

Invasive species impacts on monarch butterfly conservation initiatives

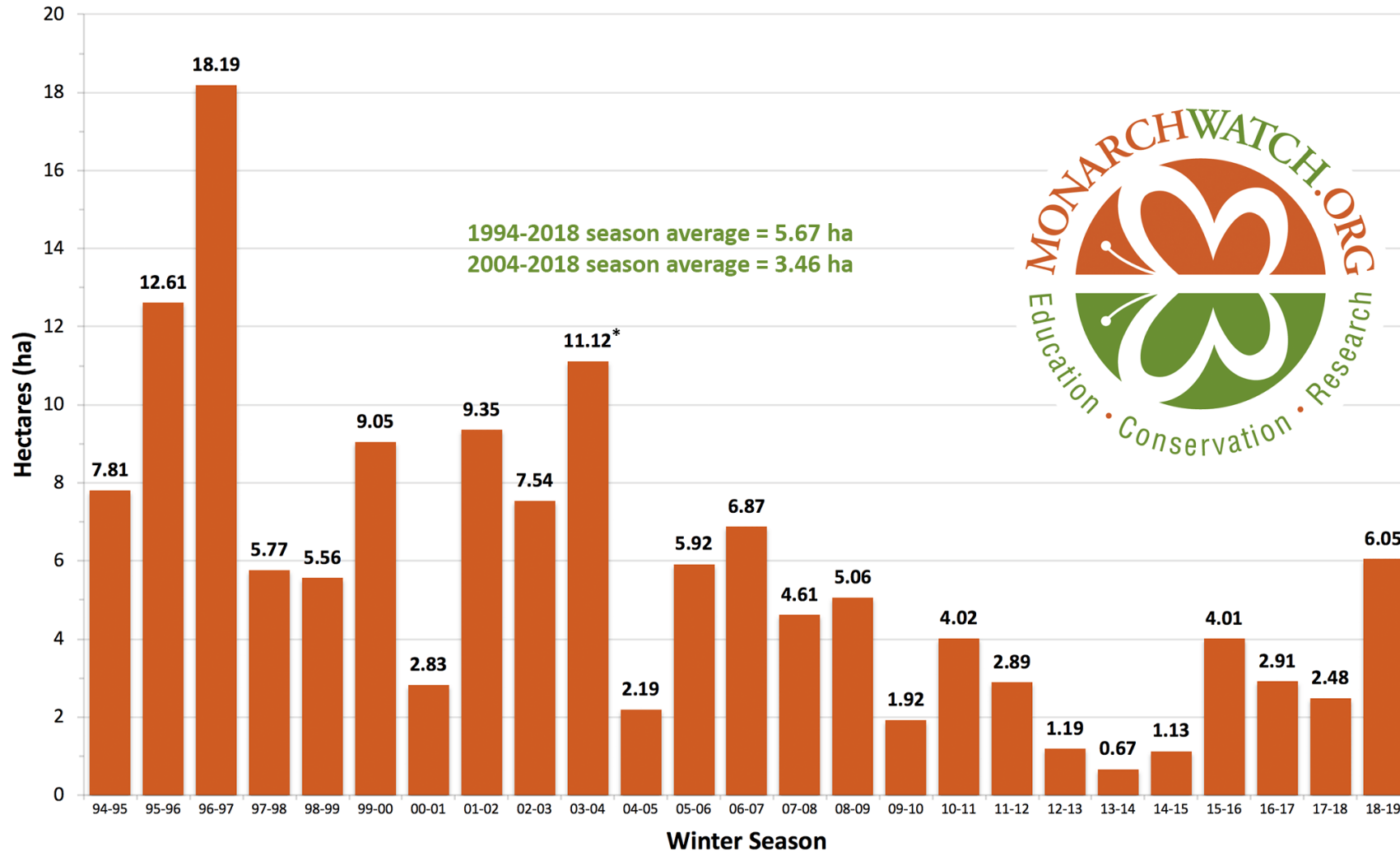


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Institute

Monarch populations have declined over the past 25 years

Total Area Occupied by Monarch Colonies at Overwintering Sites in Mexico





All Hands on Deck!

Contributions from all land use sectors are needed to restore enough milkweed



MONARCH WAYSTATIONS

CREATE, CONSERVE, & PROTECT MONARCH HABITATS

www.MonarchWatch.org



PROJECT
MONARCH
HEALTH

Monarch CCAA



MONARCHS

**IN THE
ROUGH**

Nationwide
CCAA



for
**MONARCH
BUTTERFLY**

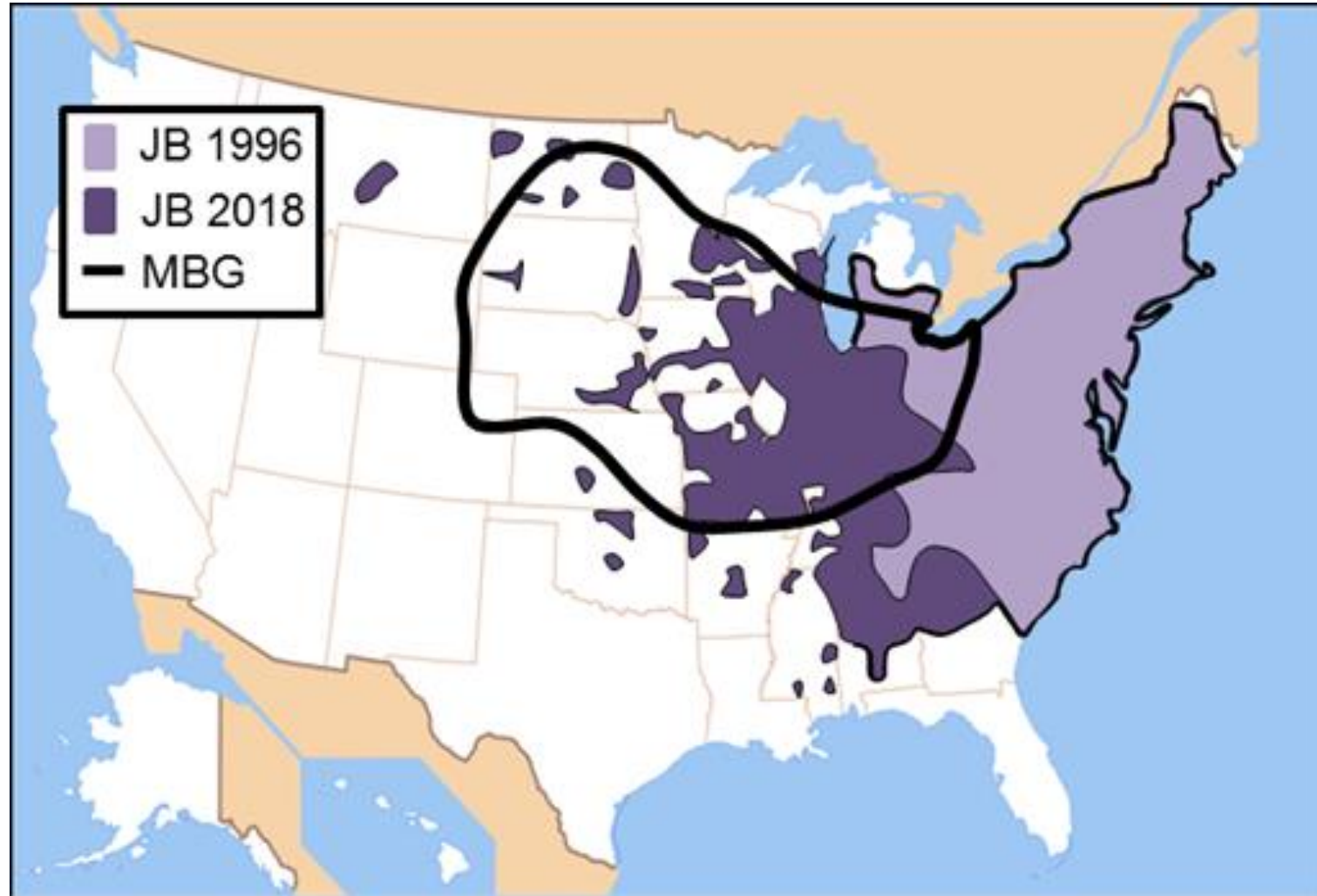
Planting milkweed is key to the **North American Monarch Conservation Plan**



An estimated **1.8 billion** additional stems is needed!

But....

Japanese beetle is encroaching into the main monarch breeding grounds of the US Midwest



Japanese beetles aggregate and feed on milkweed inflorescences

We documented >90% infestation at field sites in 2017-18



288 beetles!!



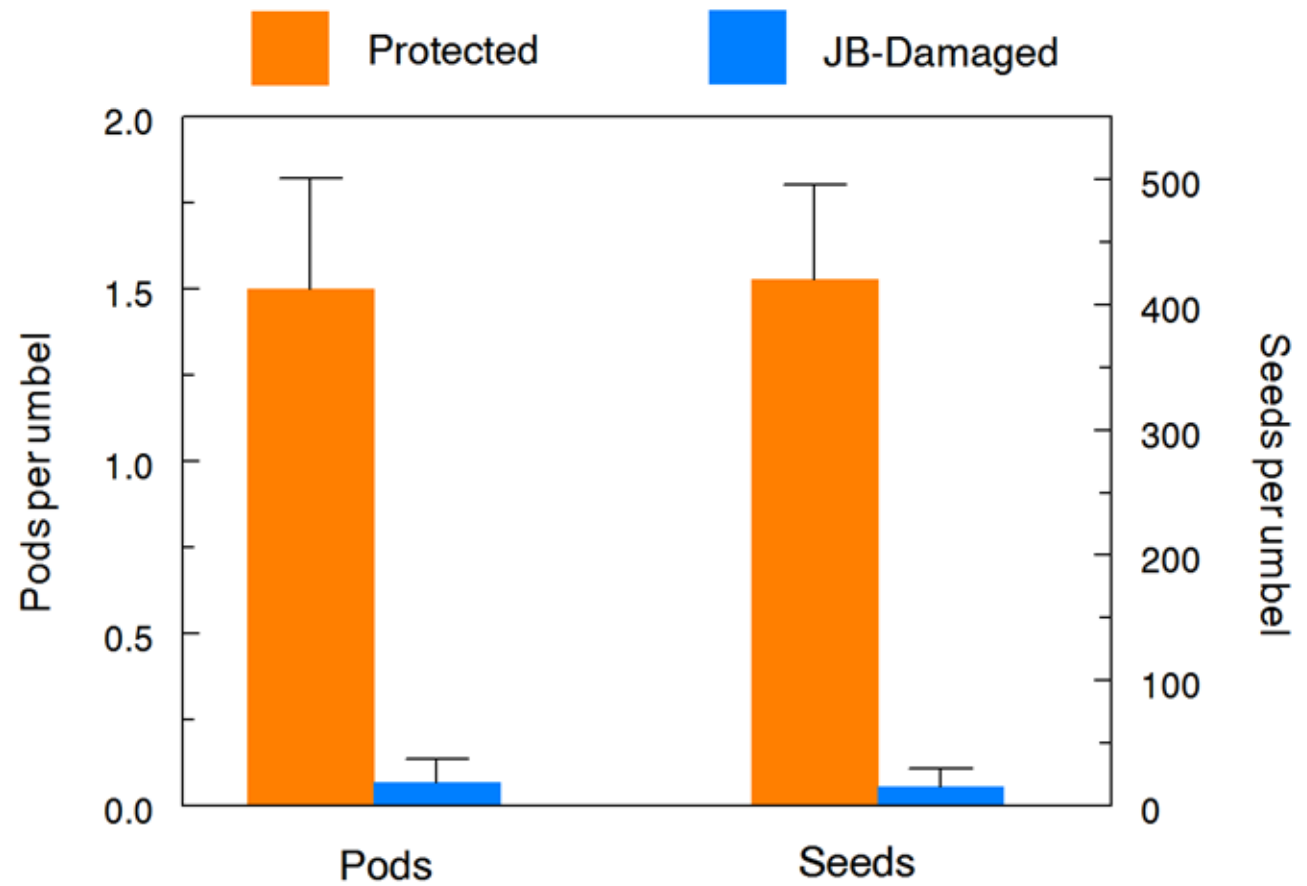
Natural florivory by Japanese beetles reduced pod and seed set by > 90%



Protected

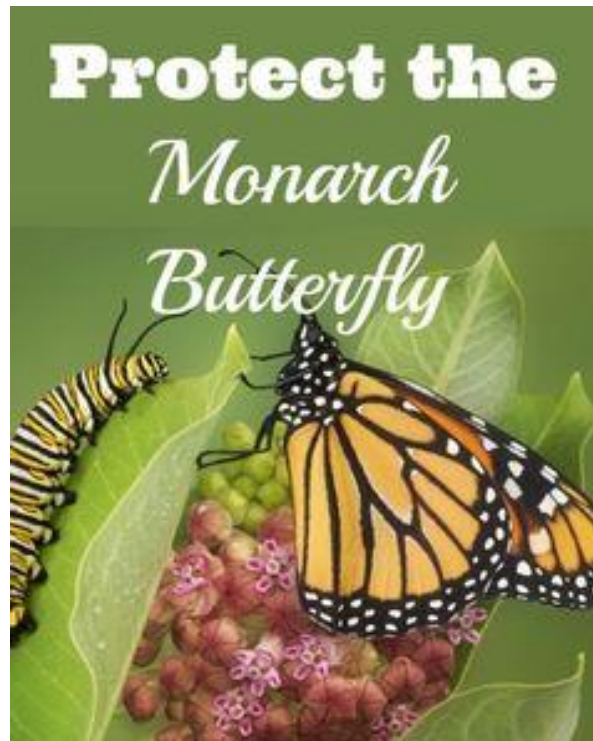


Exposed



Japanese beetles' florivory on milkweed may limit pollination and outcrossing, reducing plants' capacity to colonize new areas via seeds

JB incursion into US Midwest may compromise efforts to restore monarch butterfly habitat



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Japanese beetles' feeding on milkweed flowers may compromise efforts to restore monarch butterfly habitat

[Adam M. Baker](#) & [Daniel A. Potter](#) 

[Scientific Reports](#) **8**, Article number: 12139 (2018) | [Cite this article](#)

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Don't let your monarch garden become an “ecological trap”





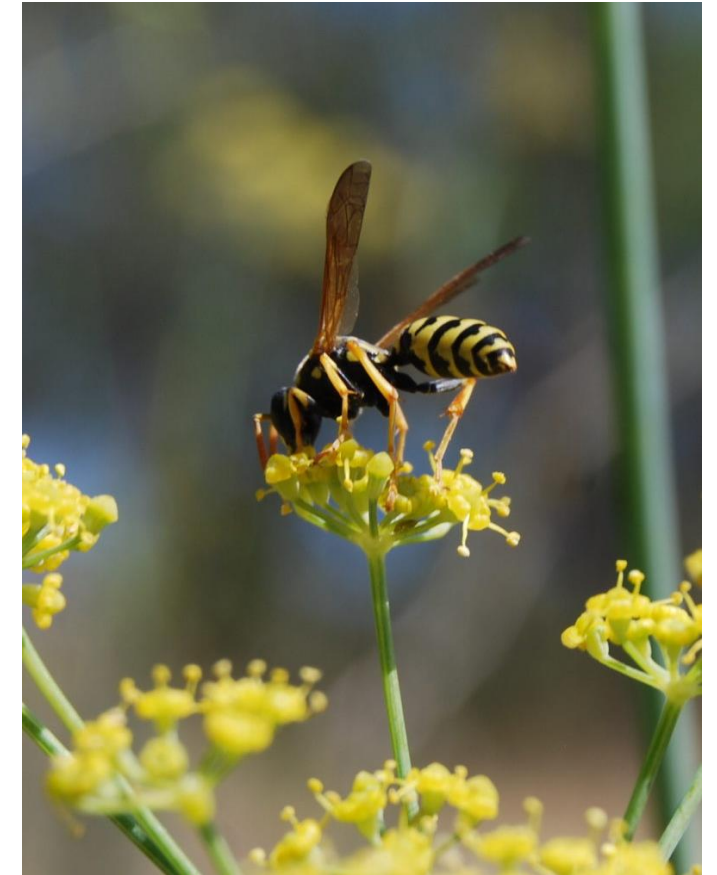
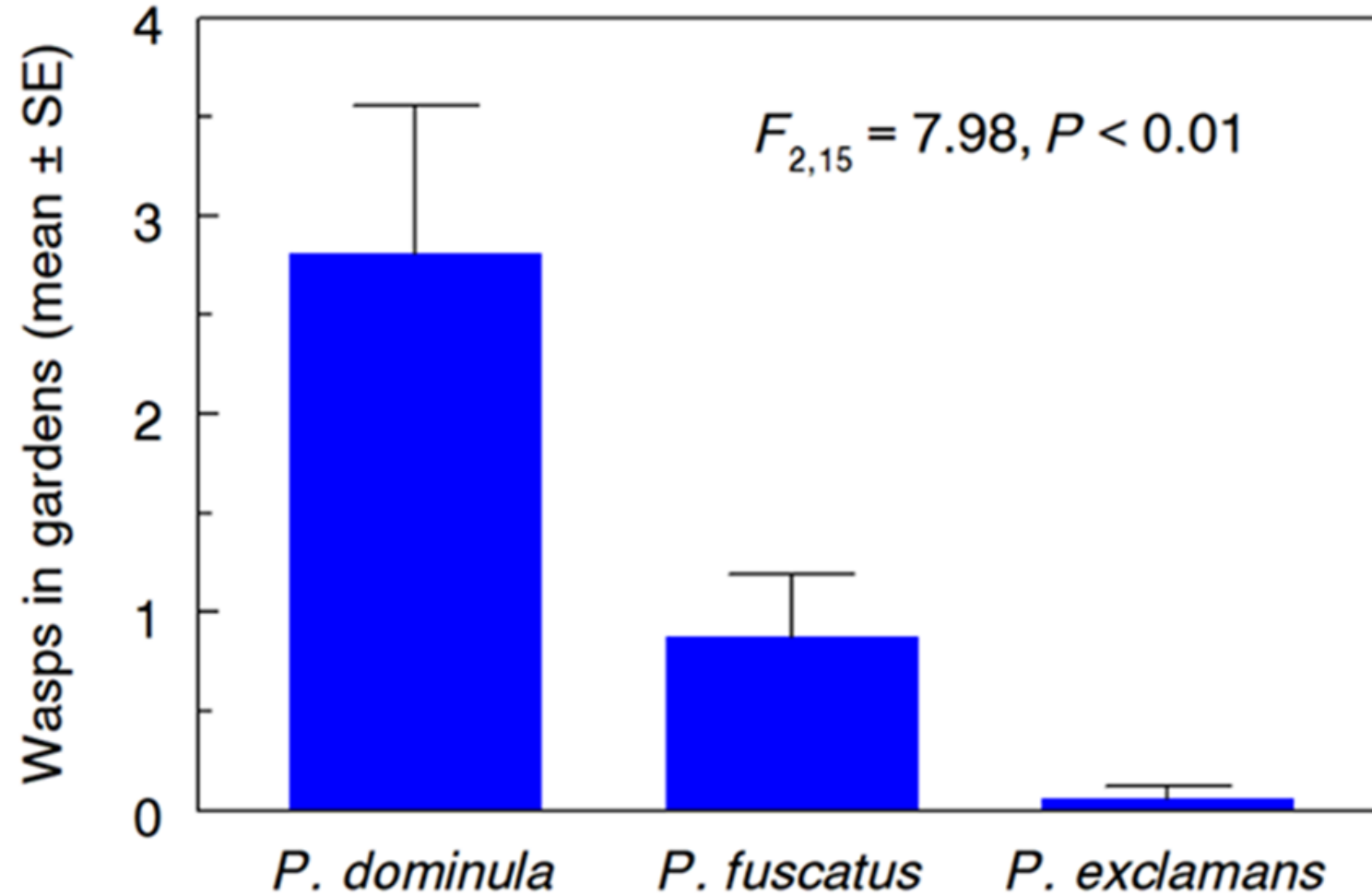
European paper wasp (*Polistes dominula*) is an urban wasp.

- Invasive in many locations
- Nests in/on structures
- Multiple foundresses
- Apply immense pressure on local food webs

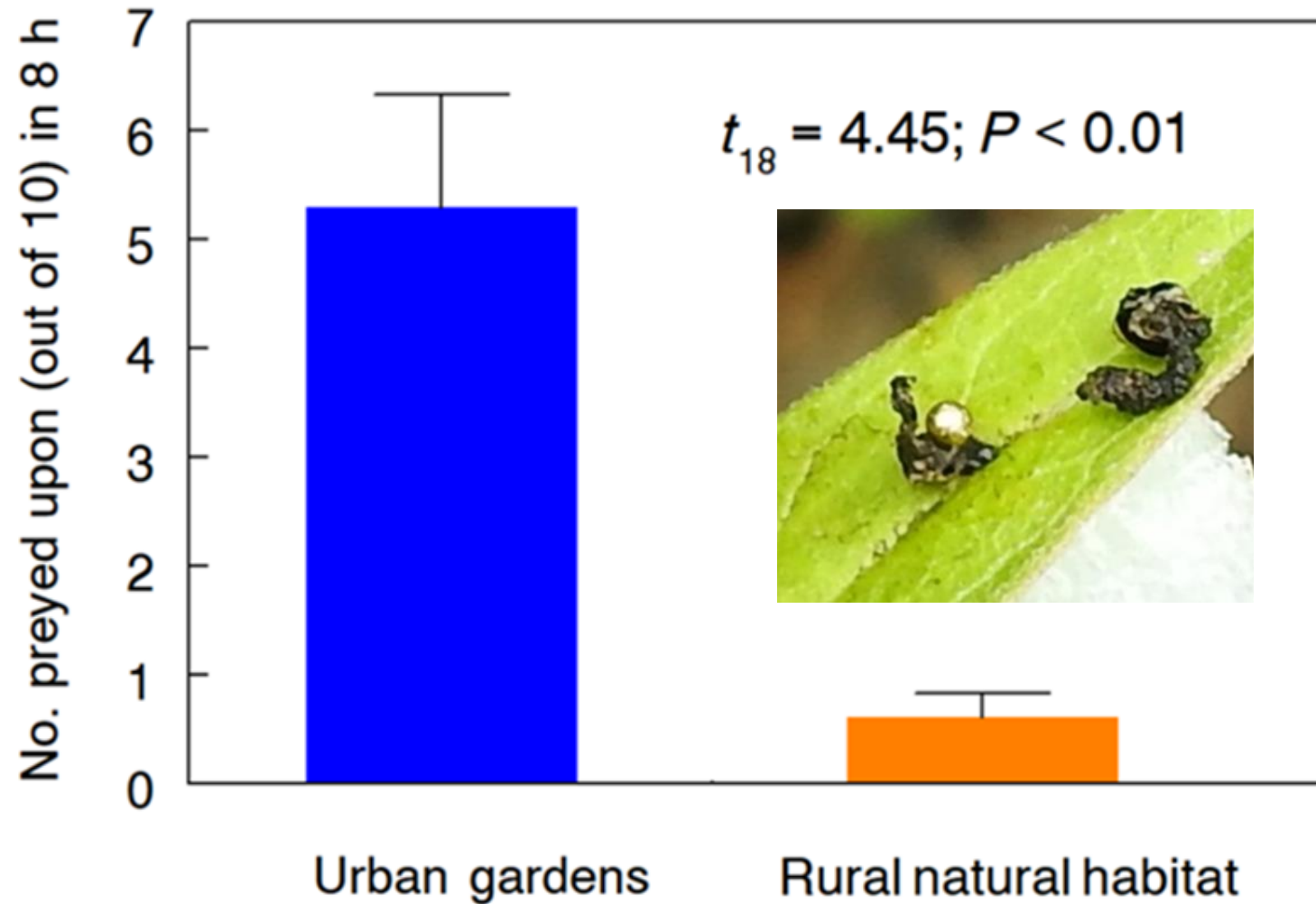


- Caterpillar hunting specialists
- Readily feed on early instar larvae
- Can feed on large late instar larvae
- Remove digestive tract to avoid plant toxins

EPW was the most common predatory paper wasp foraging in pollinator gardens



Predation was much higher in urban pollinator gardens than rural areas



Urban gardens



Rural grasslands



NO MOWING
Pollinator
Habitat
NO SPRAYING



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Invasive paper wasp turns urban pollinator gardens into ecological traps for monarch butterfly larvae

[Adam M. Baker](#) & [Daniel A. Potter](#) 

[Scientific Reports](#) **10**, Article number: 9553 (2020) | [Cite this article](#)

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All hands on deck to plant milkweeds!



Farm reserve lands



Roadsides



Industrial/Rights of way



Urban/suburban gardens

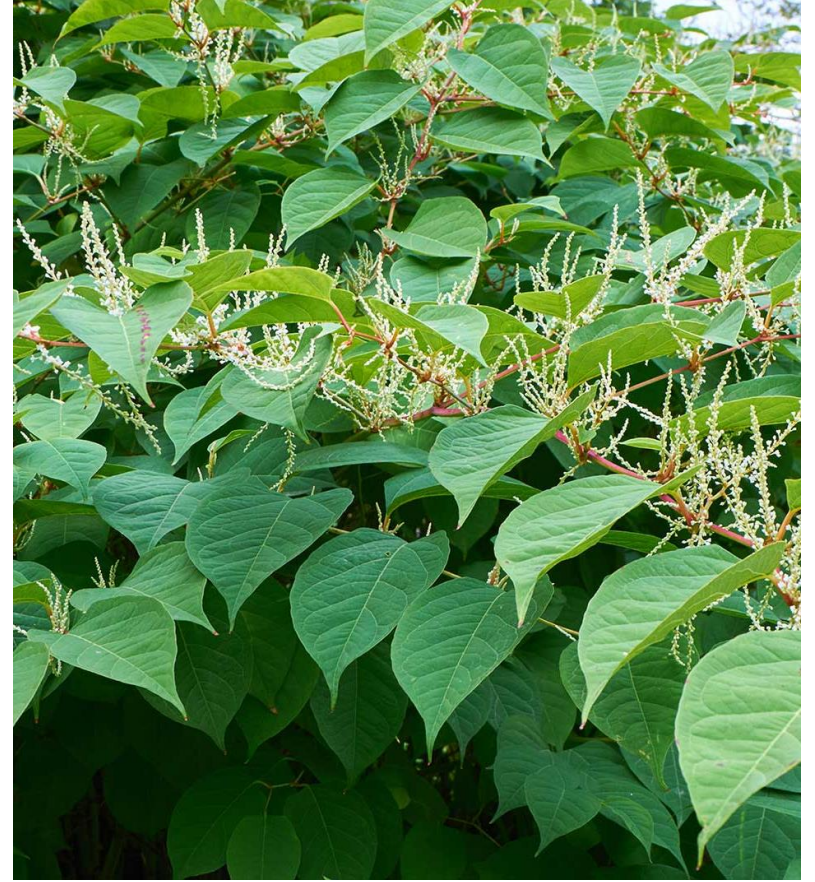
Invasive plants can outcompete and suppress milkweed and nectar plants



Honeysuckle



Grasses



Knotweed

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Thanks!

