

SSIC Citizen Science Project

Butterfly Identification & Counting

Linda Gilkeson



Lorquin's Admiral

One of the most common
butterflies we have

Caterpillars eat leaves of
willow, cherry,
cottonwood

Why count butterflies?

- Native butterfly populations can be a measure of ecosystem health because they depend on native plants for survival
- Over time, with long-running records, we can detect changes in populations that reflect what might be happening with other insects we can't easily count
- Interest in butterflies is a way to engage the public in other habitat conservation issues

Lepidoptera: Butterflies & Moths

Large wings covered with scales

Adults: Have siphoning mouthparts for their nectar diet

Larvae (caterpillars): Chewing mouthparts for a plant diet



Photo: P. Minvielle

Moths

- Feathery antennae
- Stout, furry body
- Most fly at dusk or night



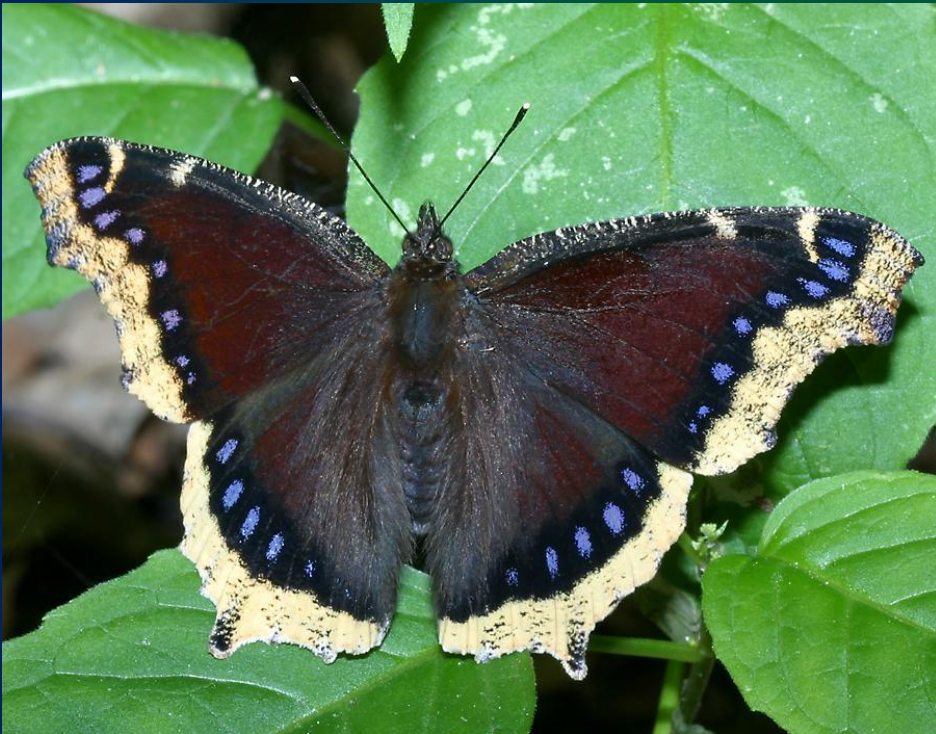
Photo: P. Minvielle



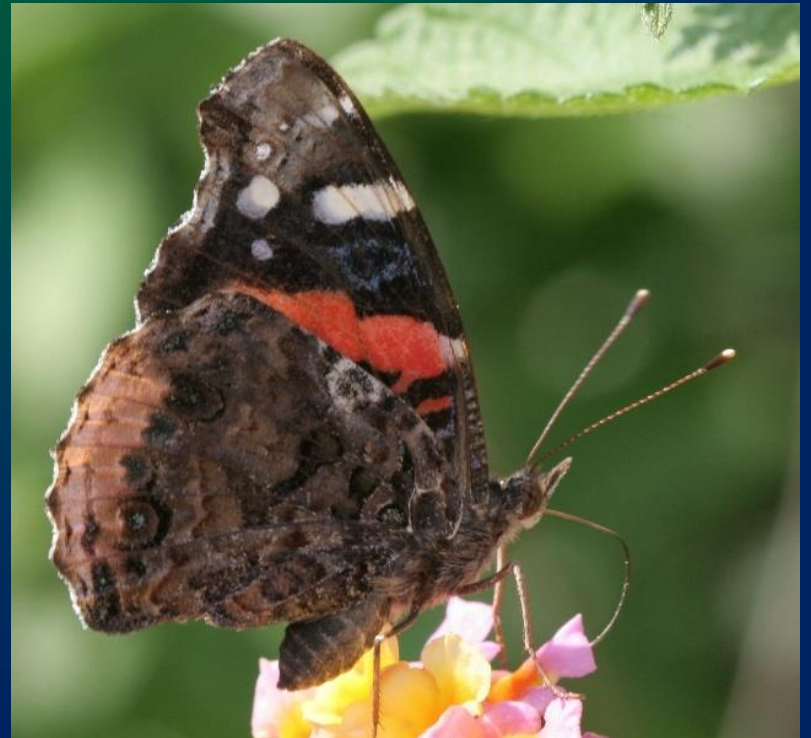
Photo: S. Beare

Butterflies

- Knobbed antennae
- Body narrower, less hairy than moths
- Fly during the day



Mourning Cloak



Red Admiral

Photo: E. Cronin

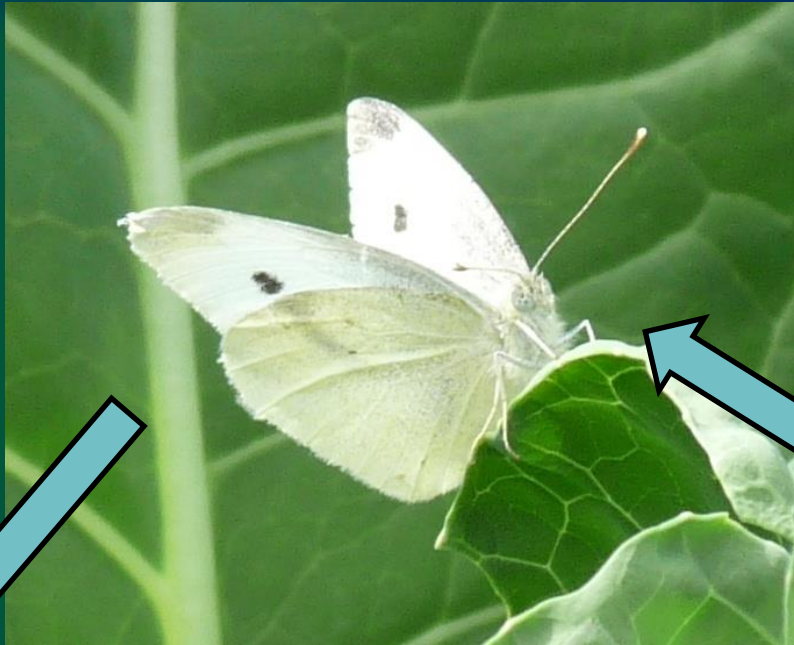
A close-up photograph of a European Skipper butterfly (Gnathargio vindex) perched on a lavender flower. The butterfly has a fuzzy, orange-brown body and wings. Its wings are a vibrant orange with a darker brown border. The background is a soft-focus lavender bush.

European Skipper

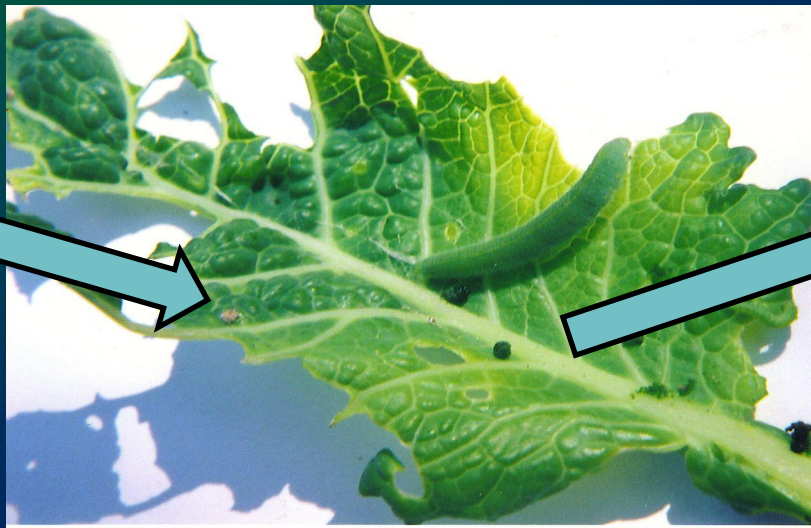
Skippers are
butterflies
too
*(though they look
like moths)*

- Hooked antennae
- Stubby, furry bodies
- “Skippy” quick flight

Butterfly Life Cycle Cabbage White



Eggs



Larva/caterpillar



Pupa in
chrysalis

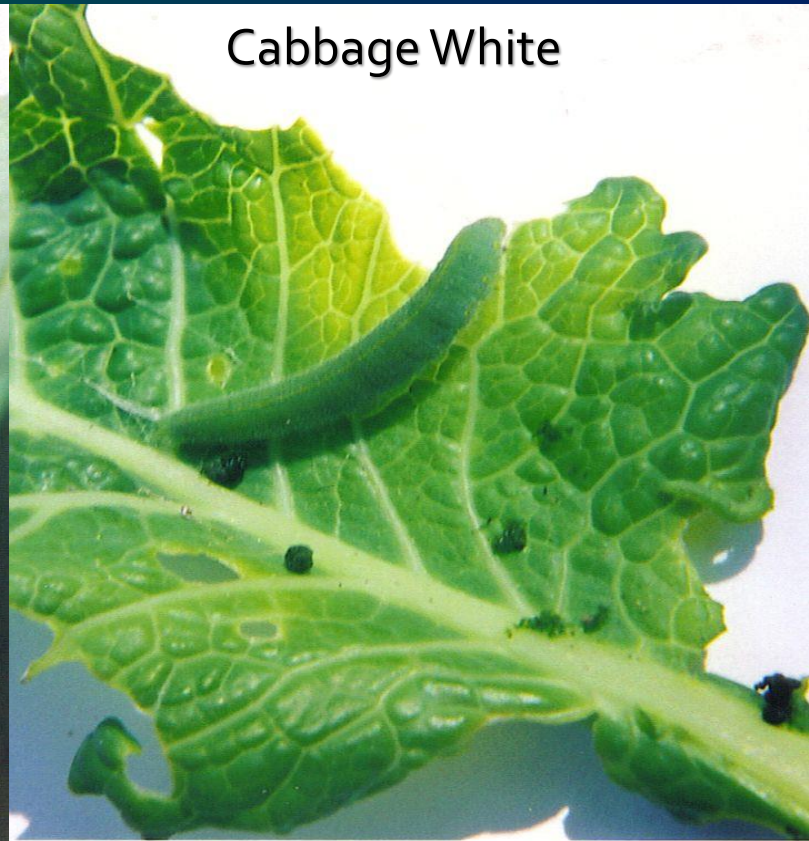
Caterpillars can be smooth or fuzzy

Painted Lady



Photo: E. Cronin

Cabbage White



Migration

Instinctive behaviour: e.g., Monarch butterflies travel thousands of miles annually

A few species seen on SSI migrate or drift this way on the wind from the southern US in high population years

West Coast Lady

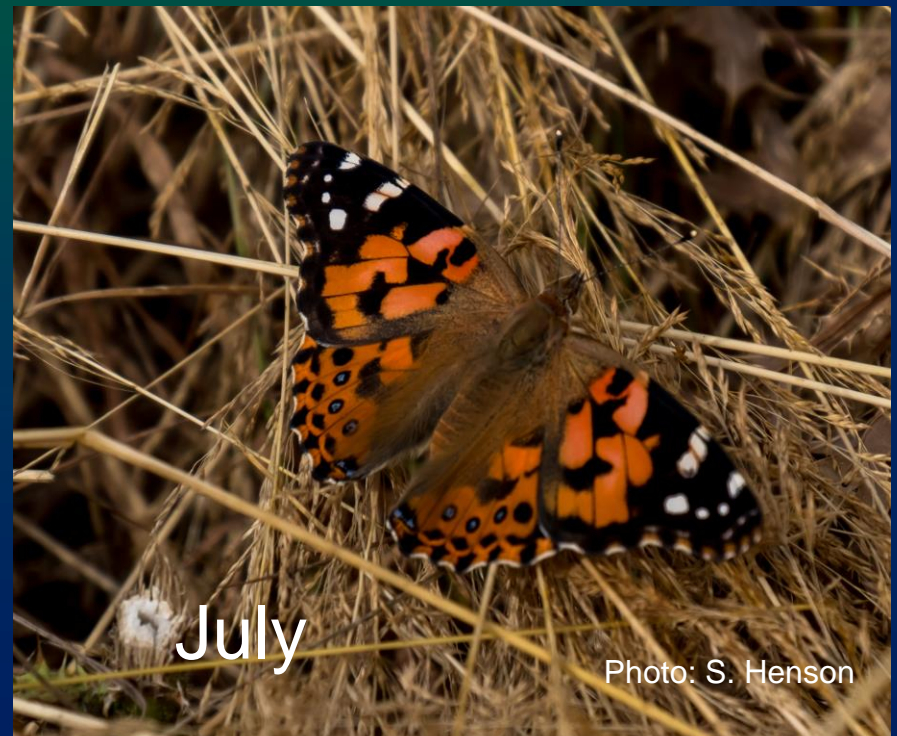
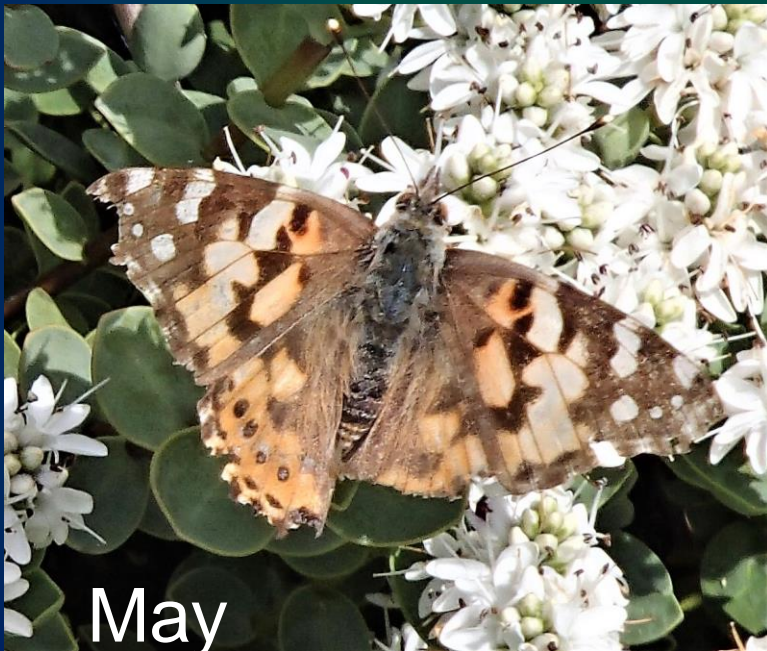


California Tortoiseshell



e.g., Painted Lady

- Worldwide, but not known to survive winter on Salt Spring
- Those seen in early spring are usually tattered after a long flight from the southern deserts of US
- This perfect July individual is likely from a brood that developed locally



Overwintering

Different species overwinter in different stages:

- Eggs: Pine White, Purplish Copper
- Larvae: Fritillaries, Lorquin's Admiral, Woodnymph
- Pupae: Swallowtails, hairstreaks, elfins, Silvery Blue, Spring Azure
- Adults: Mourning Cloak, Commas ['anglewings'], Milbert's Tortoiseshell, Red Admiral, painted ladies

The number of generations per season is unique to each species: Some have just 1, others have 2 or more broods

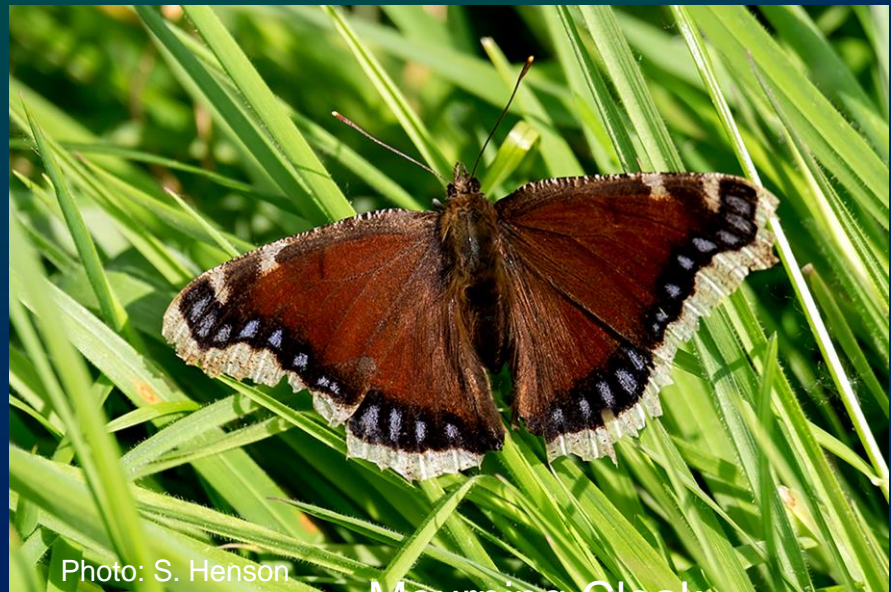


Photo: S. Henson

Mourning Cloak

Numbers naturally vary year to year

- Some native species are common one year, rare other years
- Accidental migrants are occasionally numerous
- Some species are decimated in bad winters, especially those that overwinter as adults

Cedar
Hairstreak



May 29, 2017

Travel worn
migratory
Painted
Lady

Examples of variability from past SSI Counts

2003

- 2 Mourning Cloak
- 2 Painted Lady
- 159 W. Tiger Swallowtail

2005

- 28 Mourning Cloak
- 102 Painted Lady
- 54 W. Tiger Swallowtail

2018

- 1 Propertius duskywing
- 7 Mourning Cloak

2019

- 51 Propertius duskywing
- 1 Mourning Cloak

Western Spring Azure

- Some species are common because their host plant is common or because their caterpillars eat a wide variety of plants

E.g., **Western Spring Azure**
caterpillars feed on ocean spray,
blueberry, hardhack, elderberry,
Arbutus, dogwood and other plants

Main flight: April-June (2nd brood
later in summer)



Species with caterpillars that eat nettles

Red Admiral



West Coast Lady



Satyr Comma



Painted Lady



Milbert's Tortoiseshell



Probertus Duskywing

Some butterflies are rare because their host plant is rare

E.g., **Probertus Duskywing** depends on Garry Oak

The butterflies get nectar from many plants, but caterpillars can only eat leaves of Garry Oak



Flight: April-July



Photo: T. MacLeod

What might we see?

- 22 species were recorded on Salt Spring in 2017 & 2019; 23 species in 2018 [2003-2005 counts recorded an average of 30 species]
- Royal BC Museum records show about 30 species with current records on Salt Spring. Another 10 species known on southern Vancouver Island might be seen (3 of these *were* seen in 2017 and 1 was found in large numbers in 2018 & 2019)

With a little practice you should be able to identify *over a dozen* common or distinctive species on sight

*BUT Don't expect to see a lot of butterflies on
any one count day*

Records for SSI

3 species not currently listed by RBCM on distribution maps for Salt Spring were photographed in 2017 or 2018

Arctic Skipper

Cedar Hairstreak*

Grey Hairstreak



Photo: S. Henson

Photo: E. Cronin

*2018: 19 Cedar Hairstreaks recorded from 6 locations made it the 7th most common species that year

Special Interest: SSI Endangered Species

Red-Listed species on SSI

- Propertius Duskywing
- Dun Skipper
- Common Woodnymph



Rare sub-species found only in this region

- Moss's Elfin
- Bremner's [Zerene] Fritillary



For more on these see the SSIC website:

saltspringconservancy.ca/protect/wildlife/butterflies/

Identification Tips

Size Matters

- There is wide variation in size of species, but only slight differences between individuals within the same species
- ALWAYS check your ID with the size information



California Tortoiseshell

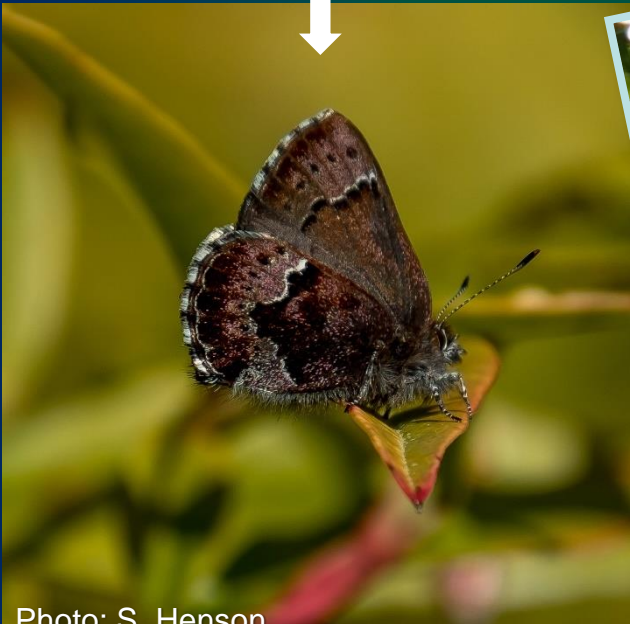
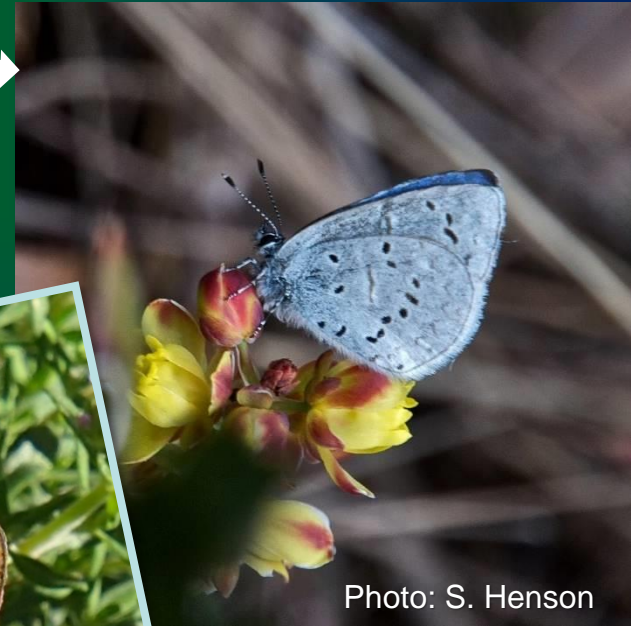
W. Spring Azure



W. Tiger Swallowtail

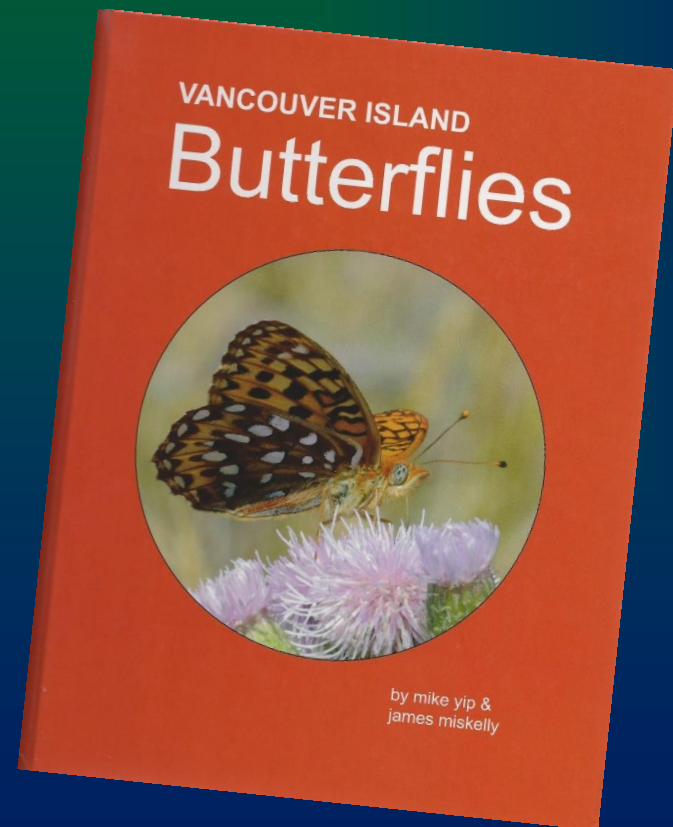
The very smalls

- **Western Spring Azure**: Spirea, Ceonothus →
- **Cedar Hairstreak**: W. Red Cedar ↘
- **Moss's Elfin**: Stonecrop ↓



Flight periods help in ID

- Check reference books for correlation with time of year
- Different species fly at different times of year
- Species that overwinter as adults fly very early in the year



Undersides may be more distinctive than upper side of wing

- Similar species often have distinctive markings on undersides that help in identification
- Differences between sexes also are common

Western Spring Azure



Silvery Blue



Day-flying moths confuse us

White-ribbed carpet moth →

is very small, flies during the day & looks like a 1/3 sized version of the Cabbage White butterfly



A small brown day-flying moth



Other moth confusion

- Moths resting in vegetation during the day fly up when you disturb plants; they look a lot like drab butterflies such as this endangered Dun Skipper



Moth



Dun Skipper

Monarchs? Nope...

NOT a native species:

James Miskelly thinks the occasional reports are mistaken identifications or escapes from releases or strays blown off-course

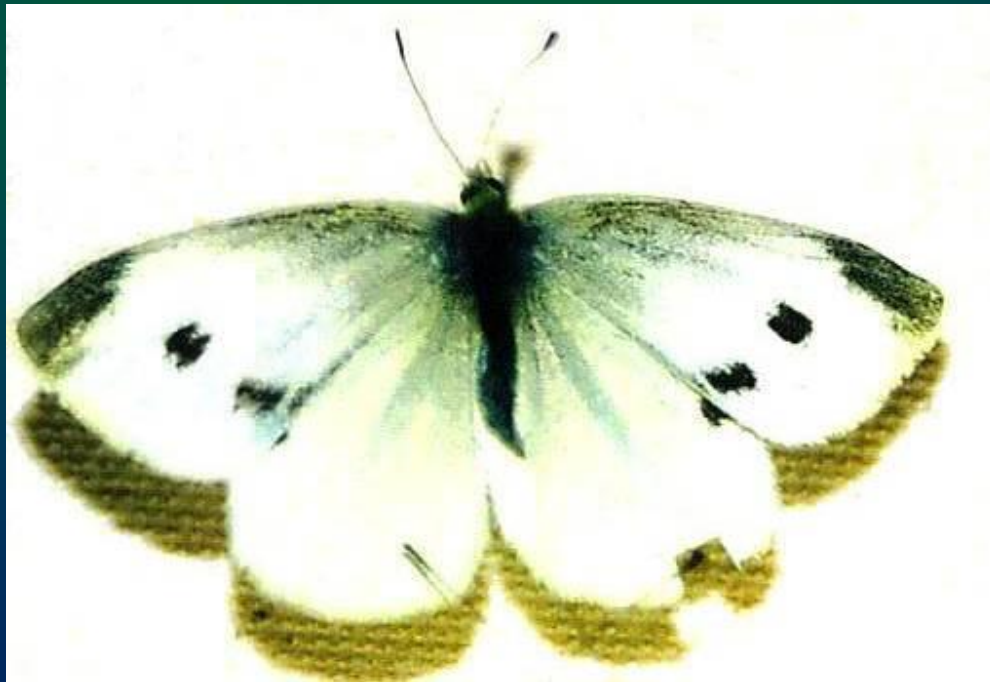
Don't try to plant milkweeds to attract them



Memorize these 7 most
common species

Cabbage White

- Non-native, introduced species
- Hosts: Cabbage (Brassicae) family plants



Lorquin's Admiral

- Hosts: Willow, poplar, chokecherry, *Spirea*
- Present all season



Western Tiger Swallowtail

- Yellow & black with zebra stripes cross wings
- Hosts: willow, alder, maple
- Flight: late May-July



Pale Swallowtail

- Black & cream with tiger stripes across wings
- Hosts: alder, currant, cherry
- Flight: June to Sept.



Yes, they do look alike!

Pale Swallowtail

Western Tiger
Swallowtail



Photo: S. Henson

Woodland Skipper

- Most numerous of all species in 2018 & 2019
- Brown checkered pattern on upper & under sides of wings
- Host plants: Grasses
- Flights: July to October



Western Spring Azure

- Hosts: ocean spray, blueberry, hardhack, elderberry, Arbutus, dogwood and other plants
- Main flight: April-June (2nd brood later in summer)



Satyr Comma

- Overwintered adults seen early spring
- Flight pattern is very fast (“anglewings”)
- Host: nettles



Be familiar with these 5 less
common species

Cedar Hairstreak

- Not officially recorded on SSI, but was 7th most numerous species in 2018
- Host: W. Red Cedar
- One of the spring 'small' browns



Mourning Cloak

- Hosts: Willow, cottonwood, aspen
- Overwinter as adults: one of earliest seen in the spring

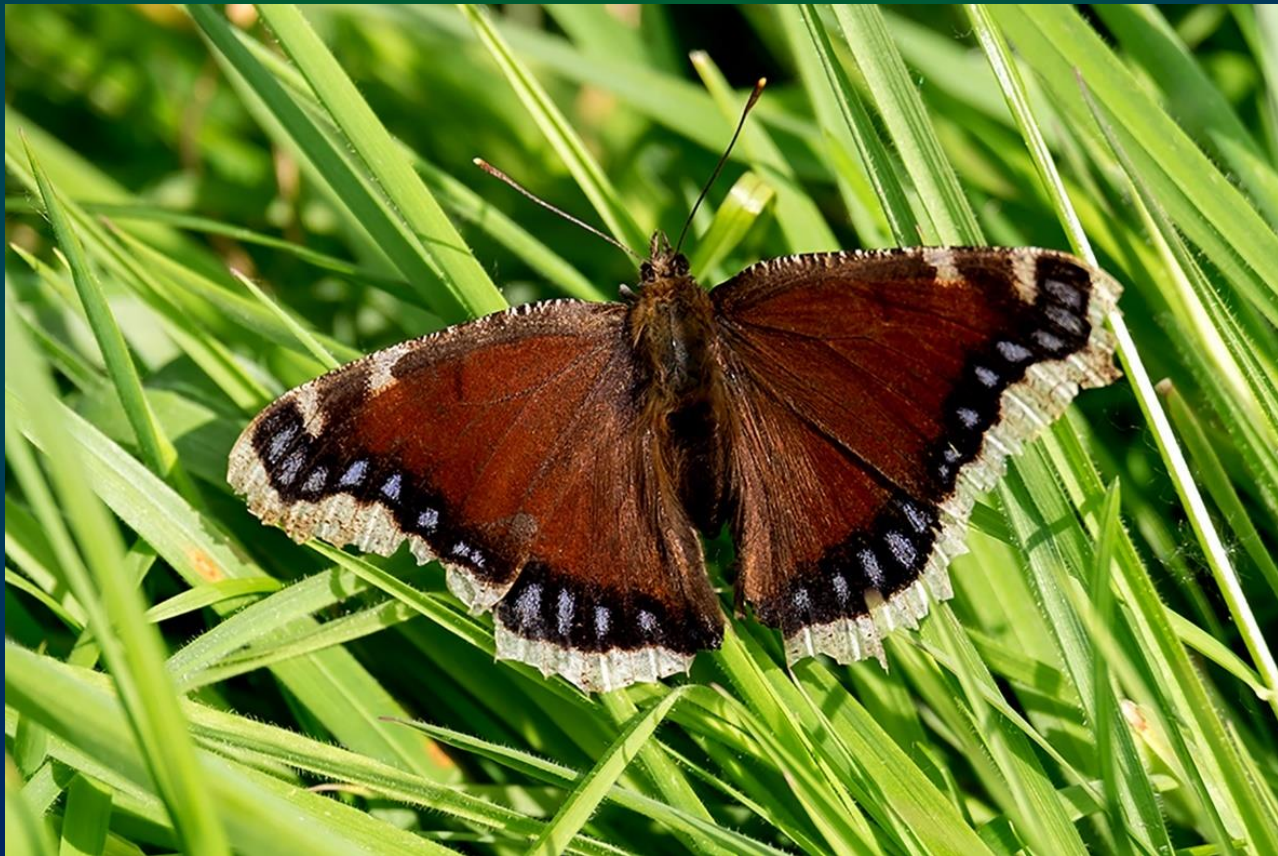


Photo: S. Henson

Pine White

- Hosts.



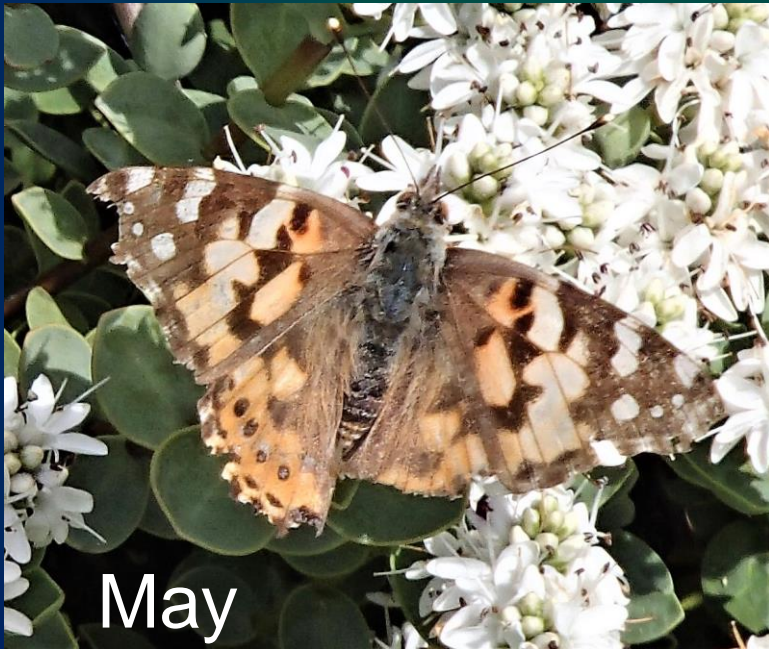
European Skipper

- Introduced species: Common some years, rare other
- No marks on upper or lower side of uniformly coloured wings (aside from darker veins and edges)
- Found in grassy meadows



Painted Lady

- Migrant: Appear tattered from migration in early season, mid-summer individuals that develop locally are in better condition
- Host: Nettles, thistles, sage, legumes, lupines
- None seen 2018, but several in 2017



Tricky species to tell apart

Day-flying moths

White-ribbed Carpet moths →
1/3 size of Cabbage White butterflies

Beware moths: March-May



Cabbage White

More spring day-flying moths

Black & orange moth: same size as
European & Woodland skippers →



Photo: K. Ford

Whites

Both sip nectar at garden & native flowers

Cabbage White: Marks on wings lighter, less defined

VERY COMMON all season



Pine White:
Much darker marks on wings

Arcing flight pattern
from high up in trees

NOT VERY COMMON

July-Sept.

Yellow Swallowtails

Tiger Swallowtail **COMMON**

Zebra stripes cross wings

May-August



Anise Swallowtail **RARE**

Dark bar/blotch on forewing

April-June



July-Sept. Skippers

European Skipper

Plain wings

COMMON SOME PLACES



Woodland Skipper

Checkerboard wings

VERY COMMON EVERYWHERE



Comparing Commas/"Anglewings"

Green Comma: Wider dark border on both wings

RARE in recent years

Fly early March onward

Satyr Comma: Dark margin on forewing; faded margin hindwing;

VERY COMMON

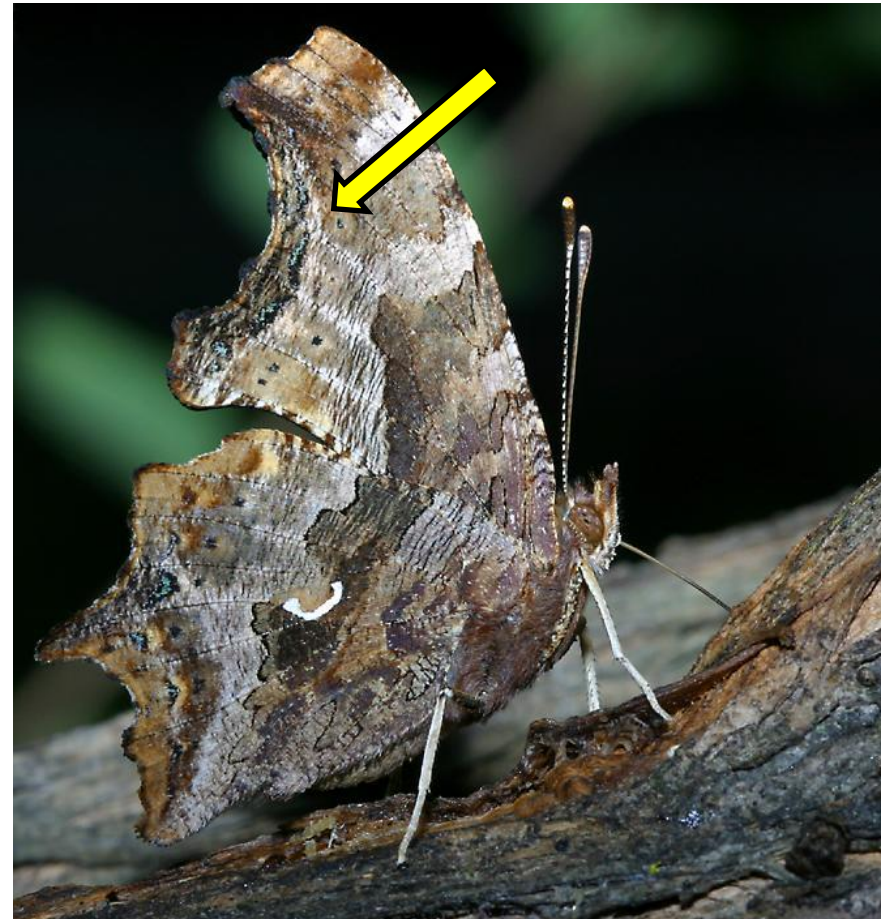
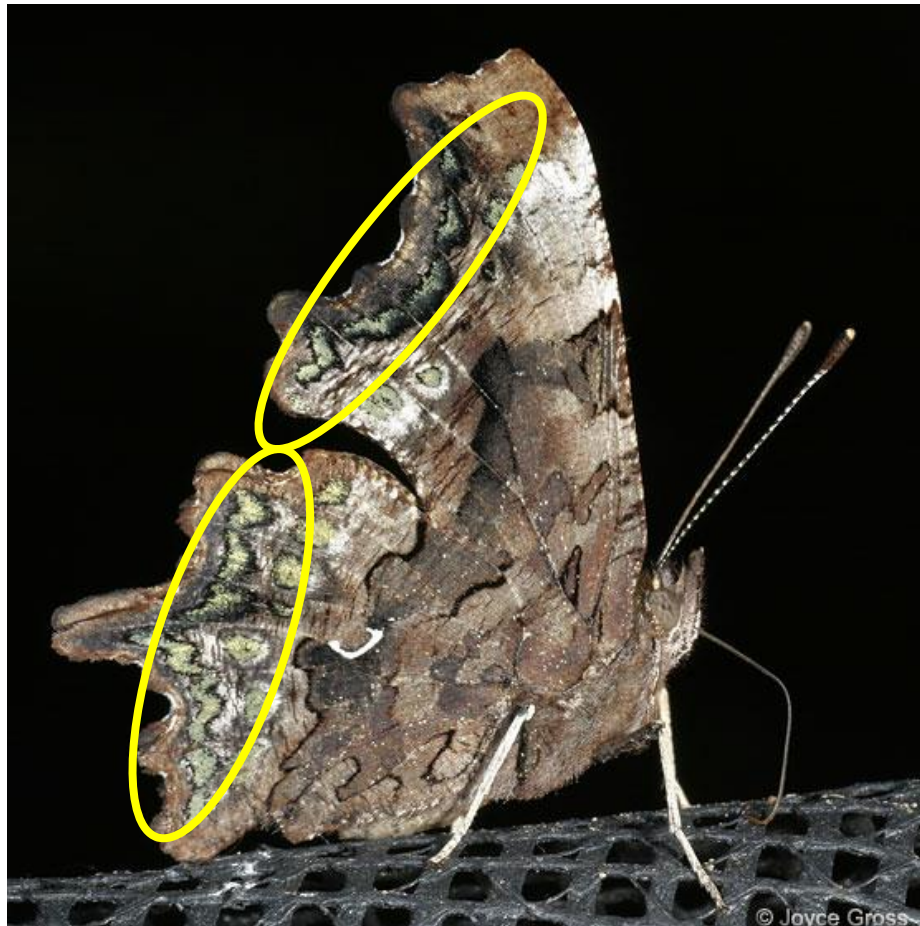
Fly early March onward



Comparing Commas

Green Comma: larger, greenish marks - **RARE** in recent years

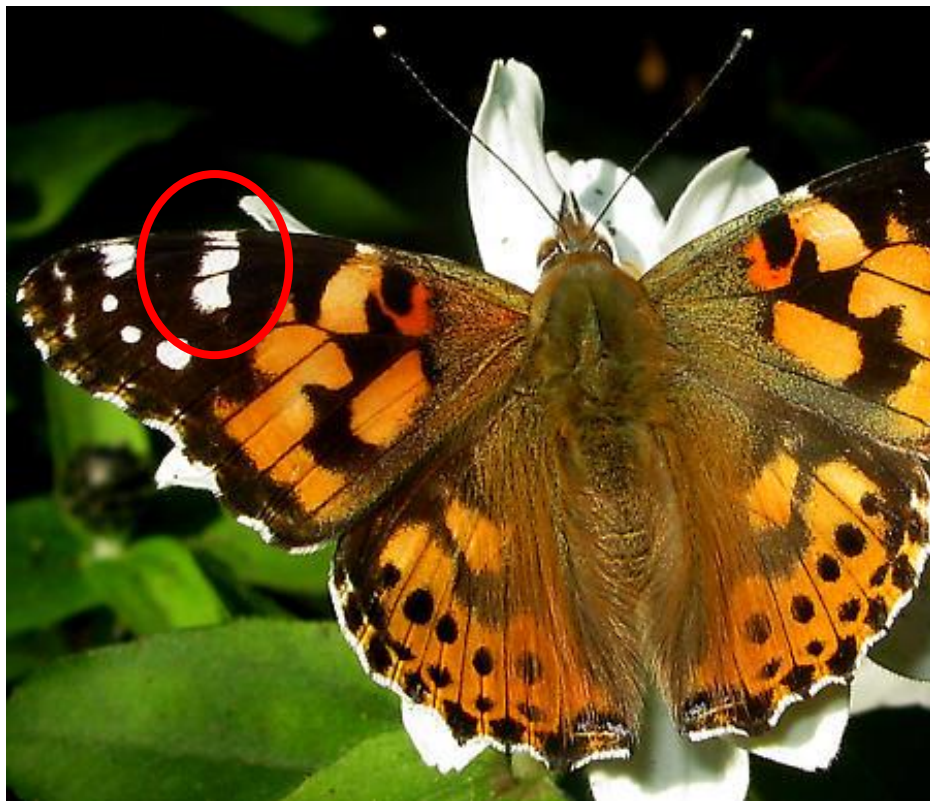
Satyr Comma: barely visible marks - **VERY COMMON**



The 'Ladies'

Painted Lady: White mark
on leading edge of forewing;
SOMETIMES COMMON

West Coast Lady: Same
area is orange, not white
RARE MOST YEARS



Spring Blues

Western Spring Azure: **COMMON**

Male

Females: wide, dark
wing edges



Silvery Blue **RARE**

Male



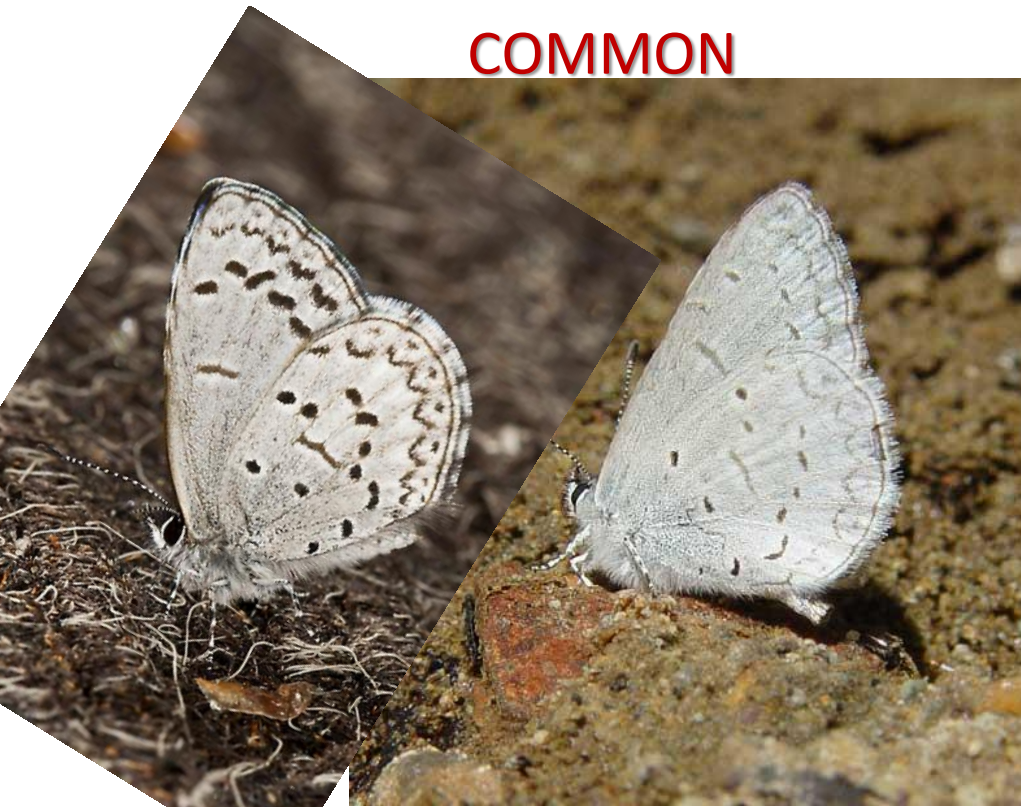
Can't tell the 2 species
apart from above: Look at
undersides of wings→

Spring Blues:

Compare undersides of wings

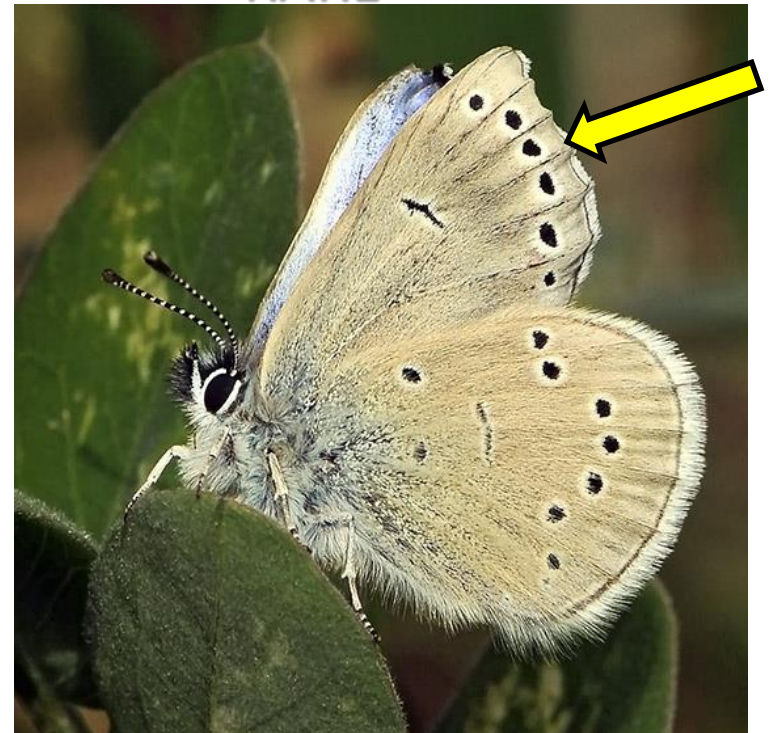
Western Spring Azure: Variety of marks, sometimes faded, over underside of wing area

COMMON



Silvery Blue: White halos around clear row of black spots around margin; buff background

RARE



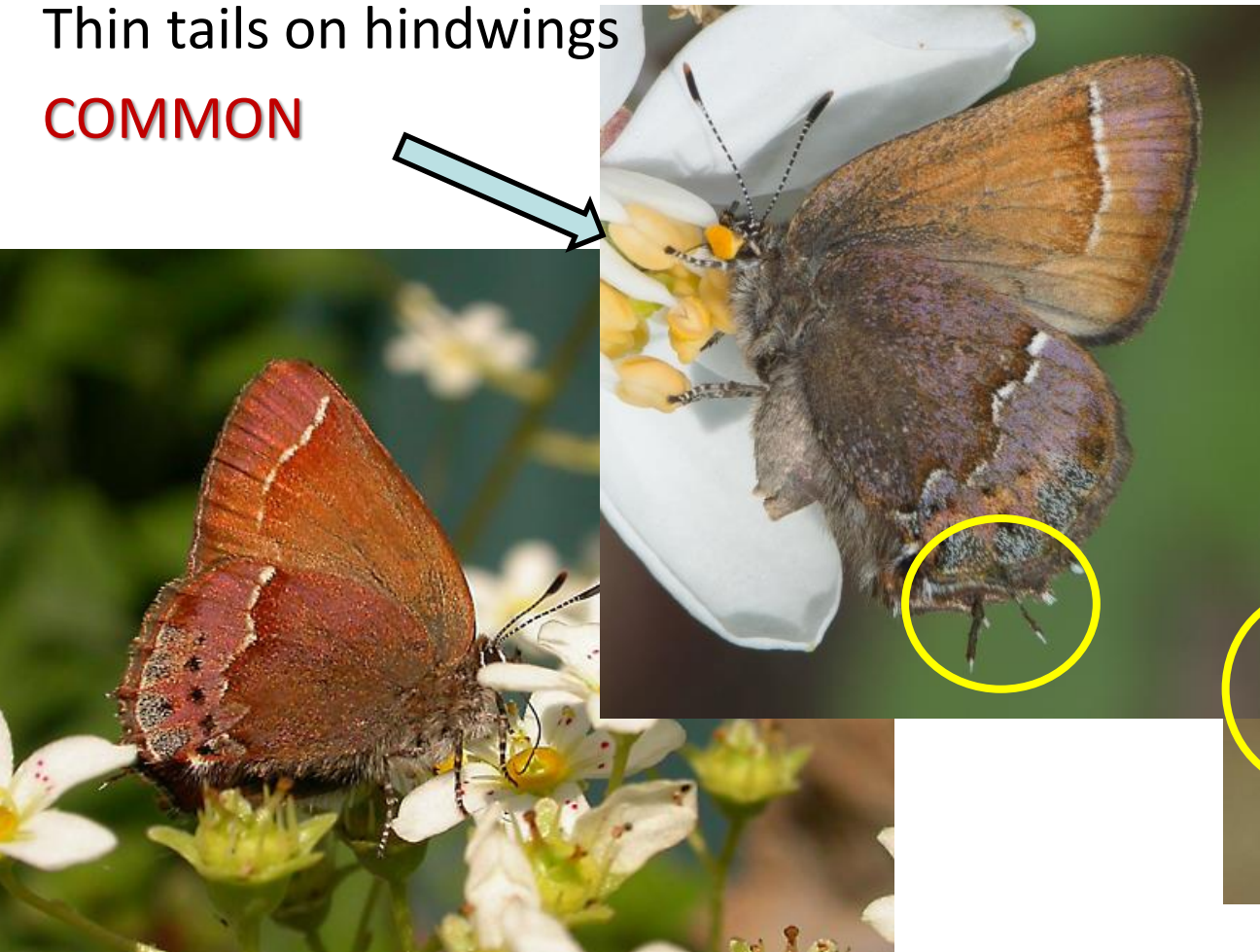
Small 'Browns'

Similar wavy white line pattern so check for tails

Cedar Hairstreak:

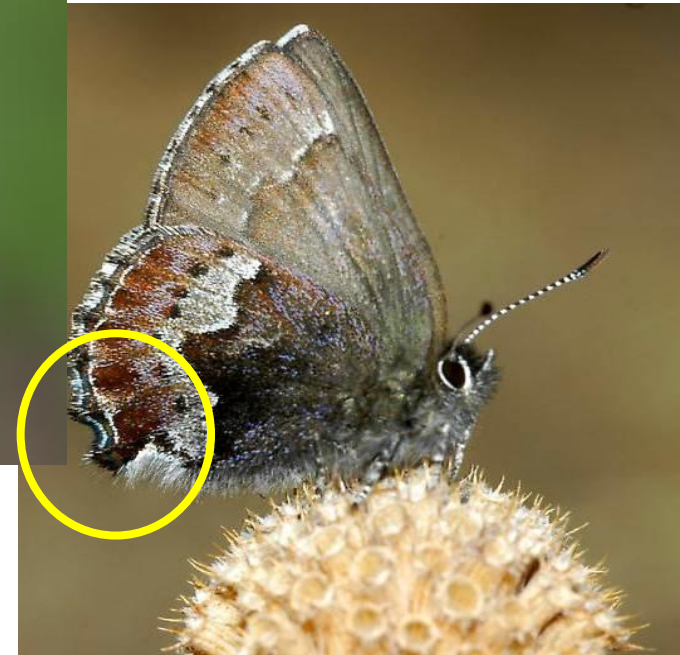
Thin tails on hindwings

COMMON



Moss's Elfin: Stubby 'tails'

RARE



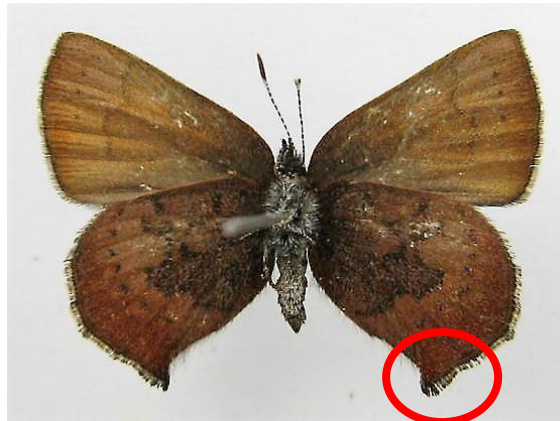
Elfin: Look for hindwing tail

Western Pine Elfin



No hindwing 'tail'

Western Elfin



Moss's Elfin

Both have stubby
'tails' on hindwings

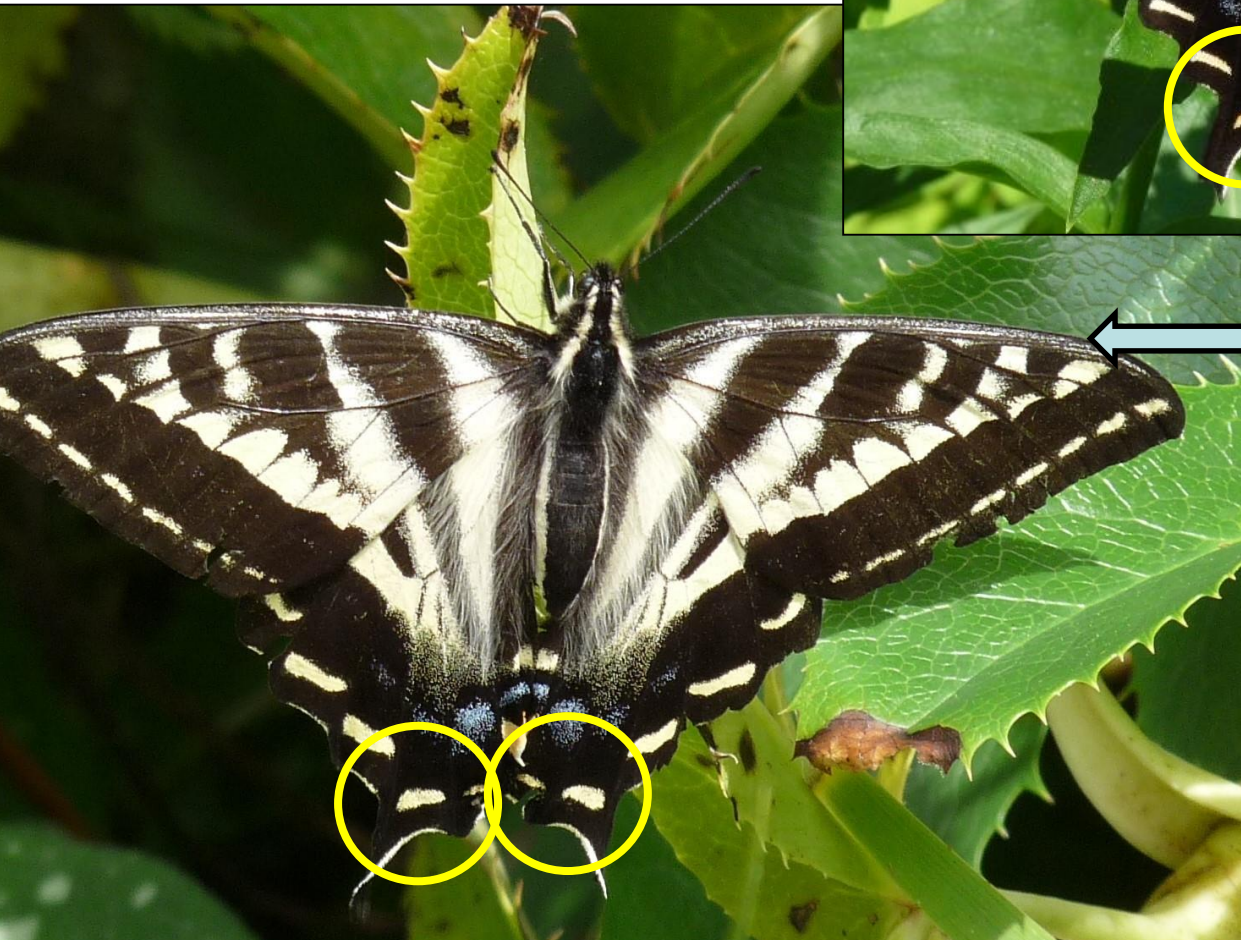
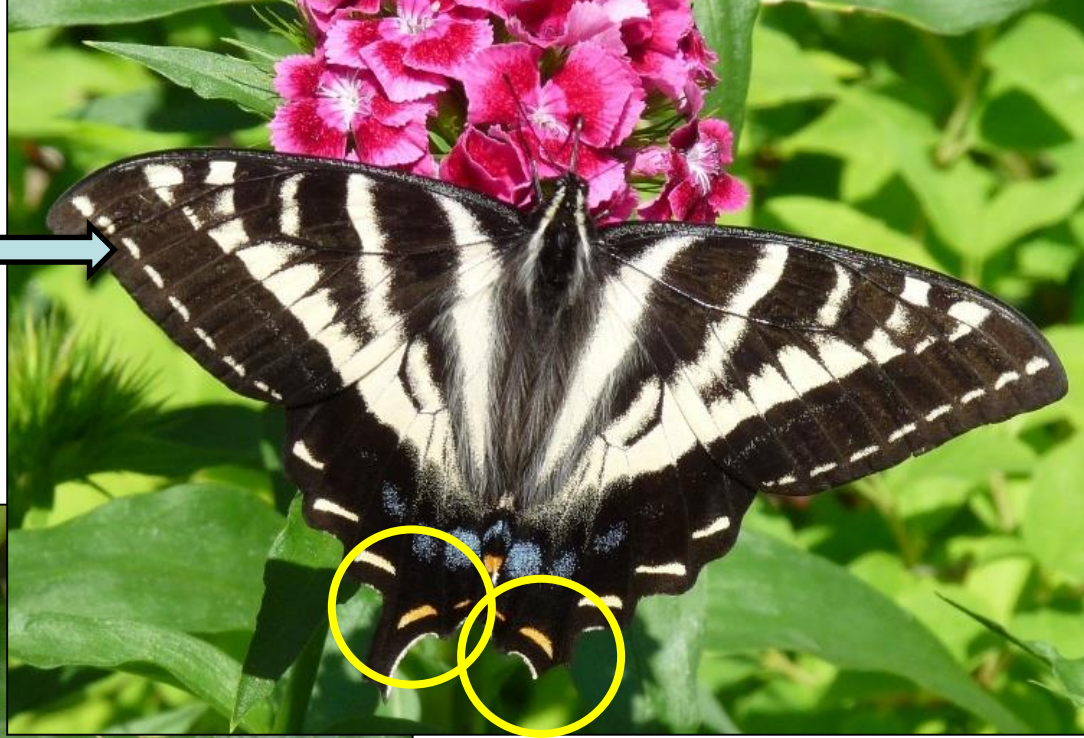


Light Swallowtails

Pale Swallowtail

Orange crescent at base of
tail on hindwing

COMMON



Western Tiger
Swallowtail *sometimes*
pale enough to be
confused with above,
especially mid-summer.
Yellow crescent at base
of tail on hindwing

Branded Skippers **VERY RARE**

Western Branded
Skipper



Common Branded
Skipper



Arctic skipper



Woodland Skipper for comparison →
No silvery marks on wing COMMON



Distinctive,
but not common species

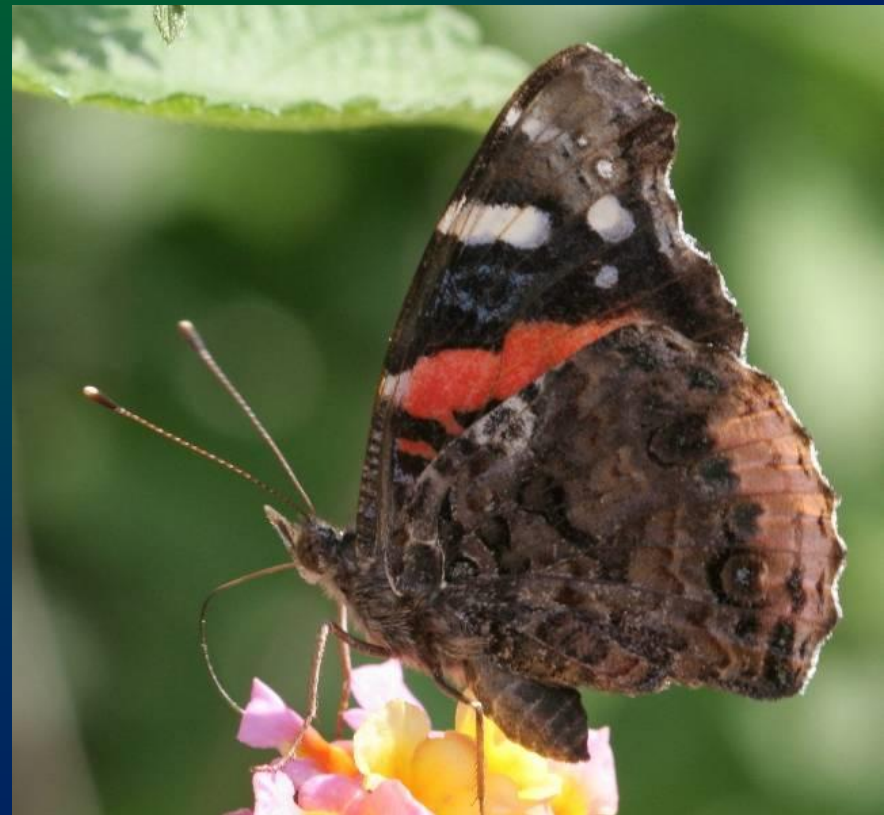
Common Woodnymph

- Hosts: unknown (grasses?)
- Flight: July to September
- Local subspecies is Red-listed
- Seen in both 2017 & 2018 counts



Red Admiral

- Host: Nettles
- Flight: all season (March to October)



Milbert's Tortoiseshell

- Hosts: Nettles
- Flight: all season (April to September)



But don't worry.... just study the top 12

- If you master these you will be able to identify most of the species you are likely to see
- If you know them well, you will know when you see something different

If you do see something different:

- Try to memorize one or two things about it that make it different from the species you know so you can look it up later
- Try to get a photo so I can help ID it (if it on the “Not Very Common” or “Rare” list I have given you, I will need to see a photo)

Photographing for ID

- A photo in focus is more valuable than a blurred closeup because it can be magnified on the computer
 - Start photographing from a distance, taking photos as you get closer (in case they flit, you still have something)
 - For a fast shot it is easier to get a photo in focus at a distance (auto focus setting)
- To get closer:
 - Be patient and move slowly
 - Keep your shadow from falling on the butterfly
 - Try to take the photo when butterfly's wings are open

Properatus Duskywing

Excellent photo for ID
purposes



Even wild shots can work: I could still ID this one

- The black wing marks are distinctive enough that I can still tell it is a **Western Tiger** and not an Anise swallowtail



Counting Butterflies

- The best conditions: Warm, sunny days between 11 am and 4 pm, with little or no wind
 - If the morning is cool, wait until mid-afternoon to count
- Where to look: Open meadows and along roadsides, clearings in the woods, sunny gardens with blooming flowers
- Time of year: A few species appear on warm days as early as March, but most are seen April through September

SSI Count Days

- 3rd week of the month from a Saturday through the following weekend (= 9 possible days to choose from)
- 6 counts: April, May, June, July, August, September

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	34	25	26	27
28	29	30				

Count Records

- For each count route, keep track of the species *and* the number of individuals of each species that you see
- Keep separate records for separate locations if you are counting on more than one route
- Do your best to count on a day within the count period, but if not possible, do a count as close to that time period as you can
- And, yes, there is a place for unidentified butterflies on the count sheet...

Submitting Records

- After the September count send me 1 record sheet with your records for all of the 6 count dates **on one page**. Use a separate page for each location if you counted more than one route
- Email me a completed Excel or Word file OR leave a hard copy in the Apple Photo community box under my name
 - Do not send photos of data sheets—they are too hard to read (if you scan the data sheet and it is a clear copy, you can email that)

Online reference: bugguide.com

“Identification, Images, & Information, for Insects, Spiders & Their Kin for the United States & Canada”

- Many photos of each species with location info; also discussion threads on identification
- Tabs include info on taxonomy, geographic ranges, host plants, larval photos when available, etc.