What is a garden pest?

making peace with wildlife

Brockville Library Drop-in series
on Ecological Gardening
Feb. 10, 2026
Bev Wagar

Img: Jim Thompson CC BY-NC
via Inaturalist

Upcoming events

~~Getting started with native plants~~

~~How to lose the lawn: Making a garden from scratch~~

NOW! Feb. 10: What is a garden 'pest'? Making peace with wildlife

Feb. 24: Invasive species-- Dump the thugs you used to love

March 10: Keep it close, slow it down: water management for gardeners

March 24: Read your way to a green thumb: best books for ecological gardening

April 7: Plant ID minus the app: getting up close and personal with plants

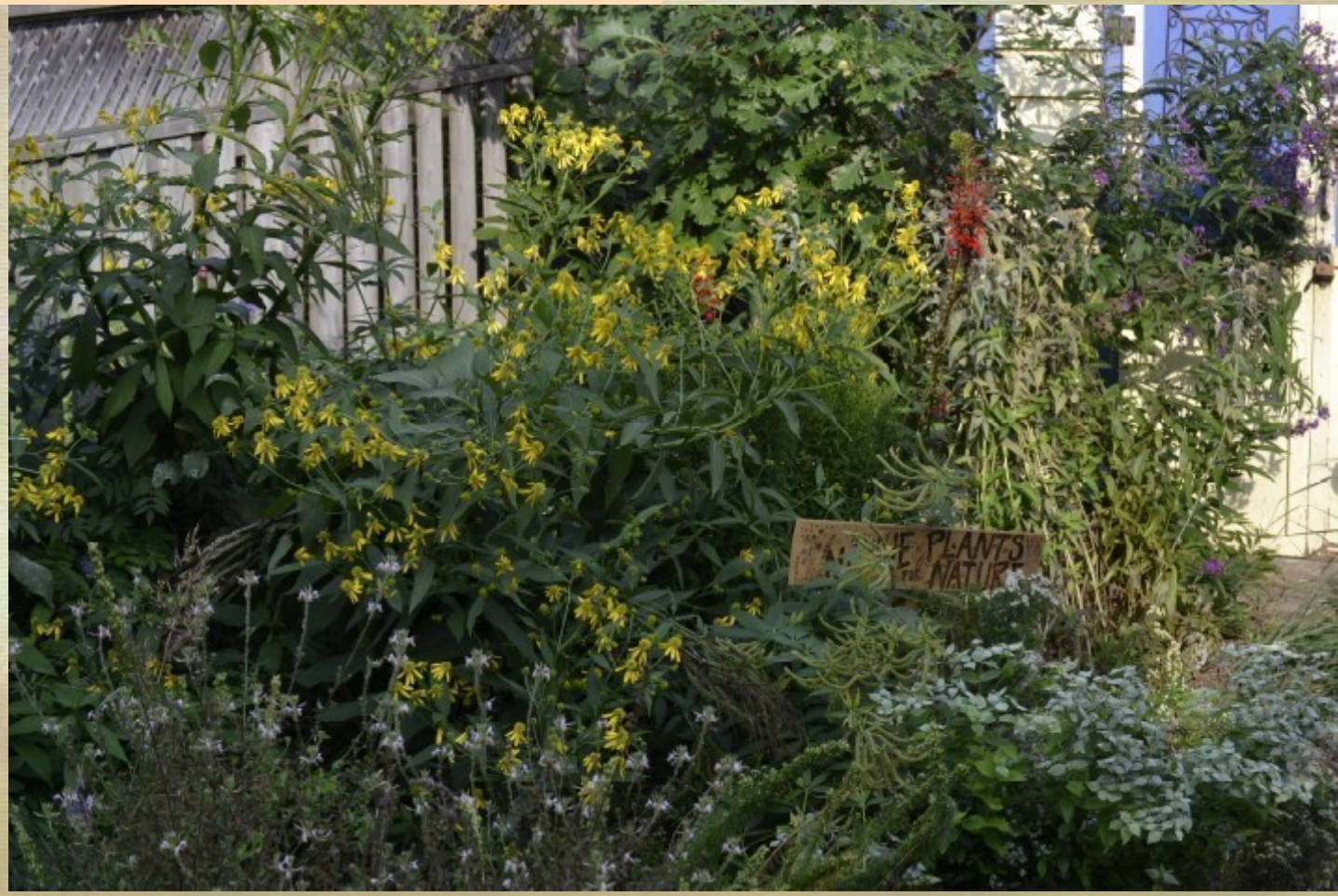
April 21: Designing with trees and shrubs: the REAL low maintenance garden

May 5: Reliable online info: sourcing and researching for gardeners

May 19: Getting over the "pretty flowers": designing for ecological function

What is ecological gardening?

- prioritizes the environmental consequences of plant choices and other activities
- serves the needs of all creatures, not just humans
- respects nature's interconnectedness
- embraces bio-diversity
- is beautiful in new and often challenging ways



Master Gardeners of Ontario (MGoI)

WHAT WE DO

- give presentations, workshops, courses, webinars, and guided tours
- provide written gardening information via articles, blogs, social media
- hold public information sessions & advice clinics at malls, fairs, farmers' markets
- offer advice to individuals through telephone, email, help lines and social media

- **a volunteer organization**
- **certified horticultural experts**
- **providing in-depth, science-based, sustainable gardening information to the public**

www.mgoi.ca/support

Choose “Group 1000 Islands”

"Pest" for humans
Part of dynamic web of life for everyone else

- Global insect decline / extinctions
- Food webs/cycles
- Pesticides
- Life-cycle case study: Japanese beetles
- Response: "Cultural practices"
- ~~Rodents~~
- ~~Mammals~~

© Chris Helzer, The Nature Conservancy

"These sunflowers aren't being 'attacked' by insect pests, they are providing critical resources to insects that play vital roles in ecosystems. This is what's supposed to happen. Plants that aren't 'damaged' by insects are not providing any value to their surroundings." Chris Helzer

Insects are in trouble

Insects in global decline

Nearly half the species in rapid decline

Including a third threatened with extinction

Extinction rate*

Insects		41%	10%
Trichoptera	*caddisflies*		
Lepidoptera	*butterflies*		
Coleoptera	*ladybirds, beetles...*		
Orthoptera	*grasshoppers...*		
Hymenoptera	*bees, ants.*		15%
Ephemeroptera	*mayflies*		
Odonata	*dragonfly*		
Plecoptera	*stonefly*		19%
Diptera	*flies, mosquitoes...*		
Hemiptera	*cicadas, aphids..*		

0 20 40 60 80 100

... two times more than vertebrates

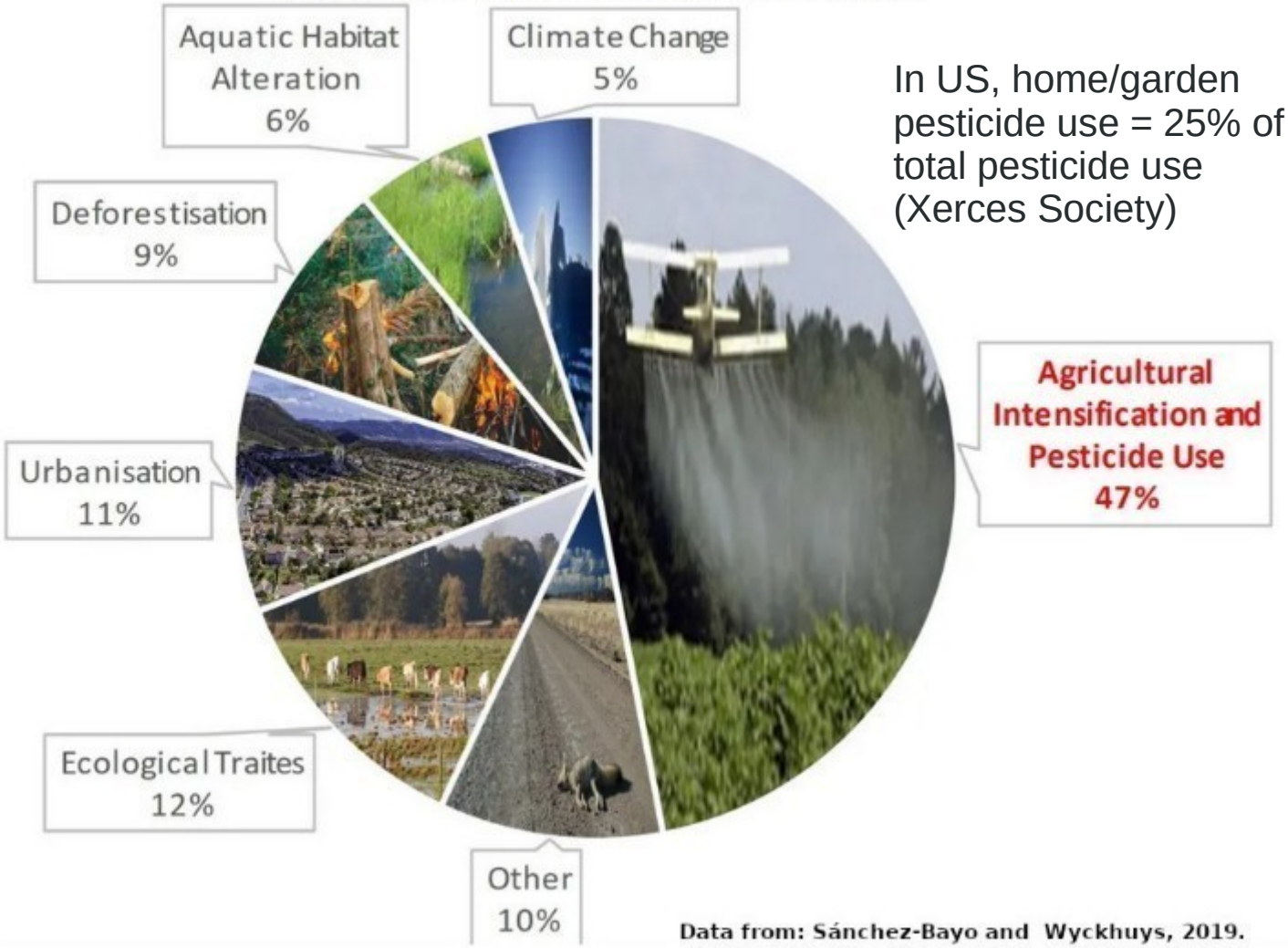
Vertebrates	22%	
Other mammals		
Birds		
Amphibians		
Reptiles		
Land mammals		1.8%

0 20 40 60 80 100

Source: Biological Conservation 232

**% of species not observed for 50 years*

© AFP



In US, home/garden pesticide use = 25% of total pesticide use (Xerces Society)

If insects disappear...

- most flowering plants would go extinct
- that would change the physical structure and energy flow of most terrestrial habitats
- which would cause the rapid collapse of the food webs that support amphibians, reptiles, birds, and mammals
- the biosphere would rot due to the loss of insect decomposers
- humans would not survive

"Life as we know it depends on insects"
-E.O. Wilson "The Little Things that Run the World" 1987

Photo credit: Dorothy Gallagher (Flickr) Plant Bug - Ilnacora stalii-Backus Woods, Ontario

If insects disappear...

350+

species of wild bee in Ontario, belonging to 6 families and 37 genera!

SPECIES

1 / 10

insect species face extinction according to a UN global biodiversity assessment

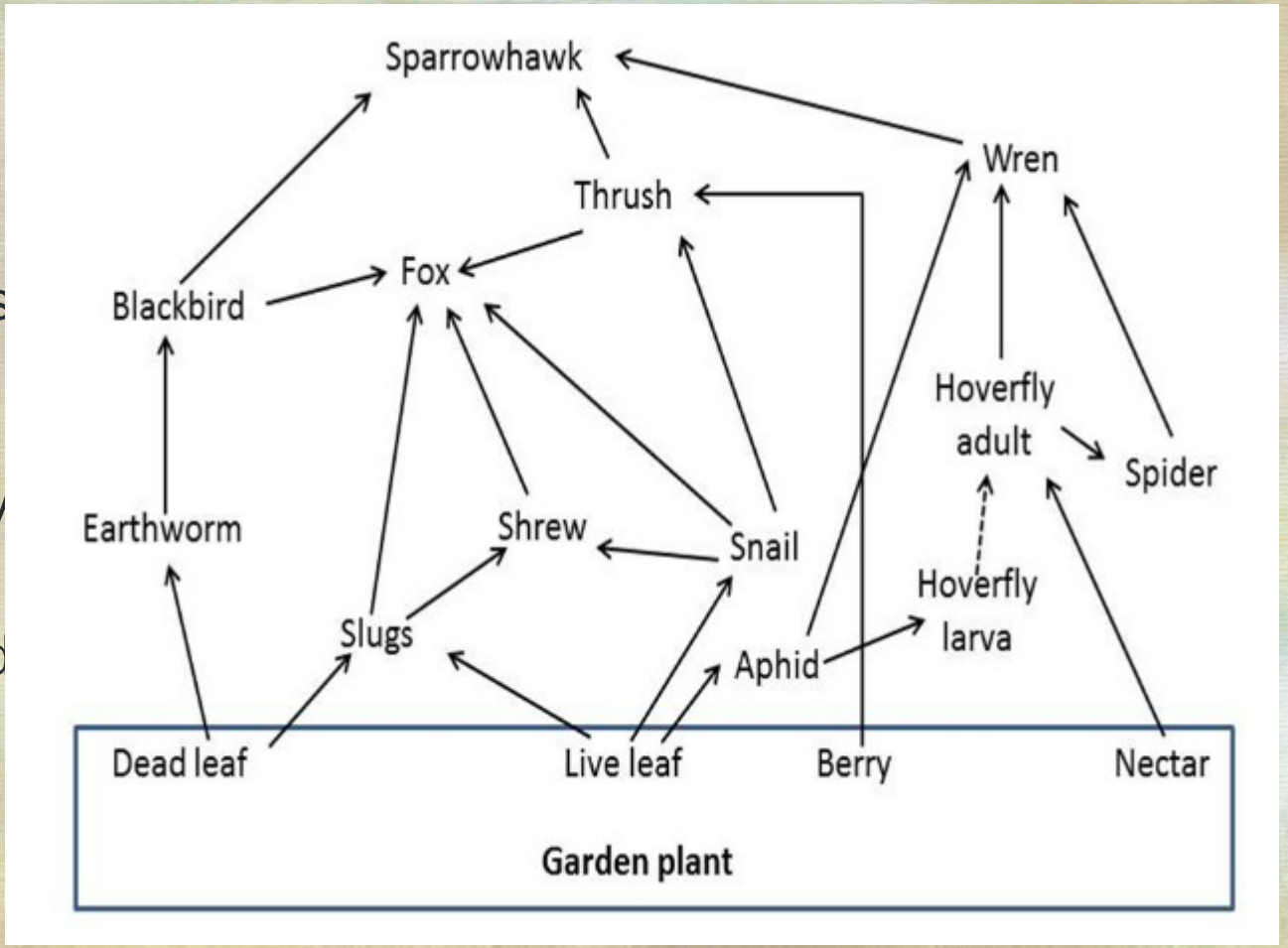
FACE EXTINCTION

Pesticides

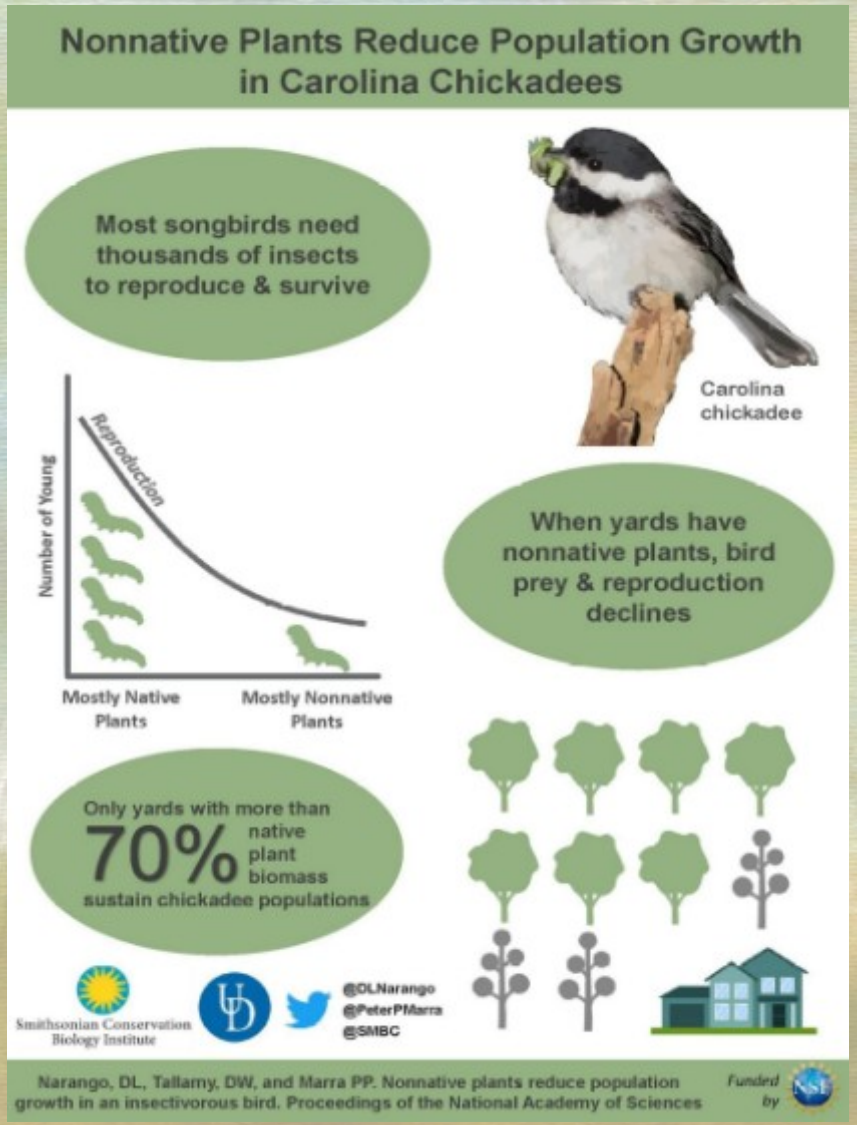
- Seldom solve the problem
- There are better ways (cultural practices)
- <2% of insects are considered ‘pests’ so why kill them all?
- Plant ‘damage’ = functioning ecosystem
- Don’t stay put
- Pesticide-free is good for bees
- Cause ecosystem rebounds

Food Webs

- Sudden decline in one ‘pes
  = decline in its predators
- Lack of predators causes survivors to multiply rapidly
- Original ‘problem’ returns
- Time lag to return/ rebound of predators
- If the sprays don’t ‘fix’ your problem, why keep using them?



Source: Wildlife Gardening Forum
https://wlgf.org/garden-science/garden-ecology/



6,000 to 9,000 caterpillars are required to make one clutch of chickadees.

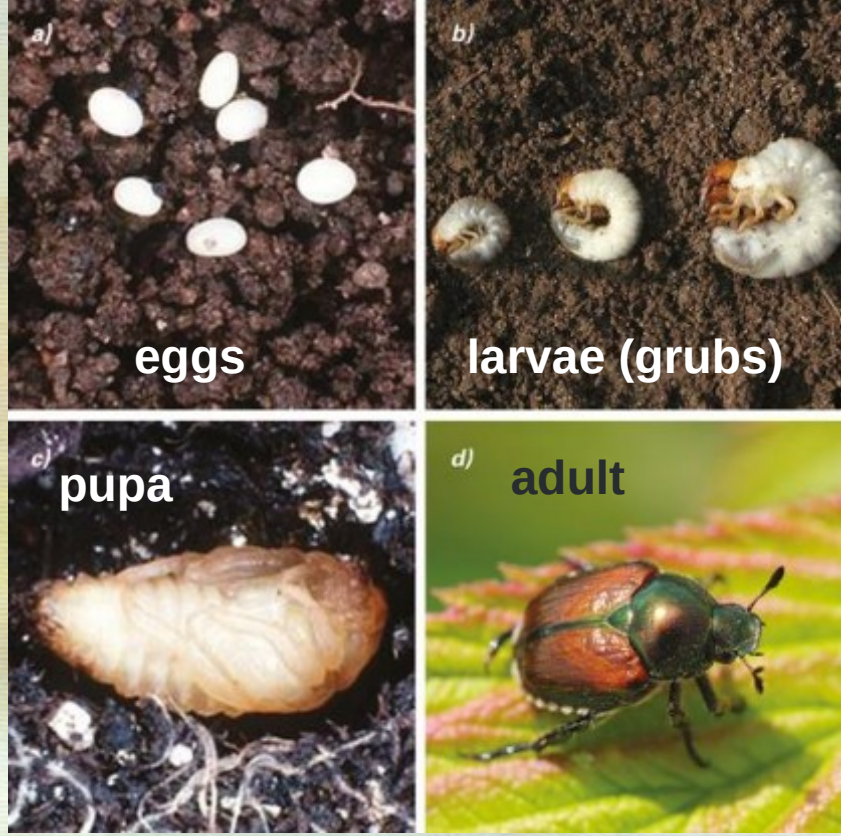
- Doug Tallamy, “The Chickadee’s Guide to Gardening”

Insects, especially caterpillars, are the pablum of the bird world

Life Cycle of Japanese Beetles

EGGS

- Deposited ~ 8 cm / 3” deep in soil ~ August
- 1.5 mm / 1/16” elliptical, white,
- Females deposit ~ 5 at a time, singly
- Deposit ~ 60 over 30 – 45 day life span
- Eggs hatch after 1 – 2 weeks in soil
- Start feeding on roots immediately
- Overwinter/hibernate as 3rd instars buried more deeply



Life cycle of the Japanese beetle, including

(a) eggs David Cappaert, Michigan State University, www.forestryimages.org,
(b) larvae (grubs) David Cappaert, Michigan State University, Bugwood.org,
(c) pupa(USDA-APHIS), and
(d) adult (Theresa Cira, University of Minnesota).

Larvae (“grubs”)

- In spring, move closer to surface
- Continue feeding on roots
- Turfgrass roots: buffet for grubs
- Pupate ~June
- Pupae: creamy or tan in colour but turn metallic green as they mature.
- Transforming phase: pupa do not eat
- Adults emerge late June / July

Photo: Ohioline, Ohio State University Extension, Department of Entomology

Adults

- Emerge late June/early July
- Begin flying at 21°C
- Feed from top down
- little feeding on cloudy/windy days

- no feeding on rainy days
- JBs (& damaged leaves) emit pheromones, attract more beetles and they begin to aggregate.
- Start on low-growing plants (~10 days)
- Move to trees, then to flowering plants
- Lay eggs in soft, moist soil
- Die soon after mating / laying eggs

JB Favourite foods (don't use, or plant as trap plant)

Dahlia (*Dahlia* spp.)

Grape (*Vitis vinifera*)

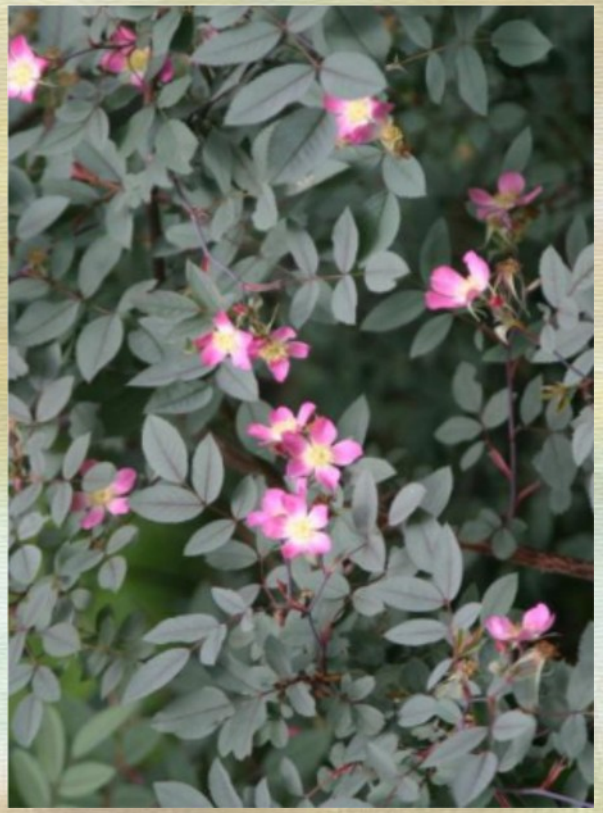
Hibiscus (*Hibiscus* spp.)

Hollyhock (*Alcea rosea*)

Perennial Rye Grass (*Lolium perenne*)

Raspberry (*Rubus idaeus*)

Rose, (*Rosa* spp.)



Rosa glauca, a JB favourite

How does understanding JBs inform our response?

- JBs are active when sunny & warm (when to hand pick...)
- Pick as emerging, before eggs & ascent
- Add native plants for biodiversity, to attract JB predators

.

What about a bat house?

(bats eat flying insects)

TRICK QUESTION!

Biodiversity brings predators

- native generalist predators of eggs & larvae: ants, **rove beetles, & ground beetles**
- Moles, skunks, racoons feast on grubs
- Many birds (esp. starlings, crows, grackles, gulls, chickens) feed on the grubs or adults
- Introduced parasitic wasps & tachynid flies

Parasitic tachynid fly eggs Photo: Bugguide.net

Increase Biodiversity

- Build a Beetle Bank in your veggie area
- Reduce lawn
- **Native** species to attract parasitic wasps, tachynid flies, flower flies, lacewings:
- Plant native species for bird habitat
- Install a water source/feature/bird bath
- Diversity in flower colour, shape, plant form, bloom time

Achillea millefolium
Asters, esp. Flat-topped
Cardamine spp.
Coreopsis spp.
Goldenrods
Monarda fistulosa
Zizia aurea

What pesticides am I allowed to use on adult JBs?

- Pesticides listed for JBs are NOT on Ontario's allowable list for home gardeners
- Imidan (phosmet) is powerful organophosphate (disrupts brains and nervous systems)
- Many retail sprays contain ineffective "active" ingredients such as clove oil
- Insecticidal soap does not work on JBs

What pesticides am I allowed to use on larval JBs (grubs)?

- Nematodes listed for grubs
  - Do not establish in soil (winter kill)
  - Require repeated application
  - Timing / temperature crucial
- *Bacillus thuringiensis subsp.* ***Galleriae*** : nat. occuring soil bacteria. Legal in Ontario. Available?

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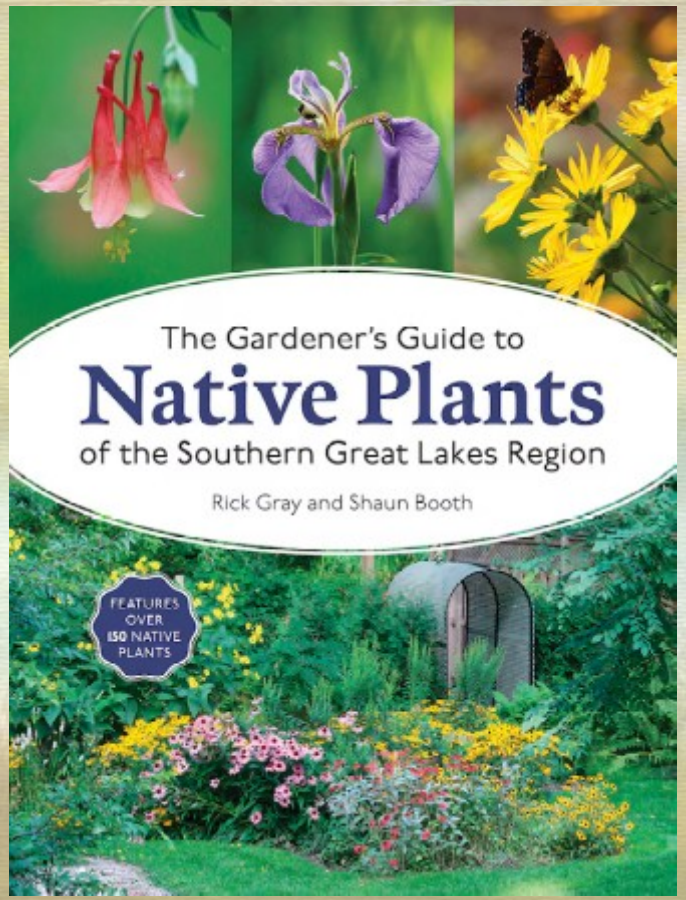
Response?

- Reduce/ eliminate your lawn/turf
- Wood chips around the base of plants can deter egg laying
- Stop watering your lawn during July & August
- JBs prefer short grass: increase your lawn height to 8+cm.
- Use “trap” plants
- DO NOT use pheromone traps
- *Bacillus thuringiensis subsp.* ***Galleriae*** : nat. occuring soil bacteria. Legal in Ontario

CHOOSE NATIVE PLANTS!



Stop fighting

- Accept insect activity
- Your plants will be okay
- No action without identification!
- Stressed plants are targets: right plant? right place?

EVERYONE GETS TO EAT!

Questions and Chat

for a resource list:
https://morethanaprettygarden.com
(blog article)

For a pdf copy of this presentation, email:

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