect or restore one or more critical habitats or threatened species?

## Science Concepts and Topics

The U.S., Canada, and Mexico are home to over 1150 species of birds, 148 of which are in need of immediate conservation attention because of their highly threatened and declining populations. Forty-two common bird species have steeply declined by 50% or more in the past 40 years. Habitat loss is the most common reason, but the good news is that conservation works. Several species near extinction have rebounded, and others can similarly succeed if given the chance.

*Partners in Flight* is a collaborative group representing bird conservation experts in Canada, the U.S., and Mexico. They aim to prevent extinction of bird species at greatest risk, ensure that common birds remain common, and promote the diversity and abundance of birdlife throughout the hemisphere, far into the future. This group's report, *Saving Our Shared Birds*, provides a wealth of information accessible to students. This final Investigation is structured around six types of conservation action outlined in *Saving Our Shared Birds* and deemed essential for conserving species and habitats at greatest risk.

## Standards Addressed in This Investigation

### Next Generation Science Standards – Middle School

- Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. (MS-LS2-1)
- Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. (MS-LS2-2)
- Evaluate competing design solutions for maintaining biodiversity and ecosystem services. (MS-LS2-5)
- Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems. (MS-ESS3-4)
- Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. (MS-ETS1-1)

### Next Generation Science Standards – High School

- Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity. (HS-LS2-7)
- Evaluate or refine a technological solution that reduces impacts of human activities on natural systems. (HS-ESS3-4)
- Design a solution to a complex real-world problem by breaking it down into smaller, more manageable

problems that can be solved through engineering. (HS-ETS1-2)

## Next Generation Science Standards – Scientific Processes

- Asking questions and defining problems
- Planning and carrying out investigations
- Constructing explanations and designing solutions
- Engaging in argument from evidence
- Obtaining, evaluating, and communicating information

## Common Core (9-10th grade)

**Reading Science & Technical Subjects**

*Key Ideas and Details*

- Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. (RST.9-10.1)
- Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. (RST.9-10.2)

*Craft and Structure*

- Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics. (RST.9-10.4)

*Range of Reading and Level of Text Complexity*

- By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently. (RST.9-10.10)

**Writing**

*Production and Distribution of Writing*

- Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. (W.9-10.6)

*Research to Build and Present Knowledge*

- Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. (W.9-10.7)
- Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. (W.9-10.8)
- Draw evidence from literary or informational texts to support analysis, reflection, and research. (W.9-10.9)

**Speaking and Listening**

*Comprehension and Collaboration*

- Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9-10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. (SL.9-10.1)
- Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source. (SL.9-10.2)

P*resentation of Knowledge and Ideas*

- Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task. (SL.9-10.4)
- Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. (SL.9-10.5)

# Creating a Conservation Plan

## Before You Start...

### Time

Preparation: **25 minutes**

Instruction: **90-120 minutes**

### Preparation

- Download the *Saving Our Shared Birds* report (http://crossingboundaries.org/bwb.php) and make copies of the pages indicated in the Materials list.
- Print copies of the Student Readings, Worksheets, and Presentation Guidelines. Note: students will work in groups on the Primary Actions, and each group will need only the reading and worksheet applicable to their designated Primary Action.

### Technology

*A-V Equipment*

- LCD Projector
- Screen or Whiteboard

*Computers*

- Acrobat Reader

*Information and Communication Technology*

- Capzles or other multimedia presentation options

*Low-Tech Options*

- Have students use PowerPoint or similar presentation software that doesn't require an internet connection.

### Materials

*Student Readings from Saving Our Shared Birds* (the first reading is for all students and the others are for groups)

- A Call to Tri-National Action (pp. 22-35)
- Primary Action 1 (pp. 23-25)
- Primary Action 2 (pp. 26-28)
- Primary Action 3 (p. 29)
- Primary Action 4 (pp. 30-31)
- Primary Action 5 (pp. 32-33)
- Primary Action 6 (pp. 34-35)

*Worksheets* (for all students)

- Conservation Action
- Presentation Guidelines

*Primary Action Worksheets* (for groups)

- Protect and Recover Species at Greatest Risk
- Conserve Habitats and Ecosystem Functions
- Reduce Bird Mortality
- Expand Our Knowledge Base for Conservation
- Engage People in Conservation Action
- Increase the Power of International Partnerships

# Creating a Conservation Plan
# The Investigation

## Investigation Overview

1. Explore bird conservation needs and efforts in the U.S. and neighboring countries, and select one of six primary types of conservation action to investigate in depth.
2. Investigate one of six primary actions for conservation and protection of bird life.
3. Design a conservation plan tailored to one of the six focal areas.
4. Create a multimedia presentation to educate the public on this topic and approach.

## Learning Objectives

Students will be able to:

- Describe threats to bird species and their habitats.
- Evaluate ways to protect, restore, and enhance populations and habitats of North American birds.
- Create and present an action plan to address critical conservation needs.

## Key Concepts

- Biodiversity
- Conservation
- Adaptation
- Critical habitats
- Human impacts
- Threats to biodiversity

## Technology Overview

- Students select from a variety of options for creating and presenting a multimedia-rich conservation plan.

## Conducting the Investigation

1. Explore bird conservation needs and efforts in the U.S. and neighboring countries, and select one of six primary types of conservation action to investigate in depth.

   a. As a class, view the brief bird conservation video (http://crossingboundaries.org/bwb.php).

   b. Ask students to use the ***Saving Our Shared Birds*** report to answer the questions in the **Conservation Action Worksheet.** Through reading designated pages and answering these questions, they will become familiar with the six primary actions identified for tri-national action.

Bird Conservation Video

2. Investigate one of six primary actions for conservation and protection of bird life.

   a. Individually or in small groups, have students select one of the six primary actions as a focus for their investigation and presentation.

      1) Protect and recover species at greatest risk. Students will select from

a list of bird species of high tri-national concern.

2) Conserve habitats and ecosystem functions. Students will concentrate on sustainable practices needed to conserve bird life in a specific ecosystem.

3) Reduce bird mortality. Students will explore human-caused threats affecting bird migration, such as pesticides, structural collisions, etc.

4) Expand our knowledge base for conservation. Students will investigate upcoming trends and topics for scientific research.

5) Engage people in conservation action. Students will investigate ways in which the U.S., Canada, and Mexico can work together to educate the public in creating and implementing solutions to conservation strategies.

6) Increase the power of international partnerships. Students will look for ways to expand international partnerships and develop ideas for achieving conservation.

b. Provide students with the appropriate worksheet (Primary Actions #1-6) to guide investigation of their selected topic.

c. Have students investigate their primary action, taking notes from relevant sections of the *Saving Our Shared Birds* report and other sources.

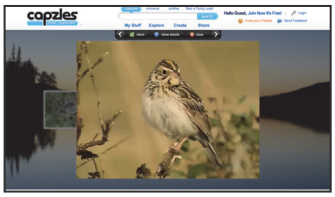
d. Ask students to create an outline for a conservation plan that is tailored to their topic of choice.

3. Create a multimedia presentation to educate the public on the selected topic and conservation approach.

a. Using the structure provided in the ***Presentation Guidelines*** handout, ask students to think about how to "sell" their specific conservation plan within the context of these two questions:

- What specific threats are birds facing, in the U.S. and beyond our borders?
- What conservation efforts will protect or restore one or more species or their critical habitats?

b. Have each student or group create a presentation using a multimedia tool such as Capzles (http://www.capzles.com) to make a convincing case for their conservation plans. (With Capzles, they can create a presentation and upload documents, photos, graphs, videos, sound files, and blog posts. Many alternatives exist, such as Prezi, PowerPoint, or Glogster, but Capzles provides the option to share student presentations with teacher-defined privacy options. This makes it easy to share class-to-class, upload to a wiki, post on Facebook, or share through other social media sites.)



http://www.capzles.com

4. Present conservation plans.

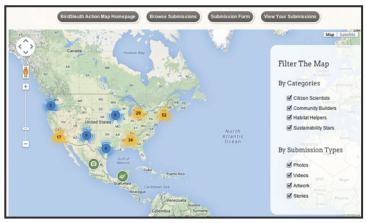
a. Provide time for student presentations, either projected to the class as a whole or accessed online in a computer lab.

b. Hold a wrap-up discussion and vote as a class on the highest priority

conservation strategy, or delay this wrap-up until after implementing one of the optional extensions below.

5. Possible extensions:

   a. Conduct a conservation project. Ideally this would be based on the actions recommended by students but could also be modified into a more small-scale project feasible within whatever timeframe you have available. Possibilities include habitat improvement in your schoolyard or community, or educating the public or younger students about ways in which they can make a difference in the lives of birds. Your class can become part of a public record of conservation actions by youth by posting on the Lab of Ornithology's BirdSleuth Action Map (http://www.birdsleuth.org/action-map/) to inform and inspire others.



BirdSleuth

   b. Correspond with other students. Have students correspond with students in other classes or even other countries about birds and conservation. Consider using ePals Global Community (http://epals.com) to connect your classes with students in another country. This networking site enables teachers and students to interact with other schools around the world. Teachers can use ePals to find colleagues with similar interests, for example teachers in the U.S. or abroad whose classes are investigating birds and conservation issues. After teachers arrange partnerships, their students exchange emails with a pen pal, and teachers have the option of vetting all incoming and outgoing correspondence.

ePals

Name: _____ Period: _____ Date: _____

# Conservation Action Worksheet

The ***Saving Our Shared Birds*** report lists six types of actions needed to protect, restore, and enhance populations and habitats of North America's birds. Using selected pages of this report, write one sentence answering the following questions about each type of action.

1. Protect and recover species at greatest risk. Many of the species at greatest risk have very limited distributions in highly threatened habitats. Why do these species require individual attention rather than relying on more general conservation actions?

   (Pages 23-25)

2. Conserve habitats and ecosystem functions. Why is this important for bird conservation?

   (Pages 26-28)

3. Reduce bird mortality. What types of challenges do birds face other than loss of habitat?

   (Page 29)

4. Expand our knowledge base for conservation. What kinds of research are needed to better understand the needs of birds?

   (Pages 30-31)

5. Engage people in conservation action. One of the possibilities is to engage more people in citizen science. How can this help with conservation?

   (Pages 32-33)

6. Increase the power of international partnerships. What three countries does this report include, and why are partnerships among these countries important for bird conservation?

   (Pages 34-35)

Name: _____ Period: _____ Date: _____

# Conservation Action

## Worksheet Answer Key

The ***Saving Our Shared Birds*** report lists six types of actions need to protect, restore, and enhance populations and habitats of North America's birds. Using selected pages of this report, write one sentence answering the following questions about each type of action.

1. Protect and recover species at greatest risk. Many of the species at greatest risk have very limited distributions in highly threatened habitats. Why do these species require individual attention rather than relying on more general conservation actions?

   (Pages 23-25)

   ***For species with highly specific habitat requirements, conservation needs to focus on protecting specific sites that provide critical habitat.***

2. Conserve habitats and ecosystem functions. Why is this important for bird conservation?

   (Pages 26-28)

   ***Habitat conservation is needed to keep common species common and to reverse population declines in species that are at risk.***

3. Reduce bird mortality. What types of challenges do birds face other than loss of habitat?

   (Page 29)

   ***Birds are caught and sold as pets, they are killed by cats and by collisions with windows or other structures, and they die from exposure to pesticides.***

4. Expand our knowledge base for conservation. What kinds of research are needed to better understand the needs of birds?

   (Pages 30-31)

   ***Research is needed on population status and trends, habitats, limiting factors, and causes of population declines for bird species of high tri-national concern.***

5. Engage people in conservation action. One of the possibilities is to engage more people in citizen science. How can this help with conservation?

   (Pages 32-33)

   ***Citizen science provides valuable scientific data and also helps people to learn about birds and can motivate them to be involved in conservation.***

6. Increase the power of international partnerships. What three countries does this report include, and why are partnerships among these countries important for bird conservation?

   (Pages 34-35)

   ***The report includes Canada, the U.S. and Mexico, and these three countries share many bird species, habitats, and threats.***

Name: _____ Period: _____ Date: _____

# Primary Action #1 Protect and Recover Species at Greatest Risk (pages 23-25)

1. List the habitats of landbird species.

2. Where is a strong network of protected areas needed?

3. What is the common link between the Wood Thrush and the Slaty-tailed Trogon? Why is this link important?

4. What are some ways that species at risk can make recoveries?

5. List some of the agencies that coordinate cross-country conservation efforts.

6. Choose one of these bird species to focus on for your conservation plan, and then investigate ways to protect or recover this species.

| | | |
|---|---|---|
| __ Spotted Owl | __ Sprague's Pipit | __ Baird's Sparrow |
| __ Chestnut-collared Longspur | __ Rufous Hummingbird | __ Loggerhead Shrike |
| __ Brewer's Sparrow | __ Field Sparrow | __ Lark Bunting |
| __ Harris's Sparrow | __ Cassin's Finch | |

Name: _____ Period: _____ Date: _____

# Primary Action #1 Protect and Recover Species at Greatest Risk (pages 23-25) Answer Key

1. List the habitats of landbird species.

   - *Tropical highland and pine-oak forest of the Mexican mountains*
   - *Tropical deciduous forests on the Pacific slope of Mexico*
   - *Tropical evergreen forest from southern Mexico through Central America*

2. Where is a strong network of protected areas needed?

   *Along Mexico's Pacific Coast and in narrow highland regions from Tamaulipas and Chihuahua south to Chiapas*

3. What is the common link between the Wood Thrush and the Slaty-tailed Trogon? Why is this link important?

   *The Wood Thrush spends winter in tropical evergreen forests of southern Mexico, the same forests where the Slaty-tailed Trogon lives year-round.*

4. What are some ways that species at risk can make recoveries?

   - *Protecting sufficient amounts of critical habitat for endangered species throughout their life cycles.*
   - *Implementing the recovery components of endangered species laws and other wildlife conservation legislation.*

5. List some of the agencies that coordinate cross-country conservation efforts.

   - *Mesoamerican Pine-Oak Conservation Alliance*
   - *Pronatura Sur*
   - *The Nature Conservancy*

6. Choose one of these bird species to focus on for your conservation plan, and then investigate ways to protect or recover this species.

| | | |
|---|---|---|
| __ Spotted Owl | __ Sprague's Pipit | __ Baird's Sparrow |
| __ Chestnut-collared Longspur | __ Rufous Hummingbird | __ Loggerhead Shrike |
| __ Brewer's Sparrow | __ Field Sparrow | __ Lark Bunting |
| __ Harris's Sparrow | __ Cassin's Finch | |

Name: _____ Period: _____ Date: _____

# Primary Action #2 Conserve Habitats and Ecosystem Functions (pages 26-28)

1. Explain how the expansion of agriculture is threating biodiversity.

2. According to this article, what should “restoration” promote?

3. Give an example of sustainable grazing and food production that will benefit bird species.

4. List three ecosystems that are being degraded at an alarming rate.
   a)
   b)
   c)
5. Identify one sustainable forestry practice.

6. Describe a sustainable community-based initiative.

7. Choose one of the following habitats to focus on in your conservation plan:

| | | |
|---|---|---|
| __Tropical Evergreen Forest | __Boreal Forest | __Temperate Grassland |
| __Arid Lands | __Temperate Forest | __Urban |

Name: _____ Period: _____ Date: _____

# Primary Action #2 Conserve Habitats and Ecosystem Functions (pages 26-28) Answer Key

1. Explain how the expansion of agriculture is threating biodiversity.

   ***Expansion of areas used for livestock grazing and other forms of agriculture affects the grassland, forest, and arid habitats needed by many species.***

2. According to this article, what should "restoration" promote?

   - ***Use of native plant species***
   - ***Control of invasive species***
   - ***Minimizing the use of chemicals***
   - ***Using fire to emulate natural disturbance patterns***

3. Give an example of sustainable grazing and food production that will benefit bird species.

   ***Shade-grown coffee and cocoa helps to retain native forest cover for birds.***

4. List three ecosystems that are being degraded at an alarming rate.

   a) ***Native grasslands***
   b) ***Temperate broadleaf forests***
   c) ***Tropical dry forests***

5. Identify one sustainable forestry practice.

   ***Possibilities include:***

   - ***Retaining large trees and snags***
   - ***Using fire and other disturbances to create greater forest complexity***
   - ***Managing to maintain structural complexity and diversity of age classes***

6. Describe a sustainable community-based initiative.

   ***Resource management is integrated into the regional economy by working with local communities and landowners to protect, restore, and manage habitats. This could include taxation systems, market incentives, and conservation easements.***

7. Choose one of the following habitats to focus on in your conservation plan:

| | | |
|---|---|---|
| __Tropical Evergreen Forest | __Boreal Forest | __Temperate Grassland |
| __Arid Lands | __Temperate Forest | __Urban |

Name: _____ Period: _____ Date: _____

# Primary Action #3 Reduce Bird Mortality (page 29)

1. Explain cage bird trade.

2. How can this trade be regulated?

3. What are some types of human-made structures that impact migratory birds?

4. What two websites provide information on minimizing bird collisions?

5. How can we minimize deaths from pesticide use?

6. Select one source of human-caused bird mortality to investigate for your conservation plan. What type of bird mortality have you selected, and why do you think it is important?

Name: _____ Period: _____ Date: _____

# Primary Action #3 Reduce Bird Mortality (page 29) Answer Key

1. Explain cage bird trade.

   *Many species of birds are trapped and sold. These include all Mexican parrot species, three species of toucans, many orioles, and buntings.*

2. How can this trade be regulated?

   *Trapping quotas could be set, tied to effective monitoring of wild bird populations. This would be similar to the successful model of sustainable waterfowl harvesting that has been achieved under the North American Waterfowl Management Plan.*

3. What are some types of human-made structures that impact migratory birds?

   *Windows, wind turbines, transmission lines, and other infrastructure*

4. What two websites provide information on minimizing bird collisions?

   - *www.flap.org for minimizing window kills*
   - *www.aplic.org for bird-friendly lighting of towers and buildings, and protecting birds on power lines*

5. How can we minimize deaths from pesticide use?

   *Supporting organic agriculture, developing reduced use or lower toxicity alternatives, and developing shared standards for licensed pesticides and application techniques*

6. Select one source of human-caused bird mortality to investigate for your conservation plan. What type of bird mortality have you selected, and why do you think it is important?

Name: _____ Period: _____ Date: _____

# Primary Action #4 Expand Our Knowledge Base for Conservation (pages 30-31)

1. What are some basic habitat and ecological requirements that must be studied for effective bird conservation?

2. What technologies are available to provide data on population status and trends? What do they allow us to do?

3. What makes it difficult to know the population status of many species?

4. What are some examples of human causes of bird mortality, and why is it important to study these sources?

5. What is meant by the "human dimensions of bird conservation," and why is this an important topic for research?

6. Select a research topic to focus on for your conservation plan. This should be a topic for which better understanding will be useful in designing and implementing effective conservation efforts. What is your topic, and why is it important?

Name: _____ Period: _____ Date: _____

# Primary Action #4 Expand Our Knowledge Base for Conservation (pages 30-31) Answer Key

1. What are some basic habitat and ecological requirements that must be studied for effective bird conservation?

   ***Information is needed about the food, vegetation, and patch size critical for priority species in all habitats, especially in rapidly diminishing tropical forest.***

2. What technologies are available to provide data on population status and trends? What do they allow us to do?

   ***Devices such as geolocators are useful in tracking migration routes. Study of stable isotopes in feathers is another technique being used to document migration patterns.***

3. What makes it difficult to know the population status of many species?

   ***Monitoring has been limited in areas where access is difficult, remote, or expensive.***

4. What are some examples of human causes of bird mortality, and why is it important to study these sources?

   ***Examples include collisions with tall structures and vehicles, and predation by cats and other nonnative predators. Studying these sources is important because we need to understand the effects on bird populations in order to set policies and guidelines based on the relative risks to priority species.***

5. What is meant by the "human dimensions of bird conservation," and why is this an important topic for research?

   ***"Human dimensions" refers to how and why people relate to birds and bird conservation issues. We need to understand peoples attitudes and behaviors in order to design conservation solutions that are acceptable to society.***

6. Select a research topic to focus on for your conservation plan. This should be a topic for which better understanding will be useful in designing and implementing effective conservation efforts. What is your topic, and why is it important?

Name: _____ Period: _____ Date: _____

# Primary Action #5 Engage People in Conservation Action (pages 32-33)

1. Why is it important to engage people in conservation action?

2. Who are the stakeholders that must be reached to implement bird friendly agriculture and forestry practices?

3. What citizen science projects are mentioned here as effective ways to engage volunteers in bird monitoring?

4. Give an example of a bird-friendly economic opportunity that could be used in a rural community, and say why this is important.

5. What does coffee farming have to do with bird habitat?

6. Choose one of the following websites from the article. In the conservation plan that you create, include information on how this group is helping to engage and educate people about birds and conservation:

   __ Environment for the Americas (www.birdday.org)

   __ eBird (www.ebird.org)

   __ Colorado Birding Trail (www.coloradobirdingtrail.com)

   __ El Fondo de Conservación El Triunfo A.C. (www.fondoeltriunfo.org)

Name: _____ Period: _____ Date: _____

# Primary Action #5 Engage People in Conservation Action (pages 32-33) Answer Key

1. Why is it important to engage people in conservation action?

   *We need to motivate people to recognize the costs and benefits of alternative futures, make behavioral changes, and take conservation actions. Through our actions, humans continue to threaten birds, often unknowingly.*

2. Who are the stakeholders that must be reached to implement bird friendly agriculture and forestry practices?

   *Producers, industry, policy-makers, business communities, and first Nations, Native American, and indigenous peoples*

3. What citizen science projects are mentioned here as effective ways to engage volunteers in bird monitoring?

   *The North American Breeding Bird Survey, Christmas Bird Count, and eBird*

4. Give an example of a bird-friendly economic opportunity that could be used in a rural community, and say why this is important.

   *Examples of bird-friendly economic opportunities include ecotourism and birding festivals. Providing bird-friendly economic opportunities reduces threats in and around protected areas.*

5. What does coffee farming have to do with bird habitat?

   *Coffee is an important crop in the tropics. On modern intensive coffee farms, tropical forests have been replaced with fields containing just coffee plants. The traditional method of growing coffee in the shade protects tropical forests and provides important habitat for many resident and migratory bird species.*

6. Choose one of the following websites from the article. In the conservation plan that you create, include information on how this group is helping to engage and educate people about birds and conservation:

   __ Environment for the Americas (www.birdday.org)

   __ eBird (www.ebird.org)

   __ Colorado Birding Trail (www.coloradobirdingtrail.com)

   __ El Fondo de Conservación El Triunfo A.C. (www.fondoeltriunfo.org)

Name: _____ Period: _____ Date: _____

## Primary Action #6 Increase the Power of International Partnerships (pages 34-35)

1. What does the NABCI promote?

2. List several areas in which International joint ventures hope to increase support and expand their capacity.

3. What will help government-led programs succeed?

4. Give an example of a voluntary partnership for high concern species and briefly discuss their role.

5. Choose an international organization that is currently trying to increase tri-national efforts in bird conservation. In the conservation plan that you create, discuss the methods used by this groups to involve partnering countries. Here are a few organizations mentioned in the article, but feel free to include another of your choice:

   __ el Grupo Cerúleo (www.srs.fs.usda.gov/egc)

   __ North American Bird Conservation Initiative (www.nabci.net)

   __ Avian Knowledge Network (www.avianknowledge.net)

Name: _____ Period: _____ Date: _____

# Primary Action #6 Increase the Power of International Partnerships (pages 34-35) Answer Key

1. What does the NABCI promote?

   *The North American Bird Conservation Initiative promotes a strategic approach to conserving birds through the identification of continentally important areas.*

2. List several areas in which International joint ventures hope to increase support and expand their capacity.

   *In the aridlands, tropical deciduous forests, and pine-oak forests of the southwestern U.S. and northern Mexico.*

3. What will help government-led programs succeed?

   *Increased funding for existing programs, including from private foundations, international aid organizations, and industry partner*

4. Give an example of a voluntary partnership for high concern species and briefly discuss their role.

   *The Cerulean Warbler Technical Group brings together partners from the forest-products, coal-mining, and coffee-production industries, multiple resource agencies, conservation NGOs (non-government organizations), and university scientists from countries throughout the species' breeding and winter range. Together they are working to protect this vulnerable species.*

5. Choose an international organization that is currently trying to increase tri-national efforts in bird conservation. In the conservation plan that you create, discuss the methods used by this groups to involve partnering countries. Here are a few organizations mentioned in the article, but feel free to include another of your choice:

   __ el Grupo Cerúleo (www.srs.fs.usda.gov/egc)

   __ North American Bird Conservation Initiative (www.nabci.net)

   __ Avian Knowledge Network (www.avianknowledge.net)

Name: _____ Period: _____ Date: _____

# Tri-National Bird Conservation Plan Presentation Guidelines

As you create your presentation, think about how to convince people that your conservation plan is important. Use this structure and check off items as they're completed.

**Include the following information:**

- ☐ **Slide 1:** Include your name, the title of the Primary Action you are addressing, and a photo or other visual if you'd like.
- ☐ **Slides 2 & 3:** What specific threats do birds face, in the U.S. and beyond our borders?
- ☐ **Slide 4:** Information from your worksheet. Include important facts or figures from your research and readings.
- ☐ **Slides 5 & 6:** What conservation efforts do you propose in order to protect or restore one or more bird species or critical habitats?
- ☐ **Slides 7 & 8:** Maps, charts, pictures that support your argument or position.
- ☐ **Slide 9:** Citations and acknowledgments.

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**Investigation 1**

Taza Schaming. Clark's Nutcracker. Cornell Lab of Ornithology.
Kelly Colgan Azar. Downy Woodpecker. (https://flic.kr/p/atLcYx)
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**Investigation 8**

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Phil Kahler. Western Meadowlark. (https://flic.kr/p/e87Jwz)

# ABOUT the AUTHORS

## Dr. Nancy Trautmann

Dr. Nancy Trautmann is Director of Education at the Cornell Lab of Ornithology, where she leads a team that aims to inspire curiosity, learning, and action related to birds and the natural world.

## Dr. Jim MaKinster

Dr. Jim MaKinster is a Professor of Science Education at Hobart and William Smith Colleges, where he teaches a variety of courses in science and environmental education and leads projects focused on environmental issues, scientific inquiry, and the use of geospatial technology.

Together, they lead programs for middle and high school teachers. The investigations in this book were developed in collaboration with 60 teachers who participated in the NSF-funded Crossing Boundaries project. These teachers pioneered new uses of technology in their classrooms and provided key input about successes, challenges, and adaptations for various types of courses and students.

CROSSING boundaries

Crossing Boundaries is a collaborative effort between Hobart and William Smith Colleges and the Cornell Lab of Ornithology. With curriculum, data resources, and related professional development opportunities, Crossing Boundaries equips teachers to engage students in using information and communication technologies (ICT) to address biodiversity conservation issues from local to international in scope.

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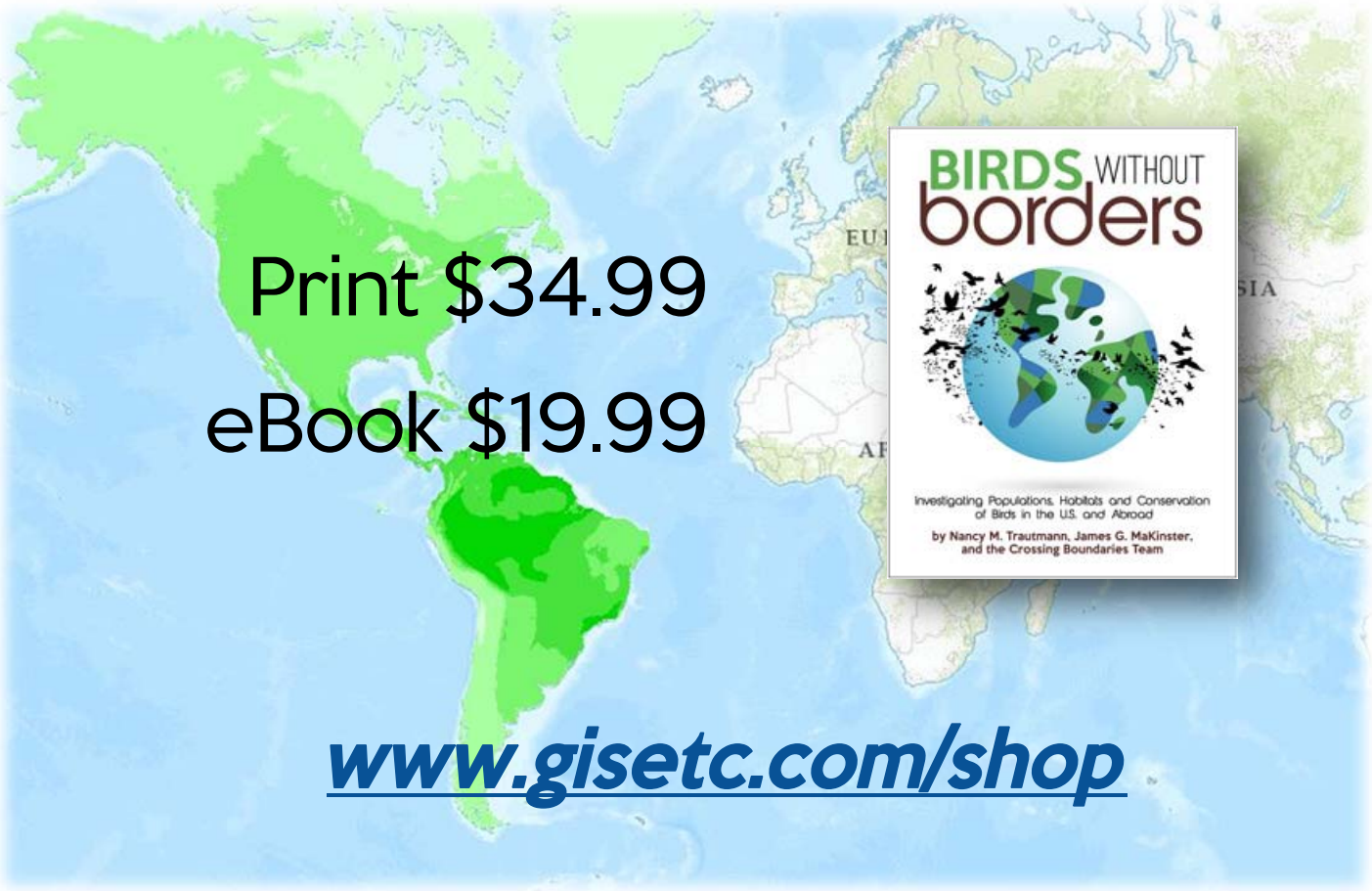


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- Investigation 2 – Exploring Habitat Needs of Nesting Birds
- Investigation 3 – Determining Annual Life Cycles of Local Birds
- Investigation 4 – Modeling Bird Population Trends
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- Investigation 6 – Bird Biodiversity Across the Americas
- Investigation 7 – Exploring Bird Conservation Needs at Home and Abroad
- Investigation 8 – Creating a Conservation Plan

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