

Insect Pollinators



An Introduction

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Pollinators:



**Animals that transfer pollen
and help to complete
plant reproductive cycles**

Animals visit flowers:

- To obtain floral rewards
- To find mates
- To find prey
- To oviposit (lay eggs)
- To sunbathe
- In the process, may acquire pollen.

Pollination may occur!



Pollinators are important to humans

- 75 % of the plant species used as food crops require animal pollinators.
- One-third of the food that we eat depends on animal pollinators.
- Insect pollinators in the United States produce at least \$10 billion of products each year.

Pollinators help maintain healthy ecosystems

90% of the world's
flowering plant species
need animal pollinators






Pollinators are a significant part of global biodiversity

At least **290,000** species of animals pollinate



Insects, by the numbers

- 2 million to 30 million insect species worldwide
- 91,000 insect species known to scientists in the United States
- Estimated 73,000 insect species yet to be described in the United States
- 16,000 bee species worldwide
- 4,000 species of native bees in North America



Introducing the Pollinators!



Bees





1



2



8



4



6



5



7

— = 5 mm



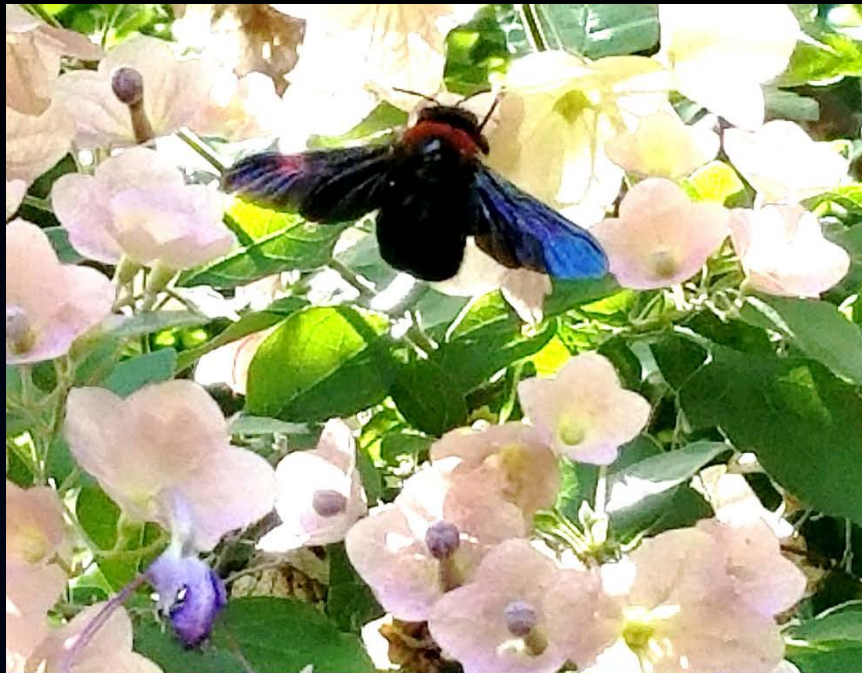


Figure 1: *Xylocopa flavorufa*



Figure 2: *Xylocopa latipes*





Butterflies and Moths



Bats





Birds

Flies





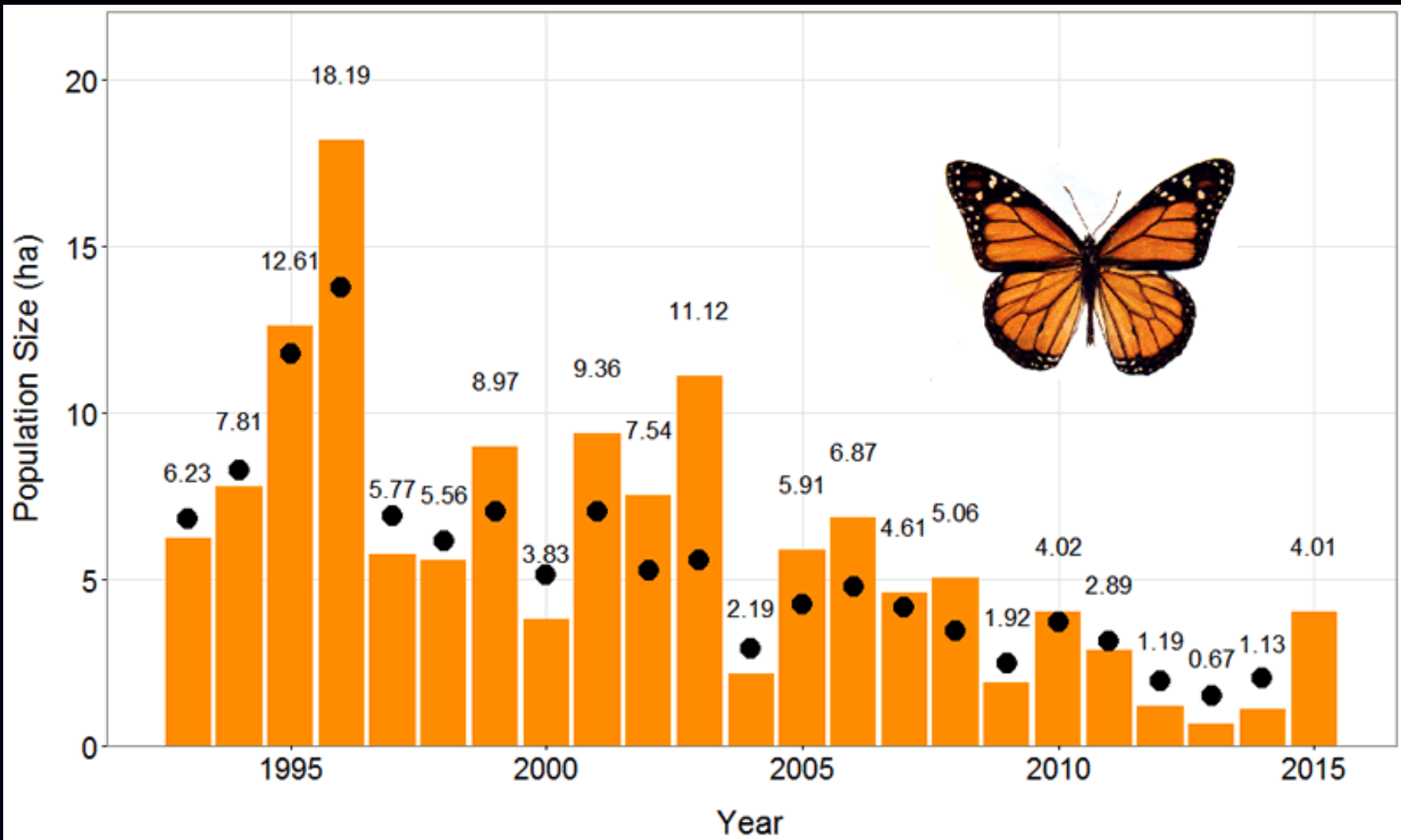
Beetles





Conservation Concerns

- Documented declines in wild honeybees and some native bees
- Colony Collapse Disorder
- 38 pollinator species currently listed as “Endangered” or “Threatened” in U. S., including:
 - Two bats and 13 birds
 - 22 butterflies and moths, one fly

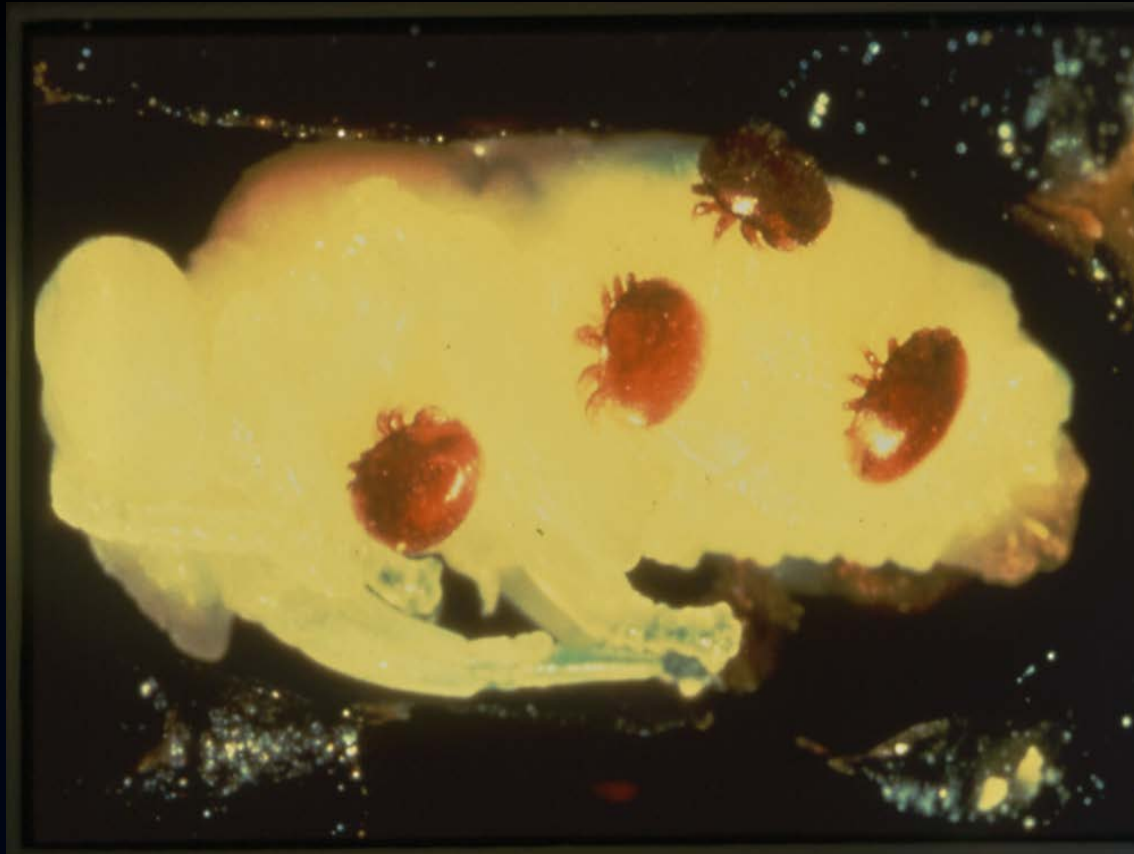




Habitat Loss



Excessive pesticide use

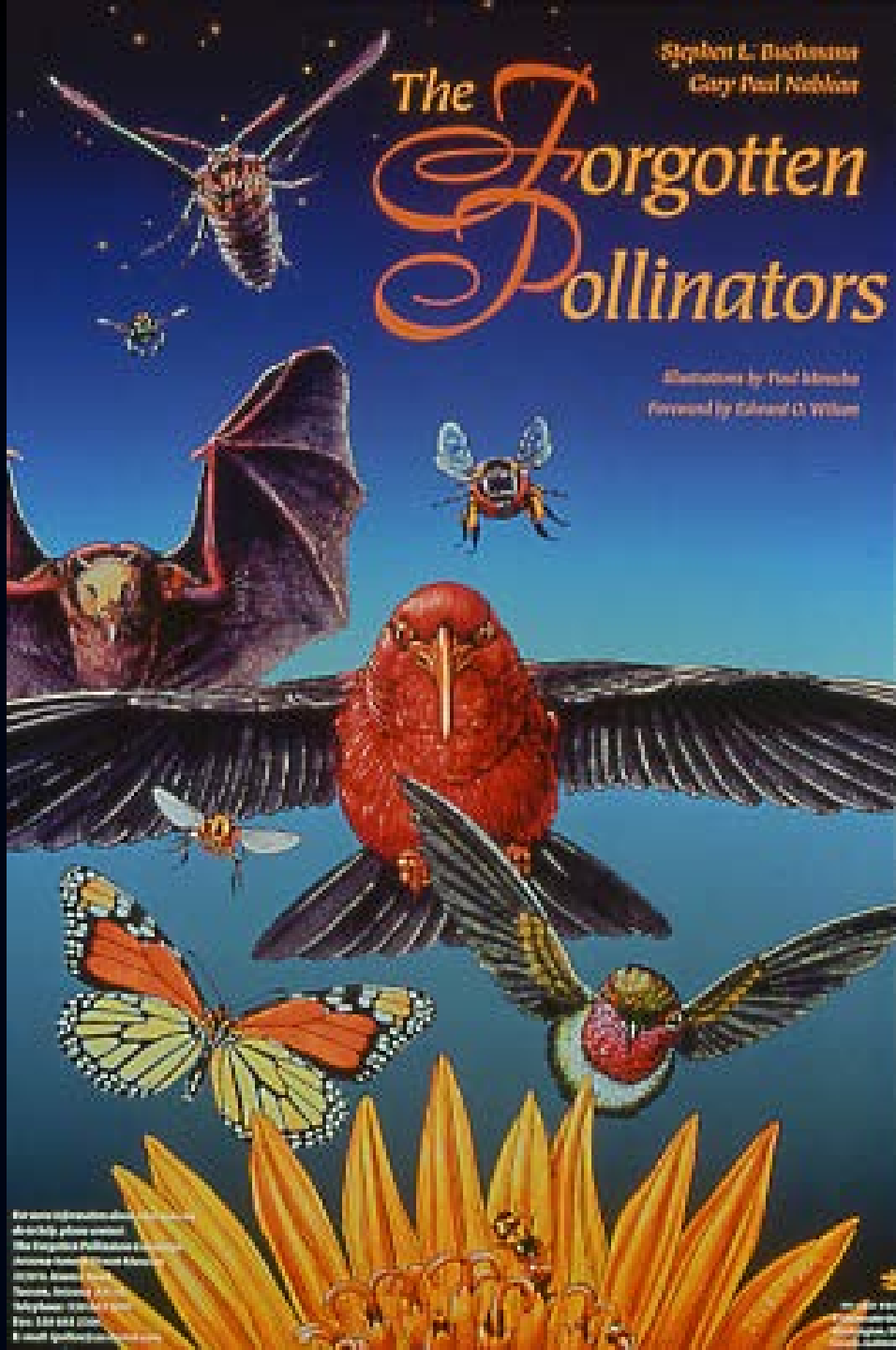


Introduced diseases and parasites

Stephen L. Buchman
Gary Paul Nabhan

The Forgotten Pollinators

Illustrations by Paul Ikenaka
Foreword by Edward O. Wilson



“The
Forgotten
Pollinators”

*book and
campaign*



North American Pollinator Protection Campaign

**POLLINATOR
PARTNERSHIP**

www.pollinator.org

Pollinator Plantings

- Use Native Plants
- Diversity of Plant Species
- Bloom throughout growing season
- Consider adding logs, rocks for structure
- Bare dirt is good!
- Pollinator-friendly plant lists: www.xerces.org



Pollinator Plantings Go Anywhere!



Homes,
Schools,
Playgrounds...



Figure 1. American Bumble Bee, *Bombus pensylvanicus* (De Geer). Female foraging on orange eye butterflybush, *Buddleja davidii* Franchet. 1225 O Street NW, Shaw Neighborhood, Washington, District of Columbia, 4 August 2014.

Help with Insect Identification

The screenshot shows a web browser window displaying the BugGuide website. The browser's address bar shows the URL <https://bugguide.net/node/view/15740>. The website header includes the BugGuide logo, navigation links (Home, Guide, ID Request, Recent, Frass, Forums, Donate, Help), and a search bar. The main content area features a "Welcome to BugGuide.Net!" section with a large photo of bees on a honeycomb (captioned "Photo © Joyce Gross") and several smaller photos of insects with their respective identification links and timestamps. A sidebar on the left contains a "Clickable Guide" with various insect icons and a "Calendar" section with upcoming events.

File Edit View History Bookmarks Tools Help

Welcome to BugGuide.Net! - B X +

← → ↻ 🏠 <https://bugguide.net/node/view/15740> 📄 ⋮ 📌 ☆

BugGuide

Identification, Images, & Information
For Insects, Spiders & Their Kin
For the United States & Canada

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Clickable Guide

Welcome to BugGuide.Net!

Photo © Joyce Gross

All Abuzz About Bugs!

We are an online community of naturalists who enjoy learning about and sharing our observations of insects, spiders, and other related creatures.

We enjoy the opportunity to instill in others the fascination and appreciation that we share for the intricate lives of these oft-maligned creatures.

Our Mission

Using the best resources we have access to, we are creating a knowledgebase to help each other and the online community.

Our Method

We collect photographs of bugs from the United States and Canada for identification and research.

We summarize our findings in guide pages for each order, family, genus, and species.

Making New Discoveries

More than just a clearinghouse for information, this site helps expand on the natural histories of our subjects. Discovering the closest

Placed by [bmathison1972](#) 1 hour ago in
▶ [Melanactes densus](#)

Placed by [cotinis](#) 2 hours ago in
▶ [Nicodes](#)

Placed by [Bruce Tilden](#) 2 hours ago in
▶ [Long-horned Beetles \(Cerambycidae\)](#)

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▶ [Dusky Raisin Moth - Hodges#6000 \(Ephesiodes gilvescentella\)](#)

Calendar

[Upcoming Events](#)

Information about the [2019 BugGuide Gathering in Louisiana](#), July 25-27

[Discussion, insects and people from the 2018 gathering in Virginia](#), July 27-29

Find an Entomologist

The screenshot shows the homepage of the Entomological Society of America (ESA). The browser address bar displays <https://www.entsoc.org>. The navigation menu includes links for JOIN, RENEW, COMMUNITY, CERTIFICATION, ENTOMOLOGY TODAY, FOUNDATION, LOGIN, and a search bar. The main header features the ESA logo and the tagline "Sharing Insect Science Globally". Below the header is a navigation bar with links for ABOUT, RESOURCES, EVENTS, CAREER CENTER, PUBLICATIONS, POLICY & INITIATIVES, and NEWS.

SUBMIT YOUR 2019 ABSTRACTS NOW!

Help advance insect science by sharing your research with colleagues in the field.

Abstract Submission Deadline: May 24

Entomology 2019 Submissions are Open

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FEATURED EVENTS

MAY 24	10-MIN PAPER, POSTER AND INFOGRAPHICS SUBMISSION DEADLINE FOR ENTOMOLOGY 2019	MAY 24	STUDENT COMPETITION 10-MIN PAPER AND POSTER DEADLINE FOR ENTOMOLOGY 2019	MAY 31	REGISTRATION AND HOTEL RESERVATIONS OPENS FOR ENTOMOLOGY 2019 Visit entsoc.org/events/annual
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