

Gardening for Butterflies

Daniel Wright

Agenda

- What is a butterfly?
- Why do we want butterflies in our gardens?
- Gardening best practices to increase number and variety of butterflies
 - Basic needs for larva
 - Basic needs for adults
- Typical butterflies around the Greater Richmond Area and how to plant for them
- Frequently asked Questions

Animalia



Arthropoda



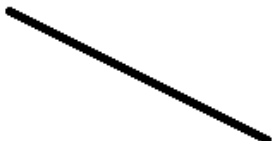
Insecta



Lepidoptera



Rhopalocera



Hesperiiidae
(skippers)

Papilionoidea
(butterflies)



Frenatae
(moths)

Butterfly Biology

-Insect

Six legs

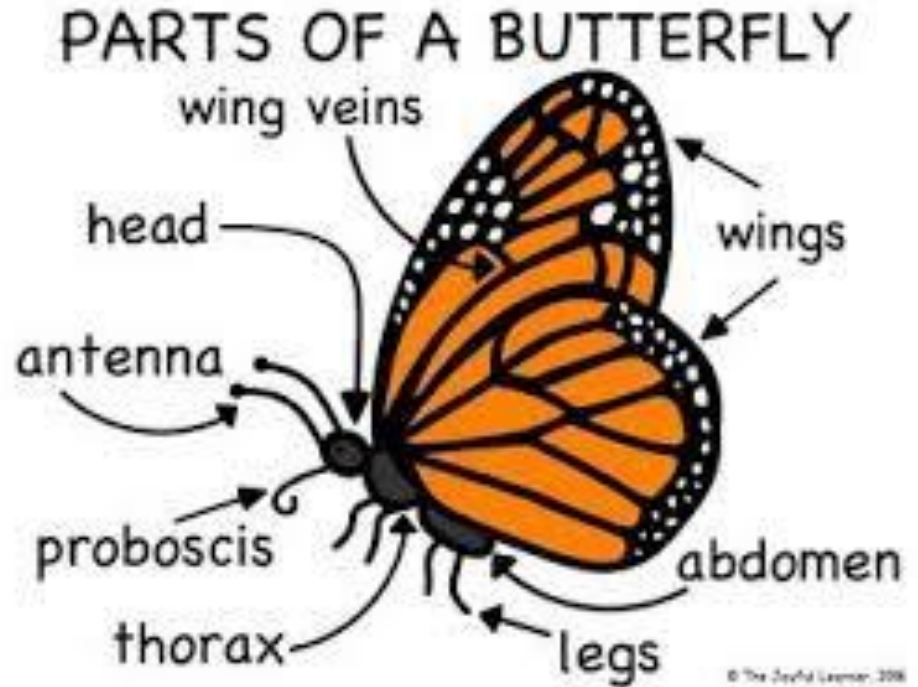
Three distinct body parts

A pair of antennae

Compound eye

“Cold blooded”

Exoskeleton



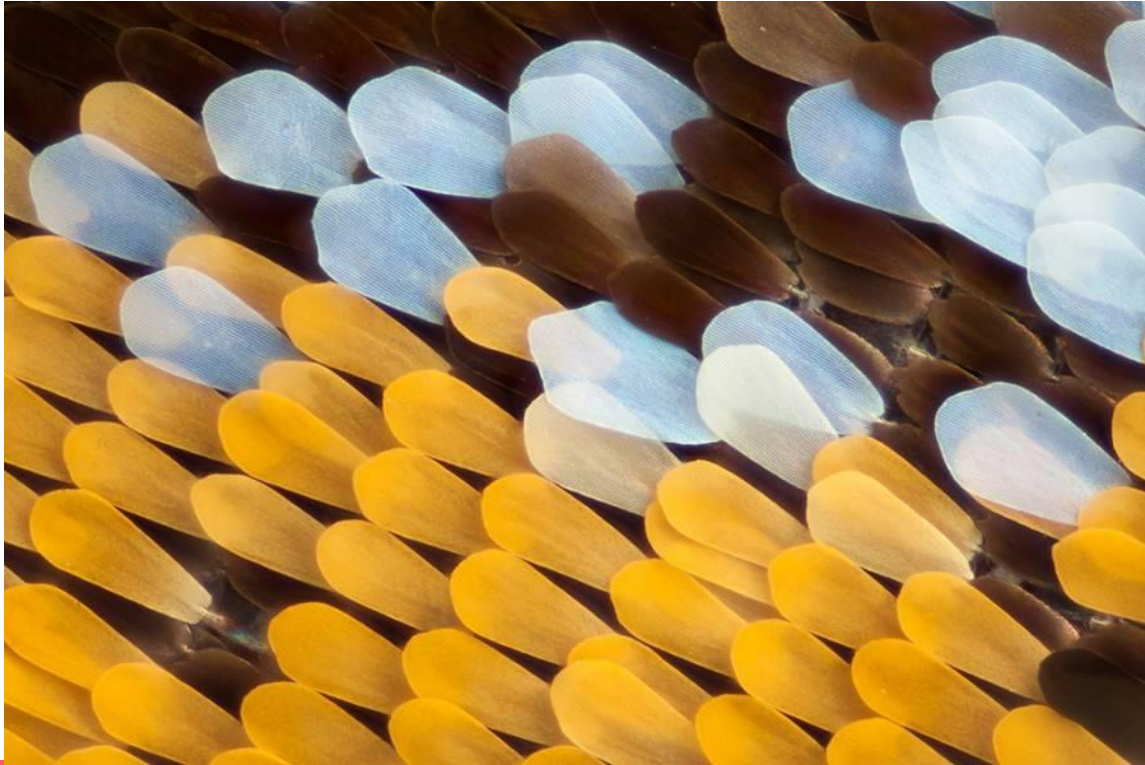
What sets Lepidoptera apart from other insects?



What sets Lepidoptera apart from other insects?



What sets Lepidoptera apart from other insects?



Visual differences between butterflies vs Moths

Butterflies

- Clubbed antennae
- Thin body
- Fold wings vertically over backs
- Tend to be larger, more colorful

Moths

- Feathered antennae
- Stockier body
- Rest with wings open, horizontally
- Tend to be smaller and have duller colors

Butterflies vs Moths



Butterfly



Moth

Butterflies vs Moths



Butterflies vs Moths



Other differences between butterflies vs Moths

Butterflies

- Four separate wings
- Diurnal
- Chrysalis
- Nectar feeders

Moths

- Frenulum that connects wings
- Nocturnal
- Cocoon
- Adult stage primarily for mating

Butterflies vs Moths

- There are exceptions to every rule
- As scientists find new species, the lines between butterflies and moths continues to get messier





Common butterfly behavior

- Territoriality
 - Skippers, buckeyes, mourning cloaks
- Puddling
 - Tend to prefer dirty water
- Roosting
 - Late afternoon, before sunset
 - Prefer well camouflaged
 - Most Virginia natives singular

Why do we want butterflies around?

1) They are beautiful and mysterious creatures

“...when I stand among butterflies and their food plants, this is ecstasy. And behind the ecstasy is something else, which is hard to explain. It is like a momentary vacuum into which rushes all that I love. A sense of oneness with sun and stone. A thrill of gratitude to whom it may concern-to the melodious genius of human fate or to tender ghosts humoring a lucky mortal”

-Vladimir Nabokov

Why do we want butterflies around?

2) An effective and efficient pollinator

- When butterflies are drinking nectar they pick up pollen on their face and body and transport it to other plants.
- Some scientists have speculated they could be the number two pollinator by volume
- Particularly useful for red flowering plants

Why do we want butterflies around?

3) Easy way to promote healthy local biodiversity

- Between all of their stages of life, they are vastly connected to local food chains
 - Spiders, wasps, ants, flies, beetles, birds, small mammals etc.
- Native pollinators are good at pollinating native plants



Best Practices: Design

- Sun
- Shelter
- Puddles
- Discouraging Birds and Pests
- Livestocking
- Nectar source
- Food for larva

Best Practices: Sun



- Large open spaces filled with sunlight
 - Different species feed at different times. You will want nectar plants in the sun for most of the day
 - Rock gardens with things like sedum or primrose make ideal basking spot for warmth-loving butterflies
-

Best Practices: Shelter

Windbreaks promote activity
and promote longer stays

- Shrubby nectar sources:
butterfly bush,
honeysuckle
 - Larval food sources:
spicebush, hawthorn
 - Willow, poplar, wild cherry
trees
 - Fence/trellises: Pipevine,
passion flower
-

Best Practices: Puddles

- At least one puddling area is important
- Wet sand/earth/mud over open water
- Gouging level surface or grading an incline will allow natural rains to provide moisture
- Bury a bucket filled with sand up to an inch or two with rocks on top and fill with water.
- Places pets like, butterflies will like
- Splashing area with stale beer, honey water, sugar water

Best Practices: Discouraging Birds and Pests

Many things other than humans enjoy increased butterfly activity.

- Careful with balancing birds and butterflies.
 - Caution against nesting boxes
 - Particularly swallows and sparrows
 - Protective netting over plants with eggs or pupa
 - Ladybugs and praying mantis over spraying insecticides
-

Best Practices: Livestocking

- Stocking is an effective way of getting started and encouraging large populations
- Do not remove egg or pupa from leaf it is on, but rather move entire leaf or branch to your garden

Best Practices: Special touches

Unique mini-environments to draw
less common species to your garden

- Small wooded areas will entice satyrs and mourning cloaks
 - Bare, sunny ground near trees: buckeyes and red-spotted purples
 - Meadows: countless species and particularly large number of skippers
-

Nectar Sources: Diversity is Key

- Butterflies are not picky on nectar sources.
 - Bright colors, studies show preference of red and yellow on many species
 - Shape
 - Tubular around a flower head (daisies) provide convenient place to perch
 - Clusters of smaller flowers provide high nectar quantities and are easy to find (lantana)
 - Seldom use flowers that hang down from a vine or stem
- Fragrance: stronger the better. Studies have shown that a butterfly will almost always pick the more fragrant flower even if it is the same size and shape

Nectar Sources: Annuals



Southern American Verbena, *Verbena bonariensis*

Pentas, lantana, verbena (verbena can be an annual or a perennial), zinnia, salvia.

- * Annuals do well both in the ground or planted in containers.
- * The physical characteristics of these plants are good “fits” for the physical characteristics of the butterfly. They have flowers with petals providing a good landing pad and a short tube with a nectary at the base of the flowers.

Nectar Sources: Perennials



Echinacea purpurea – Eastern Purple Coneflower

Monarda didyma or *Monarda fistulosa* –
Bee Balm or Wild Bergamot

Coreopsis verticillata – Threadleaf
Coreopsis

Phlox paniculata – Tall Garden Phlox

Rudbeckia hirta or *Rudbeckia fulgida* –
Black-eyed Susan or Orange Coneflower

Echinacea purpurea – Eastern Purple
Coneflower

Achillea millefolium – Yarrow

Eutrochium *purpureum* – Joe-pye weed

Nectar Sources: Milkweed



-be sure to get one of our natives:
Butterfly weed (*Asclepias tuberosa*),
Swamp Milkweed (*Asclepias perennis*), Whorled Milkweed
(*Asclepias verticillata*), or *Asclepias incarnata*.

-Host plant for monarchs

-easy to grow

What You Might Expect: Eastern Tiger



Eastern Tiger Swallowtail (*Papilio glaucus*)

Host Plants: Cherry, tulip tree, lilac, willow, ash, sweet-bay

Nectar Plants: Lilac, butterfly bush, ironweed, honeysuckle, lantana

Monarch



Monarch (*Danaus plexippus*)

Host Plants: Various members of the milkweed family

Nectar Plants: Milkweed, butterfly bush, thistle, goldenrod, Joe-pye weed, pentas, cosmos, lantana, zinnia

Buckeye



Buckeye (*Junonia coenia*)

Host plant: Plants from the snapdragon family including snapdragon (*Antirrhinum*) and toadflax (*Linaria*); the plantain family including plantains (*Plantago*); and the acanthus family including ruellia (*Ruellia nodiflora*).

Red-Spotted Purple



Red-Spotted Purple (*Limenitis arthemis*)

Host plants: willows, black cherry and birches.

Meadow Fritillary



Host Plants: Violets-

the northern white violet (*Viola pallens*) and woolly blue violet (*V. sororia*).

Variegated Fritillary



Host Plants: maypops (*Passiflora incarnata*), may apple (*Podophyllum peltata*), violets (*Viola*), purslane (*Portulaca*), stonecrop (*Sedum*) and moonseed (*Menispermum*).

Black Swallowtail

Host plants: carrots, parsley, dill, fennel, Queen Anne's Lace and rue

Black Swallowtail - Male



Black Swallowtail - Female



Frequently asked Butterfly questions

What is so special about
monarchs?

What is so special about monarchs?



Longest tracked migration: 4,830 miles

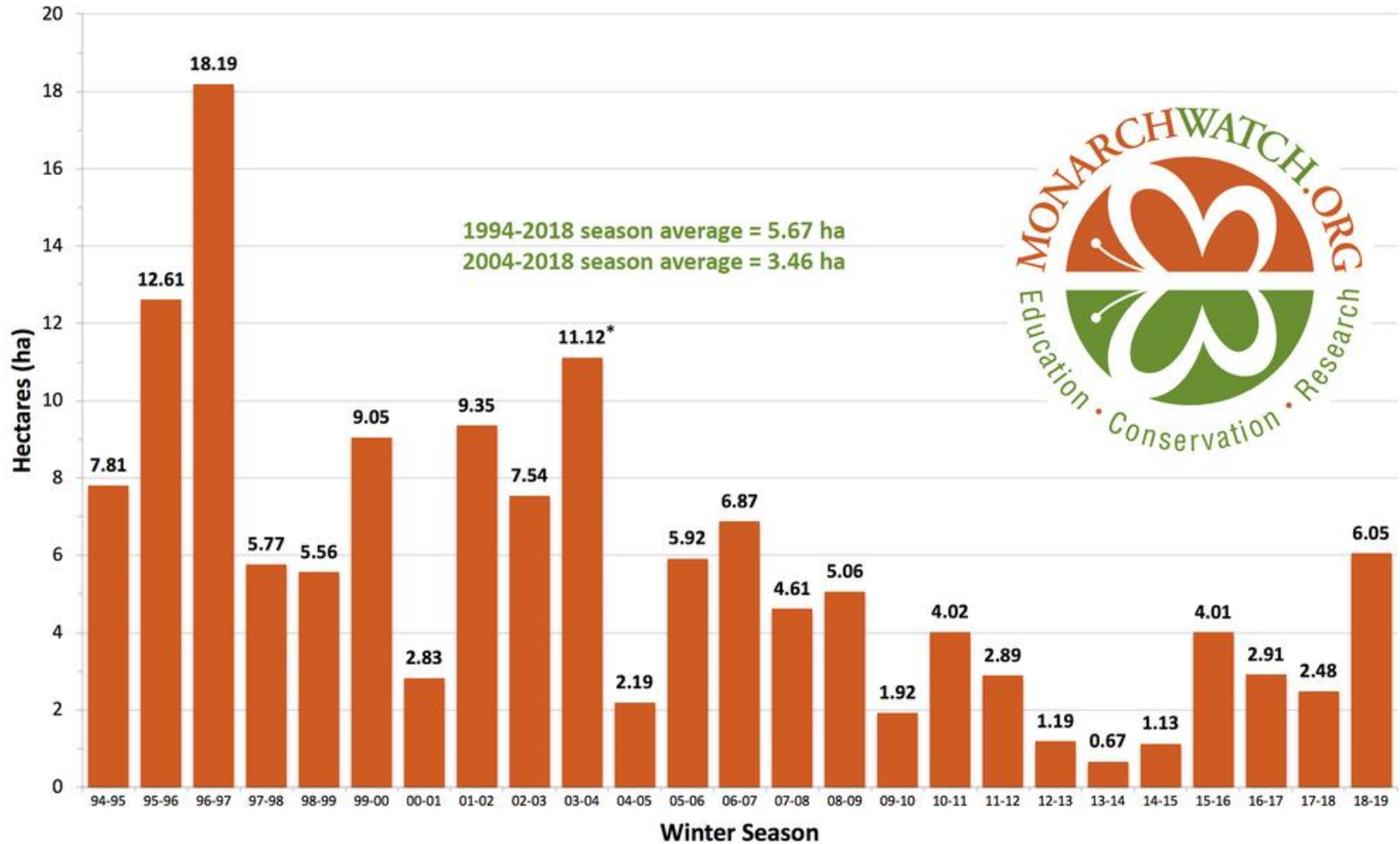
Fasted tracked monarch: 265 miles in one day (typically 50-100 miles/day)



What is so special about monarchs?



Total Area Occupied by Monarch Colonies at Overwintering Sites in Mexico



How to help monarchs

- Provide adequate habitat (milkweed, nectar plants, puddling locations)
- Take great care in using sprays and pesticides
- Push to avoid mowing on roadsides and places that are natural milkweed habitats
- Tag and track monarchs, to build larger data pool on their migratory patterns



The Butterfly Bush Question

- The Department of Conservation and Recreation does not list Buddleia as invasive plants
 - Does have many aggressive tendencies
 - - US National Arboretum highly recommends carefully managing the spread of seedlings
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How long do butterflies live?

- Varies on the species
- Most of our natives range from 1-2 weeks in their adult form

Sources

Lewis Ginter <https://www.lewisginter.org/visit/events/butterflies-live/attract-native-butterflies/>

The Butterfly Garden by Mathew Tekulsky

University of Virginia's list of Virginia Natives to Attract

The Department of Conservation and Recreation

<http://www.dcr.virginia.gov/natural-heritage/invspinfon>

Monarch Watch

A large red square with a white border, centered on a white background. Inside the square, the word "Questions?" is written in white text.

Questions?