

The Odonata of Finzel Swamp

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This report covers the field work completed in 1995 and 1996 for partial fulfillment of the Maryland Department of Natural Resources (DNR), Heritage and Biodiversity Conservation Programs (HBCP) contract. The purpose for the contract was to identify and survey for dragonflies and damselflies (Insecta: Odonata) at Finzel Swamp, Negro Mountain Bog, and the Glades of Cherry Creek.

Finzel Swamp is a cold water swamp located at the edge of Garrett and Allegany counties east of Route 546. The 333 protected acres of the swamp and the surrounding environs has been under protection since 1969. The cool microclimate of the area acts as a refuge for cold tolerant organisms which inhabited Western Maryland 15,000 years ago during the most recent ice age.

Finzel Swamp has been studied by biologists for years and many aspects of its unique fauna and flora are well documented. For that reason neither a biological review or a map is included in this report. However, two appendices are included on butterflies and leaf beetles because new species of interest were found during the 1995-1996 field season.

The survey focused on three very different aquatic environments: the swamp proper, an abandoned farm pond, and the marshy pools located in the open fields edging the swamp and pond. Both dragonfly and damselfly adults and larval cast skins were used to gather information during the survey. No direct larval sampling was done.

Table 1 summarizes the data collected on Odonata during the 1995-1996 survey. The swamp proper was relatively poor in dragonflies and damselflies with *Pachydiplax longipennis* (Blue Dasher) as its most dominant dragonfly and *Enallagma hageni* (Hagen's Bluet) and *Ischnura verticalis* (Eastern Forktail) as the most dominant damselflies.

The low depressions in the grasslands (abandoned cropland?) surrounding the swamp and farm pond was dominated by the

dragonfly *Sympetrum obtrusum* (White-faced Meadowhawk).

The most productive environment was the abandoned farm pond which had clean clear water and a rich variety of swamp, marsh, and open shore, providing for a diverse odonate community. The spring species assemblage was truly diverse reaching its peak during June when virtually every species found in Table 1 (either as

TABLE 1: ODONATA OF FINZEL SWAMP

	MAY	JUNE	JULY	AUG	SEPT
DRAGONFLIES:					
Gomphidae					
1. <i>Arigomphus villosipes</i> (P)			X		
2. <i>Gomphus exilis</i> (P)		X	X		
Aeshnidae					
3. <i>Aeshna canadensis</i> *+(S,P)				X	
4. <i>Aeshna tuberculifera</i> *(P)					X
5. <i>Aeshna umbrosa</i> (S,P)					X
6. <i>Anax junius</i> (S,P,F)	X		X		X
7. <i>Anax longipes</i> (C) (P)		X			
8. <i>Boyeria vinosa</i> (P) (A)		X			X
9. <i>Epiaeschna heros</i> (S)			X		
Cordulegasteridae					
10. <i>Cordulegaster diastatops</i> +(A)		X			
Macromiidae					
11. <i>Didymops transversa</i> (C) (A)		X			
12. <i>Macromia</i> sp.(A)					X
Corduliidae					
13. <i>Cordulia shurtleffi</i> +(P)		X	X		
14. <i>Epithea cynosura</i> (P)		X	X		
15. <i>Epithea princeps</i> (P)					X
16. <i>Somatochlora tenebrosa</i> (A)					X
Libellulidae					
17. <i>Celithemis elisa</i> (P)		X	X	X	X
18. <i>Leucorrhinia intacta</i> +(S,P)		X			
19. <i>Libellula julia</i> +(S,P)		X	X		
20. <i>Libellula luctuosa</i> (P)			X	X	
21. <i>Libellula lydia</i> (S,P)		X	X	X	X
22. <i>Libellula pulchella</i> (S,P)		X	X	X	X
23. <i>Libellula semifasciata</i> (S,F)	X	X			
24. <i>Pachydiplax longipennis</i> (S,P,F)		X	X		
25. <i>Sympetrum obtrusum</i> (F)			X	X	X
26. <i>Sympetrum vicinum</i> (S,P)				X	X
27. <i>Tramea lacerata</i> (P)		X			X
DAMSELFLIES:					
Lestidae					
28. <i>Lestes rectangularis</i> (S,F)				X	X
29. <i>Lestes vigilax</i> (S,P,F)			X	X	X
Coenagrionidae					
30. <i>Amphiagrion saucium</i> (F)		X	X		
31. <i>Argia fumipennis violacea</i> (P)				X	
32. <i>Chromagrion conditum</i> (S,P)		X			
33. <i>Enallagma antennatum</i> *+(P)			X		

34. <i>Enallagma aspersum</i> (P)		X		X		X
35. <i>Enallagma civile</i> (P)				X		
36. <i>Enallagma geminatum</i> (P)				X	X	X
37. <i>Enallagma hageni</i> +(S,P,F)				X		
38. <i>Enallagma signatum</i> (P)				X	X	X
39. <i>Ischnura posita</i> (S,P,F)	X		X			X
40. <i>Ischnura verticalis</i> (S,P,F)	X	X		X	X	X

Key:

Bold = species of potential interest due to rarity in Maryland

(C) = Record from Dave (C)zaplak

+ = At present known from Maryland only from Garrett County

* = Species or subspecies known from 5 or less sites in Maryland

(S) = (S)wamp habitat -- found in

(P) = Farm (p)ond -- found in

(F) = shallow pools in low sections of (f)ields -- found in

(A) = stray (a)dults -- larval habitat streams in or near survey area

strays from surrounding environments or as permanent residents of the pond) could be found. By August the diversity drops with the most conspicuous dragonflies being *Celithemis elisa* (Calico Pennant) and three species of *Libellula* (*L. lydia* -- Common Whitetail, *L. pulchella* -- Twelve-spotted Skimmer, and *L. luctuosa* -- Widow Skimmer). By September, the late fall species *Sympetrum vicinum* (Yellow-legged Meadowhawk) rules the pond.

Three species are identified in Table 1 as species which are of potential interest to the HBCP. All three were found at the farm pond.

Aeshna canadensis (Canada Darner) had not been recorded from Maryland before 1993. In Maryland, it has only been recorded from Garrett County. *Aeshna canadensis* appeared to be common throughout my survey areas in 1995 and somewhat less so in 1996. Identification was done in hand, but no voucher specimen was taken.

Aeshna canadensis is an abundant northern boreal species and a powerful insect capable of covering great distances in flight. The Canada Darner most likely extends its population along its southern range under ideal conditions. For details on biology and natural history of *A. canadensis* see Walker, 1958.

The current information on *Aeshna canadensis* implies that it is either a recent but temporary invader or has been established for some time but not reported due to previously low numbers of individuals in the population. Which hypotheses is correct cannot be answered until additional field work is completed. The

southern-most record of this species is Highland county, Virginia (Carle, 1982) and it is listed in Virginia as a S1 organism.

Aeshna tuberculifera (Black-tipped Darner) presents a similar scenario of being a powerful flying boreal species which could conceivably show up far from its normal range. *Aeshna tuberculifera* has a very spotty record from Maryland with two historical records (both in 1916) from Prince George's County, a 1996 record in Howard County and recent scattered records from Garrett County including Mt. Nebo WMA, Negro Mountain Bog, and Finzel Swamp. A voucher specimen was taken from Finzel Swamp and resides in the author's collection. See Orr, 1996, for the present distributions of all known dragonflies and damselflies from the Maryland and Washington D.C. area.

The Black-tipped Darner's southern known limit is Russell County, Virginia (Carle, 1982). In Virginia, *A. tuberculifera* is encountered more often than *A. canadensis*, just the opposite from what the 1995-1996 data from Garrett County shows. In Virginia, *A. tuberculifera* is listed as a S2. For details of the biology and natural history of the Black-tipped Darner see Walker, 1952.

Enallagma antennatum (Rainbow Bluet) is a northern species which maintains a healthy population at the farm pond. This species is not blue like most of its relatives but orange, green, and black. The Rainbow Bluet's southern limit extending into Garrett County. Voucher specimens were taken and are in the author's collection. The Rainbow Bluet was also photographed at the pond. Roble, 1994 does not list the Rainbow Bluet as occurring in Virginia. It is recorded from Pennsylvania and West Virginia (Westfall and May, 1996).

The farm pond is the only current location, that I am aware of, where *Enallagma antennatum* can be found in Maryland. Based on the biology and mobility of this species it will likely show up in similar habitats (large clean ponds) in the region. However, until additional surveys are completed this population should be considered as important and should be monitored.

Currently the Rainbow Bluet, Black-tipped Darner, and the Canada Darner are not listed by the DNR-HBCP. All three should be given consideration for listing. Finzel Swamp should be identified as important for the maintenance of these three species.

Additional surveys of Finzel would likely increase the number of

recorded resident odonate species and Finzel has the potential to hold some additional surprises. However, other prime habitats in Garrett County have not been covered to the degree that Finzel has. Therefore, I will not be requesting additional survey money on Finzel. I would recommend that the Rainbow Bluet population be monitored by a local biologist in order to ensure that it remains healthy.

I would like to state my appreciation to Joe Cavey for supplying the information on the leaf beetles and to Dave Czaplak for sharing his odonate and butterfly records for Finzel swamp.

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APPENDIX I: Butterflies of Finzel Swamp

A detailed survey of butterflies was not attempted or were they actively searched out for identification. However, what was seen is reported. A couple of these butterfly species are both very local and very rare in Maryland. I saw the largest concentration of the *Euphydryas phaeton* (Baltimore) and *Nymphalis vau-album* (Compton Tortoiseshell) that I have ever seen in Maryland. I am also including the record of the two individual *Chlosyne harrisii* (Harris' Checkerspots) observed by Dave Czaplak on June 14, 1995. Those species marked with an asterisk are listed by DNR-HBCP as rare, threatened, or endangered in Maryland.

Papilionidae (Swallowtails): 1) Spicebush Swallowtail, 2) Tiger Swallowtail

Pieridae (Whites and Yellows): 3) Cabbage Butterfly, 4) Common Sulphur

Lycaenidae (Gossamer wings): 5) Eastern Tailed Blue, 6) Spring Azure Complex

Nymphalidae (Bush-footed Butterflies): 7) Aphrodite Fritillary, 8) Great Spangled Fritillary, 9) Variegated Fritillary, 10) Silvery Checkerspot, 11) Baltimore, 12) Question Mark, 13) Compton Tortoiseshell*, 14) Red-spotted Purple, 15) Wood Nymph, 16) Red Admiral, 17) Harris' Checkerspot*

Hesperiidae (Skippers): 18) Silver-spotted Skipper, 19) Delaware Skipper, 20) European Skipper, and 21) Peck's Skipper

APPENDIX II Leaf Beetles (Insecta: Coleoptera: Chrysomelidae) Known to Occur in Two TNC Properties in Garrett County, Maryland

(Joe Cavey, October 5, 1996)

Finzel Swamp Nature Preserve

Subfamily Donaciinae:

Donacia biimpresa Melsheimer

Plateumaris nitida (Germar)

Plateumaris rufa (Say)

Subfamily Orsodacninae:

Orsodacne atra (Ahrens)

Subfamily Chlamisinae:

Exema canadensis Pierce

Subfamily Eumolpinae:

Paria fragariae Wilcox

Subfamily Chrysomelinae:

Calligrapha alni Schaeffer

Subfamily Galerucinae:

Diabrotica undecimpunctata howardi Barber

Scelolyperus cyanellus (LeConte)

Subfamily Alticinae:

Altica litigata Fall

Altica rosae Woods

Capraita subvittata (Horn)

Chaetocnema irregularis LeConte

Crepidodera violacea Melsheimer

Derocrepis eurythropus (Melsheimer)

Phyllotreta striolata (Fabr.)

Psylliodes napi (Panzer)

Subfamily Hispinae:

Microrhopala xerene (Newman)

Odontota dorsalis Thunberg

Sumitrosis inaequalis (Weber)

The Glades of Cherry Creek

Subfamily Donaciinae:

Plateumaris metallica Ahrens

Plateumaris rufa (Say)

Subfamily Cryptocephalinae:

Bassareus formosus sulphuripennis (Melsh.)

Cryptocephalus sp., near *gibbicollis*

Haldeman

Cryptocephalus quadruplex Newman

Diachus auratus (Fabr.)

Lexiphanes saponatus (Fabr.)

Pachybrachis othonus othonus (Say)

Triachus atomus (Suffrian)

Subfamily Chlamisinae:

Exema canadensis Pierce

Subfamily Eumolpinae:

Brachypnoea margaretae Schultz

Paria quadrinotata (Say)

Paria thoracica (Melsheimer)

Subfamily Chrysomelinae:

Calligrapha alni Schaeffer

Chrysolina quadrigemina (Suffrian)

Chrysomela knabi Brown

Subfamily Galerucinae:

Diabrotica undecimpunctata howardi Barber

Ophraella conferta (LeConte)

Scelolyperus cyanellus (LeConte)

Tricholochmaea alni (Fall)

Tricholochmaea vaccinii (Fall)

Subfamily Alticinae:

Capraita subvittata (Horn)

Crepidodera violacea Melsheimer

Luperaltica senilis (Say)

Subfamily Hispinae:

Microrhopala excavata excavata (Olivier)

Microrhopala vittata (Fabr.)
Sumitrosis inaequalis (Weber)

The preceding lists of leaf beetles resulted from collections I made at the Glades of Cherry Creek and Finzel Swamp Nature Preserve in June and August of 1996, and one visit to the Glades in June of 1986. I requested and received permission to survey these habitats from The Nature Conservancy to augment my 10 year project to produce an annotated list of Maryland leaf beetles (Cavey and Staines, in prep.). I provide these lists to supplement TNC's faunal inventory for this important family of insects.

Leaf beetles comprise the fourth largest family of beetles in North America, with about 1500 species known on the continent and more than 400 species I will record from Maryland (Cavey and Staines, in prep.). My brief surveys of two Garrett County, Maryland TNC properties produced modest numbers of leaf beetle species - 27 from the Glades and 20 from Finzel Swamp. However, some of the species collected were significant, as noted below.

- *Plateumaris nitida* (Germar) - This species was formerly known to occur from Pennsylvania north and from one record in western Virginia reported in 1991. My collection of a series of *P. nitida* in Finzel Swamp represents a New State Record for Maryland. This species feeds on sedges.
- *Calligrapha alni* Schaeffer - I reported a single specimen collected in 1986 near Deep Creek as a New State Record for Maryland [Cavey, J.F. 1994. Annotated new distributional records for North American Chrysomelidae (Coleoptera). *Coleopt. Bull.* 48(1):1-9]. The collection site was north of Deep Creek Lake in the Glades. The only known records of this species from Maryland are now from the Glades and Finzel Swamp. These sites represented the southern limits of *C. alni*'s distribution until a recent find in West Virginia. This species feeds on *Alnus rugosa*, speckled alder.
- *Tricholochmaea vaccinii* (Fall) - A small series of the "blueberry leaf beetle" that I collected in 1986 on Mount Backbone, Garrett County represented a New State Record for Maryland and a southern extension of the beetle's known distribution from Quebec to New Jersey (Cavey 1994). This species is so rare at this latitude that for the past 10 years I was unable to duplicate that collection in Maryland. However, in June and August 1996, I found this species common on lowbush blueberry growing on drier ground bordering the edge of sphagnum bogs in the Glades.
- *Cryptocephalus* sp., near *g. gibbicollis* Haldeman - I collected a single specimen of this beetle in the Glades in June 1996. If the specimen is *C. gibbicollis*, it represents only the second collection of that species in Maryland. But this specimen does not exactly match descriptions of *C. gibbicollis*. I will investigate the possibility that this specimen belongs to a species new to science, this winter.

Collection of four noteworthy leaf beetles during two brief visits to the Glades and Finzel Swamp in 1996 is testimony to the quality of these unusual, perhaps unique habitats and evidence for the need to continue faunal studies there.

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