

# **A SEASONALITY OF MISSOURI ODONATES**



**George G. Sims  
Route 2, Box 237-3  
Mansfield, Missouri 65704-9564  
(417) 554-1682  
[georgesims@hotmail.com](mailto:georgesims@hotmail.com)**

**October 5, 2011  
Last Revision: January 25, 2012**

# Seasonality of Missouri Odonata

George G. Sims

Route 2, Box 237-3, Mansfield, Missouri 65704-9564

(417) 554-1682

georgesims@hotmail.com

January 25, 2012

This project was undertaken to emulate Victor Fazio's recent study of the seasonality of Oklahoma odonates.

Kent Fothergill kindly read the initial report, and observed:

“The phenology of imago odonates is an important avenue of study. Larval development is influenced by water temperature (Lutz 1968), and changes in imago early dates may reflect water temperature changes. Changes in imago late dates may reflect changes in climate that have altered ability of adults to survive. This document provides a baseline. Additionally, data such as these serve an odonate conservation purpose as they encourage examination of the odonate fauna by a wide range of naturalists and land managers.”

Initial data was taken from Linden Trial's seminal *Atlas of Missouri Odonata* (2005), and early and late dates for each species from her volume are shown below in yellow. The taxonomic divisions shown in my compilation are taken from her report. I then examined all records from specimens collected in Missouri and recorded on Odonata Central ([www.odonatacentral.org](http://www.odonatacentral.org)), John Abbott's exceptional database from the University of Texas, and entered any seasonal extensions in red. Many of the records on Odonata Central were derived from Nick Donnelly's groundbreaking “DOT Map Project”, but did not reveal collection dates. Nick generously replied to my inquiries and informed me that his collection data for the project did not include that information. Tim Vogt provided one extension from his personal collection, which has not yet been shown in the Odonata Central database, and that entry is marked in a light red/pink color.

On October 4, 2011, I visited the University of Missouri-Columbia's Enns Entomological Museum, where I was able to examine the entirety of their odonate collection—over 100 museum trays, both pinned and papered specimens. I did *not* attempt to make my own identifications of any of the museum's specimens, and examined only those that had been completed curated and vetted. I did not examine several trays of unclassified/unverified specimens. Any further additions resulting from this examination are shown in blue. Several doubtful listings from the *Atlas*, which showed no further supporting evidence, have been removed from the final report.

## ACKNOWLEDGEMENTS

I am most grateful to Victor Fazio, for the inspiration to attack this project, especially given the most basic nature of my entomological skills. Kris Simpson, of the Enns Museum at the University of Missouri-Columbia, was most gracious and helpful in allowing me complete access to their excellent collection. Linden Trial, who produced the 2005 *Atlas of Missouri Odonata*, is obviously a most remarkable woman, especially given the unbelievable number of specimens she has collected, and which are included in the museum's collection.

John Abbott's Odonata Central is an invaluable resource, and he should be credited with allowing many newcomers to the field of odonatology to begin to contribute, even in small ways, to the spirit of odonatological research.

The venerable Nick Donnelly was kind enough to offer advice and encouragement. David Bowles, Shelly Cox, Thomas W. Donnelly, Victor Fazio, Kent Fothergill, Chris Goforth, Berlin Heck, Steve Hummel, Jim Johnson, Ed Lam, Greg Lasley, Kelby Ouchley, Dennis Paulson, Jon and Nancy Rapp, Kris Simpson, Tim Vogt, and Anthony Zukoff have been patient, understanding, and encouraging in my novice efforts in learning and understanding odonates.

Any mistakes or omissions in this report, are, of course, the fault of the author.

## REFERENCES

Abbott, J.C. 2007. Odonata Central: An online resource for the distribution and identification of Odonata. Texas Natural Science Center, The University of Texas at Austin. Available at <http://www.odonatacentral.org>. (Last accessed: January 25, 2012).

Fazio, V. 2010. Odonata of Oklahoma: Seasonality. Online resource: [http://www.odonatacentral.org/docs/OK\\_Seasonality\\_Working\\_Draft\\_1.5.5](http://www.odonatacentral.org/docs/OK_Seasonality_Working_Draft_1.5.5) 18 Sep 2011.pdf. (Last accessed: January 21, 2012).

Lutz, P.E. 1968. Effects of Temperature and Photoperiod on Larval Development in *Lestes eurinus* (Odonata: Lestidae). *Ecology* 49.4: 637-644.

Trial, L. 2005 *Atlas of Missouri Odonata* revised 2005. Missouri Department of Conservation report.

# Odonata of Missouri: Seasonality

Prepared by George G. Sims, January 25, 2012

Route 2, Box 237-3, Mansfield, Missouri 65704-9564

(417) 554-1682

georgesims@hotmail.com

Atlas of Missouri Odonata

Odonata Central Record

Personal Collections

Enns Museum-University of Missouri

<u>Species</u>	<u>English Name</u>	<u>Early Date</u>	<u>Late Date</u>
----------------	---------------------	-------------------	------------------

## ZYGOPTERA:

### Calopterygidae:

<i>Calopteryx maculata</i>	Ebony jewelwing	5/12	9/28
<i>Hetaerina americana</i>	American rubyspot	5/14	10/22
<i>Hetaerina titia</i>	Smoky rubyspot	7/22	10/7

### Lestidae:

<i>Archilestes grandis</i>	Great spreadwing	6/17	11/8
<i>Lestes congener</i>	Spotted spreadwing	6/3	11/14
<i>Lestes disjunctus</i>	Common spreadwing	4/19	10/20
<i>Lestes eurinus</i>	Amber-winged spreadwing	5/11	8/24
<i>Lestes forcipatus</i>	Sweetflag spreadwing	5/11	9/24
<i>Lestes inaequalis</i>	Elegant spreadwing	5/5	6/30
<i>Lestes rectangularis</i>	Slender spreadwing	5/10	10/23
<i>Lestes unguiculatus</i>	Lyre-tipped spreadwing	5/2	10/8
<i>Lestes vigilax</i>	Swamp spreadwing	5/10	9/29

### Coenagrionidae:

<i>Amphiagrion saucium</i>	Eastern red damsel	6/20	7/31
<i>Argia alberta</i>	Paiute dancer	7/18	7/20
<i>Argia apicalis</i>	Blue-fronted dancer	Clark County 5/14	Clark County 10/15 OC323575 Bates County
<i>Argia bipunctulata</i>	Seepage dancer	5/20	9/17
<i>Argia fumipennis</i>	Violet dancer	4/21	10/10
<i>Argia moesta</i>	Powdered dancer	4/22	10/10
<i>Argia nahuana</i>	Aztec dancer	4/19	9/7
<i>Argia plana</i>	Springwater dancer	5/5	10/3

<i>Argia sedula</i>	Blue-ringed dancer	5/3 OC327860 Bates County	9/23
<i>Argia tibialis</i>	Blue-tipped dancer	5/14	9/22
<i>Argia translata</i>	Dusky dancer	6/7	9/25
<i>Argia vivida</i>	Vivid dancer	9/26	9/26
<i>Chromagrion conditum</i>	Aurora damsel	5/7	6/30
<i>Enallagma antennatum</i>	Rainbow bluet	6/16	8/28
<i>Enallagma aspersum</i>	Azure bluet	4/27	9/28
<i>Enallagma basidens</i>	Double-striped bluet	4/26	10/14
<i>Enallagma carunculatum</i>	Tule bluet	5/25 OC343386/349474 Phelps County	9/6
<i>Enallagma civile</i>	Familiar bluet	4/16	11/15 OC334516 Boone County
<i>Enallagma divagans</i>	Turquoise bluet	4/21	8/31
<i>Enallagma exsulans</i>	Stream bluet	5/13	9/25
<i>Enallagma geminatum</i>	Skimming bluet	4/21	10/10
<i>Enallagma signatum</i>	Orange bluet	5/7	10/10
<i>Enallagma traviatum</i>	Slender bluet	4/21	7/18
<i>Enallagma vesperum</i>	Vesper bluet	5/5	9/21
<i>Ishnura damula</i>	Plains forktail	4/21	4/21
<i>Ishnura hastata</i>	Citrine forktail	5/7	10/23
<i>Ishnura kellicotti</i>	Lilypad forktail	5/8	9/8
<i>Ishnura posita</i>	Fragile forktail	3/14	11/16
<i>Ishnura ramburii</i>	Rambur's forktail	8/15	9/14
<i>Ishnura verticalis</i>	Eastern forktail	3/19	10/24 OC334204 Boone County
<i>Nehalennia gracilis</i>	Sphagnum sprite	7/25	7/28
<i>Nehalennia irene</i>	Sedge sprite	6/20	7/20
<i>Telbasis byersi</i>	Duckweed firetail	9/1	9/1
<i>Telebasis salva</i>	Desert firetail	8/11	8/11

## ANISOPTERA:

### Petaluridae:

<i>Tachopteryx thoreyi</i>	Gray petaltail	5/24	7/31
----------------------------	----------------	------	------

### Aeshnidae:

<i>Aeshna canadensis</i>	Canada darner	7/10 Saint Louis County	7/10 Saint Louis County
<i>Aeshna constricta</i>	Lance-tipped darner	6/16	10/17
<i>Aeshna umbrosa</i>	Shadow darner	6/16	11/8

*Anax junius*  
*Anax longipes*  
*Basiaeschna janata*  
*Boyeria vinosa*  
*Epiaeschna heros*  
*Nasiaeschna pentacantha*  
*Rhionaeschna multicolor*  
  
*Rhionaeschna mutata*

Common green darner  
 Comet darner  
 Springtime darner  
 Fawn darner  
 Swamp darner  
 Cyrano darner  
 Blue-eyed darner  
  
 Spatterdock darner

3/14	11/26
5/11	7/31
4/14	9/5
6/22	10/5
4/12	8/5
5/17	8/8
4/30	4/30
Jackson County	Jackson County
5/6	6/12

**Gomphidae:**

*Arigomphus lentulus*  
*Arigomphus maxwelli*  
*Arigomphus submedianus*  
*Arigomphus villosipes*  
*Dromogomphus spinosus*  
*Dromogomphus spoliatus*  
*Erpetogomphus designatus*  
*Gomphus exilis*  
*Gomphus externus*  
*Gomphus fraternus*

Stillwater clubtail  
 Bayou clubtail  
 Jade clubtail  
 Unicorn clubtail  
 Black-shouldered spinyleg  
 Flag-tailed spinyleg  
 Eastern ringtail  
 Lancet clubtail  
 Plains clubtail  
 Midland clubtail

5/19	5/27
5/21	6/18
5/15	9/1
4/19	7/11
5/29	9/15
6/1	9/23
6/16	9/1
4/26	7/12
5/5	8/15
6/5	6/7
	OC334674 Saint Louis County

*Gomphus graslinellus*  
*Gomphus lineatifrons*  
*Gomphus lividus*  
*Gomphus militaris*  
*Gomphus ozarkensis*  
*Gomphus quadricolor*  
*Gomphus vastus*  
*Gomphus ventricosus*  
*Hagenius brevistylus*  
*Ophiogomphus westfalli*  
*Progomphus obscurus*  
*Stylogomphus sigmastylus*  
*Stylurus amnicola*  
*Stylurus intricatus*  
*Stylurus notatus*  
*Stylurus plagiatus*  
*Stylurus spiniceps*

Pronghorn clubtail  
 Splendid clubtail  
 Ashy clubtail  
 Sulphur-tipped clubtail  
 Ozark clubtail  
 Rapids clubtail  
 Cobra clubtail  
 Skillet clubtail  
 Dragonhunter  
 Westfall's snaketail  
 Common sanddragon  
 Interior least clubtail  
 Riverine clubtail  
 Brimstone clubtail  
 Elusive clubtail  
 Russet-tipped clubtail  
 Arrow clubtail

4/5	7/19
5/14	7/4
5/2	6/17
5/6	8/17
4/10	7/28
5/15	7/7
5/16	8/14
6/1	7/1
5/22	9/15
5/14	7/18
5/19	8/13
4/11	8/23
6/4	8/11
6/26	10/15
7/28	8/10
7/15	9/18
7/19	9/13

**Cordulegastridae:**

*Cordulegaster maculata*  
*Cordulegaster obliqua*

Twin-spotted spiketail  
Arrowhead spiketail

4/1	6/15
5/2	7/29

**Libellulidae (Macromiinae):**

*Didymops transversa*

Stream cruiser

4/11 OC305391 Jasper County	5/26 OC324674 Shannon County
-----------------------------------	------------------------------------

*Macromia alleghaniensis*

Allegheny river cruiser

6/26 7/30

*Macromia illinoiensis*

Swift river cruiser

6/7 9/9

*Macromia pacifica*

Gilded river cruiser

4/24 9/15

*Macromia taeniolata*

Royal river cruiser

7/17 9/7

**Libellulidae (Cordullinae):**

*Epitheca costalis*

Slender baskettail

4/19 6/24

*Epitheca cynosura*

Common baskettail

4/14 Aug

*Epitheca princeps*

Prince baskettail

5/6 8/27

*Helocordulia uhleri*

Uhler's sundragon

5/7 6/1

*Neurocordulia molesta*

Smoky shadowdragon

6/4 7/3

*Neurocordulia xanthosoma*

Orange shadowdragon

5/28 8/18

*Neurocordulia yamaskanensis*

Stygian shadowdragon

7/29 7/30

*Somatochlora filosa*

Fine-lined emerald

8/5 8/5

*Somatochlora hineana*

Hine's emerald

Carter County Carter County  
6/14 7/18

*Somatochlora linearis*

Mocha emerald

6/12 8/28

*Somatochlora ozarkensis*

Ozark emerald

6/28 8/14

*Somatochlora provocans*

Treetop emerald

7/28 7/28

*Somatochlora tenebrosa*

Clamp-tipped emerald

Stoddard County Stoddard County  
6/25 10/2

**Libellulidae (Libellulinae):**

*Celithemis elisa*

Calico pennant

4/19 11/2

*Celithemis eponina*

Halloween pennant

5/11

*Celithemis fasciata*

Banded pennant

OC282329  
Mississippi County 10/30

*Celithemis verna*

Double-ringed pennant

4/24 9/2

*Dythemis fugax*

Checkered setwing

5/10 7/5

*Dythemis velox*

Swift setwing

7/3 7/11

*Erythemis simplicicollis*

Eastern pondhawk

6/4 9/15

*Erythemis vesiculosa*

Great pondhawk

5/1 1/23

*Ladona deplanata*

Blue corporal

6/14 6/14

*Ladona julia*

Chalk-fronted corporal

Boone County Boone County  
4/7 6/9

6/21 6/21

Webster County Webster County

<i>Libellula auripennis</i>	Golden-winged skimmer	8/6 Carter County	8/7
<i>Libellula cyanea</i>	Spangled skimmer	5/14	10/15
<i>Libellula flavida</i>	Yellow-sided skimmer	5/18	8/11
<i>Libellula incesta</i>	Slaty skimmer	5/6	9/30
<i>Libellula luctuosa</i>	Widow skimmer	4/3	11/7
<i>Libellula pulchella</i>	Twelve-spotted skimmer	5/2	10/20
<i>Libellula semifasciata</i>	Painted skimmer	5/20	7/5
<i>Libellula vibrans</i>	Great blue skimmer	6/8	9/30
<i>Pachydiplax longipennis</i>	Blue dasher	4/20	11/20
<i>Pantala flavescens</i>	Wandering glider	5/21	11/12
<i>Pantala hymenaea</i>	Spot-winged glider	5/13	11/7
<i>Perithemis tenera</i>	Eastern amberwing	5/14	10/30
<i>Plathemis lydia</i>	Common whitetail	4/23	10/13
<i>Sympetrum ambiguum</i>	Blue-faced meadowhawk	5/21	11/14
<i>Sympetrum corruptum</i>	Variiegated meadowhawk	4/16	11/26
<i>Sympetrum costiferum</i>	Saffron-winged meadowhawk	6/1	10/29
<i>Sympetrum internum</i>	Cherry-faced meadowhawk	4/17	11/24
<i>Sympetrum obtrusum</i>	White-faced meadowhawk	6/15	10/12 OC334396 Saint Louis City
<i>Sympetrum occidentale fasciatum</i>	Western meadowhawk	7/11	9/22
<i>Sympetrum rubicundulum</i>	Ruby meadowhawk	5/30	10/20
<i>Sympetrum vicinum</i>	Autumn meadowhawk	5/25	12/23 Tim Vogt Shannon County
<i>Tramea calverti</i>	Striped saddlebags	7/31 Saline County	7/31 Saline County
<i>Tramea carolina</i>	Carolina saddlebags	5/30	8/17
<i>Tramea lacerata</i>	Black saddlebags	4/17	11/16
<i>Tramea onusta</i>	Red saddlebags	4/28	10/12