Butterflies of Virginia: Beyond the Basics

- Prepared by Terri Keffert and Nancy Weiss of the Rivanna Master Naturalists, with additional thanks to Julie Connelly

Goals for this Class

- Brief overview of butterfly anatomy
- Butterfly identification of commonly seen butterflies all across Virginia
- Teach you the ‘tools’ to enable you to identify them on your own
- Observation tips

What We Won’t Cover

- Host and nectar plants
- Flight periods
- Butterfly gardens
- Larval stages / caterpillar identification
- Butterfly conservation
- Spring-only species and most Skippers
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Tools for Identification
- Binoculars #1 (focus at close range best)
- Digital camera with fresh batteries
- Field guides, e.g.:
  - Butterflies through Binoculars: the East – Jeffrey Glassberg
  - A Field Guide to Eastern Butterflies – Peterson Field Guide

Butterfly Life Cycle
- EGG
- CATERPILLAR
- PUPA – chrysalis
- ADULT

Identification Characteristics
- Color
- Size and shape
- Distinctive features – tails, no tails
- Check fore/hindwing; topside/underside markings
- Flight style
- Location – woods, fields, which plant is it on
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Butterfly Anatomy
How to describe what you see…
- Forewings (2)
- Hindwings (2)
- Topside
- Underside
- Margins
- Eyespots
- Antenna

Five Butterfly Families in Virginia
- Swallowtails - *Papilionidae*
- Whites & Sulphurs - *Pieridae*
- Gossamer-wings - *Lycaenidae*
- Brushfoots - *Nymphalidae*
- Skippers - *Hesperiidae*

SWALLOWTAILS *Papilionidae*
- ZEBRA
- BLACK SWALLOWTAIL
- SPICEBUSH
- PIPEVINE
- EASTERN TIGER

Swallowtails: Spots on the underside of the hindwings

- Pipevine Swallowtail
- Eastern Tiger Swallowtail
- Spicebush Swallowtail
- Black Swallowtail
- Zebra Swallowtail

Whites & Sulphurs: Light-colored butterflies

- Pipevine Swallowtail
- Eastern Tiger Swallowtail
- Spicebush Swallowtail
- Black Swallowtail
- Zebra Swallowtail
### Zebra Swallowtail

**Identifying Features**
- Unique
- Zebra-like, black and white (sometimes light greenish tinted) striped triangular wings
- Long tails

**Habitat**
- Open spaces, water

**Host Plant**
- Pawpaw tree (*Asimina triloba*) – a Va native

### Eastern Tiger Swallowtail

**Identifying Features**
- Light Form: yellow with black stripes
- Dark Form: charcoal black; stripe on hind wing; one band of orange eye spots; female
- Striped body / no spots

### Pipevine Swallowtail

**Identifying Features**
- Topside: Iridescent blue; single row of spots
- Underside: 1 row (band) of orange spots

**Host Plants**
- Pipevine spp.
Black Swallowtail

**Identifying Features**
- Topside: subapical spot
- Underside: 2 rows (bands) of orange spots

**Habitat**
- Open fields

**Host Plants**
- Parsley, carrot, rue

Spicebush Swallowtail

**Identifying Features**
- Greenish-bluish topside of hindwing
- Two orange bands under; lacks yellow-orange cell spot

**Habitat**
- Woods and wet places

A Closer Look at Dark Swallowtails

**PIPEVINE**
- Single band

**BLACK**
- 2 bands; all cells filled

**SPICEBUSH**
- 2 bands; one cell "blue"

*All these bodies have white spots*
Eastern Tiger Swallowtail: Black form; female

Pipevine

Black

Spicebush

“Shadow” of stripe – as in yellow form

COMPARISON of DARK TIGER with other DARK SWALLOWTAILS

WHITES and SULPHURS Pieridae

- Rounded wings
- Bright simple colors
- Energetic flight
- Frequent open habitats
- Generalist in food plants

Cabbage White

Identifying Features
- Small size
- FW has 1 (male) or 2 (female) black dots
- Black on FW apex
- VERY common

Habitat
- Everywhere!
- Open areas
Clouded Sulphur and Orange Sulphur

Identifying Features
Both have, on underside:
- FW very pale tan marginal band
- HW double silver eyespot
- FW series of tiny spots

Difference between:
Clouded:
Underside FW: no orange
Orange:
Underside FW: orange blush

GOSSAMER-WINGS  *Lycaenidae*

- Largest butterfly family (>4,000 species)
- Usually small and delicate
- 4 subfamilies
  - Harvester
  - Hairstreaks
  - Blues
  - Coppers

Harvester
- Our only carnivorous butterfly!
- Orange with splotchy black wing margins and body

Habitat
- Woodlands, with alders & beech
HAIRSTREAKS

Red-Banded Hairstreak

Identifying Features
- Small
- Red band on underside outlined in black/white on one side
- Two tails on each HW
- Series of black eyespots near the tails

Habitat
- Overgrown, forest margins

Gray Hairstreak

Identifying Features
- Grey in color
- Two tails on each HW
- Orange and black eyespots
- Underside HW: jagged white/black line

Habitat
- Open areas, fields

BLUES and AZURES

Eastern Tailed-Blue

Identifying Features
- Very small
- Orange eyespots on HW; top and undersides
- One small tail on each HW
- Rubs HW together at tail while resting
- Dark outline around wings
- Flies low to ground

Habitat
- Open areas, fields
Summer Azure (Common Blue)

**Identifying Features**
- Very small
- No tails or orange eyespots
- Often very pale blue
- Stronger flyer than Eastern-Tailed Blue

**Habitat**
- Hardwood forest, fields, edges

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**BRUSHFOOTS Nymphalidae**

- Most diverse family
- Use only the back four legs for walking

**Examples:**
- Mourning Cloak
- Red-Spotted Purple
- Crescents & Checkerspots
- Anglewings
- Fritillaries
- Monarch and Viceroy
- Ladies and Admirals
- Buckeye
- Snout

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**Mourning Cloak**

**Identifying Features**
- Medium size
- Wing margins – pale yellow or white

**Habitat**
- Most anywhere, especially hardwood forests
- Willows – major food
**Red-Spotted Purple**

**Identifying Features**
- Somewhat iridescent blue
- Large, **no tails**
- Band of red-orange spots in submargins and wing bases

**Habitat**
- Deep woods, moist areas

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**Pearl Crescent**

**Identifying Features**
- HW: marginal row of crescents
- HW: black spots without white centers
- 1 white crescent on HW underside

**Habitat**
- Open fields/meadows

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**Silvery Checkerspot**

**Identifying Features**
- No row of crescents
- Submarginal row of black spots often have white centers
- Many white crescents on underside of wings
- 1.5 - 2 in.

**Habitat**
- Woodland & stream edges
Comparison

Pearl Crescent

Silvery Checkerspot

Question Mark

Identifying Features
- Black horizontal spot on FW “epaulet”
- Silver ‘question mark’ underside

Habitat
- Forests, wooded edges

Eastern Comma

Identifying Features
- Lacks black horizontal spot on FW
- Edges deeply cut
- Underside with silver comma

Habitat
- Forested streams
- Woodlands and edges
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Comparison

Question Mark

Eastern Comma

Great Spangled
- Largest & most common
- Tan-colored band between large silvery-white spots on HW underside

FRITILLARIES

Variegated
- HW underside – no white spots, more splotchy
- Box around Black spots on FW/HW margins

Monarch and Viceroy

Monarch
- Larger
- No black line across
- Males have black scent spot
- Glides with wings in V pattern
- More powerful wingbeats

HABITAT: Fields with milkweed

Viceroy
- Smaller
- HW has a black line across
- Mimics Monarchs
- Glides on flat wings
- Flies w/ shallow wingbeats

HABITAT: Willows – major food
American Lady and Painted Lady

- **American Lady**
  - "Big eyes and an open mind"
  - FW eyespots
  - Open black band FW
  - Underside: HW 2 large eyespots

- **Painted Lady**
  - No eyespots, black dots
  - Closed black band FW
  - Underside: HW small poorly defined eyespots

Both: "cobwebbing" on HW underside

Common Buckeye

**Identifying Features**
- Medium size
- Unique eyes of FW and HW
- FW orange bars on top and undersides

**Habitat**
- Open areas, fields
- Common

Red Admiral

**Identifying Features**
- Medium size
- Distinctive red bands on black
- FW/HW white spots on apex with a touch of blue

**Habitat**
- Likes rotting fruit, scat
- Open areas, nectars
American Snout

**Identifying Features**
- Medium size
- Snout – protrusion from head very distinct!
- Angular wings and dark margins
- Orange color near body

**Habitat**
- Hackberry – major food source
- Forested streams, marsh, fields

SKIPPERS: Two groups

**SKIPPERS Hesperiidae**
- Small to medium butterflies
- Larger bodies, smaller angular wings
- Hooked antennae
- Erratic “skipping” flight
- Challenging to identify

**SKIPPERS**

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Silver-Spotted Skipper

Identifying Features
- Larger body, hooked antenna
- Medium size
- White spot with sharp edges on HW underside

Butterfly Viewing Conditions

1. Optimal air temperature for butterfly activity: 80°-90°F (60-100°F acceptable)
2. No or little wind, and no rain.
3. Relatively low cloud cover or shade.
4. Remember to record this information if you are keeping records!

Observation
- Walk slowly around your area
- Avoid shadow on butterfly - needs the sun
- Use binoculars for closer details
- Take photos to help identify
- Data matters! Don’t guess! Use 2-3 characteristics to identify species
- Make field notes, then get help if needed
Internet Resources

- Butterflies and Moths of North America (RAMONA) www.butterfliesandmoths.org
- Butterflies of America www.butterfliesofamerica.com
- The Va Rare Species Atlas www.vararespecies.org
- North American Butterfly Association (aka NABA) www.naba.org
- Piedmont Va. Native Plant Database www.albemarle.org/nativeplants

Many thanks!

Thanks to Nancy Weiss and Julie Connelly.

Thanks to Eileen deCamp, Michelle Prysby, Ken Childs, Nancy, Julie, and the many VMNs and others for the use of their beautiful photos for this educational program.