

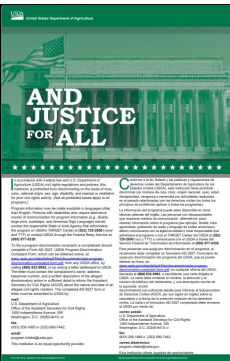
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The letter must contain the complainant's name, address, telephone number and a written description of the alleged discriminatory action in sufficient detail to inform the Assistant Secretary for Civil Rights (ASCR) about the nature and date of an alleged civil rights violation. The completed AD-3027 form or letter must be submitted to USDA by:

mail:
 U.S. Department of Agriculture
 Office of the Assistant Secretary for Civil Rights
 1400 Independence Avenue, SW
 Washington, D.C. 20250-9410, or
 fax:
 (833) 256-1665 or (202) 690-7442;
 email:
program.intake@usda.gov.

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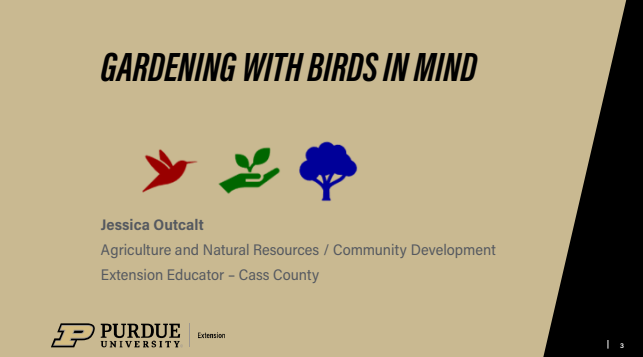


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correo postal:
 U.S. Department of Agriculture
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 Washington, D.C. 20250-9410, o
 fax: (833) 256-1665 o (202) 690-7442;
 correo electrónico: program.intake@usda.gov para consultas relacionadas con cumplidores discriminatorios sobre interacciones con el USDA
askusda@usda.gov para cualquier otra consulta
 Tenga en cuenta todas las preguntas / formularios de elegibilidad relacionados con SNAP, diríjase a <https://www.fns.usda.gov/snap/recipient/eligibility> o la oficina local de SNAP: <https://www.fns.usda.gov/snap/state-directory>

Esta institución ofrece igualdad de oportunidades.




GARDENING WITH BIRDS IN MIND

Jessica Outcalt
 Agriculture and Natural Resources / Community Development
 Extension Educator - Cass County

PURDUE UNIVERSITY Extension

“ Knowledge generates interest, and interest generates **COMPASSION.**”



Douglas W. Tallamy, "Nature's Best Hope: A New Approach to Conservation that Starts in Your Yard"

Yellow-rumped Warbler, Tippecanoe Co. Photo courtesy Jessica Outcall

What got me interested in this?

- Birds are gateways to nature, for all demographics and socioeconomic statuses and urban-to-rural gradients and everything in between
- "The Pigeon Paradox" (Dunn et al. 2008)




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Wildlife-friendly gardens

Why does this matter?

AMERICAN BIRD CONSERVATION SOCIETY | MISSION | NEWS | SOURCE | RESEARCH | SERVICES | ABOUT



3 Billion Birds Gone
Help Reverse Bird Declines Today!

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HOW TO IDENTIFY BIRDS

Size, shape, spot, season

Size - relative to other birds, or to a common bird like a sparrow/robin/crow/goose

Shape - beak or feet shape, wingspan, tail size and shape, crest/no crest, etc.

Spot - what part of the habitat is it in? Canopy, forest floor, shrubs, power lines, in the sky?

Season - is the bird supposed to be here, now?

Color - don't rely on color until you've answered these other questions. For example, Blue Jays don't always look blue.

RESOURCES FOR BIRD-WATCHERS

Wildlife-friendly management

Diversity, diversity, diversity

- Whatever your goal, aim for diverse habitats
- Backyard gardening, even as small as a single potted plant, also provides habitat for birds and fulfills their needs
- If you remember one thing from tonight:
 - Food
 - Water
 - Shelter

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Wildlife-friendly management

Birds have unique ecological niches

- Predators
- Prey
- Pest control
- Pollinators
- Seed dispersers



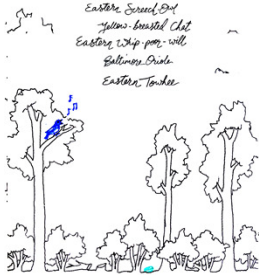
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Wildlife-friendly management

Birds have unique ecological niches

- Predators
- Prey
- Pest control
- Pollinators
- Seed dispersers



*Eastern Screech Owl
Yellow-bellied Chat
Eastern Whip-poor-will
Belted Grouse
Eastern Towhee*

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Images credit The Nature Conservancy / Jessica Outcalt

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What if I don't have any garden space?

"All we have to decide is what to do with the time that is given us." (J. R. R. Tolkien)

- Keep cats indoors
- Put reflective stickers on windows, doors
- Turn bright lights off at night
- Use integrated pest management (IPM) strategies, using chemical pesticides as last resorts
- Plant native plants where possible
- Drink bird-friendly coffee



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Native plants

Co-evolution and reciprocity

- Plants were wind-pollinated until around 150 million years ago, when insects began consuming pollen
- Competition for insect visitors and the addition of nectar as a reward for insects led to an explosion of diversity
- Today nearly half a million plant species and over 200,000 animal species work together to pollinate flowers
 - Plants gain the benefit of efficient reproduction and increased genetic diversity
 - Insects gain food and habitat

Source: <https://extension.purdue.edu/blog/garden-scoop/2020/05/28-early-history-pollinators-and-plants>



Native plants

Why native?

- Because pollinators co-evolved with the flowers they pollinate, native species of bees, butterflies, etc. often specialize on native flowers
- Native pollinators are more efficient than non-native honeybees
- Protection of threatened and endangered species
 - Monarch butterfly and milkweed
 - Karner blue butterfly and wild blue lupine
 - Rusty patched bumble bee and grasslands



Native plants

Why native?

- Sustainability
 - Native ecosystems function as a whole - a system of balance
- Habitat restoration
 - Indiana has lost most of its prairie, which once covered 15% of the state and is now only a few thousand acres (source: IN DNR)
- Soil health
 - Native plant roots go deep to stabilize the soil and maintain healthy seed banks
- Clean water
 - Require less water, prevent erosion



Tools to benefit birds and people

Indiana Native Plant Society

Indiana Native Plant Finder

This database tool will help you choose garden-worthy Indiana native plants that fit your site and support pollinators. Use the dropdown menus to select plant types and desired characteristics, and a filtered search will generate an array of plants for you. Enter as many filters as you like to narrow your search, select more filters and search again. Click on a thumbnail to learn more about a plant and see additional photos. [About the Finder](#)

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Tools to benefit birds and people

Merlin

Identify the birds you see or hear with Merlin Bird ID

Free global bird guides with photos, sounds, maps, and more.

[App Store](#) [Google Play](#)

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Tools to benefit birds and people

iNaturalist

Take your nature knowledge up a notch with iNaturalist! Use the power of image recognition technology to identify the plants and animals all around you. iNaturalist is the largest and most diverse online community for sharing observations of birds, amphibians, plants, and fungi and participating in exciting citizen science challenges.

- Get outside and record the life around you.
- Identify wildlife, plants, and fungi and learn about the organisms all around you.
- Earn badges for observing different types of species and participating in challenges.

[Get the iNaturalist app](#)

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Bird-friendly gardening

How do bird-friendly gardens help our environment?

- Erosion prevention
 - Native plants have deep root systems
 - Foliage of plants buffers rainfall and protects soil
- Runoff mitigation
 - Rain gardens can absorb water running off impervious surfaces or compacted soil
- Cultural pest control
 - Native plants are hosts to "good bugs" that feed on pests like aphids and are prey for birds

Bird-friendly gardening - summary

Diversity, diversity, diversity


- Diversity of habitat
 - Small to large: lawn weeds, native flowers, shrubs, trees
- Diversity of blooms
 - Flower shapes, colors; foliage and stem characteristics
- Diversity of seasons
 - Ideally a variety of blooming plants throughout the growing season

Feeding birds

Diversity breeds diversity



Resources and tools for gardeners




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Wildlife-friendly management

Certified Wildlife Habitat

- Option 1: pay a small fee, check some boxes, get your garden certified as wildlife habitat!
- Option 2: use this checklist as a guide for management practices – an ideal wildlife area would check all these boxes, not just the minimum number
- Option 3: all of the above!



**National Wildlife Federation's
GARDEN FOR WILDLIFE**

Garden Certification Walk-through Checklist

It's easier than you think to create your own wildlife garden! Use this walk-through checklist to confirm you have all the elements necessary to be certified.

Note: This checklist is only a tool to prepare your garden. Please verify online at <https://nwf.org/gardenforwildlife>

FOOD: Your habitat should provide a minimum of three of the following types of food. Supplemental features are optional.

<input type="checkbox"/> Native Plants	<input type="checkbox"/> Fruits	<input type="checkbox"/> Bird Feeder	<input type="checkbox"/> Butterfly Host Plants to Host Caterpillars
<input type="checkbox"/> Birdhouses/Nests	<input type="checkbox"/> Bark	<input type="checkbox"/> Insect Hotels	
<input type="checkbox"/> Nectar	<input type="checkbox"/> Pollen	<input type="checkbox"/> Hummingbird Feeder	
<input type="checkbox"/> Foliage/Logs	<input type="checkbox"/> Seed		

National Wildlife Federation recommends a habitat garden open early for a minimum of 80-90% native plants.

WATER: Your habitat needs one of the following sources to provide clean water for wildlife to drink and bathe:

<input type="checkbox"/> Stream	<input type="checkbox"/> Seasoned Pond	<input type="checkbox"/> River	<input type="checkbox"/> Rain Garden
<input type="checkbox"/> Shrub	<input type="checkbox"/> Ditches	<input type="checkbox"/> Shallow Pudding Area	<input type="checkbox"/> Water Garden/Pond
<input type="checkbox"/> Lawn	<input type="checkbox"/> Spring		

COVER: Wildlife needs at least two places to find shelter from the weather and predators.

<input type="checkbox"/> Mulched Area	<input type="checkbox"/> Cave	<input type="checkbox"/> Branch or Log Pile	<input type="checkbox"/> Open Shaded/Poached
<input type="checkbox"/> Woodpile Pile	<input type="checkbox"/> Nesting Box	<input type="checkbox"/> Burrow	<input type="checkbox"/> Water Garden/Pond (Good Places for Caterpillars)
<input type="checkbox"/> Ground Cover	<input type="checkbox"/> Emergence	<input type="checkbox"/> Meadow or Prairie	
<input type="checkbox"/> Rock Pile or Stack			

PLACES TO RAISE YOUNG: You need at least two places for wildlife to engage in courtship behavior, mate and then rear and raise their young.

<input type="checkbox"/> Water Trees	<input type="checkbox"/> Wetland	<input type="checkbox"/> Dead Trees or Snags	<input type="checkbox"/> Water Garden/Pond (Good Places for Caterpillars)
<input type="checkbox"/> Meadow or Prairie	<input type="checkbox"/> Cave	<input type="checkbox"/> Open Shaded/Poached	
<input type="checkbox"/> Nesting Box	<input type="checkbox"/> Burrow		

BEST PRACTICES: You need to employ practices from at least two of the three categories below to help manage your habitat in a sustainable way. To better help wildlife, we advocate employing one or more practices from each category.

<p><small>Soil and Water Conservation:</small></p> <ul style="list-style-type: none"> Riparian Buffer Capture Rain Water from Roof Xeriscape (water-wise landscaping) Drip or Soaker Hose for Irrigation <p><small>Controlling Exotic Species:</small></p> <ul style="list-style-type: none"> Practice Integrated Pest Management Remove Non-Native Plants and Animals 	<ul style="list-style-type: none"> Limit Water Use Reduce Erosion Use Mulch Rain Garden <ul style="list-style-type: none"> Use Native Plants Reduce Lawn Areas
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Soil and Water Conservation:

- Riparian Buffer
- Capture Rain Water from Roof
- Xeriscape (water-wise landscaping)
- Drip or Soaker Hose for Irrigation

Controlling Exotic Species:

- Practice Integrated Pest Management
- Remove Non-Native Plants and Animals

Limit Water Use

- Reduce Erosion
- Use Mulch
- Rain Garden

Use Native Plants

- Reduce Lawn Areas

SUSTAINABLE PRACTICES: You need to employ practices from at least two of the three categories below to help manage your habitat in a sustainable way. To better help wildlife, we advocate employing one or more practices from each category:

<p><small>Soil and Water Conservation:</small></p> <ul style="list-style-type: none"> Riparian Buffer Capture Rain Water from Roof Xeriscape (water-wise landscaping) Drip or Soaker Hose for Irrigation <p><small>Controlling Exotic Species:</small></p> <ul style="list-style-type: none"> Practice Integrated Pest Management Remove Non-Native Plants and Animals 	<ul style="list-style-type: none"> Limit Water Use Reduce Erosion Use Mulch Rain Garden <ul style="list-style-type: none"> Use Native Plants Reduce Lawn Areas
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Wildlife-friendly management

How Purdue Extension can help

- Purdue Education Store: www.edustore.purdue.edu
- Your local ANR educator!
 - Contact your county office to find out who the nearest agent is

QUESTIONS?

THANK YOU!

Contact information:

- joutcalt@purdue.edu
- 574-753-7750
