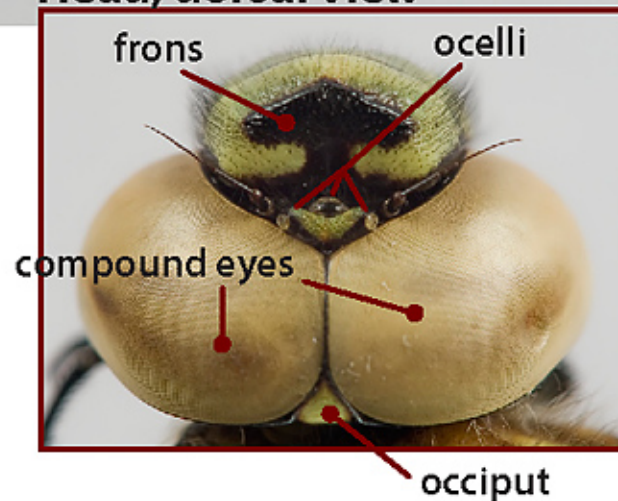


# Odonate Anatomy

## Full body, lateral view

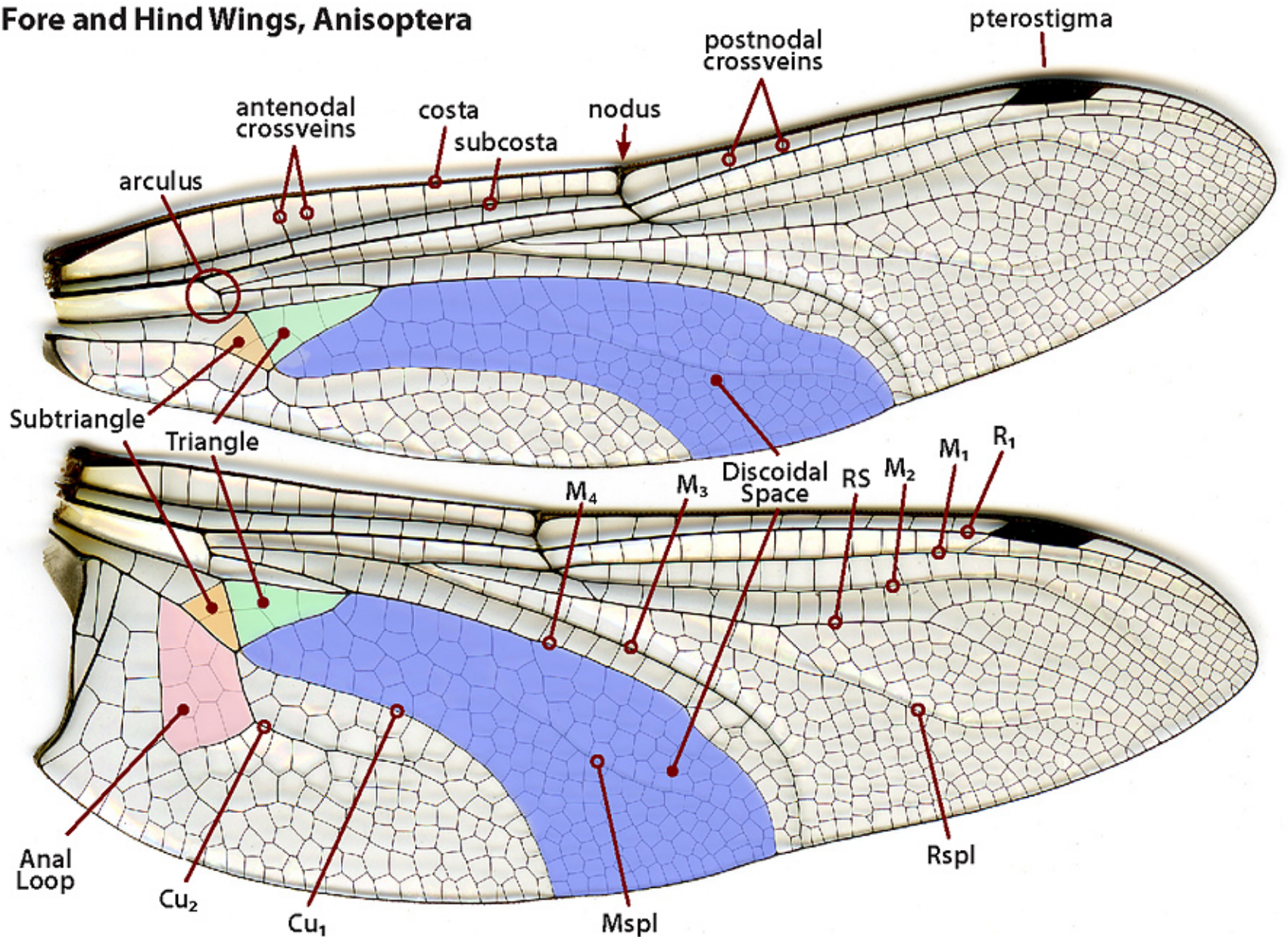


## Head, dorsal view



# Odonate Anatomy

## Fore and Hind Wings, Anisoptera





# Dragonflies (Anisoptera) vs. Damselflies (Zygoptera)



- Build—especially abdomen length:width
- Forewing vs. hindwing shape
- Wing position while perched
- Male dragonflies with 3 abdominal appendages; male damselflies with 4

# Dragonfly Families

Petaltails (Petaluridae):	1/0 (species in Oregon/Washington Co.*)
Darners (Aeshnidae):	13/5
Clubtails (Gomphidae):	9/0
Spiketails (Cordulegastridae):	1/0
Cruisers (Macromiidae):	1/0
Emeralds (Cordulidae):	7/1
Skimmers (Libellulidae):	31/15

\*Currently recorded. There are certainly more species yet to be recorded in Washington County.

## Dragonfly Families: Darners (Aeshnidae)

- Very large eyes meet at a long seam
- Relatively long, narrow abdomen
- Distinctive profile in flight
- Not often observed perching



Common Green Darner (*Anax junius*)



California Darner (*Rhionaeschna californica*)



Paddle-tailed Darner (*Aeshna palmata*)



## Dragonfly Families: Clubtails (Gomphidae)

- Eyes separated at top of head
- Frequently perch on ground or low rocks/vegetation
- Primarily associated with streams



Grappletail (*Octogomphus specularis*)



Pale Snaketail (*Ophiogomphus severus*)

## Dragonfly Families: Emeralds (Cordulidae)

- Eyes meet at a point; bright green in many species
- Largely brown or black, some with metallic green on thorax



Spiny Baskettail (*Epitheca spinigera*)



American Emerald (*Cordulia shurtleffii*)





## Dragonfly Families: Skimmers (Libellulidae)

- Eyes meet at a point
- Large number of species; highly varied
- Some with prominently patterned wings; all with foot-shaped anal loop
- Males have “female-shaped” wings



Dot-tailed Whiteface  
(*Leucorrhinia intacta*)



Eight-spotted Skimmer (*Libellula forensis*)



Western Pondhawk (*Erythemis collocata*)

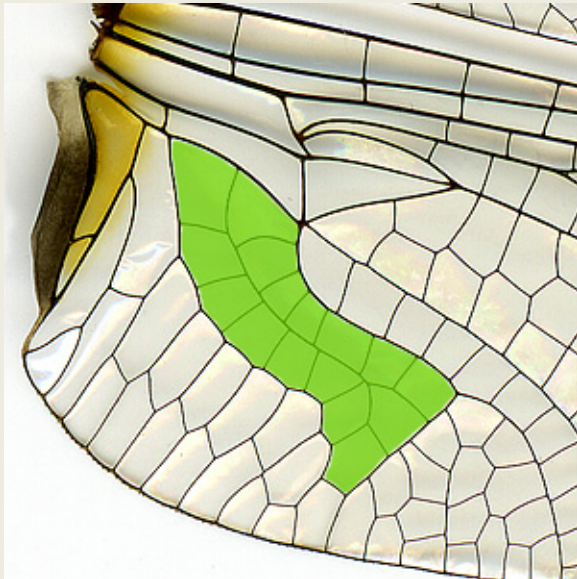


Cardinal Meadowhawk  
(*Sympetrum illotum*)

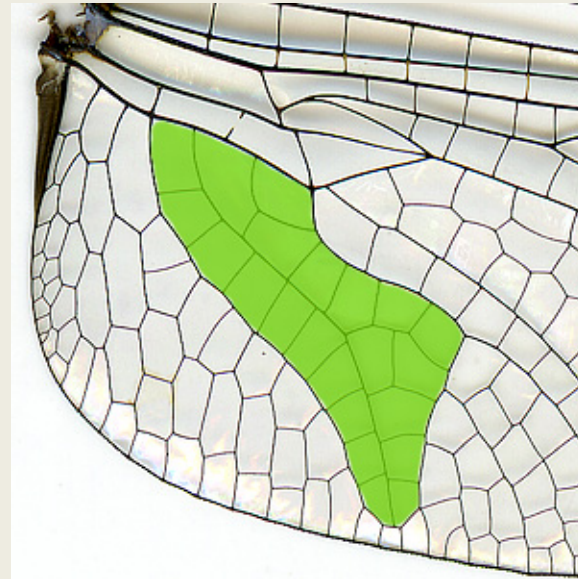


# Dragonfly Families: Emeralds vs. Skimmers

**Emeralds**



**Skimmers**



# Damselfly Families

Broad-winged Damselfs (Calopterygidae): 2/1 (species in Oregon/Washington Co.\*)

Spreadwings (Lestidae): 7/3

Pond Damselfs (Coenagrionidae): 20/5

\*Currently recorded. There are certainly more species yet to be recorded in Washington County.

## Damselfly Families: Broad-winged Damselfs (Calopterygidae)

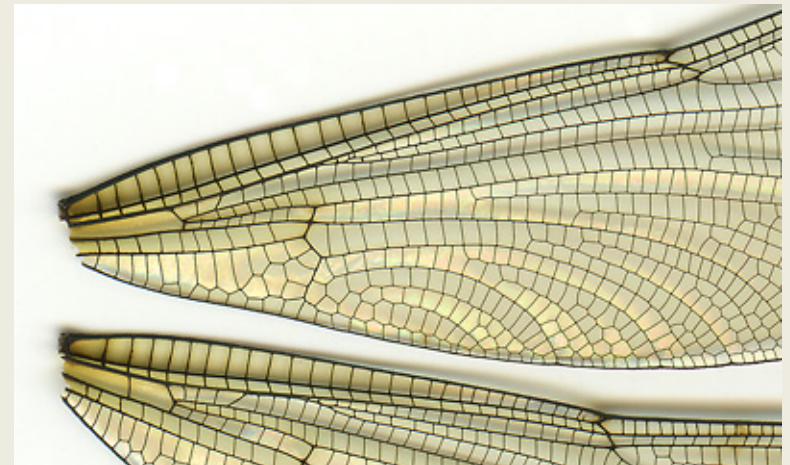
- Large species often with distinctly colored wings
- More than two antenodal crossveins; wings not petiolate
- Associated with streams



American Rubyspot (*Hetaerina americana*)



River Jewelwing (*Calopteryx aequabilis*)





## Damselfly Families: Spreadwings (Lestidae)

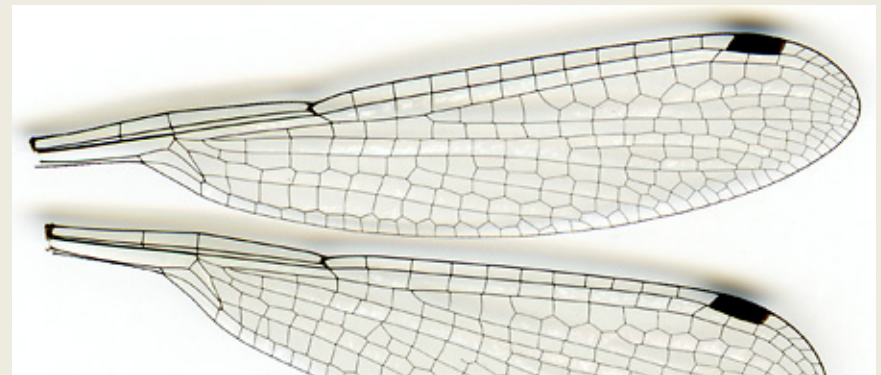
- Typically perch with wings open
- Pterostigma length about twice width
- Two antenodal crossveins; wings petiolate
- Generally not colorful except for blue eyes on mature males (some females)



Northern Spreadwing (*Lestes disjunctus*)



Spotted Spreadwing (*Lestes congener*)



## Damselfly Families: Pond Damsels (Coenagrionidae)

- Typically perch with wings closed
- Pterostigma length about same as width
- Two antenodal crossveins; wings petiolate
- Mature males generally colorful; commonly blue and black



Pacific Forktail (*Ischnura cervula*)



Tule Bluet (*Enallagma carunculatum*)



Western Red Damsel  
(*Amphiagrion abbreviatum*)

# Identifying Odonates: “striped” darners (*Aeshna/Rhionaeschna*)

What to look for...

- Shape of male’s cerci (upper abdominal appendages)



“simple”



“paddle”



“forked”

- Thoracic pattern (shapes of pale stripes)
- Is there a bold black line across the face?
- Are there paired pale spots on underside of abdomen?



- Shape of pale mark on side of S1



# Identifying Odonates: “striped” darners (*Aeshna/Rhionaeschna*)

## California Darner (*Rhionaeschna californica*)

- Small for a darner
- “Simple” cerci
- Distinctive thoracic stripes
- Bold black line across the face
- Early flier for a darner, and one of the first dragonflies to fly in the spring



# Identifying Odonates: “striped” darners (*Aeshna/Rhionaeschna*)

## Blue-eyed Darner (*Rhionaeschna multicolor*)

- Bright blue eyes; pale blue thoracic stripes and face
- “Forked” cerci
- Dull brown line across the face
- Mid-season flier



# Identifying Odonates: “striped” darners (*Aeshna/Rhionaeschna*)

## Paddle-tailed Darner (*Aeshna palmata*)

- “Paddle” cerci
- Blue spots on top of S10
- No pale spots on underside of abdomen
- Heavy pale mark on side of S1
- Bold black line across the face
- Late summer and fall flier



See <http://nwdragonflier.blogspot.com/2011/10/sorting-paddle-tailed-and-shadow.html> for a more thorough comparison of Paddle-tailed and Shadow Darners.



# Identifying Odonates: “striped” darners (*Aeshna/Rhionaeschna*)

## Shadow Darner (*Aeshna umbrosa*)

- “Paddle” cerci
- No blue spots on top of S10
- Pale spots present on underside of abdomen
- Very thin pale mark on side of S1
- Dull brown line across the face
- Late summer and fall flier



See <http://nwdragonflier.blogspot.com/2011/10/sorting-paddle-tailed-and-shadow.html> for a more thorough comparison of Paddle-tailed and Shadow Darners.

# Identifying Odonates: meadowhawks (*Sympetrum*)

What to look for...

- Thoracic pattern (plain? spots? stripes?)
- Abdominal pattern (all red? a little black along edge? black “saw tooth” pattern?)
- Wing coloration—just veins colored along leading edge, or are cells colored too? extent of coloration?
- Leg color—black or brown?

# Identifying Odonates: meadowhawks (*Sympetrum*)

## Cardinal Meadowhawk (*Sympetrum illotum*)

- Abdomen all bright red; face red
- Pair of white spots on side of thorax
- Orange suffusion at wing base and orange veins along leading edge of wings
- Short black streaks at wing bases
- Brown legs





# Identifying Odonates: meadowhawks (*Sympetrum*)

## Variegated Meadowhawk (*Sympetrum corruptum*)

- Immatures with white thoracic stripes and “portholes” on abdomen; white parts fade, more red, with age
- Orange veins along leading edge of wings; otherwise clear
- Black legs



very mature



immature



mature

# Identifying Odonates: meadowhawks (*Sympetrum*)

## Striped Meadowhawk (*Sympetrum pallipes*)

- Abdomen with black along sides (varies)
- Face pale (not red)
- White thoracic stripes on sides and front
- Wings generally clear, but varies—may be small amber patch at base and pale veins along leading edge
- Black legs



# Identifying Odonates: meadowhawks (*Sympetrum*)

## Autumn Meadowhawk (*Sympetrum vicinum*)

- Abdomen all bright red; usually limited black near end
- Face red
- Plain thorax
- Wings with a small amber patch and pale veins at base
- Brown legs
- Female with obvious funnel-shaped vulvar lamina



female abdomen