

Managed Natural Landscapes



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What is a Managed Natural Landscape?

A Managed Natural Landscape is a **planned, intentional, and maintained** planting of predominantly native plant species.

It can include grasses, wildflowers, ferns, sedges, shrubs, trees, vines, rain gardens, pollinator gardens, woodland gardens, and ornamental plantings.



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What are native plants?

- Plants that have “occurred naturally for thousands of years in a region, ecosystem, or habitat without human introduction” ¹
- Native plants have evolved over time to adapt to the local climate, soil, and other native plants and animals



¹ <https://www.nwf.org/Native-Plant-Habitats/Plant-Native/Why-Native#:~:text=What%20is%20a%20native%20plant,species%20in%20your%20planting%20location.>

Why create Managed Natural Landscapes?



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Drastic decline of birds, butterflies, bees, and other species

- We've lost **3 billion birds** in North America since the 1970s, including 30% of our songbirds
- Monarch butterfly numbers have dropped as much as **90%** in the east, over **99%** in the west ¹
- **33,000** species of native plants and animals in the U.S. are "imperiled" or "functionally extinct" ²
- The UN says we'll lose **one million species** in the next 20 years



¹ National Wildlife Federation, www.nwf.org/-/media/Documents/PDFs/Mayors-Monarch-Pledge/NWF-Landscaping-Guide.pdf

² Data from State Natural Heritage Centers



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Insect populations are in especially serious decline

- Populations dwindled **78%** from 1973 to 2013 and continue to fall
- We need insects to pollinate **90%** of our plant species
- Insects are near the base of our food web

- Douglas Tallamy, *Nature's Best Hope*



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"If we were to wipe out insects alone on this planet, the rest of life and humanity with it would mostly disappear from the land. **Within a few months.**" — E.O. Wilson, entomologist

Birds need insects; insects need native plants

- 96% of terrestrial bird species in the US (215 bird species in the eastern US) must feed their young insects ¹
- Carolina chickadees need as many as 9,000 caterpillars to raise just one brood ²
- Many caterpillars can eat **only one or a few** native plants species

¹ Roger Tory Peterson, *A Field Guide to the Birds*

² Dr. Douglas Tallamy, *Nature's Best Hope*



Dewhurst, Donna A., USFWS, 2006



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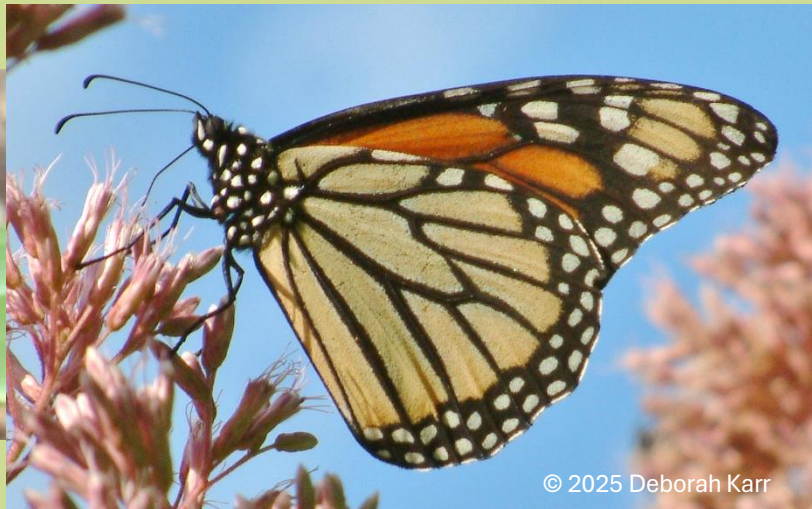
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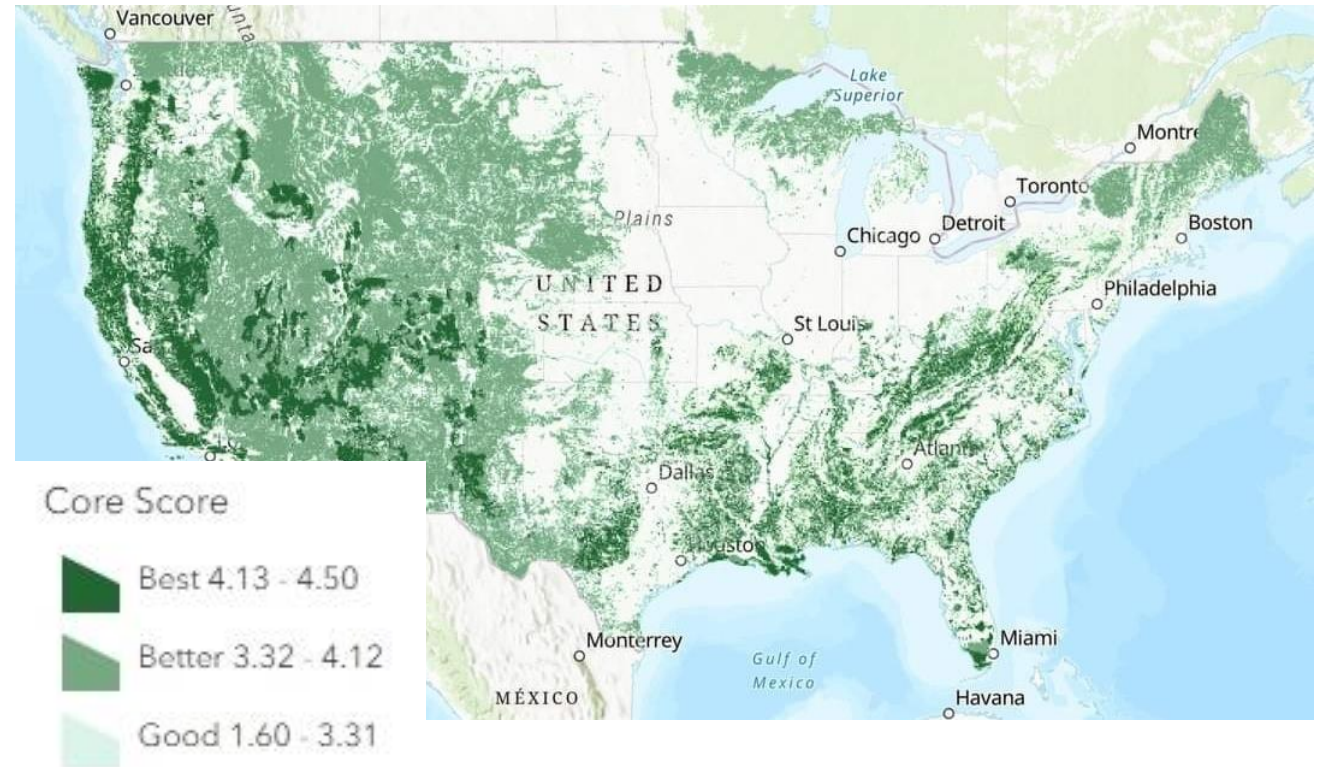
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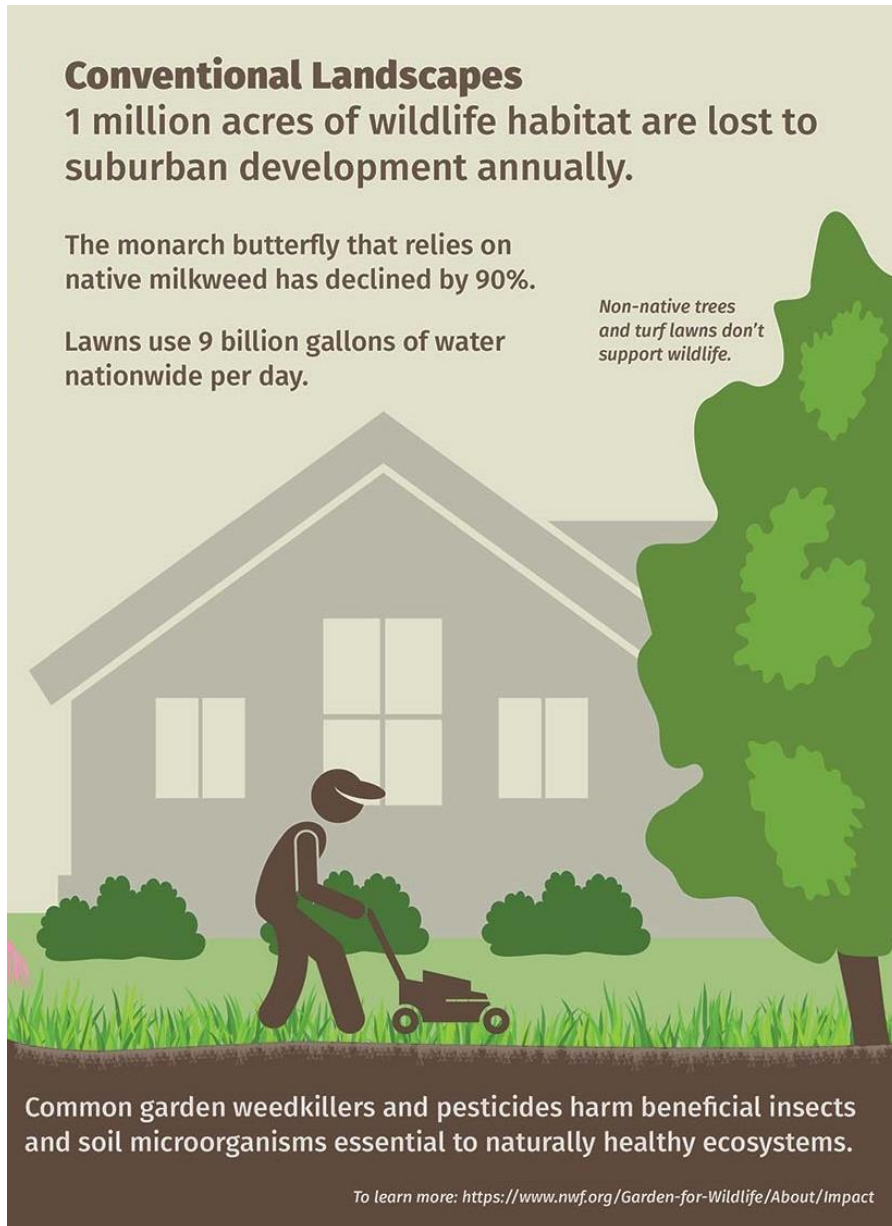
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There is almost no intact habitat left in the Midwest

- This map shows “intact habitat cores” in the US (2017), which are “minimally disturbed natural areas at least 100 acres in size and greater than 200 meters wide”
- Dark green areas indicate intact habitat and high biodiversity
- Much of the Midwest has almost *no remaining intact habitat*



<https://www.arcgis.com/home/item.html?id=od2f35395c3c43ecb7685df9be63dd84>



Conventional landscaping is costly and damaging to the environment

- Intensive use of fossil fuels, chemical fertilizers, pesticides, water, and labor
- Turfgrass does not support habitats
- **50-70% of invasive species and 82% of invasive woody plants** were introduced through horticulture trade ²

¹ [www.nwf.org/Garden for Wildlife/About/Impact](https://www.nwf.org/Garden-for-Wildlife/About/Impact)

² Theresa M. Culley and Tziporah H. Feldman, "The Role of Horticulture in Plant Invasions in the Midwestern United States," International Journal of Plant Sciences, May 2023, www.journals.uchicago.edu/doi/abs/10.1086/724662

Non-native invasive species threaten crops and native species

- Invasive species spread rapidly and outcompete native plants and crops
- **42 percent** of threatened or endangered native species are at risk because of invasive species
- Note: invasive plant species are *exclusively* non-native plants



Lesser celandine (*Ranunculus ficaria*), Gary Stolz, USFWS 2016

"Invasive Species," National Wildlife Federation, www.nwf.org/Educational-Resources/Wildlife-Guide/Threats-to-Wildlife/Invasive-Species

Common invasive species

- Autumn Olive
- Bouncing Bet
- Callery ("Bradford") Pear
- Chinese Silvergrass
- Dames Rocket
- Eurasian water-milfoil
- Flowering Rush
- Garlic Mustard
- Honeysuckle (Amur, Japanese, Morrow's and Tartarian)
- Japanese Barberry
- Japanese Knotweed
- Japanese Stiltgrass
- Multiflora Rose
- Oriental Bittersweet
- Porcelainberry
- Purple Loosestrife
- Reed Canary Grass
- Russian Olive
- Smooth Bromegrass
- Teasel
- Tree of Heaven
- Winged Burning Bush
- Wintercreeper (*Euonymus fortunei*)
- Yellow Flag Iris



Chinese silvergrass

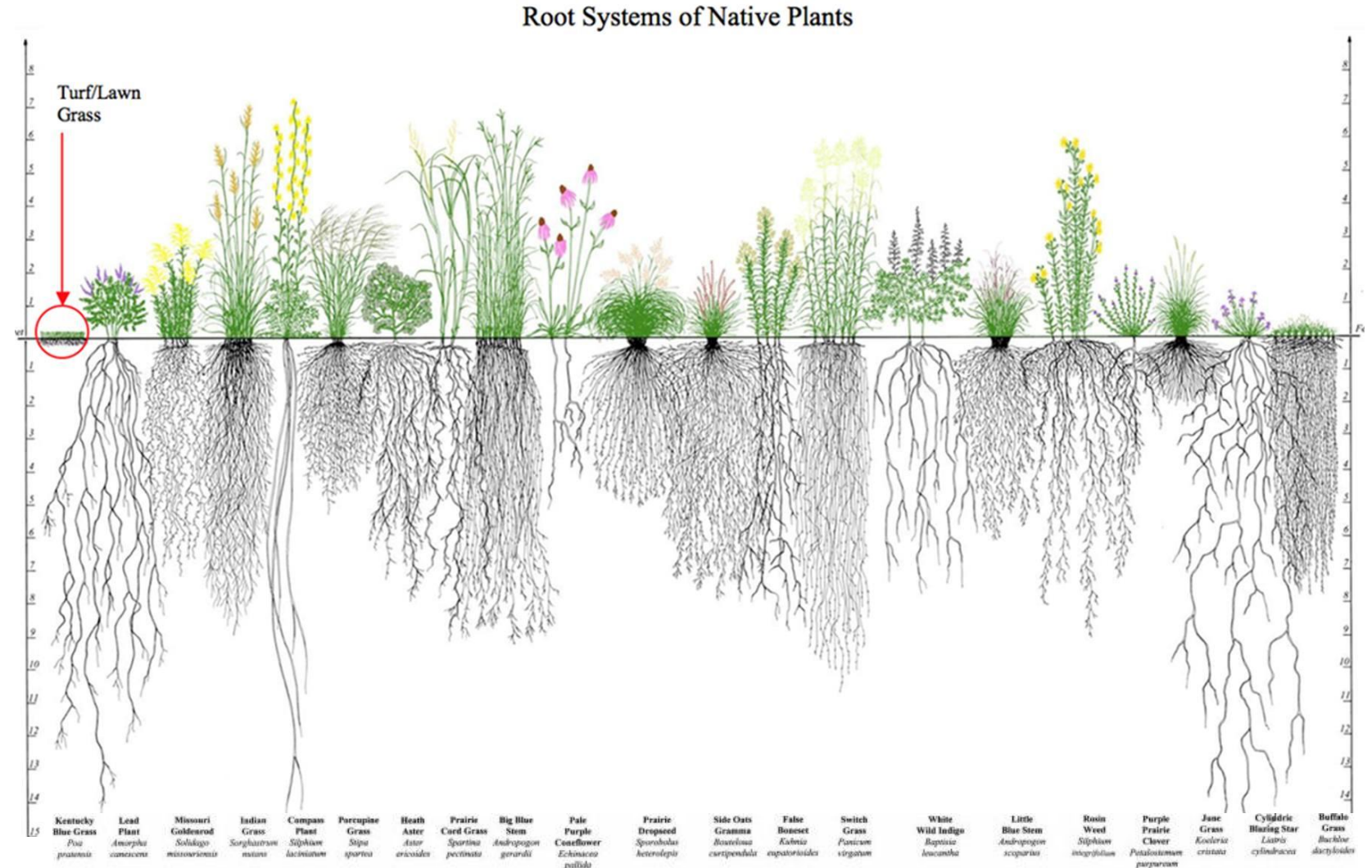
"OIPC Plant Assessment Results," Ohio Invasive Plants Council,
www.oipc.info/assessment-results.html

Benefits of native plants

- They feed native pollinators and birds
- Many grow in poor soil
- Many are drought resistant
- They require less watering, no mowing, no fertilizing
- They sequester large quantities of carbon
- They have much deeper root systems than turfgrass, absorb rains/stormwater runoff, control erosion, and reduce standing water for breeding mosquitoes



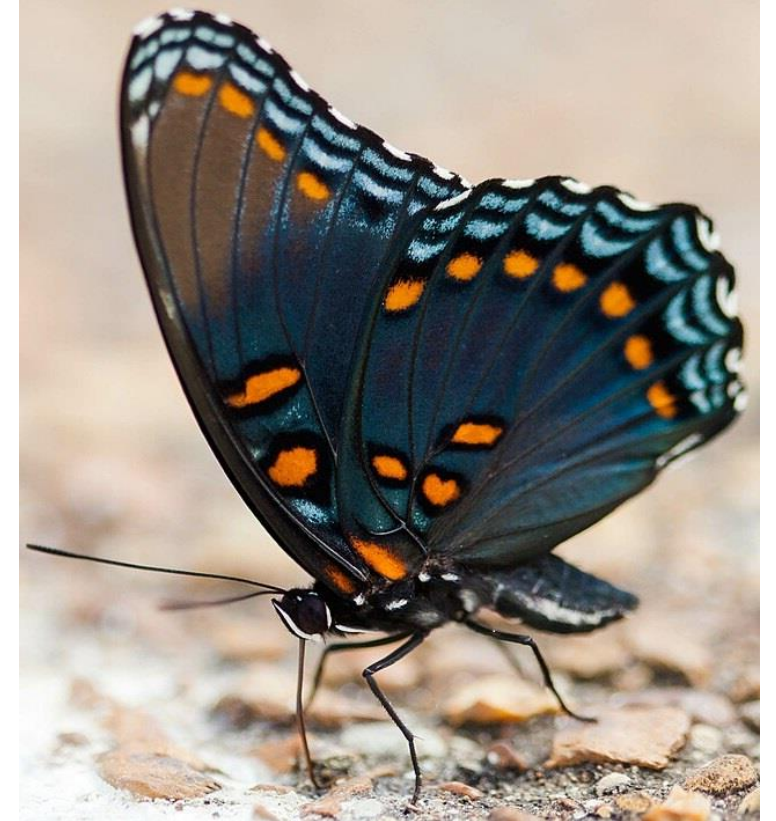
Turfgrass roots vs. native plant root systems



"Root Systems of Native Plants," Ohio Division of Wildlife, 2024 Wildlife Diversity Conference photos, Mar. 14, 2024, www.facebook.com/photo/?fbid=858114986348118&set=a.858037859689164

Managed Natural Landscapes can save local governments money

- Native prairie landscaping costs **56% less** to install than traditional landscaping—an **annual average savings of \$3,400 per acre**
- Native species also reduce costs by
 1. Absorbing water that would otherwise flow into sewers
 2. Decreasing levels of erosion
 3. Filtering harmful pollutants before they reach waterways



Landscaping with Native Plants: Quantification of the Benefits of Native Landscaping Current Knowledge, *supra* note 11.

Brendan Doughert & Dan Shaw, *Summary of Functional Benefits of Native Plants in Designed and Natural Landscapes* 3-4, <https://perma.cc/FK54-B7L7>

Managed Natural Landscapes mean more birds

Bird-friendly yards with native plants see almost **twice as many bird species**, on average, as conventionally landscaped yards



www.nwf.org/Native-Plant-Habitats/Impact/What-the-Science-Says

Natural Landscaping: **Myth** vs. Fact

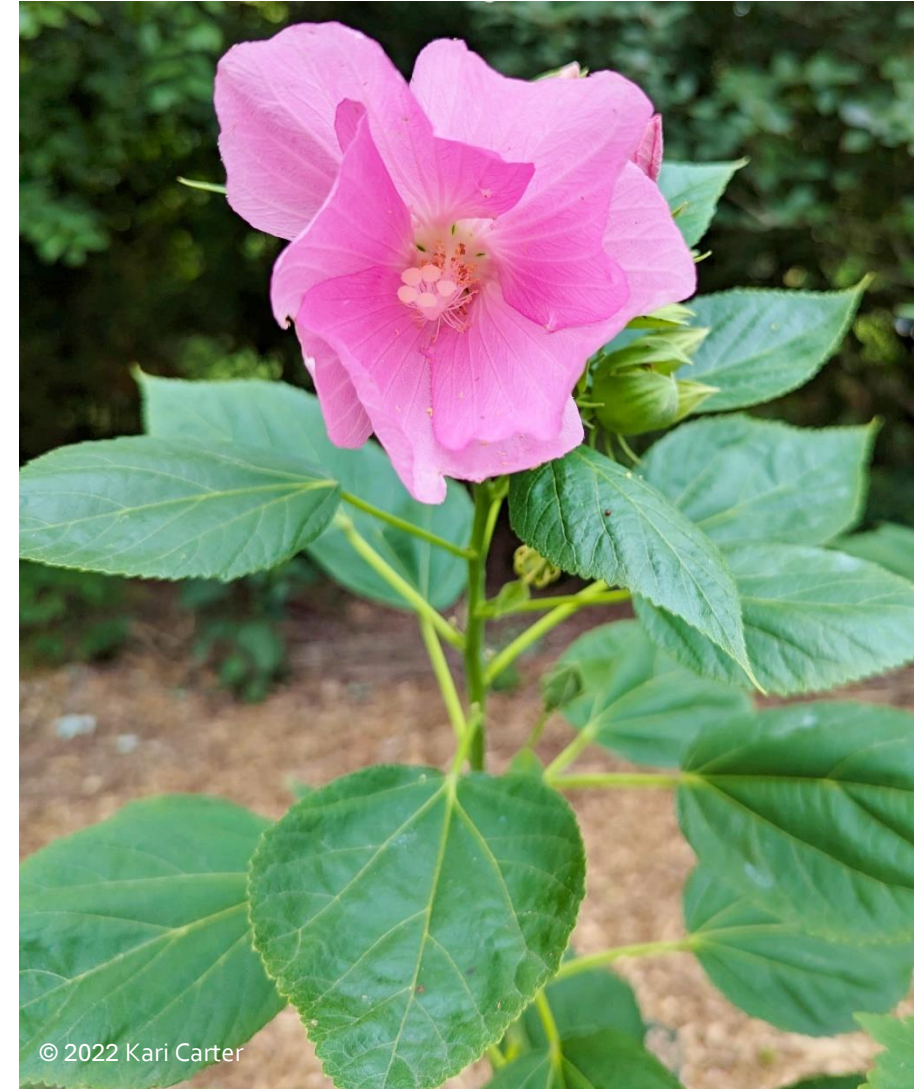


Myth: Natural landscapes attract vermin

Facts:

- Natural landscapes cannot sustain a population of black or Norway rats
- These nonnative rats do not eat the seeds of our native grasses and flowers
- They are attracted to human-produced food (corn, grain, pet foods, food scraps)

Penn State Extension; “Neighborly Natural Landscaping in Residential Areas,” Aug. 5, 2024, <https://extension.psu.edu/neighborly-natural-landscaping-in-residential-areas>



- “Unsecured garbage is the main attraction for most pests such as rodents and raccoons. Native landscaping is not.” ¹
- Native plants attract animals that eat insect pests (swallows, purple martins, dragonflies, frogs, salamanders, hummingbirds)
- Canada geese, considered pests, prefer short turf grass over taller native grasses ¹



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¹ Environmental Protection Agency; “Landscaping with Native Plants,”
<https://archive.epa.gov/greenacres/web/html/factsht.html#:~:text=is%20highly%20allergenic.,Will%20Native%20Plants%20Attract%20Pests%3F,Native%20landscaping%20is%20not.>

Myth: Natural landscapes are breeding grounds for mosquitoes

Facts:

- Mosquitoes need standing water to breed
- **“A turf lawn, with its shallow root system, is more likely to be unable to soak up all the water from a heavy rain...than a natural landscape with its deeper roots.”**¹

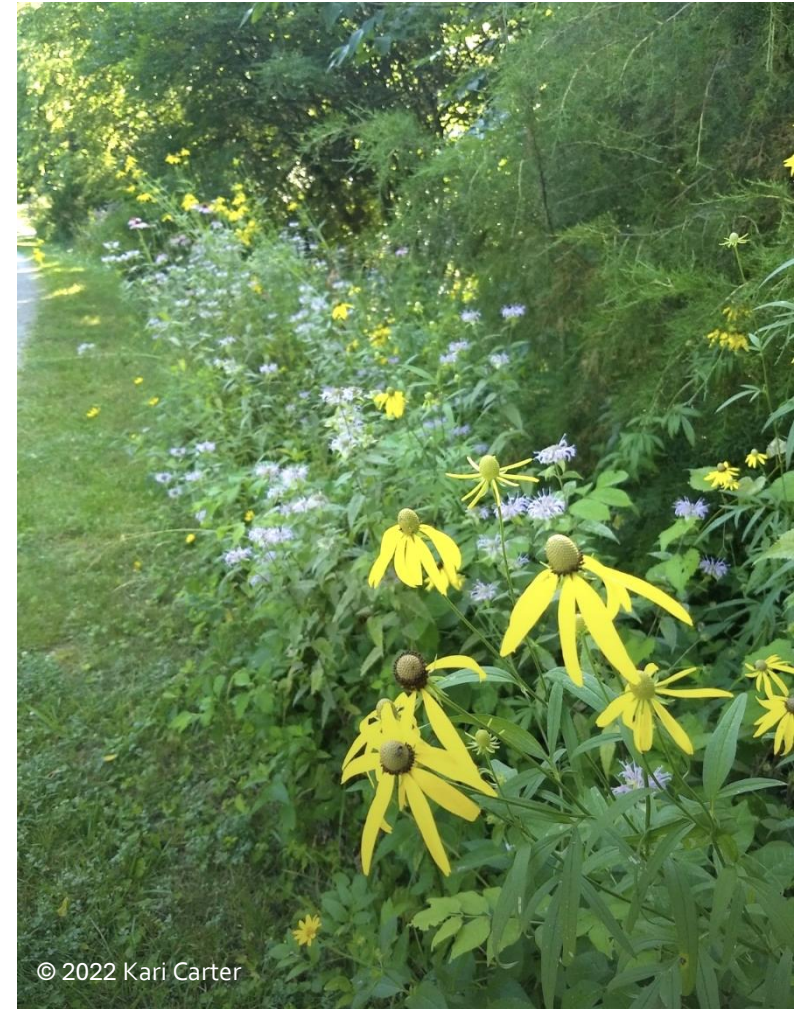


¹ Penn State Extension; “Neighborly Natural Landscaping in Residential Areas,”
Aug. 5, 2024, <https://extension.psu.edu/neighborly-natural-landscaping-in-residential-areas>

Myth: Natural landscapes lower property values because they are “messy.”

Facts: “Real estate with distinctive, well-done natural landscaping actually possesses a **marketing edge** and **has a positive effect on property values**. Developers cite the natural landscapes retained in their developments as an asset and **charge more for naturally landscaped homes** than for homes in areas with traditional landscaping. High-quality natural features like woodland corridors can preserve and strengthen a community's unique characteristics.”

“Neighborly Natural Landscaping in Residential Areas,” Penn State Extension, <https://extension.psu.edu/neighborly-natural-landscaping-in-residential-areas>



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Natural Landscaping with reduced turfgrass is a growing movement

“Neighborhood organizations, environmental restoration professionals, landscape architects, and nurseries are **turning more often to natural landscaping for aesthetic and economic reasons**, as well as for environmental benefits like reduced stormwater runoff and improved wildlife habitat.”



“Neighborly Natural Landscaping in Residential Areas,” Penn State Extension,
<https://extension.psu.edu/neighborly-natural-landscaping-in-residential-areas>

People are buying plants for wildlife

- **1 in 3 U.S. adults (34%) purchased plants to help wildlife in 2021—an increase of 26% in 1 year**
- **1 in 4 people (25%) buy native plants**
- **People planning to transform portions of lawn to native landscape went from 9% in 2019 to 19% in 2021**

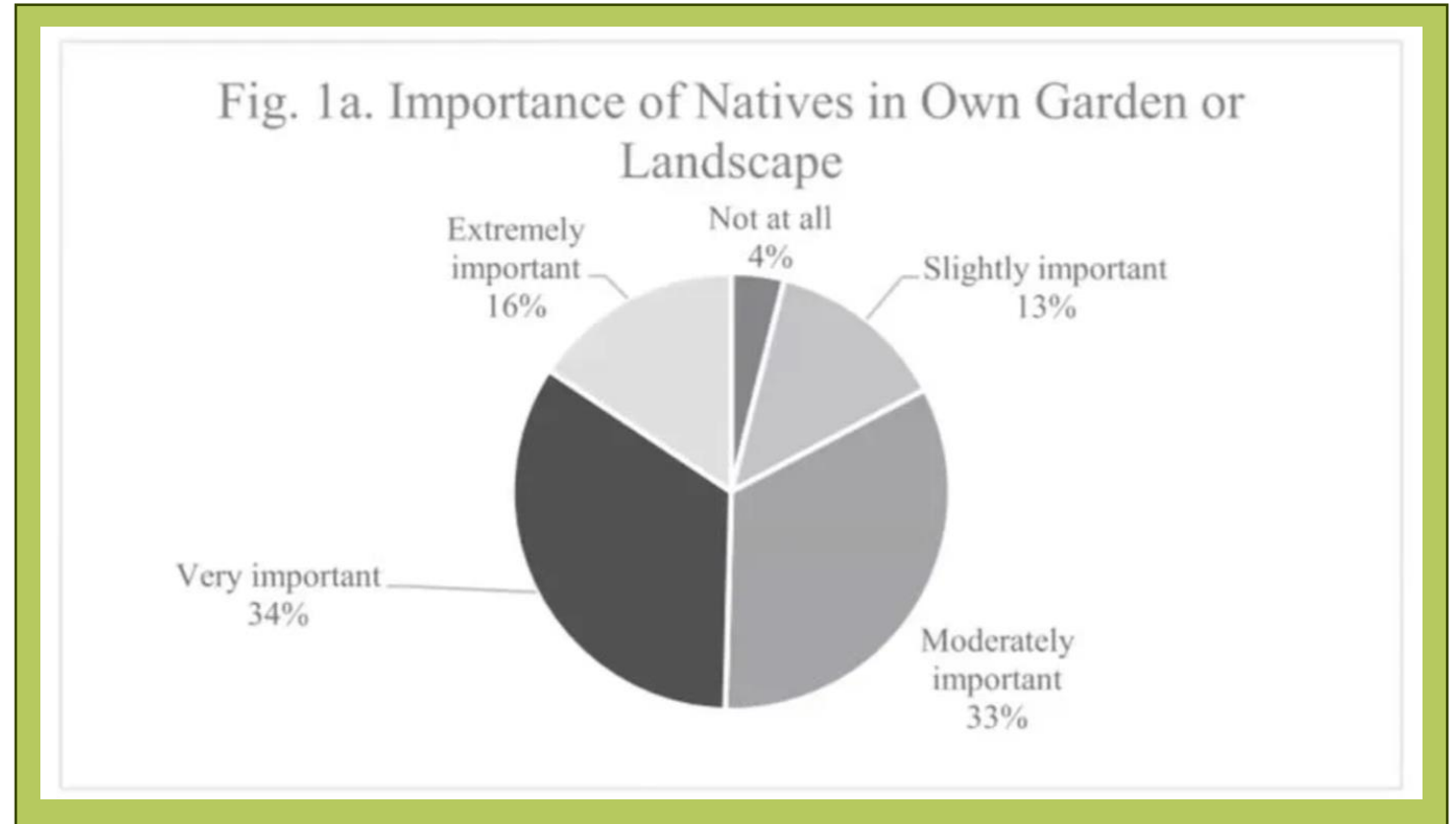
The National Gardening Survey collected responses from 2,601 U.S. adults and has a margin of error of ± 2 percentage points.

www.nwf.org/Latest-News/Press-Releases/2022/5-02-22-Consumer-Gardening-Report



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Growing native plants is important to 83-96% of U.S. consumers



"U.S. consumers' perceived importance of incorporating native plants into their own gardens and landscapes from an online survey" (n_2,066). Rihn et al. "Greater Appeal of Native Plants for Environmentally Conscious Consumers," *Journal of Environmental Horticulture*, 2022.

Homegrown National Park™ is a national movement to restore biodiversity

Conceived by entomologist Doug Tallamy, **Homegrown National Park™** is an idea that has inspired many homeowners who want to help restore ecosystems.



"Our National Parks, no matter how grand in scale are too small and separated from one another to preserve species to the levels needed. Thus, the concept for Homegrown National Park™, a bottom-up call-to-action to regenerate habitat where we live and work,... extending national parks to our yards and communities." (Doug Tallamy)

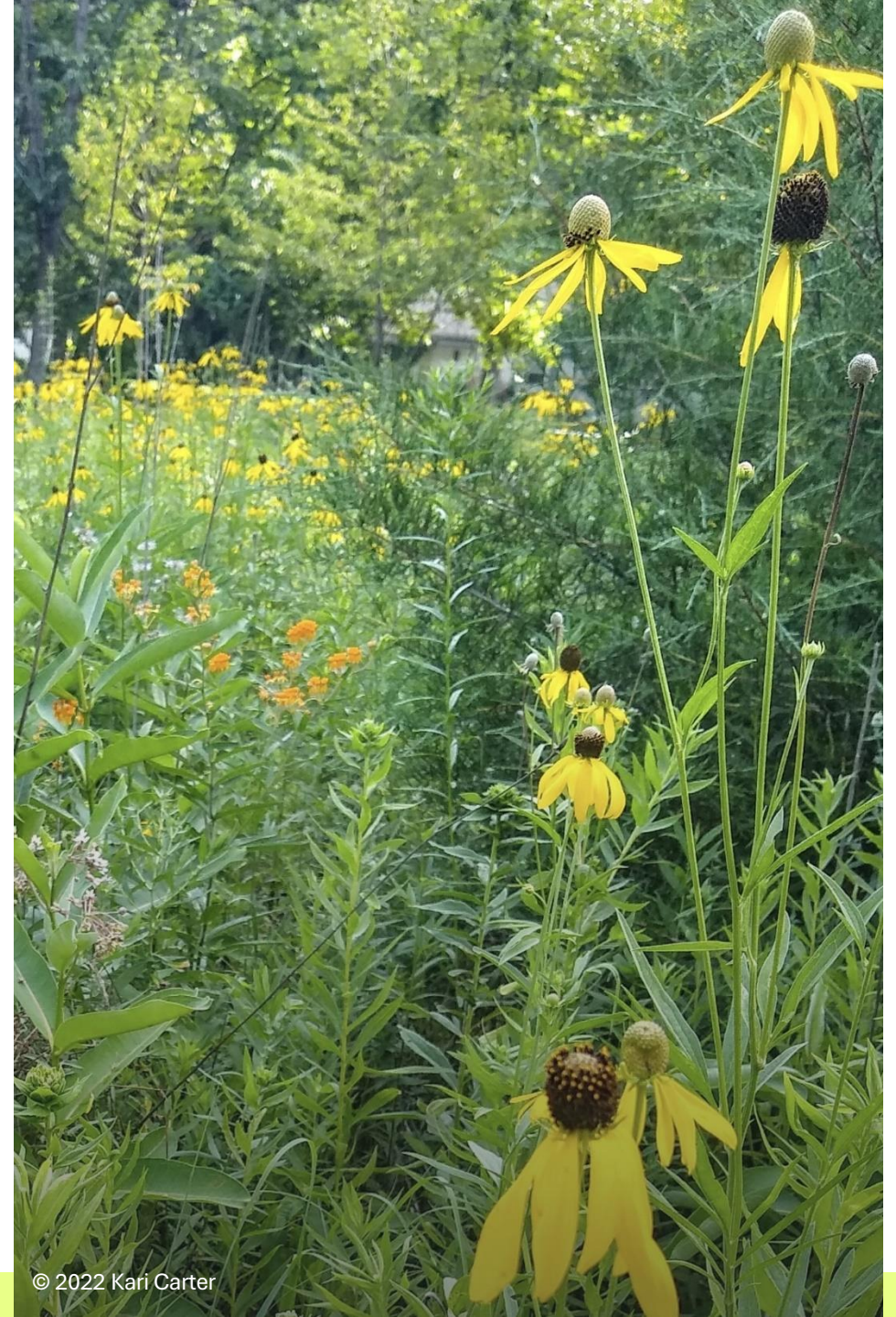
Regenerating habitat on privately owned property will provide **ecological networks** to connect habitat fragments with one another, sustainably enlarging populations of plants and animals.

Native garden inspirations





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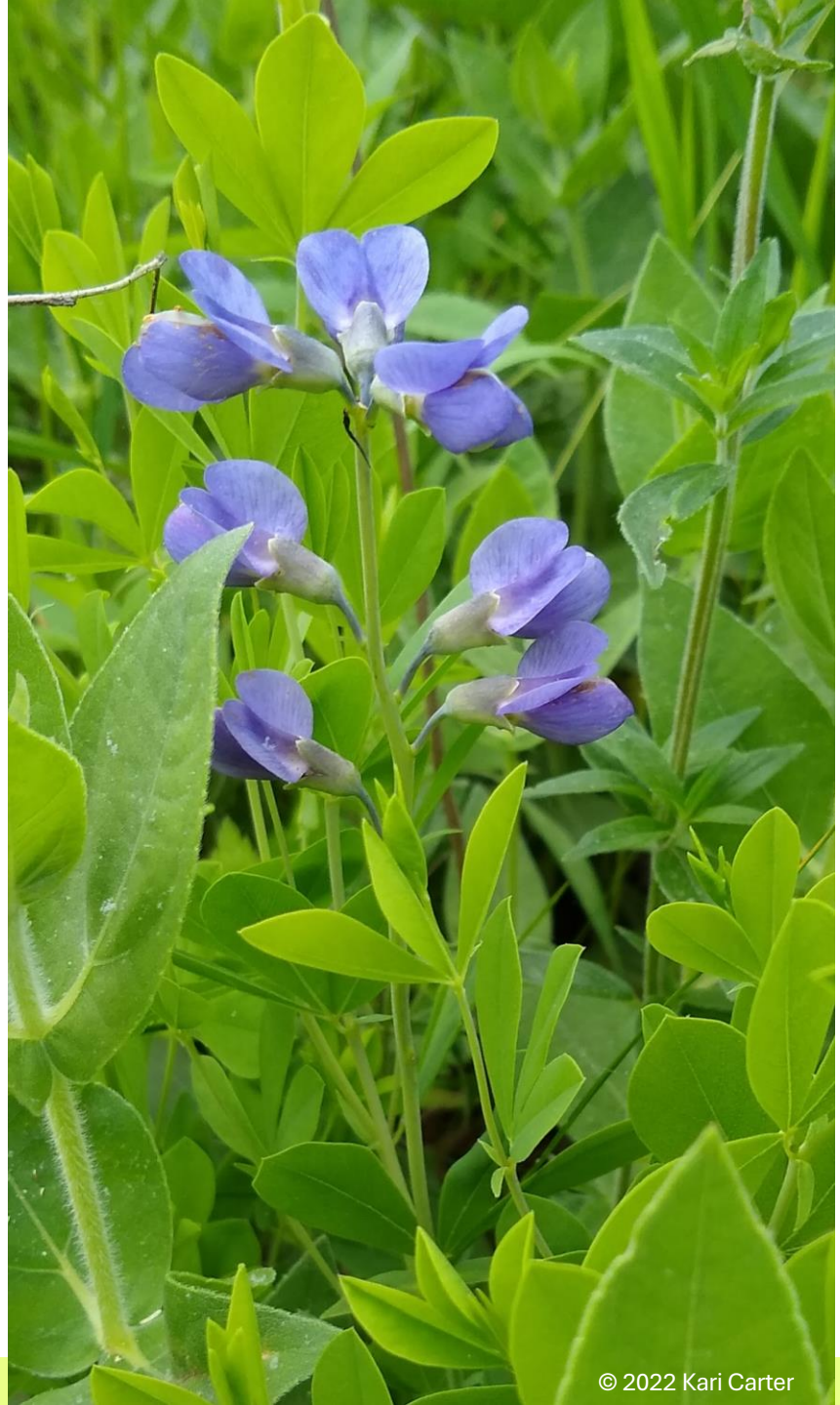
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Thank you!

We hope you will consider Managed Natural Landscapes for your property ordinance, allowing for natural landscapes while providing guidance for making them attractive.

