Welcome!

• Friday Agenda
  • Intro Presentation – 5:30
  • Emily Sandall – 6:00
  • Intro to ID – 6:30
  • Break – 6:50
  • Photography Panel – 7:00
  • Kurt Mead? – 8:00
  • Moth sheets – 9:00

• Acknowledgements

MaLisa Spring
State Coordinator of
The Ohio Dragonfly Survey
Other housekeeping items

• Meals: 1 catered meal on Saturday evening
• Not so fun “bugs”
• Specimen collection
• Field trips (and weather)
Odonata All Stars

- Bronze: 15-49 observations
- Silver: 50-149 observations
- Gold: 150 + observations

- County Records
How to differentiate dragonflies and damselflies

• Dragonflies
How to differentiate dragonflies and damselflies

• Damselflies
How to differentiate dragonflies and damselflies

Small Antennae
Why care about dragonflies and damselflies?

• They are cool!
• Speciose (169 reported species)
• Great alien prototypes
Why care about dragonflies and damselflies?
Why care about dragonflies and damselflies?
Why care about dragonflies and damselflies?
Why care about dragonflies and damselflies?

• Food for other organisms
Challenges to our dragons and damsels? (Aside from things trying to eat them)
Habitat Loss and Degradation

Wetland loss → Ohio has lost 90% of all wetlands
Peatland loss → 92% of all peatlands gone
Endangered and Threatened species

• Endangered 16/169
• Threatened 6/169
• Species of Concern 1/169
Hine’s Emerald

- Potentially extirpated
But, there is hope!

Habitat preservation and management
The Ohio Dragonfly (and damselfly) Survey Goals

- Identify every species for each county
- Teach others about Odonata
- Create an all Ohio Field Guide
You can help!

- Photo submissions
- Physical collections
## Stats

<table>
<thead>
<tr>
<th>Totals</th>
<th>Most Observations</th>
<th>Most Species</th>
<th>Most Observed Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>12898 Observations</td>
<td>jimlem, 1775 observations</td>
<td>ricknirschl, 97 species</td>
<td>Eastern Pondhawk, 866 observations</td>
</tr>
<tr>
<td>140 Species</td>
<td>smvolunteerjcannon, 1166 observations</td>
<td>jimlem, 89 species</td>
<td>Blue Dasher, 692 observations</td>
</tr>
<tr>
<td>405 People</td>
<td>smmyers, 979 observations</td>
<td>smwhite, 78 species</td>
<td>Eastern Forktail, 631 observations</td>
</tr>
<tr>
<td></td>
<td>coachwhipbooks, 712 observations</td>
<td>lgilbert, 77 species</td>
<td>Willow Skimmer, 603 observations</td>
</tr>
<tr>
<td></td>
<td>dmcshaffrey, 577 observations</td>
<td>christopherswan, 75 species</td>
<td>Eastern Amberwing, 516 observations</td>
</tr>
</tbody>
</table>

**iNaturalist**

- Phone app
- Computer
Other

- Receive updates from this project
  
  Receive updates about this project on your dashboard and in the daily updates email.

Do you want to make your private/obscured observation coordinates visible to the project curators?

- Yes, but only if I add the observation to the project myself.
- Yes, no matter who adds the observation to the project.
- No.

Note: You can also choose to share the private coordinates of observations in this project on a case-by-case basis. These are just the defaults for new observations added to the project.

Yes, I want to join  Cancel
Photography methods

- Side profile
- Top profile
- Terminal appendages
When in doubt: take a photo of the genitalia

*Lestes rectangularis*

*Lestes vigilax*
Finding Dragons

• Sometimes they find you!
Finding Dragons

• Sometimes you really have to search to find them
Finding Dragons

• Some are everywhere

© MaLisa Spring
Swift Setwing

- Discovered in 2014
Swift Setwing Conundrum

- Photos courtesy of Chris Spring
Habitats

Created by Pavel N. from Noun Project
Check everywhere!

River Bluet (Enallagma anna)

Photos copyright Shane Myers
Hello Ohio! *Sticky
December 22, 2017 at 12:38pm by Malisa

The New Survey:

The Ohio Odonata Society is working with the Ohio Division of Wildlife to update the original survey that ran from 1991 – 2001. In this updated survey we will be utilizing both traditional collections of specimens and photographic records through iNaturalist. The new survey will run from 2017 through 2019 and will culminate in a lay-person book on Ohio Dragonflies and Damselflies similar to the Ohio Bird Atlas.

**Goals** for the second survey of Ohio dragonflies and damselflies include:

- to identify every species known for each county
- to identify species introduced/established in Ohio since the original survey.
- to determine changes in distribution and abundance, especially rare species

To participate, you can either photograph or collect specimens. No identification skills are required for photo observations and we accept observations from any date. Just take a
Ohio Tiger Beetles (Cicindelidae)

Other Projects:
Ohio Bee Atlas
Odonata Identification: Silhouettes
Beginners - Intermediate
Odonata

- Dragonflies (Anisoptera)
  - Broad Wing Calopterygidae
  - Pond Damsels Coenagrionidae
  - Spreadwings Lestidae

- Damselflies (Zygoptera)
Ohio Damselfly Identification: Silhouettes

Damselfly = Suborder Zygoptera
For beginners, it helps to look at the wing positioning and shape. Ohio has 51 species of damselflies in 3 families and 11 genera. Below is a quick silhouette guide for the common genera. Illustrations and design by MaLisa Spring.

Broad-winged Damselflies: Family Calopterygidae
Rubyspots (Hetaerina spp) - 2 species in Ohio
Jewelwings (Calopteryx spp) - 3 species in Ohio

Pond Damselflies: Family Coenagrionidae
Dancers (Argio spp) - 7 species in Ohio
Forktails (Ischnura spp) - 6 species in Ohio

we recommend photographing male terminal appendages to confirm identifications of Bluet and Spreadwings
Bluets (Enallagma spp) - 17 species in Ohio

Arkansas Bluets
Other taxa in the Family Coenagrionidae include: Aphrophora saucia; Chromagrion condurn; Coenagrion reductum; Neolanthus gracilis; and Neolanthus virgins.

Spreadwing Damselflies: Family Lestidae
Pond Spreadwings (Lestes spp) - 10 species in Ohio
Great Spreadwing (Archilestes grandis)

We recommend photographing male terminal appendages to confirm identifications of Bluets and Spreadwings
Swamp Spreadwing
Note narrow wing bases & wing position

Find something cool?
- Submit photos to iNaturalist.org
- Collect a specimen if you have landowner permission
- Or email spring.99@osu.edu

For more information, see: u.osu.edu/ohiodamselflyasurvey/

Ohio Dragonfly Identification: Silhouettes

Dragonfly = Suborder Anisoptera
Ohio has 116 species of dragonflies in 7 families & 43 genera. Most dragonfly families are separated by their eye shape. Below are silhouettes representing each family found in Ohio. Illustrations & design by MaLisa Spring, 2018.

Clubtails: Family Gomphidae
- 38 species in Ohio
- Challenging to ID

Clubtail
Front of Head
Pronghorn Clubtail

Petaltails: Family Petaluridae
- 1 species in Ohio
- Forested seeps

Petaltail
Top of Head
Gray Petaltail

Skeptrails: Family Cordulegasteridae
- 5 species in Ohio
- Uncommon
- Slender body
- Brown body with patches of yellow

Skeptrail
Front of Head
Brown Skeptrail

Skimmers: Family Libellulidae
- 38 species in Ohio
- Eyes meet at a single point or along a seam
- Easy to ID based on coloration and wing patterns
- Most other families have clear, unpatterned wings

Springtime Damselfly
Top of Head
Spotted Darners

Emeralds and Baskettails: Family Corduliidae
- 17 species in Ohio
- Challenging to ID
- Rarely land

Common Baskettail
Top of Head
Common Baskettail

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Broad-winged Damselflies: Family Calopterygidae

Rubyspots (*Hetaerina* spp)
2 species in Ohio

Jewelwings (*Calopteryx* spp)
3 species in Ohio

Note broad wing bases:

- American Rubyspot
- Ebony Jewelwing
Pond Damselflies: Family Coenagrionidae

Dancers (*Argia* spp)  
7 species in Ohio

- Blue Ringed Dancer  
  © MaLisa Spring

- Paiute Dancer  
  © Jim Lemon

- Violet Dancer  
  © MaLisa Spring
Family Coenagrionidae

Forktails (*Ischnura* spp)
6 species in Ohio

- Fragile Forktail
- Eastern Forktail
- Citrine Forktail
Family Coenagrionidae

Bluets (Enallagma spp)
17 species in Ohio

We recommend photographing male terminal appendages to confirm identifications of Bluets and Spreadwings

Azure Bluet

Female Bluet
Family Coenagrionidae

- Aurora Damsel (*Chromagrion conditum*)
Spreadwing Damselflies: Family Lestidae

Pond Spreadwings (*Lestes* spp) - 10 species in Ohio

Great Spreadwing (*Archilestes grandis*)

Note narrow wing bases & wing position

Swamp Spreadwing

Normal resting position with wings open
When in doubt: take a photo of the genitalia

Lestes rectangularis

Lestes vigilax
Anisoptera

Dragonflies
Gomphidae: Clubtails

30 species in Ohio
Petaluridae: Petaltails
1 species in Ohio

Grey Petaltail
© Jim Lemon
Cordulegastridae: Spiketails
5 species in Ohio
Libellulidae: Skimmers
38 species in Ohio

Common Whitetail (female)
Aeshnidae: Darners
17 species in Ohio

Green Darner

Springtime Darner
Corduliidae: Emeralds and Baskettails

17 species in Ohio
Macromiidae: Cruisers

7 species in Ohio

Swift River Cruiser
Questions?
MaLisa Spring
Spring.99@osu.edu

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Now for: ID Quiz!!!
Double Stripped Bluet (Damselfly)

Twelve Spotted Skimmer (Dragonfly)
Giant Robber Fly
*(Promachus sp)*

Robber Fly
*(Efferia sp)*
American Rubyspot (Damselfly)
Hanging Thieves
Robber fly
(*Diogmites sp*)
with Crane Fly
(*Tipulidae*)

© MaLisa Spring
Ruby Meadowhawk (Dragonfly)
Eastern Forktail
(Damselfly)
Comet Darner
*Anax longipes*

Common Green Darner
*Anax junius*

*Fly with legs up*
Blue Dasher

Pachydiplax longipennis
Eastern Amberwing
Perithemis tenera

Ohio Flight
May 21 - Oct 22

© MaLisa Spring
Common Whitetail
*Plathemis lydia*

Ohio Flight
Apr 14 – Oct 15

© MaLisa Spring

© Jim Lemon
Eastern Pondhawk  
*Erthemis simplicicollis*

*Fly with legs down*
Spangled Skimmer
*Libellula cyanea*

Slaty Skimmer
*Libellula incepta*
Widow Skimmer
Libellula luctuosa
Twelve-spotted Skimmer

Libellula pulchella

© MaLisa Spring
Spotted Spreadwing

*Lestes congener*

© MaLisa Spring
Slender Spreadwing

Lestes rectangularis

Ohio Flight
May 21 - Oct 28

© MaLisa Spring

Slender Spreadwing

Lestes rectangularis
Ebony Jewelwing
*Calopteryx maculata*

© Jim Lemon
Stream Bluet

Enallagma exsulans

© Jim Lemon

Skimming Bluet

Enallagma geminatum

© MaLisa Spring

Skimming Bluet

Enallagma geminatum

© Jim Lemon
Double-striped Bluet

*Enallagma basidens*
Eastern Forktail
*Ischnura verticalis*

Fragile Forktail

© Jim Lemon
Rambur’s Forktail

Eastern Forktail