



Environmental Service Learning

Spring 2024



Center for Earth and Environmental Science



DEPARTMENT OF EARTH SCIENCES
SCHOOL OF SCIENCE

What is CEES?

CEES is an applied research center housed within the School of Science and Department of Earth Sciences.

CEES has three core missions: research, education outreach, and environmental stewardship.

water quality

soil health

RESEARCH

EDUCATION

applied research

The research done at CEES is applied (i.e. it has practical application - it is not strictly theoretical) and focuses on water quality issues, soils, and environmental restoration.

Education outreach involves bringing STEM activities/ environmental education programs (at no charge) to middle school and high school students using the Center's mobile STEM lab. The Center also does outreach directed towards the general public at fairs and festivals and other events.

environmental restoration

ENVIRONMENTAL STEWARDSHIP

professional development programs for teachers

CEES is a grant-funded center. In other words, the main work of the Center is made possible predominantly through grants, donations, and other charitable gifts. University funding is minimal.

environmental science themes

generally
^
CEES is hiring!

Environmental stewardship occurs through the Center's Service Learning program.

community service & education

Environmental Service Learning:

- Providing opportunities for *environmental stewardship* and *experiential learning*.
- Engaging in *dialog* about *environmental issues*.
- Introducing regional *natural areas*.
- Introducing *groups that maintain* these areas.
- Introducing issues to stimulate *changes in behavior* as well as *critical thinking* about **humanity's role** as an **agent of change**.
- *Restoring* and *improving* natural areas.
- *Mitigating* and *preventing* pollution.
- *Building* a sense of *community*.



CEES's Service Learning program provides opportunities for all of the above

Education & Community Service

Aside from the obvious faculty requirement or extra-credit bribe?



IMPROVE WATER QUALITY

. . . . and some projects also result in improved water quality – both locally and regionally!

Service Learning Projects



Spring 2024

Spring 2024 stewardship will focus on:

community science

invasive species removal

environmental clean up

Bird Watching for Community Science

The Great Backyard Bird Count

Purpose

GBBC (initiated in 1998) is a long term global project that provides a snapshot of bird diversity and abundance in mid February.

Community science projects increase “eyes on the ground” for data observation.

People of all skill levels can take part.

Birding is often the “gateway drug” to an appreciation of the diversity of the natural world – and – participation in community science projects.

Birds are, metaphorically speaking, the canaries in the coal mine for many environmental issues.

This is because birds are large, relatively obvious, and therefore more easily studied.

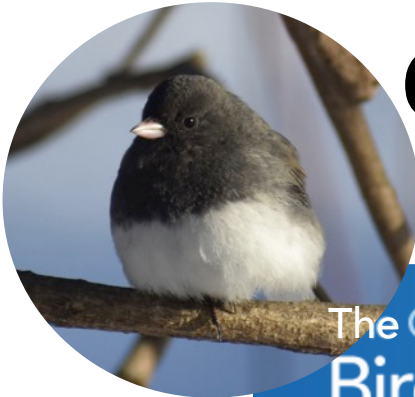


Charismatic megafauna

Birds hold a middle position in most food webs: they feed on insects, fruits, and grains – lower level components of food webs.

Their dependence on insects to feed their young during the breeding season is particularly important.

Environmental impacts affecting these lower-level components may be more readily observed/assessed through their impacts on birds.



Citizen Science: GBBC

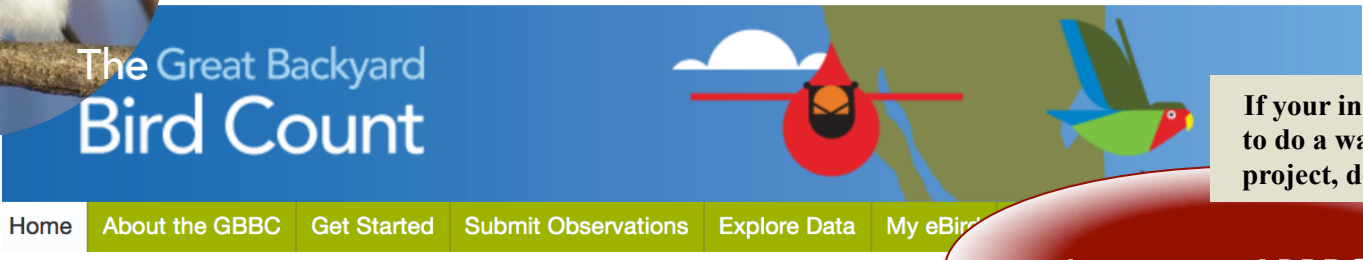


LOCATION: **Holiday Park Nature Center**

Indoors!



Powered by **eBird**



If your instructor wants you to do a water-quality related project, do not select GBBC.

Instructor APPROVAL

GBBC is always President's Day weekend

2024 Great Backyard Bird Count is February 16-19

Bird watchers of all ages count birds to create a real-time snapshot of where birds are.

Count birds anytime, anywhere, with eBird »



No birding skills needed - we train you for Indiana winter bird ID!



Project 1 & 2

Project 3 & 4

February 16 (Friday)

February 17 (Saturday)

There is a morning and afternoon project each day

morning project is 9:30 AM – 12:30 PM
afternoon project is 1:00 PM – 4:00 PM

There is no back-up date: we do this project rain or shine.



Citizen Science: GBBC

LOCATION: [Holliday Park Nature Center](#)

**Instructor APPROVAL
needed**



Powered by 



Home About the Count Get Started Submit



Friday Projects

Project 1

February 16 (morning)

9:30 AM – 12:30 PM

Project 2

February 16 (afternoon)

1:00 PM – 4:00 PM



Just to reiterate the date/time of each event

Back-up Date: **NA**

Citizen Science: GBBC

We will use the wildlife observation room at the Holiday Park Nature Center.

Instructor APPROVAL needed



Powered by eBird



Saturday Projects

Project 3

February 17 (morning)

9:30 AM – 12:30 PM

Project 4

February 17 (afternoon)

1:00 PM – 4:00 PM



Do you have field glasses or a 35mm DSLR camera?

Bring them!

Back-up Date: **NA**

Invasive Species Removal

**Bush Honeysuckle –
it's everywhere!**

Invasive plants often have far-reaching impacts on the environments in which they become established.

Bush Honeysuckle has characteristics that make it particularly problematic due to the effects the shrub has on infiltration and water quality.

Infiltration is the movement of water deeper into the soil.



You will learn to identify it

. . . . loathe it

. . . . and celebrate its removal!

Invasive Species Removal

Purpose

Removing invasive species helps address (remediate) the various negative impacts caused by the presence of the invasive species in the environment.

improve habitat

These are just a few of the negative impacts invasive species can have.

invasives replace native species

invasives decrease biodiversity

invasives may not be a suitable food resource for insect herbivores

improve water quality

honeysuckle promotes sediment loading of waterways



All this green shrubbery is honeysuckle

See *Why we do these projects – invasives & trash removal* for an explanation.

The first set of invasive removal projects will be on the north side.



Holiday Park

LOCATION: north side of Indianapolis near 64th St.



Invasive Species Removal



Honeysuckle leaves out very early!

Project 5

March 29 (Friday)

10:00 AM - 1:00 PM

Project 6

March 30 (Saturday)

10:00 AM - 1:00 PM

Back-up Date: March 31 (Sunday)

10:00 AM - 1:00 PM

Holiday park is a location with a lot of topography. We will be “off trail” and it can get rather muddy at this time of year.



Southwestway Park

3rd largest park in Indianapolis!



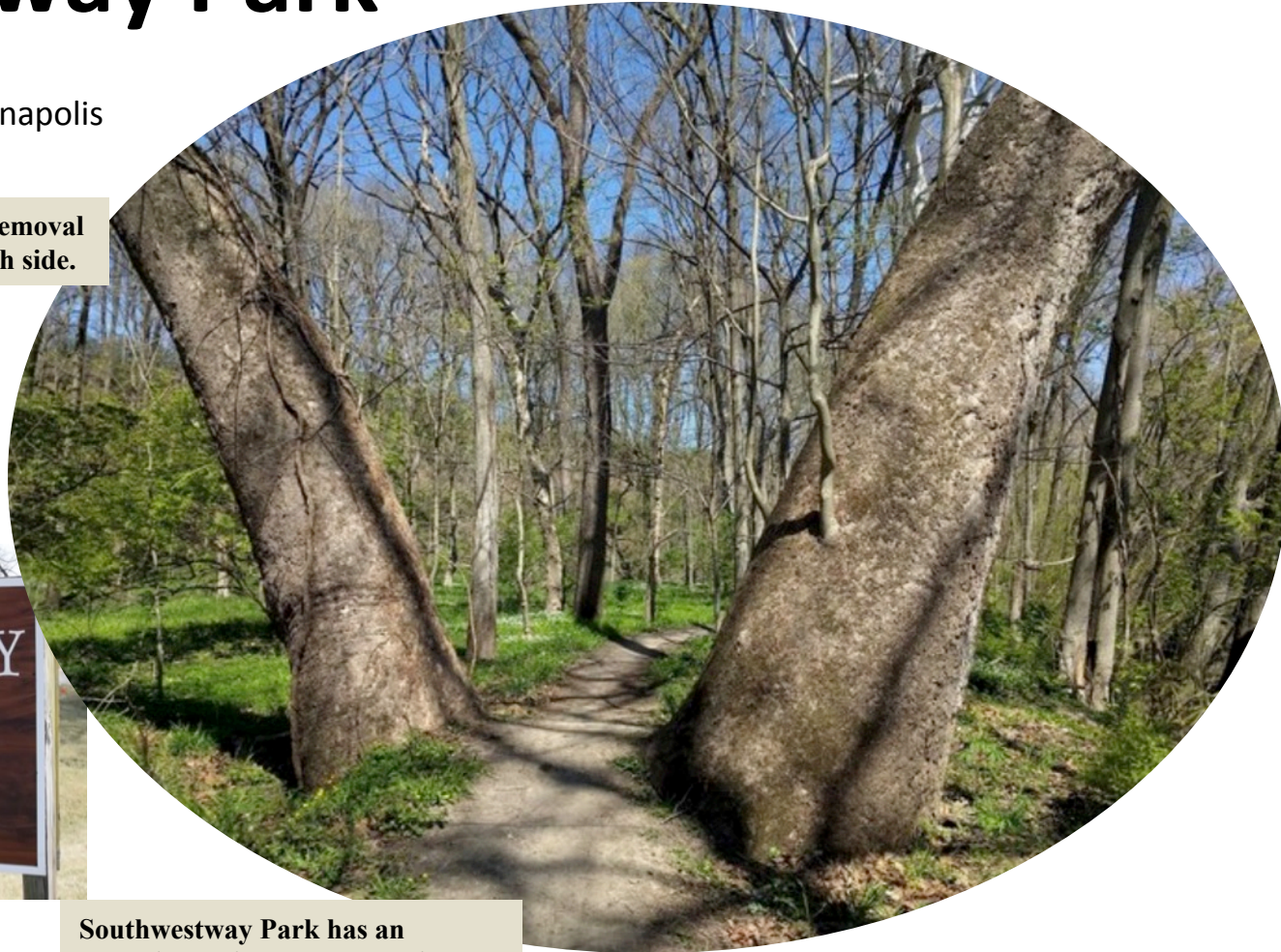
LOCATION: south side of Indianapolis
8400 Mann Rd.

The second set of invasive removal projects will be on the south side.

Project 7

April 5 (Friday)

10:00 AM - 1:00 PM



Project 8

April 6 (Saturday)

10:00 AM - 1:00 PM

Southwestway Park has an extensive trail system. We will be working in the area of Mann Hill.

Back-up Date:

April 7 (Sunday)

10:00 AM - 1:00 PM



ARBOR Trash Clean-up

The White River floods frequently.

With each flood event, trash is deposited in the floodplain.

We'll remove trash, thereby disrupting the land-to-river-to-ocean pathway it follows.

Purpose

return recyclables to the recycling stream

interrupt the land-to-ocean pathway of plastics

improve habitat

improve water quality

Collected trash will be sorted as recyclable or non-recyclable, and disposed of accordingly.

This project is convenient to campus: the ARBOR is on the west side of campus – it's the forest located along the eastern bank of the White River.

Located between New York Street and 10th Street bridges.



The ARBOR is a riparian forest on the east bank of the White River. The trees (initially just tiny twigs and small saplings) were planted during service learning events that took place in the fall of 2000.

“Riparian” simply means that the forest is located along a river or stream.



Lilly ARBOR



All sorts of odd trash is found at the ARBOR.



LOCATION: Lilly ARBOR – Porto Alegre St. between 10th Street and New York Street bridges

Project 9

Saturday, April 20

10:00 AM – 1:00 PM



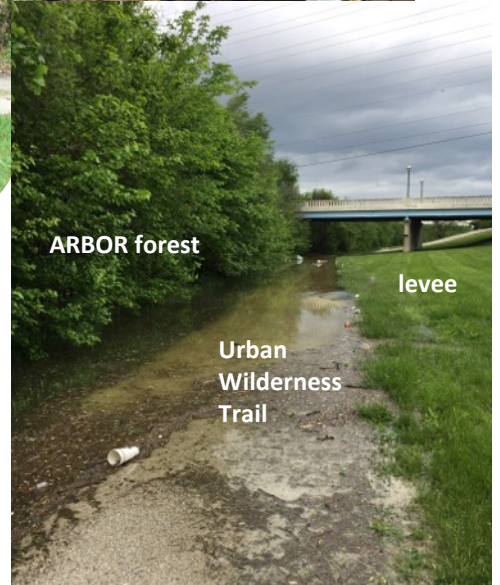
We will also remove wild garlic mustard, an invasive herb.



Backup Date:

April 21 (Sunday)

10:00 AM – 1:00 PM



Flooding sometimes reaches the base of the levee.



Temperature and precipitation will influence the growth rate of garlic mustard.

flowering stage

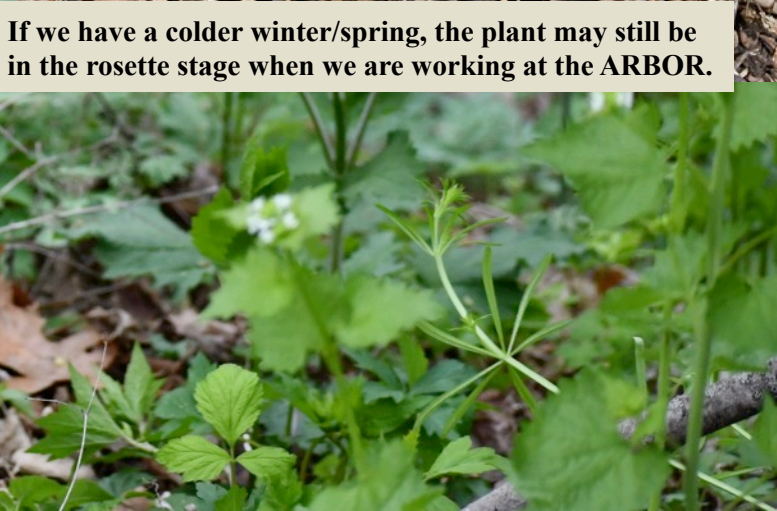


If we have a warm winter/spring, the plant may be in flower by mid April.

rosette stage



If we have a colder winter/spring, the plant may still be in the rosette stage when we are working at the ARBOR.



Be mindful of your surroundings



Nature is not clickable

Misapplication of excessive attention to electronic devices can result in miscalculations and misfortunate mistakes that – with mischievous misadventure – compound miserable mishaps and foment misgivings as relates to missed opportunities to enjoy the miseenscene and other interesting miscellany in the natural world.

In other words, if you are constantly looking at your smart phone, you're going to miss a lot
. . . . just sayin'.

Please: don't text and nature

. . . . and no step on snek

Any snakes we might see will be more along the lines of a *judgmental shoelace*, rather than a *nope rope* or *danger noodle*.





Questions ?

Contact:

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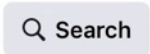
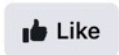
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Indianapolis**

897 likes • 955 followers



Service Learning photos!

Interesting environmental science,
ecology & geology themed posts.



Twitter:
@CEES_IUPUI



MUCH LEARNING

VERY SERVICE

SO WATER

The Doge is no longer considered funny – alas!

‘Tis not a vibe.

Its humor has ceased to be.

This is an ex-meme.

SUCH CLEAN



AMAZE

WOW