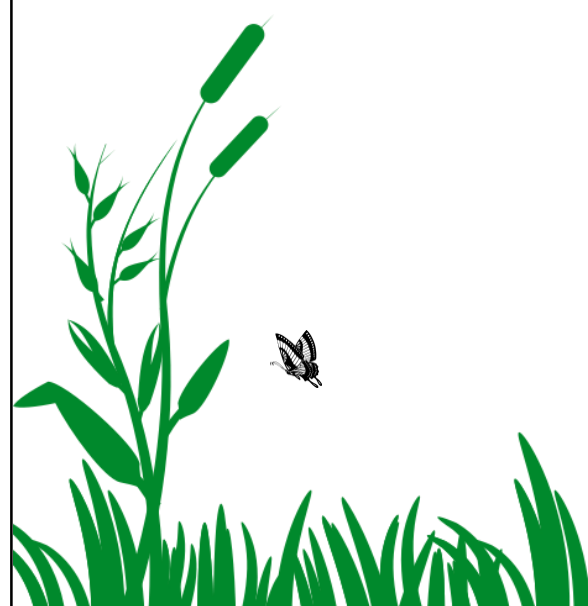


Of Monarchs, Satyrs, and Ladies

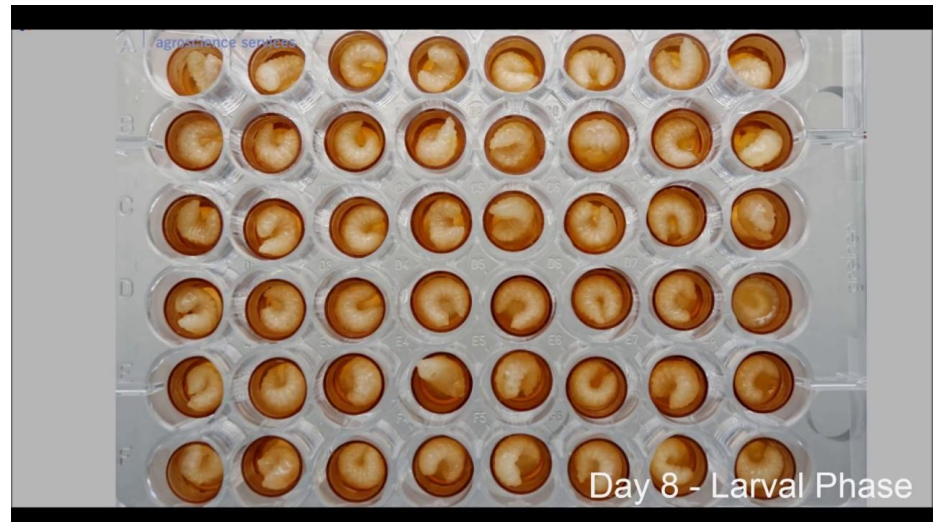
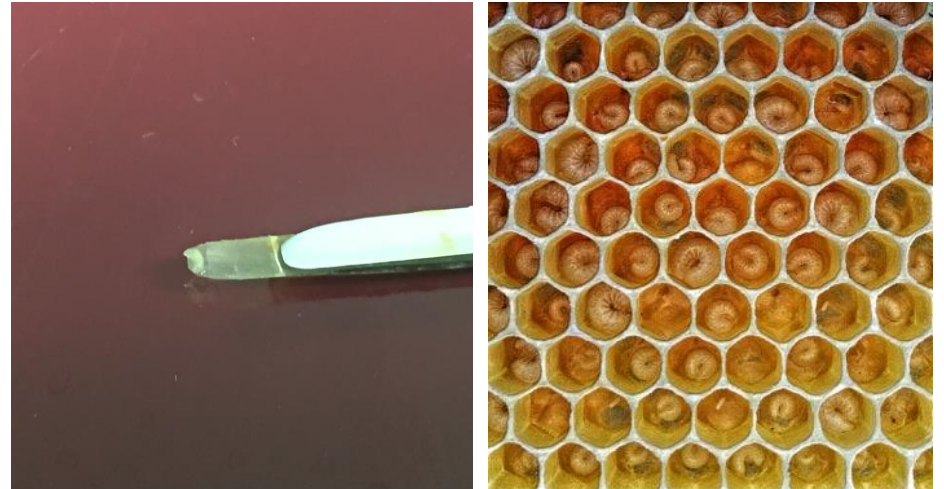
Plymouth County Extension



Blake Dinius
Entomologist Educator
bdinius@plymouthcountyma.gov
774-773-3404



Introduction



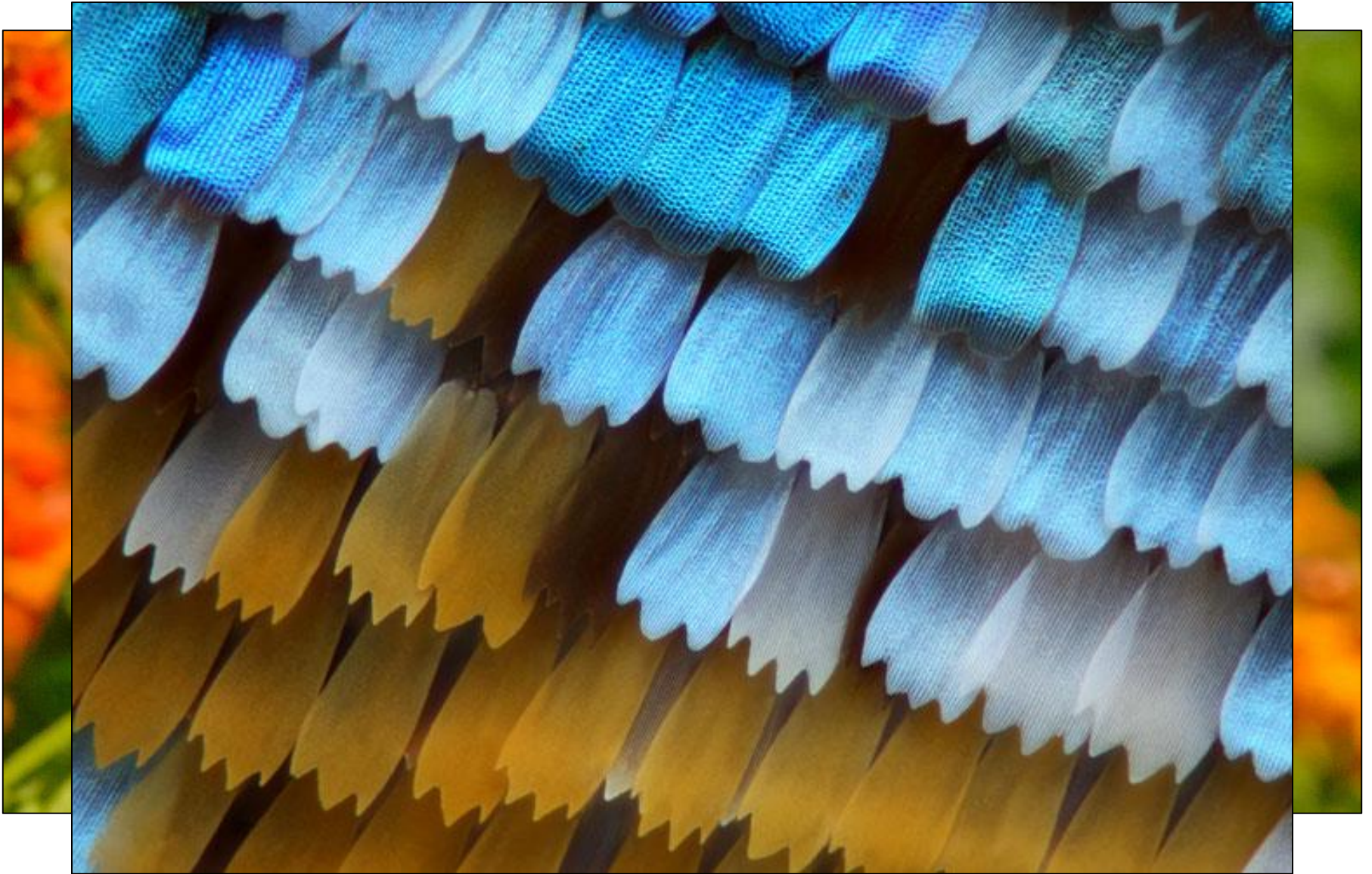
Introduction



Insects in the Order Lepidoptera



Lepidoptera means "scaled wing"



MORPHO BUTTERFLY



Why watch butterflies?



Exercise



Aesthetically pleasing







JSCross 2019

Watch behaviors



Lists/Collections

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Long-tailed												
Roadside												
Scarce												
Wooden												
Wild Indigo												
Common Check												
Common Scotys												
Arctic Skipper												
Leaf Skipper												
European Skipper												
Fiery Skipper												
Leonard's Skipper												
Colweb Skipper												
Indian Skipper												
Peck's Skipper												
Twenty-edged Skipper												
Crossline Skipper												
Long Dash												
Northern Broken-Dash												
Little Glasswing												
Sachem												
Delaware Skipper												
Mulberry Wing												
Hobomok Skipper												
Zabulon Skipper												
Broad-winged Skipper												
Dion Skipper												
Black Dash												
Two-spotted Skipper												
Dark Skipper												
Dusted Skipper												
Pepper and Salt Skipper												
Common Blue-Skipper												
Orange												

Checklist of the
Butterfly Club

Date _____

Locality _____

Observers _____

Notes _____

This checklist contains 111 butterfly species regularly occurring in Massachusetts. The status of each species from March through October is indicated with a bar graph. Additional information is included for overwintering forms and occurrence within the state. The graphs and information are based on more than 100,000 records collected by the Massachusetts Butterfly Club from 1993 to 2014.

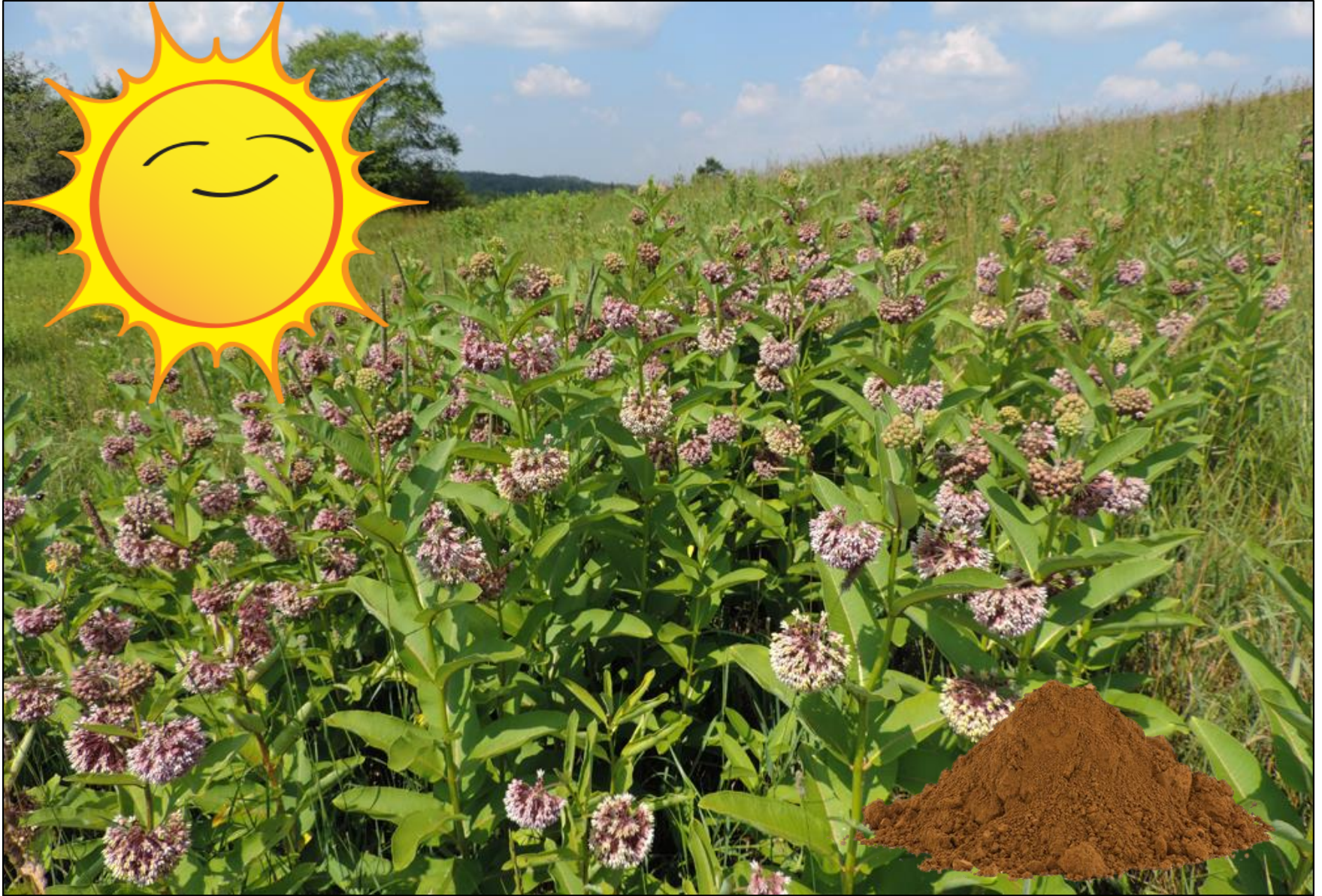
Key

- Common: Easily seen and often in large numbers
- Usual: Usually seen
- Scarce: Usually present in low numbers, but not always seen
- Rare: Known only from a few localities

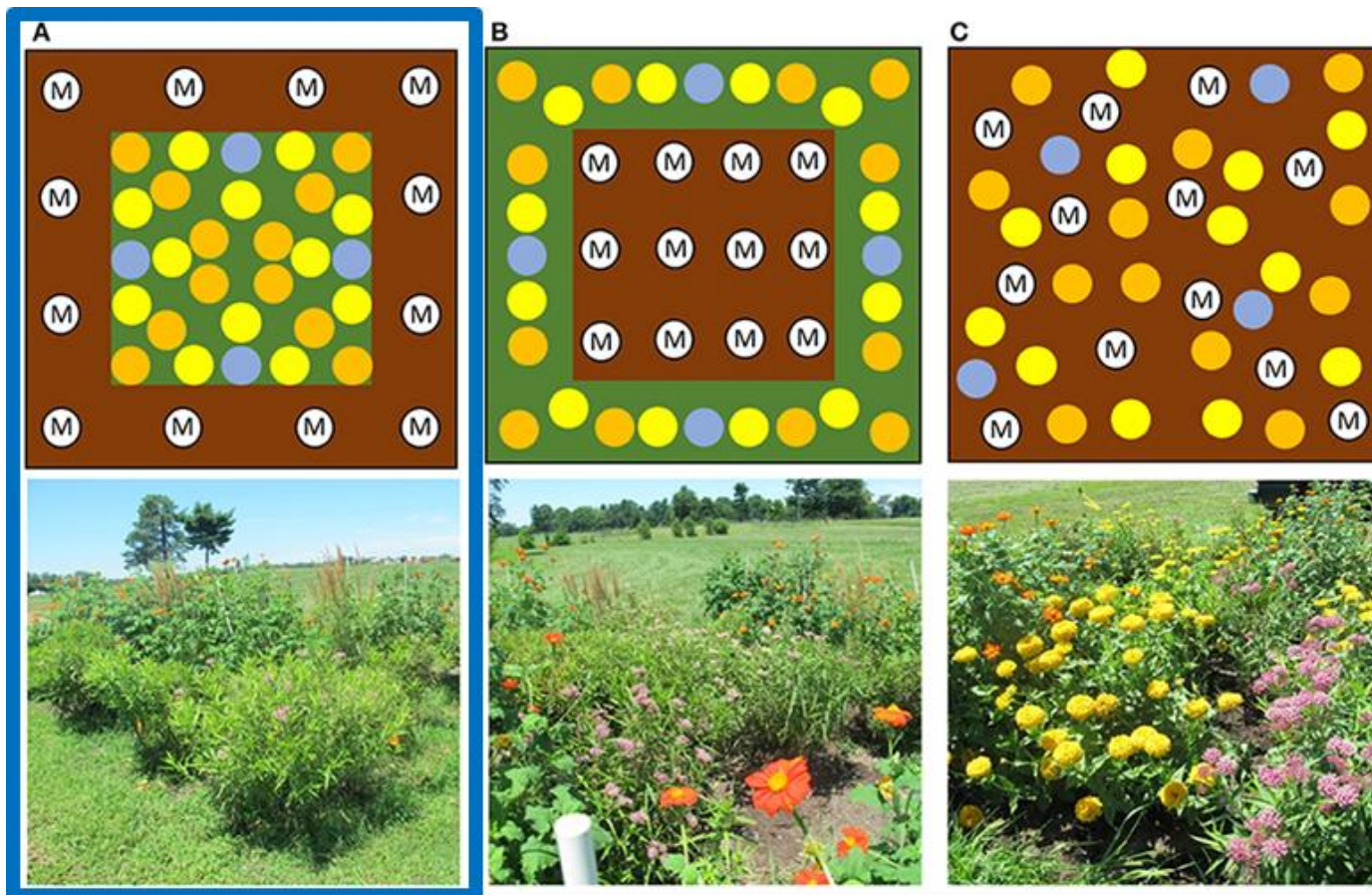
Gotta catch 'em all!

The Massachusetts Butterfly Club is a non-profit organization and sponsors state-wide butterfly conservation, interpretation, and fun. The Massachusetts Butterfly Club is your best resource for butterfly records and to become an active member. Information at www.massbutterflyclub.org

A deeper understanding of nature



- 2.5-4x more eggs + caterpillars
- 1 meter between perimeter
- 0.5 meters between each plant

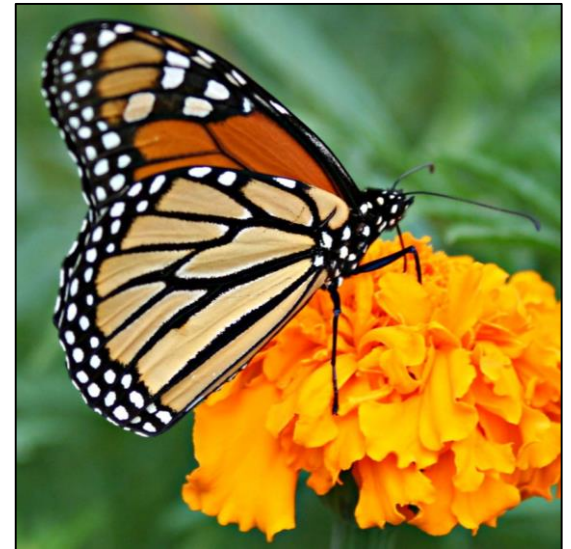
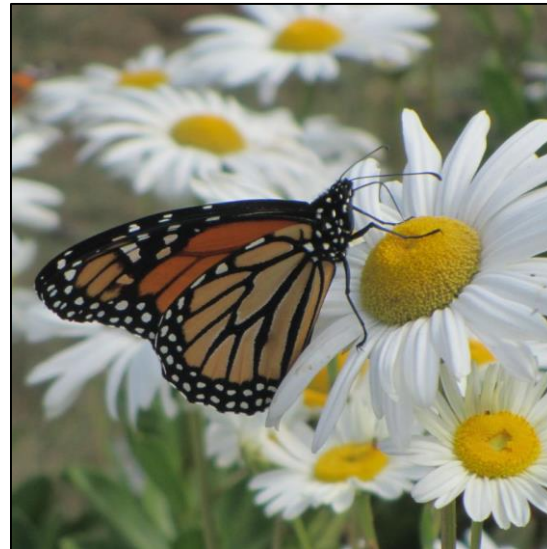


(M) *Asclepias incarnata* ● *Tithonia rotundifolia* ● *Zinnia elegans* ● *Calamagrostis x acutiflora*

Baker, Adam & Potter, Daniel. (2019). Configuration and Location of Small Urban Gardens Affect Colonization by Monarch Butterflies. *Frontiers in Ecology and Evolution*. 7.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Coral Hairstreak					— ■■■■ —	— — — —		
Acadian Hairstreak				· — ■■■ —	·			
Edwards' Hairstreak				— — ■■■■ —	— — ·			
Banded Hairstreak				· ■■ ■■■■ ■■ —	— — ·			
Hickory Hairstreak				· — ■■■ —	— · ·			
Striped Hairstreak				— ■■■■ ■■ —	— — — — ·			
Oak Hairstreak				— ■ — — —	·			
Brown Elfin		— ■■■■ ■■■■ —	· · ·					
Hoary Elfin		— — — — ■■ — —	— ·					
Frosted Elfin		· · — ■■■■ ■■ · —						
Henry's Elfin		— ■■ ■ — — —	· ·					
Bog Elfin			· — —					
Eastern Pine Elfin	— · — ■■■■ ■■■■ ■■ — —	·				·		

Adults nectar on many plants



Caterpillars need host plants



Butterfly gardening

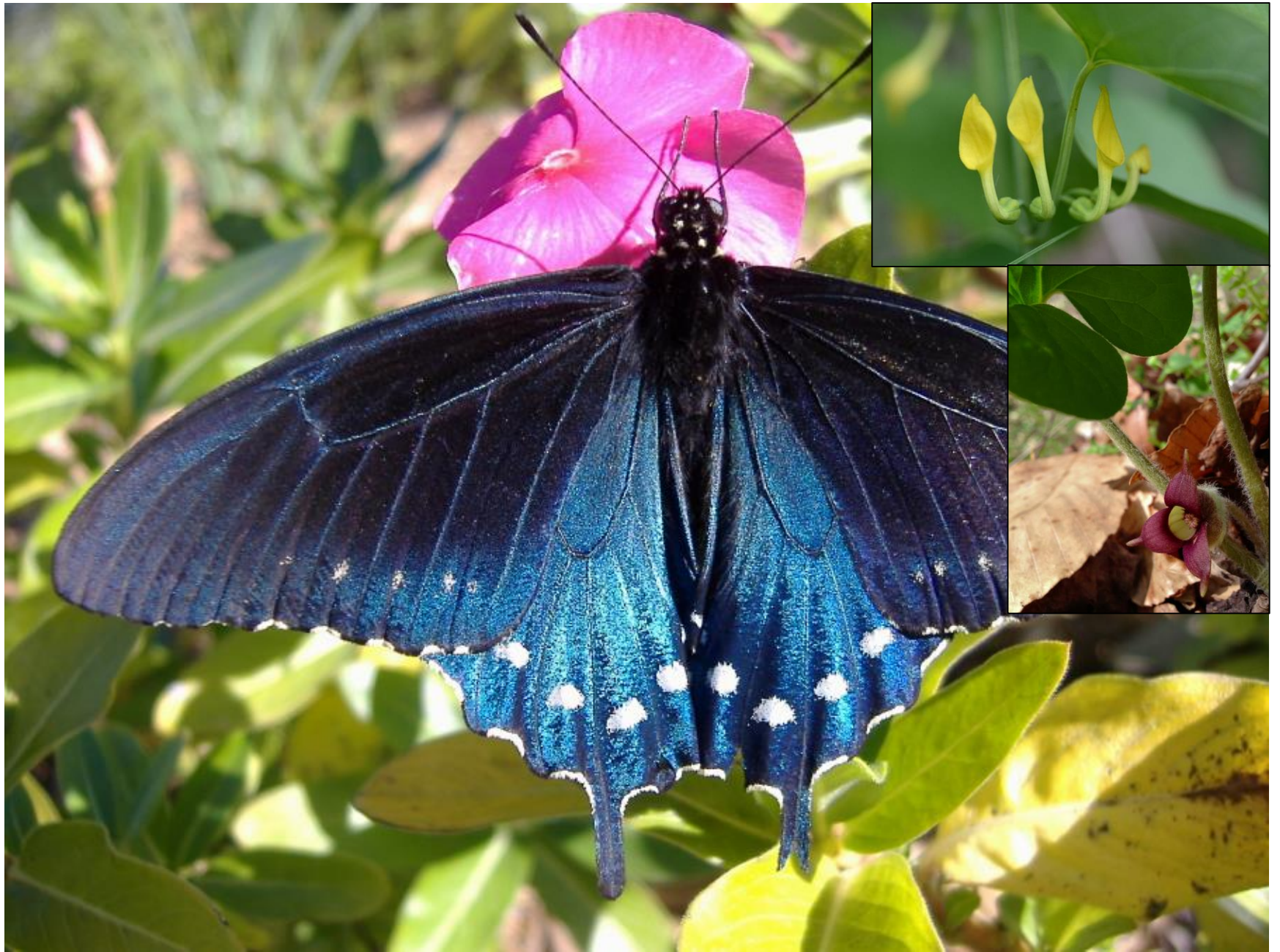




© 2013 Ahmet Baytas









© Roy Zartarian



Sharon Stichter



GARDENING for BUTTERFLIES in New England

TO ATTRACT THE MOST BUTTERFLIES
TO YOUR GARDEN, PLANT BOTH NECTAR
FLOWERS AND CATERPILLAR FOOD
PLANTS

MY "TOP FIFTEEN" NECTAR PLANTS

Butterfly Bush* (*Buddleia davidii*. *B. alternifolia* is also good.)
Zinnias (tall, flat-topped varieties e.g. 'State Farm', 'Cut & Come Again', 'Carrousel'. 'Profusion' is okay. NOT pompoms.)
Marigolds (*Tagetes* spp.) (Taller, single varieties; NOT pompoms.)
Milkweeds: Swamp Milkweed (*Asclepias incarnata*), Butterfly Weed (*A. tuberosa*), and Common Milkweed (*A. syriaca*- aggressive).
New England Aster (*A. novae-angliae*), and most other asters.
Scabiosa* ('Butterfly Blue' lives up to its name.)
Purple Coneflower (and other *Echinacea* spp.)
New Jersey Tea (*Ceanothus americanus*)
Sweet Pepperbush (*Clethra alnifolia*) (all varieties)
Gayfeather (*Liatris* spp.) (*L. ligulistylis*, *pyncnostachya*, *koboldii*, etc.)
Coreopsis spp. (Even 'Moonbeam' works for me)
Joe-Pye Weed (*Eupatorium* spp. - all varieties)
Cupplant or Compass Plant (*Silphium* spp.)
Mexican sunflower (*Tithonia*) (excellent in late summer)
Verbena: *V. bonariensis* in late summer and fall. Other verbenas okay.

ALSO GOOD: Chives (and other *Allium* spp.); *Senecio aureus* (wetland native for early bloom); Bee balm (*Monarda*); Thyme; Catmint* (*Nepeta*); Black-eyed Susan (*Rudbeckia*); Privet**; Dandelions**; Phlox; Centranthus*; Valerian*; Dogbane (caution: aggressive); vetch; thistles; Mountain-Mint (*Pycnanthemum* spp.); Mint (*Mentha* spp.) (caution: aggressive); Lilies*; Cosmos; Sedums; Helonium; Blackberry; Raspberry; Lavender*; Galliardia; Red Clover*; Birds-foot Trefoil**; Button-bush (*Cephalanthus*); Black Cohosh (*Cimifuga racemosa*); Bidens (especially *Bidens alba*, which is annual in our climate); Lantana (not hardy); Pentas* (not hardy). For Moths: *Oenothera* spp.; Nicotiana spp.

*not native to the Americas, but well-behaved in our area **not native, may be aggressive

SOURCES FOR PLANTS AND SEEDS : Prairie Nursery; Prairie Moon Nursery
www.prairiemoonnursery.com; Select Seeds www.selectseeds.com; New England Wild

Flower Society www.news.org; Churchill Nursery, Exeter, NH; Russell's Garden Center, Sudbury, MA; Bigelow Nurseries, Northboro, MA; Sunlight Gardens, TN; Johnnies Selected Seeds, Winslow, ME; and many others.

ESSENTIAL LARVAL FOOD PLANTS FOR YOUR GARDEN

Red Admiral: Nettles (*Urtica dioica***), False Nettle (*Boehmeria cylindrica*), Hops (*Humulus lupulus*)
American Lady: Pussytoes (*Antennaria*- all species); Pearly Everlasting (*Anaphalis margaritacea*); Cudweed (*Gnaphalium obtusifolium*, etc.); Globe Thistle (*Echinops ritro**)
Black Swallowtail: Dill (*Anethum graveolens**); Queen Anne's Lace (*Daucus carota***); Fennel (*Foeniculum vulgare***); Parsley (*Petroselinum**); Lovage (*Levisticum officinale**); Scotch Lovage (*Ligusticum scoticum*); Rue (*Ruta graveolens**).
Spicebush Swallowtail: Spicebush (*Lindera benzoin*); Sassafras
Monarch: Milkweeds (*Asclepias* spp) all, but especially Common Milkweed
Sulphurs, Eastern Tailed-Blue: Alfalfa*; Clovers*; Lespedeza, Desmodium, Lathyrus
Baltimore Checkerspot: Turtlehead (*Chelone glabra*); Plantain (*Plantago lanceolata*)
Pipewine Swallowtail: Dutchman's Pipe (*Aristolochia durior*)
Pearl Crescent: Asters; **Fritillaries:** Violets
Silver-spotted Skipper: Black locust (*Robinia*) (very aggressive); Honey locust (*Gleditsia*); Groundnut (*Apios americana*) (aggressive, but not as much as *Robinia*).
Viceroy: Poplars and Willows **Mourning Cloak:** Willows
Red-spotted Purple: Black Cherry (*Prunus serotina*); poplars, birches, willows
Eastern Comma; Question Mark; Milbert's Tortoiseshell: Stinging Nettles; Hops; Elms
American Copper: Sorrel, Dock (*Rumex* spp.)**
Spring/Summer Azure: Black Cherry (*Prunus serotina*); *Spirea*; *Vaccinium*
Least and Peck's Skippers: Grasses: *Poa* spp.; *Panicum* spp.
Crossline, Cobweb, and Dusted Skippers: Little Bluestem (*Schizachyrium scoparium*)

BUTTERFLY RESOURCES

Sharon Stichter, www.butterfliesofmassachusetts.net History of butterflies in our state, detailed host plant discussion, abundance charts, distribution maps. 2010.

Massachusetts Butterfly Club www.massbutterflies.org In-state photographs of all species, membership information, field trips, checklists, guide to good field sites.

Jeffrey Glassberg, *Butterflies Through Binoculars: The East*. Oxford University Press, 1993. The best field guide for our region.

Rick Cech, *Butterflies of the East Coast*. Princeton University Press, 2005. Beautiful up-to-date reference book; includes identification, host plants and habitat.

This handout © Sharon Stichter, Newbury, MA 2011

rev. 6-11

BLUE WHALE

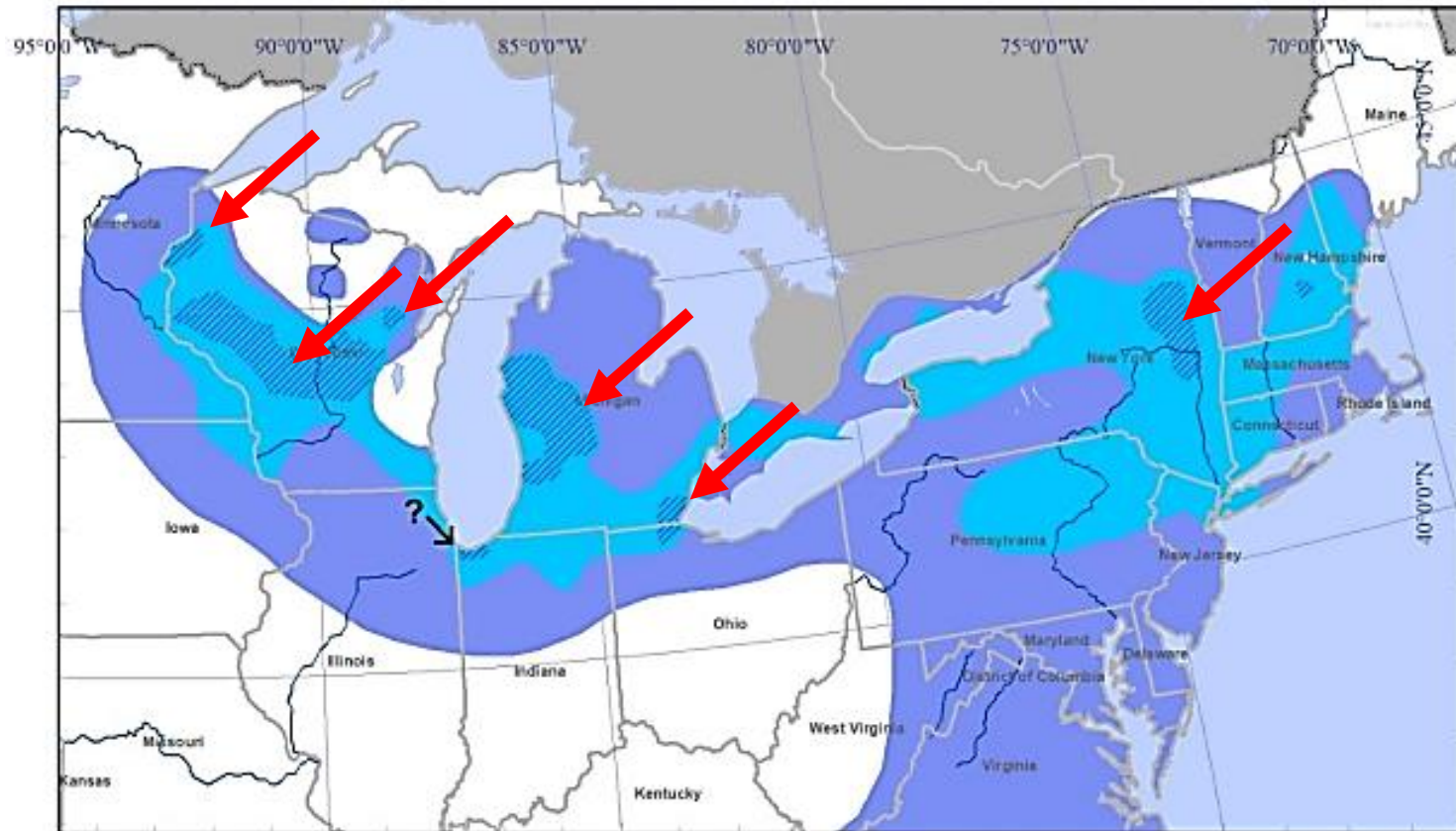


KARNER BLUE



Paul Labus

Developed by A. Hess (2019) as part of the Draft KBB Climate Response Sub Team Report DRAFT, 2017.



Current Range of Karner Blue Butterfly



Historical Range of Karner Blue Butterfly



Wild Blue Lupine Range



States



Canadian Provinces



Water Bodies



Map by A.N.Hess

2001 study...

We may never know how many invertebrate species are at risk. The true impact of extinction on invertebrates is hard to quantify, partly because endangered species documentation is biased in favor of vertebrates. According to the 2000

overlooked and ignored, they eclipse all other forms of life on earth, not only in sheer numbers, diversity (number of species), and biomass (dry weight), but also in

ure 1) of the total identified animal species, and with all other invertebrates (excluding viruses and bacteria) the number reaches 1,238,000 or 94 percent (UNEP 1995). The

velop vast surface blooms of incredible mass. In the U.S. the biomass of earthworms and arthropods is estimated at 1,000 kg/ha, while the comparative biomass of human

Undiscovered mammals:

303

Undiscovered insects:

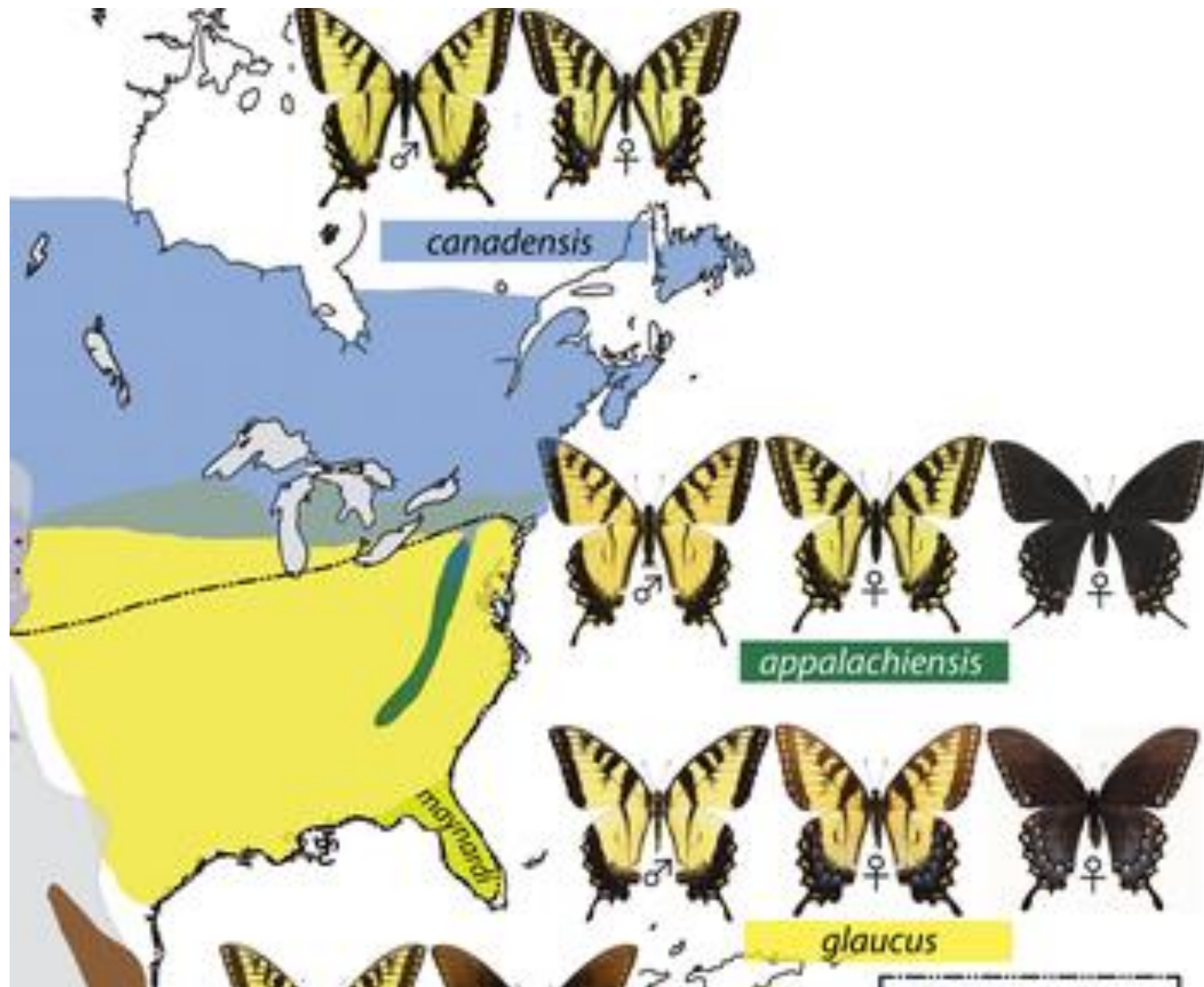
Over 30,000,000

**HOW MANY INSECTS
ARE THERE?**



THERE'S OVER 9,000!

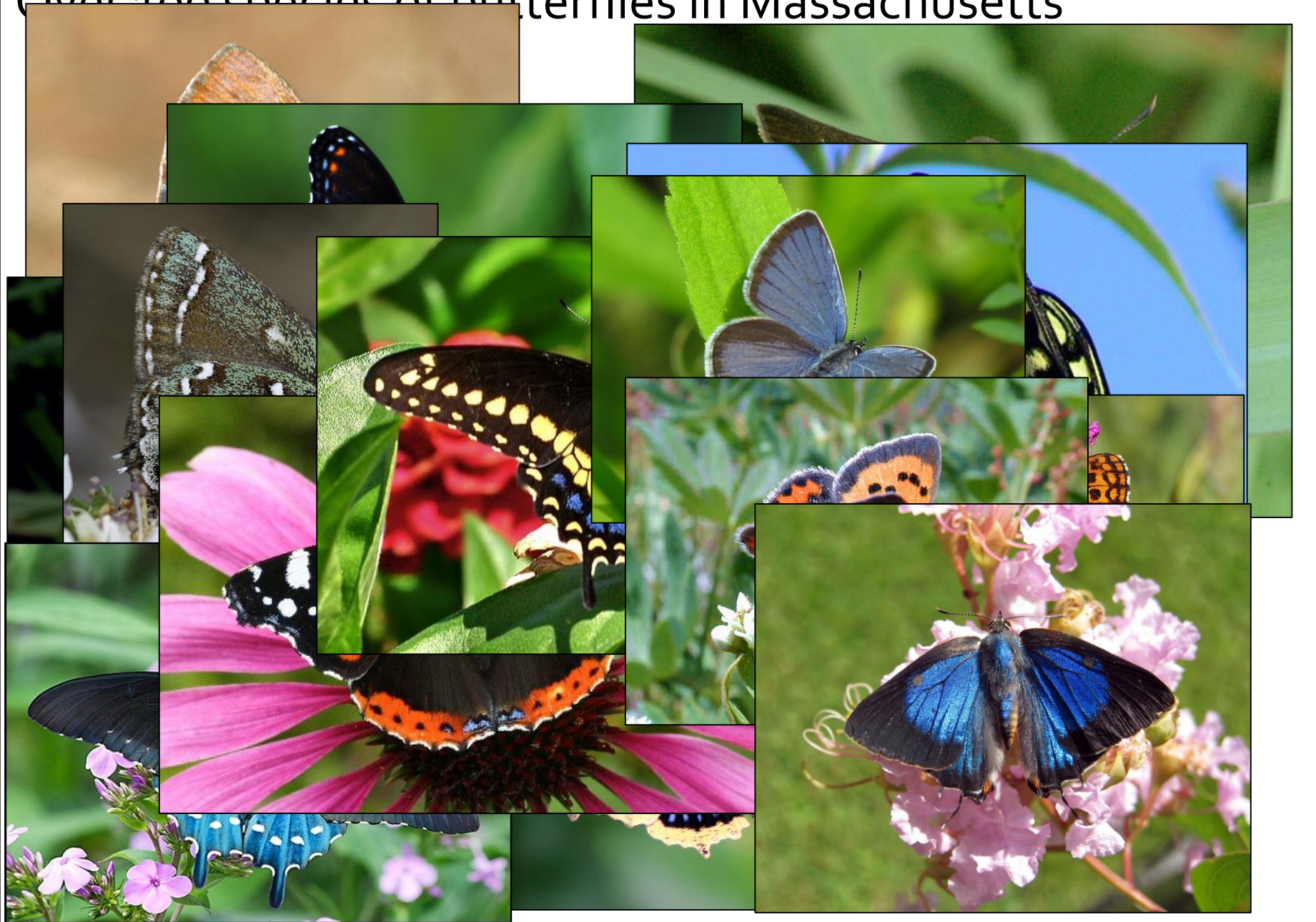
Figure 1. The distributional ranges and hybrid zones of tiger swallowtails, and the hybrid phenotype of *Papilio appalachiensis*.

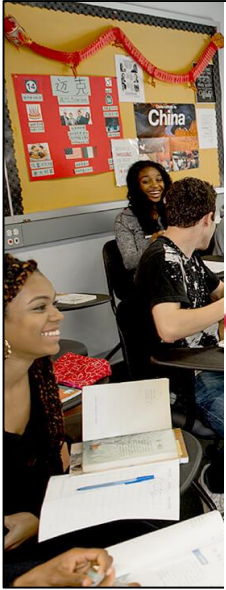




©2005 Will Cook

Over 100 species of butterflies in Massachusetts





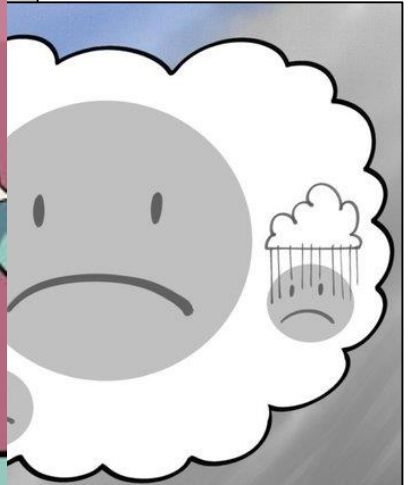
Things to Do



MY BU

bucket list

- GO TO AUSTRALIA
- TRAVEL W/ BOYFRIEND
- GET AN APARTMENT
- LIVE W/ BOYFRIEND
- GET MARRIED
- RENT A HOUSE
- BUY A HOUSE



Slow your life down



Meditative

Namaste



What do you need to get started?



1. A sense of adventure!



2. Something to see them



Quality of lens



Quality of lens



Short minimum focus

- At least <10 feet
- Ideally <6 feet



Magnification Power (7x32)



Objective lens size
(8x42)

Lets in more light!



3. Something to record what you see

- paper and pencil

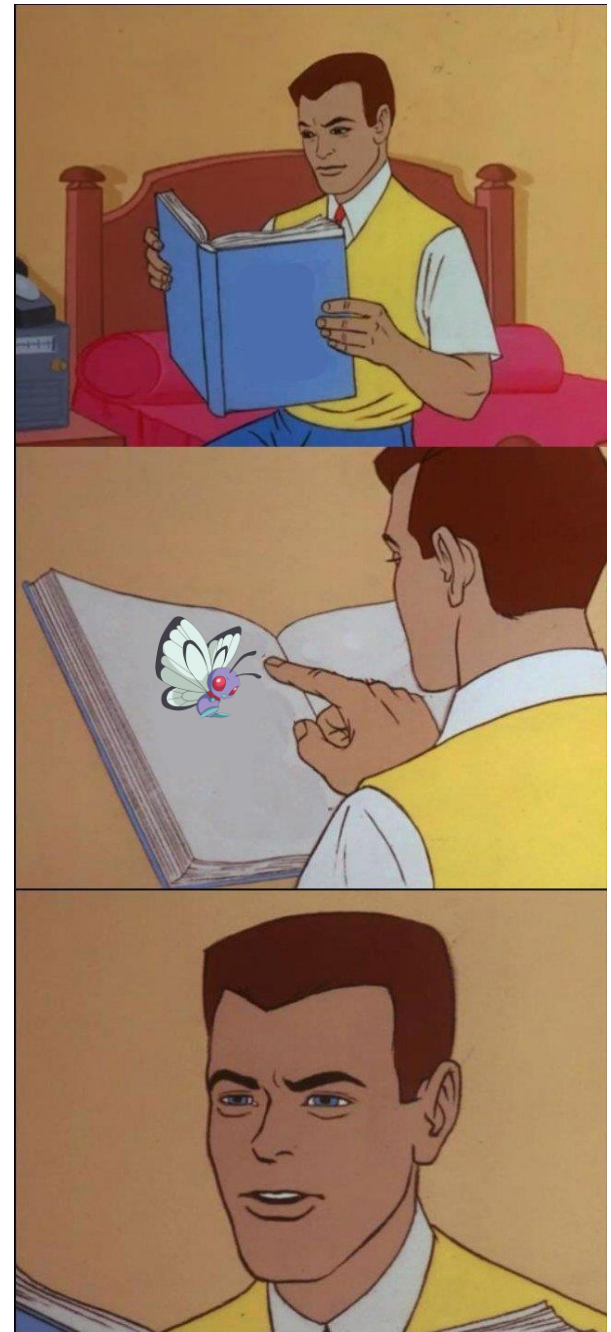
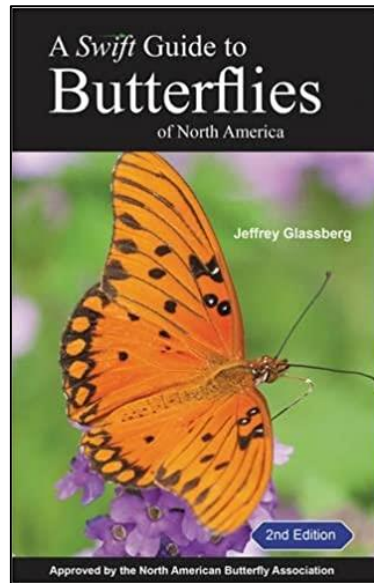
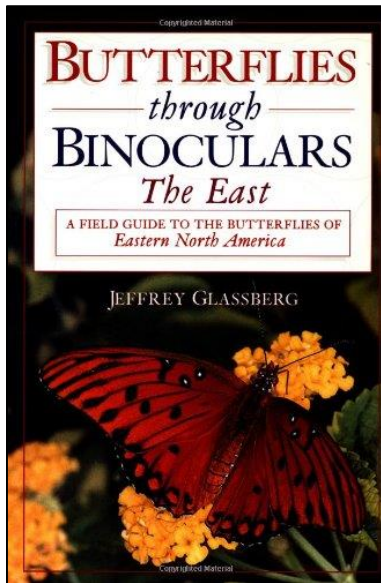
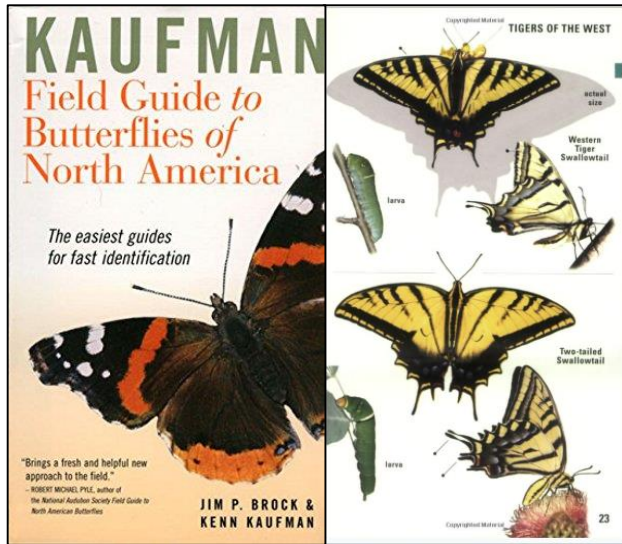


Butterfly Checklist		Name:
Large butterflies: Swallowtails (Papilionidae)		
Subfamily:	Papilioninae	
<input type="checkbox"/>	Eastern Tiger Swallowtail	
<input type="checkbox"/>	Pipevine Swallowtail	
<input type="checkbox"/>	Spicebush Swallowtail	
<input type="checkbox"/>	Black Swallowtail	
<input type="checkbox"/>	Giant Swallowtail	
Medium butterflies: Brush-footed Butterflies (Nymphalidae)		
Subfamily:	Milkweed Butterflies (Danaeinae)	
<input type="checkbox"/>	Monarch	
Subfamily:	Admirals (Limenitidinae)	
<input type="checkbox"/>	White Admiral/Red-spotted Purple	
<input type="checkbox"/>	Viceroy	
Subfamily:	Satyrs (Satyrinae)	
<input type="checkbox"/>	Little Wood-satyr	
<input type="checkbox"/>	Common Wood-nymph	
<input type="checkbox"/>	Common Ringlet	
Subfamily:	Fritillaries (Heliconiinae)	
<input type="checkbox"/>	Great Spangled Fritillary	

So, you found something cool... what now?



IS THIS A BUTTERFLY?



Juvanal's duskywing



Horace's duskywing



They're the same picture.

Phone apps

- Good for butterflies!
- Only as good as the photo quality
- Only as good as community supporting it



How do you find butterflies?

ONE DOES NOT SIMPLY

WALK INTO BUTTERFLIES



Weather butterflies like:

- **Sunny, warm**
- **10 AM – 2PM**
- **Not very windy**



Walk slowly and carefully





Don't let your shadow scare them!



Look up, down, and all around



Different plants can mean different butterflies

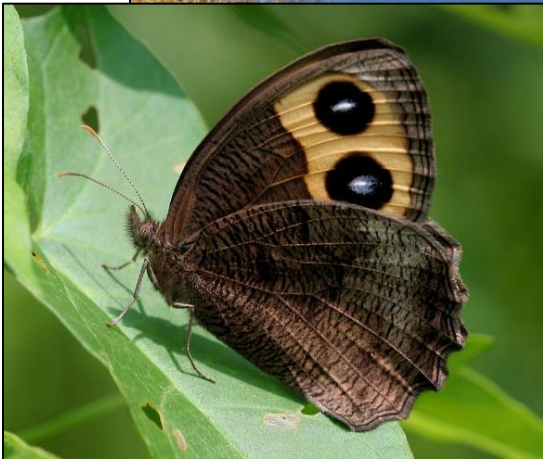
- Meadow
- Deciduous forest
- Coniferous forest
- Beaches
- Ecotone



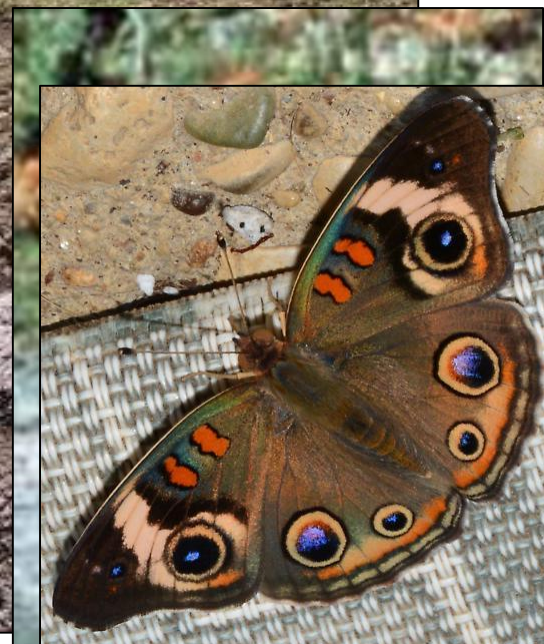
Myles Standish State Forest (Plymouth/Carver)



Douglas S. Westgate Property (Wareham)



Cumberland Farms IBA (Middleboro/Halifax)



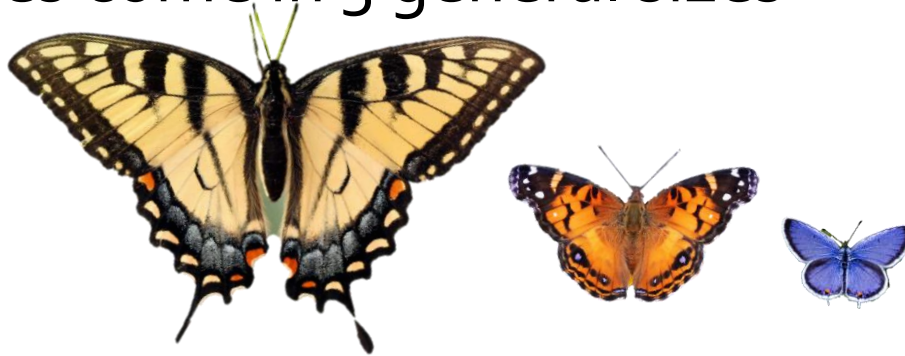
Backyard Butterfly ID Crash Course

IF YOU CAN'T ID A PAINTED LADY



**YOU'RE GONNA BE LIVING IN A VAN
DOWN BY THE RIVER**

Butterflies come in 3 general sizes



LARGE



MEDIUM



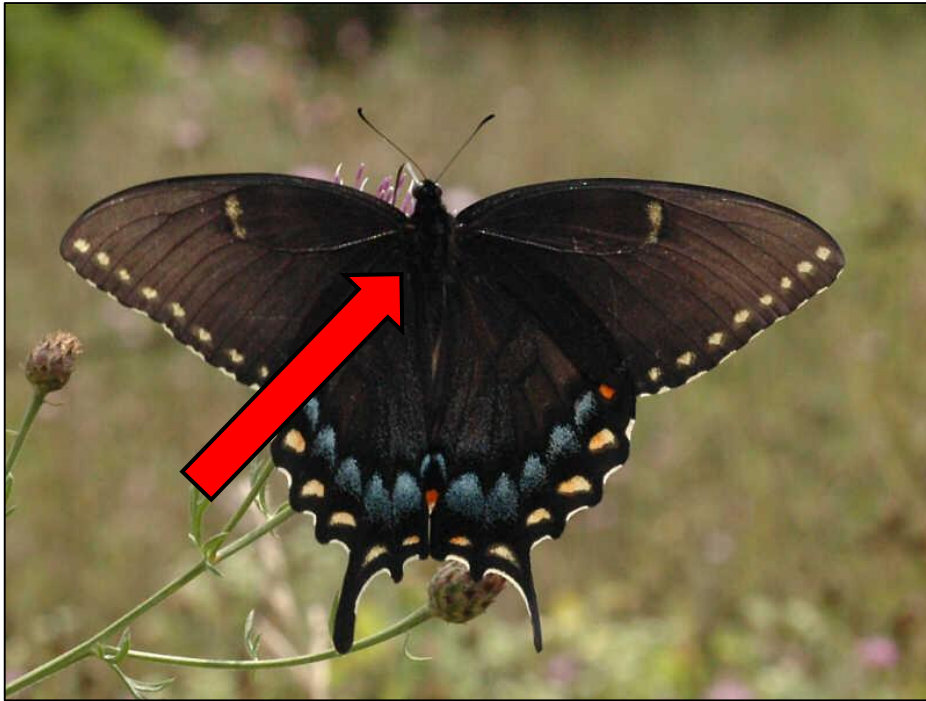
SMALL



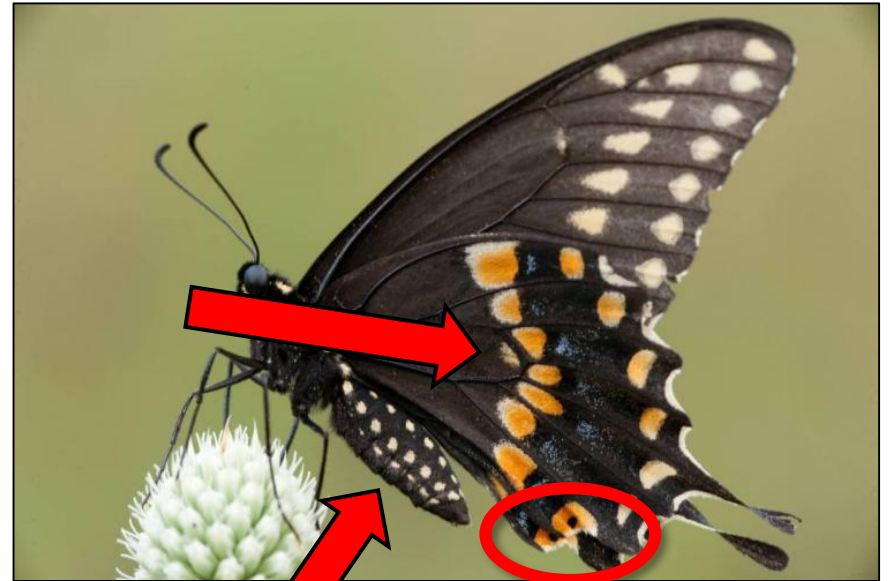
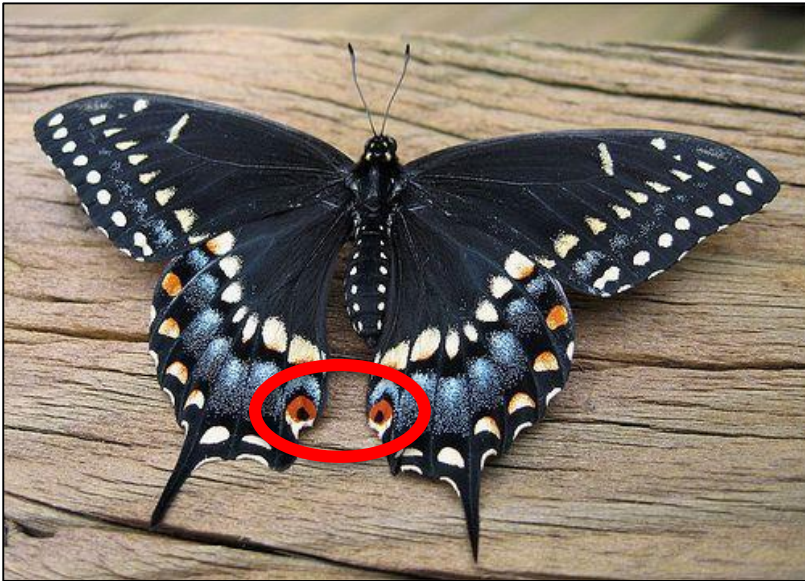
Tiger swallowtail



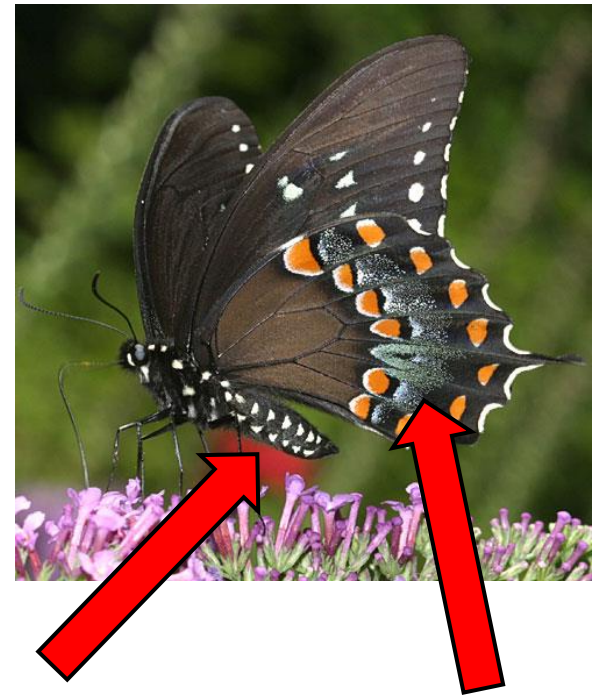
Tiger swallowtail (dark female form)



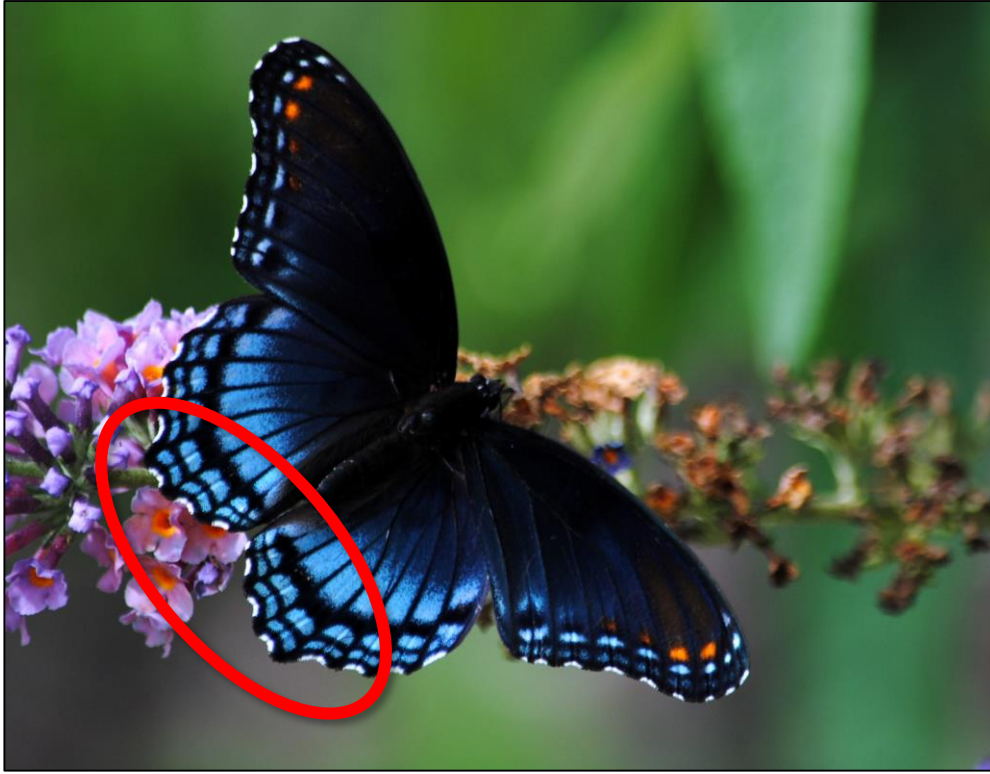
Black swallowtail



Spicebush swallowtail

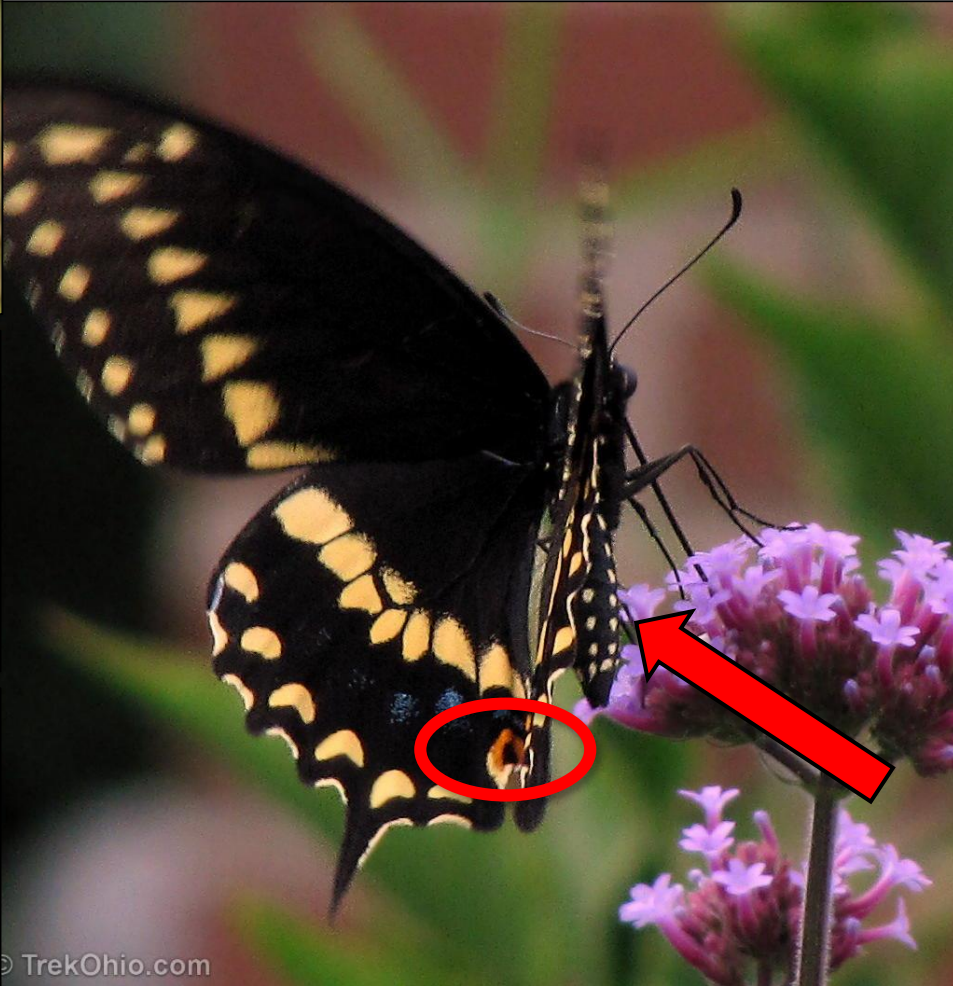


Red-spotted purple



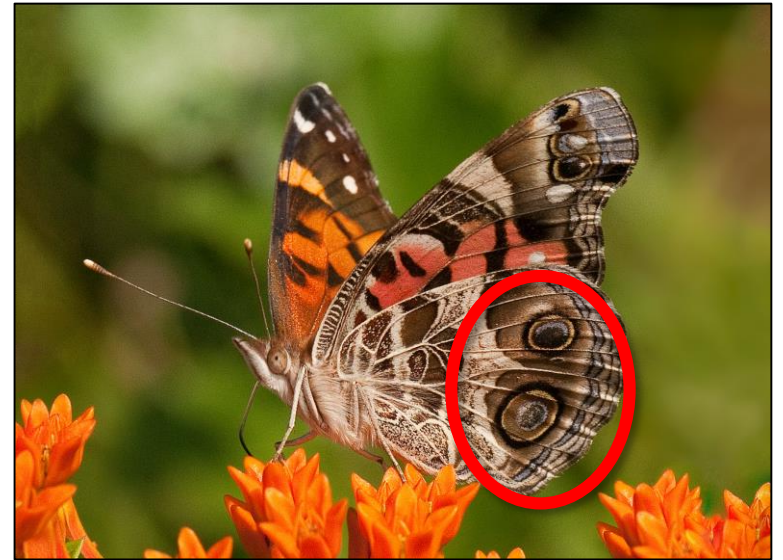
White Admiral



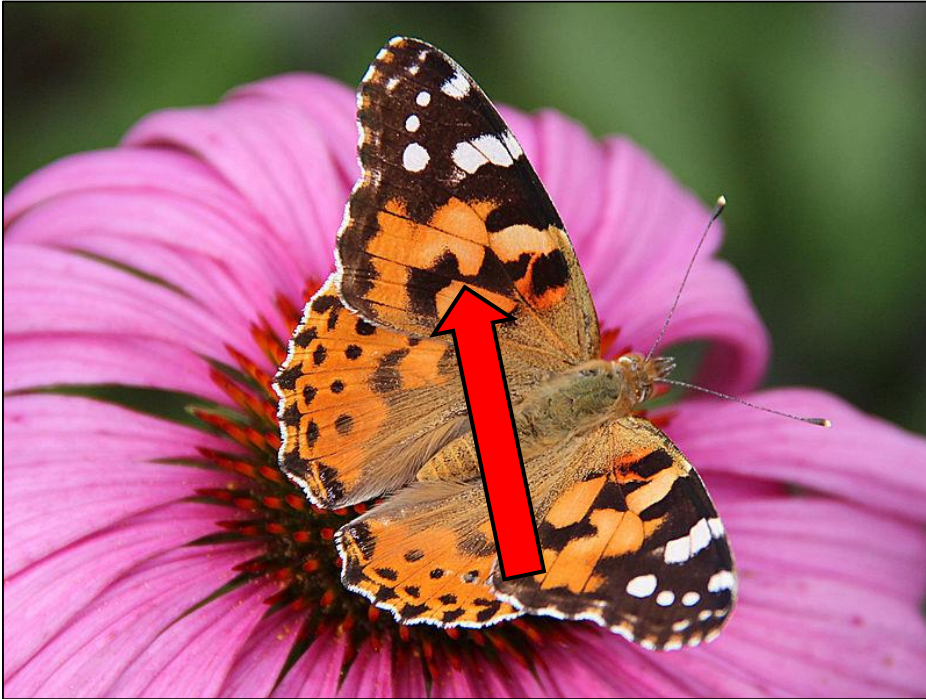


© TrekOhio.com

American lady



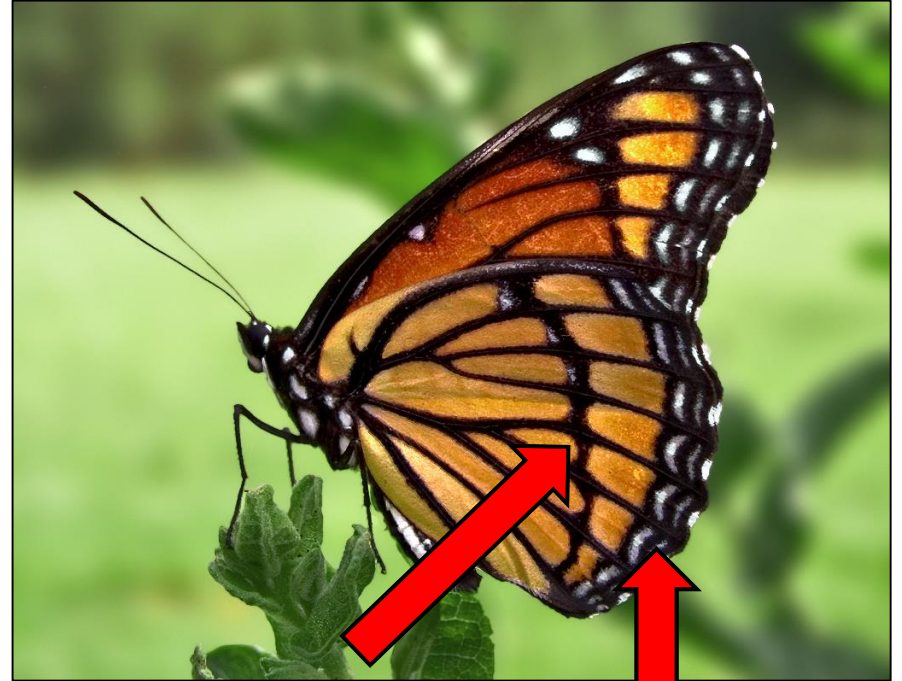
Painted lady



Monarch

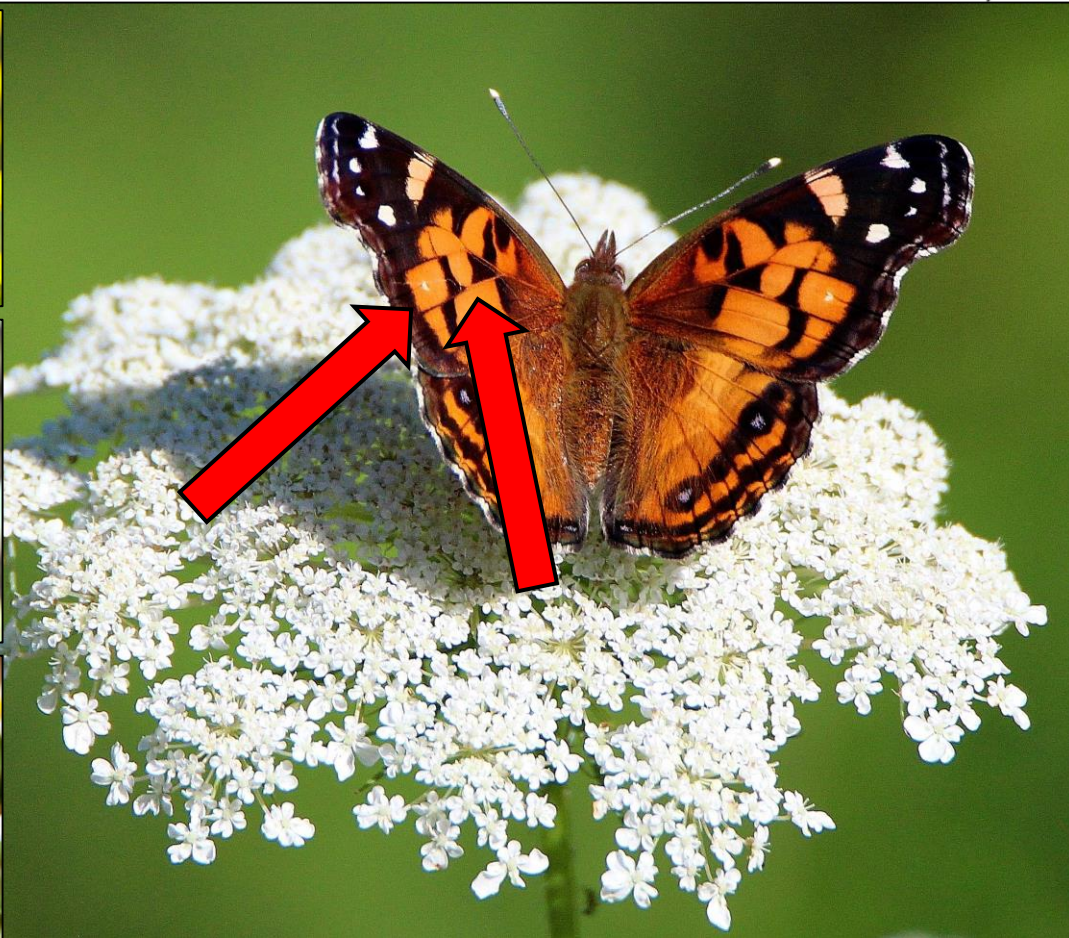


Viceroy

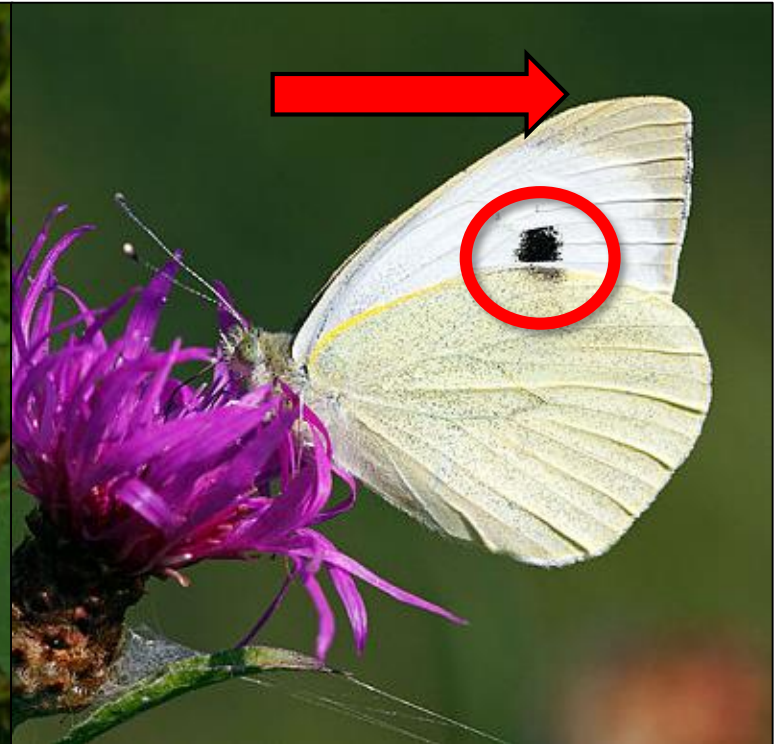
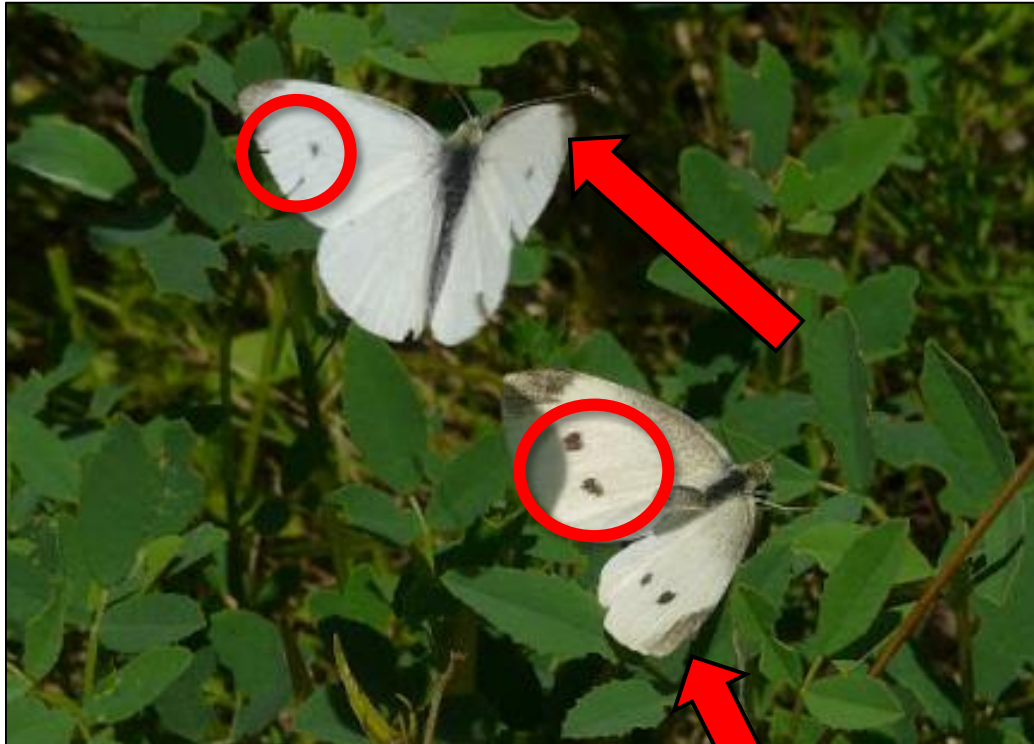


Common buckeye

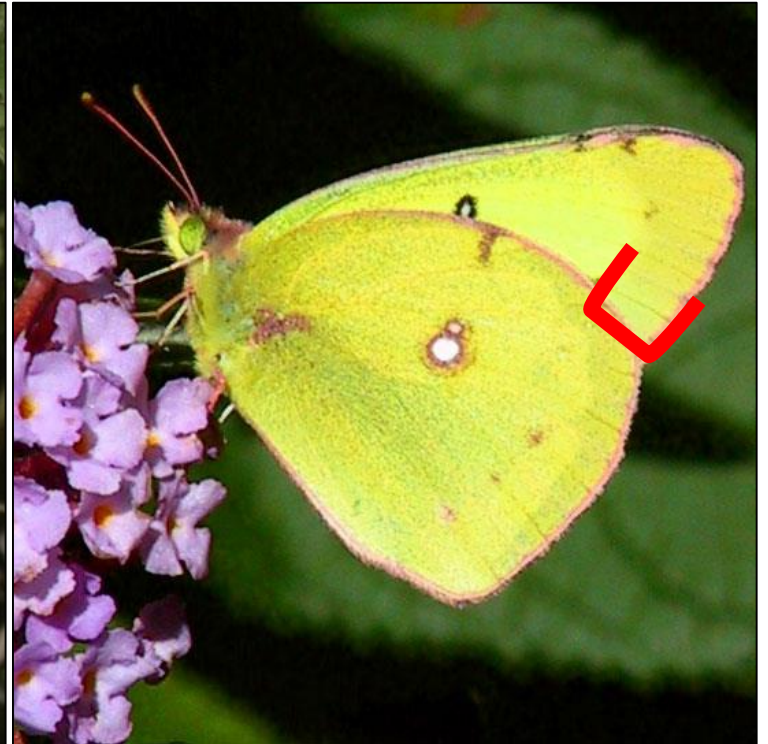




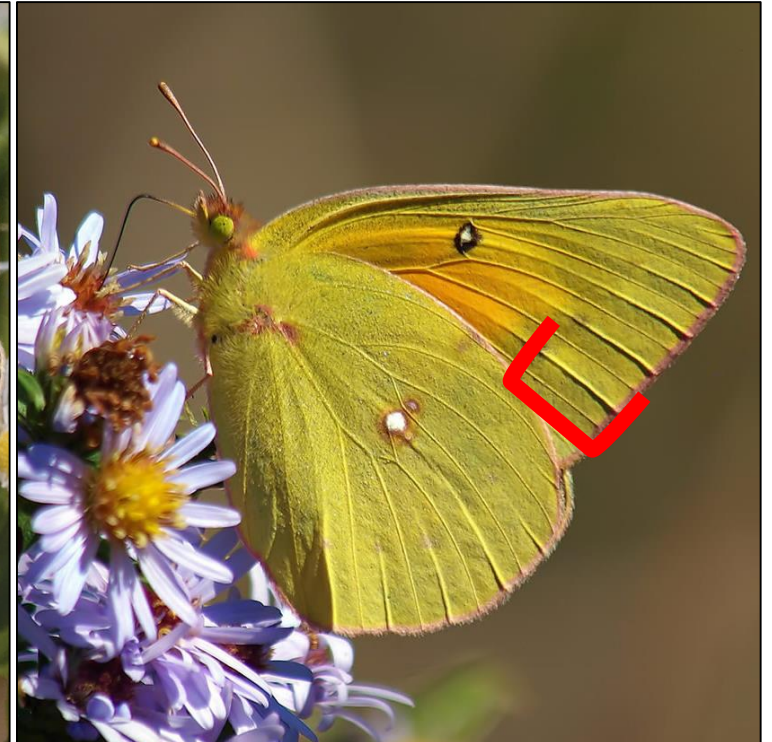
Cabbage white



Clouded sulphur

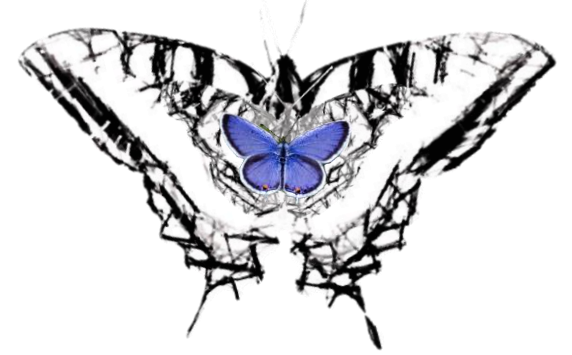


Orange sulphur

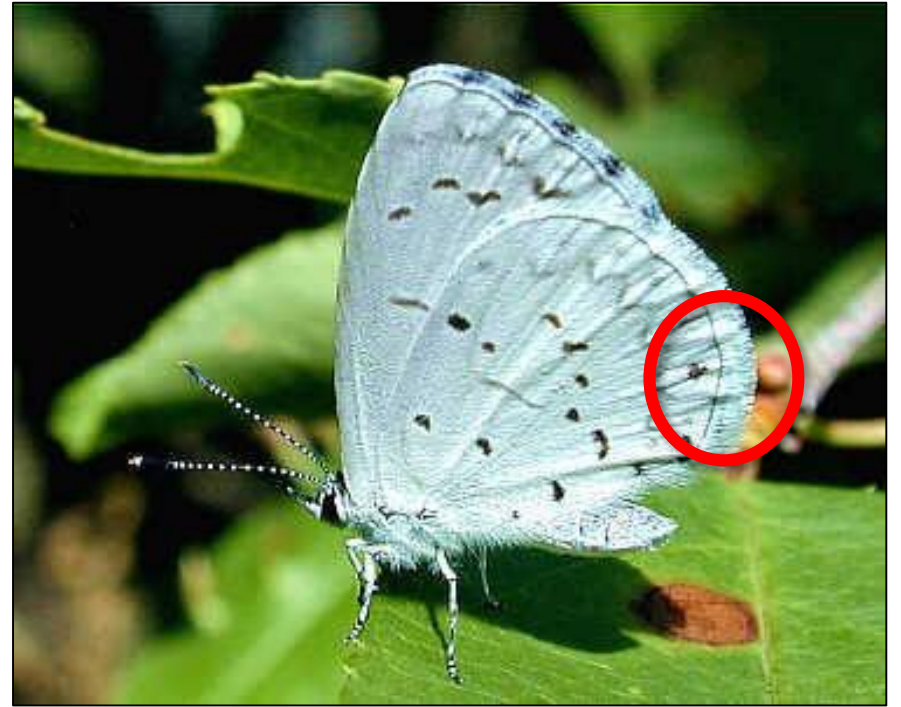
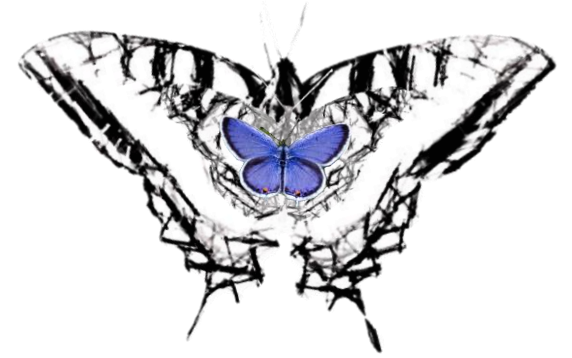




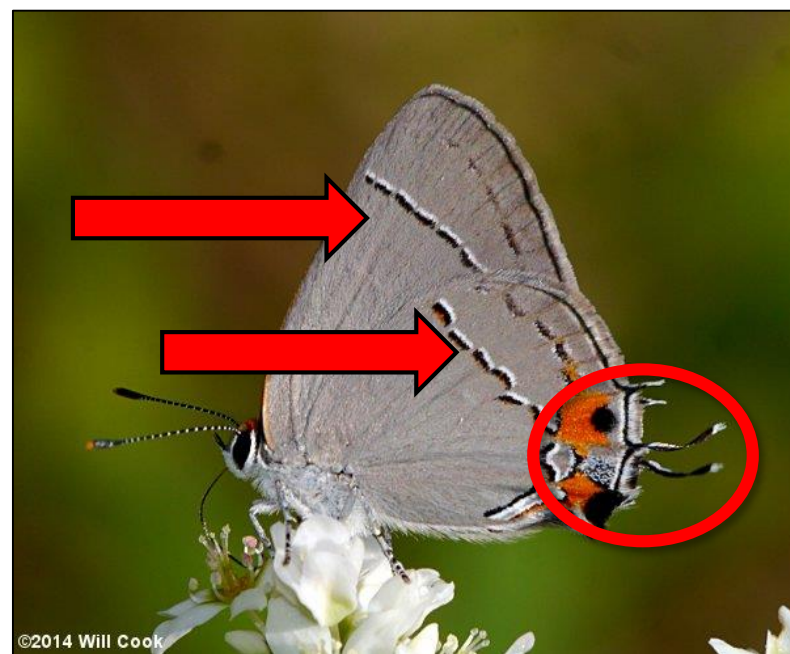
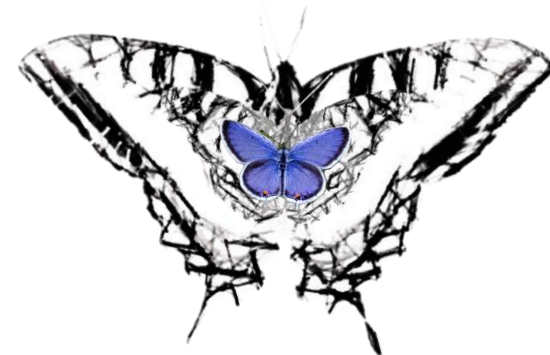
Eastern tailed-blue

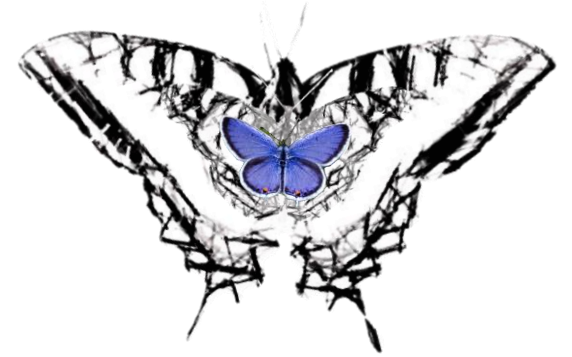


Spring azure



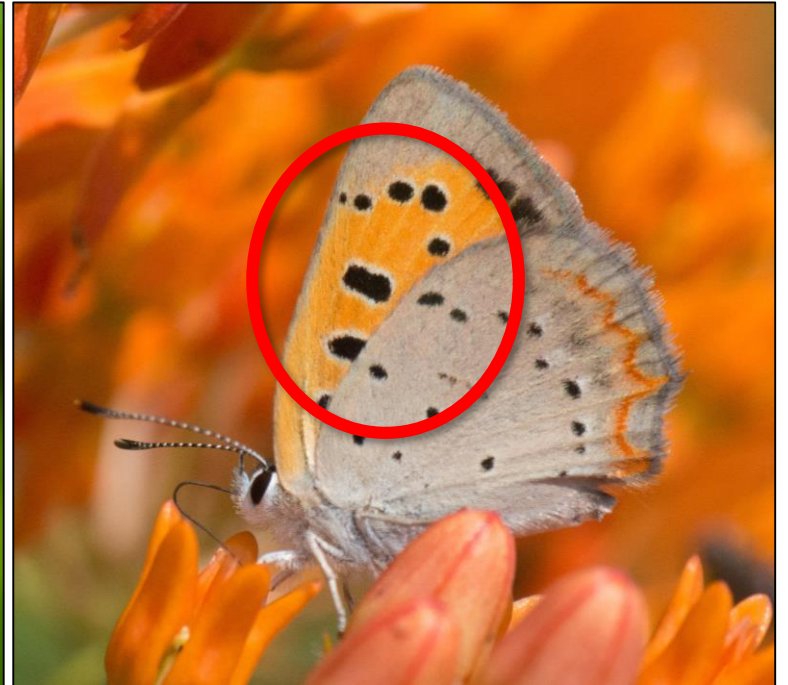
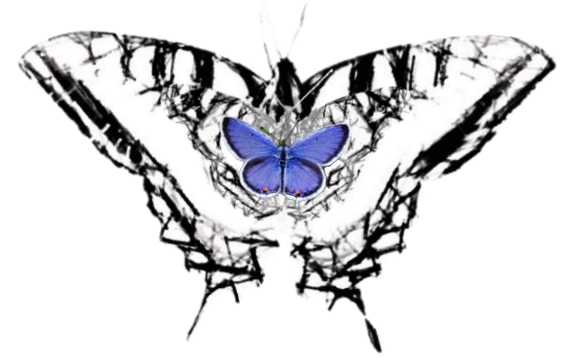
Gray hairstreak



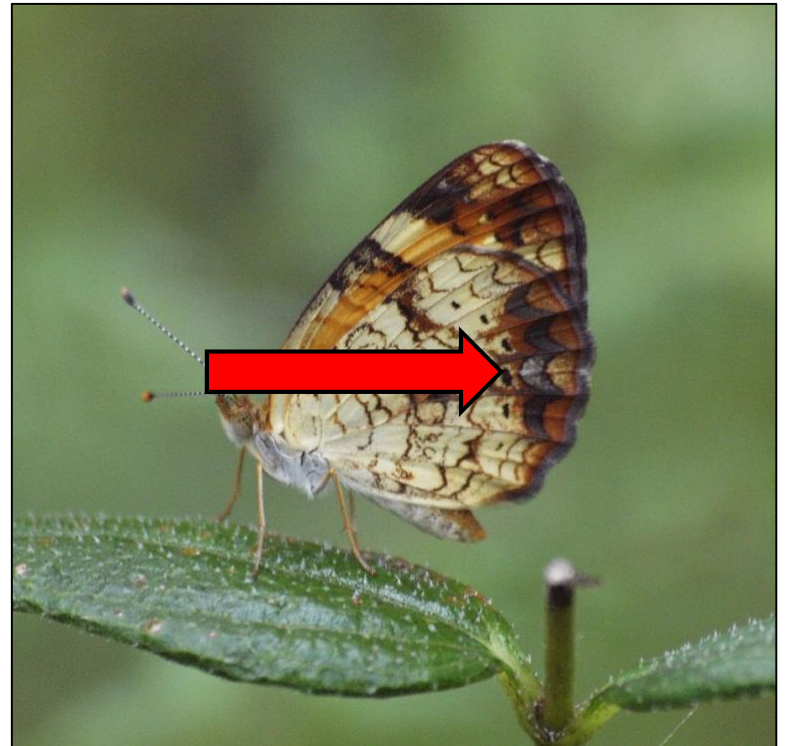
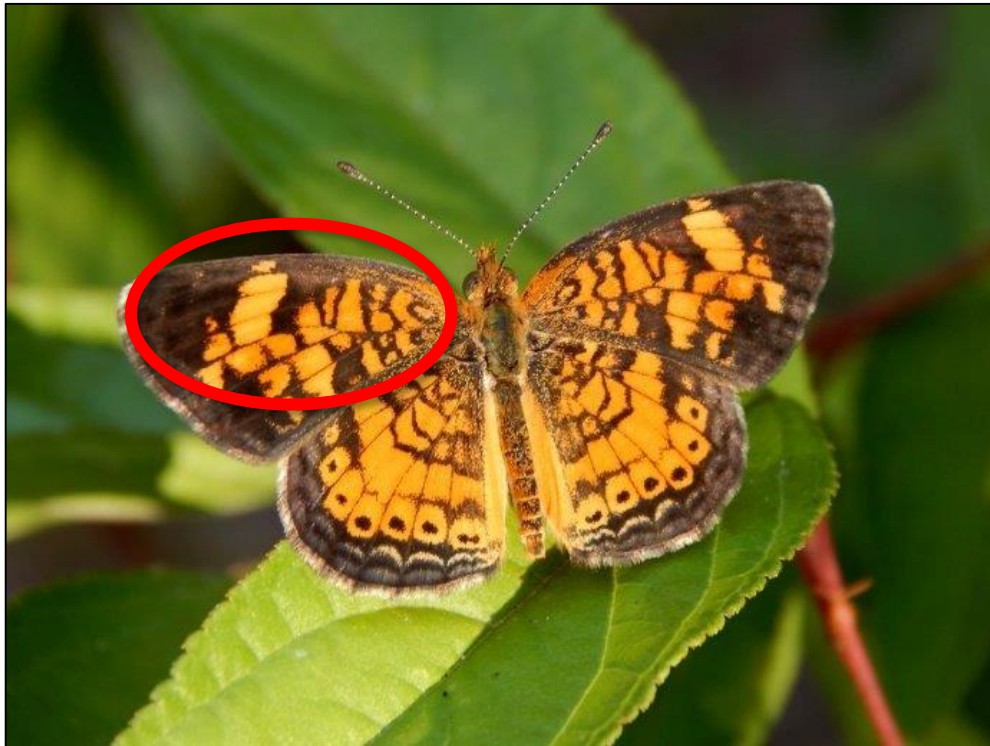
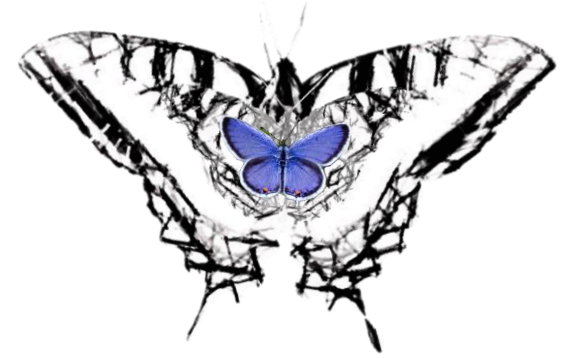


© 2013 Alice Koster

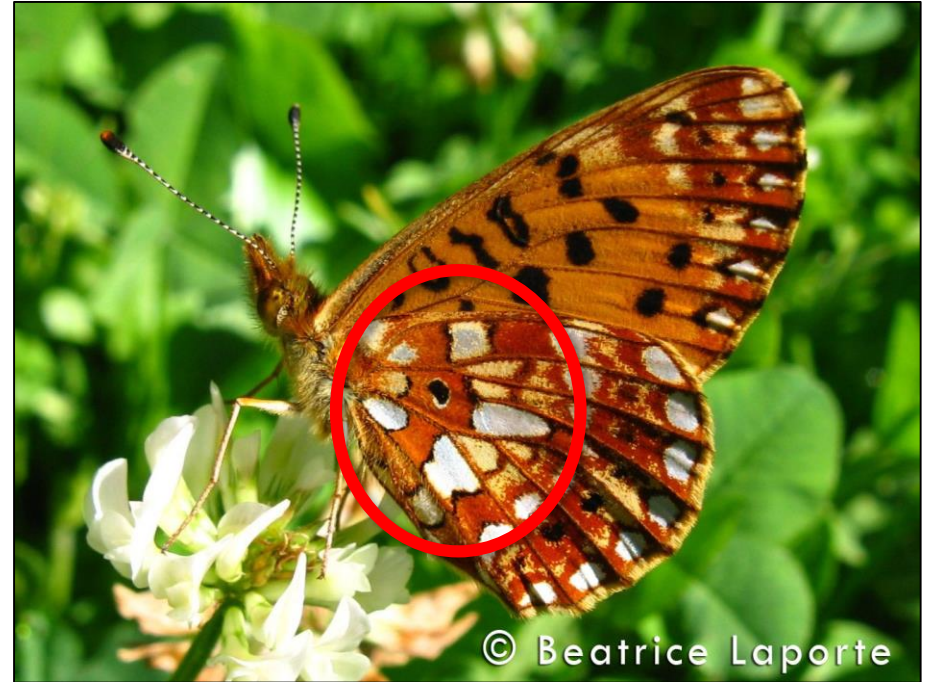
American copper

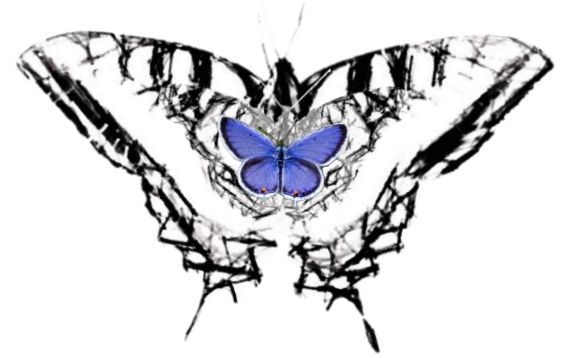
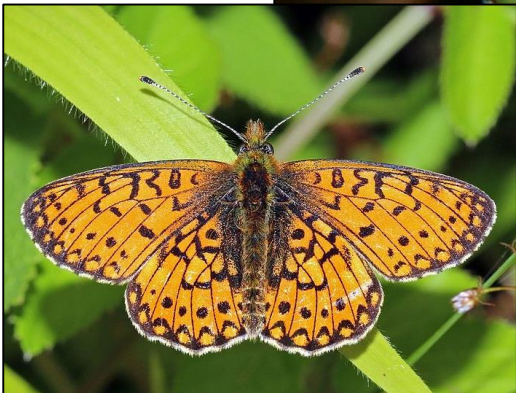


Pearl crescent

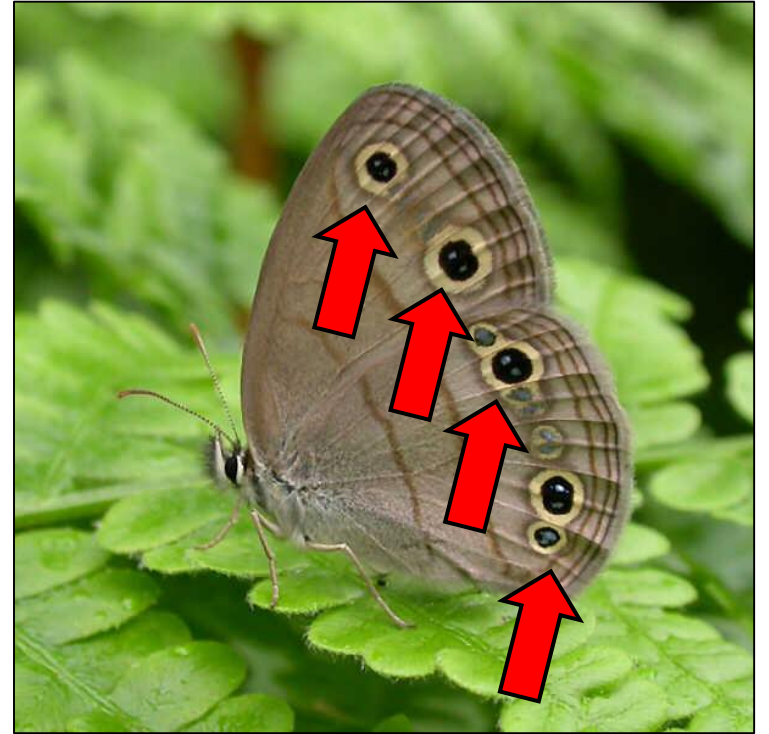


Silver-bordered fritillary





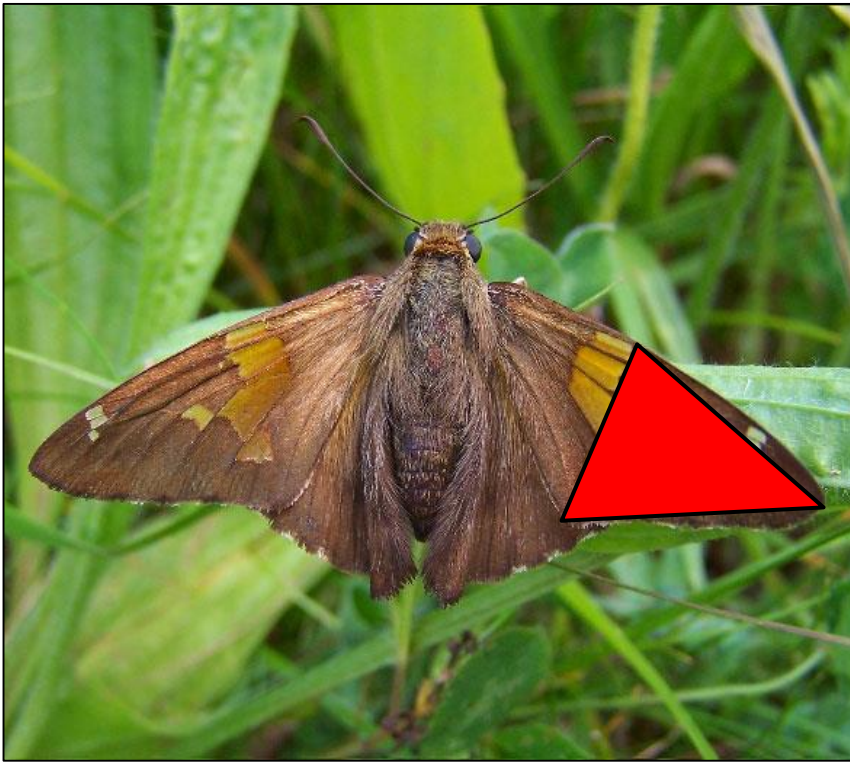
Little wood satyr



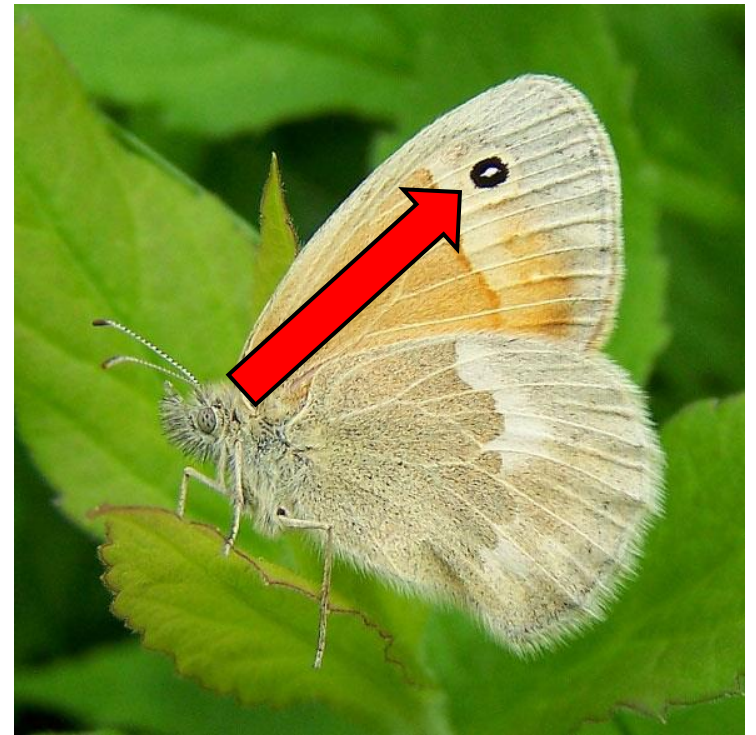
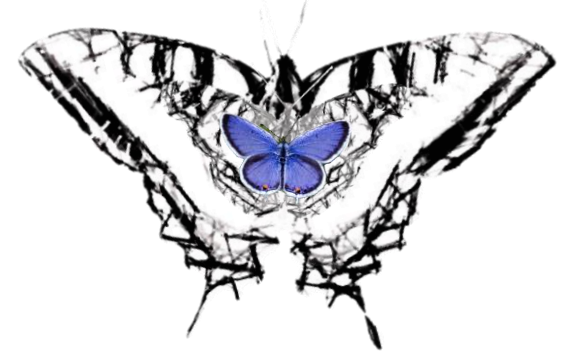
Common wood nymph



Silver-spotted skipper



Common ringlet





Trouble getting things to stick?



Take it one step at a time...

Skippers

Blues and Hairstreaks

Sulphurs and Whites

Medium Orange

Swallowtails



Focus on common species

And, try look-a-likes!



Join guided walks



Butterfly houses

Magic Wings South Deerfield



Butterflies of Cape Cod Bourne



If at first you don't succeed...



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Questions?

