

THE ODONATA OF MOUNT NEBO WILDLIFE MANAGEMENT AREA

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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 Sideling Hill Creek, Cranesville Swamp and Mount Nebo Wildlife Management Area.

The major focus of the sampling at Mount Nebo WMA was along the wetland habitats of Millers Run. The marsh created by the beaver pond was often visited because of the unique concentration of *Aeshna* species. Mount Nebo WMA is the only location in Maryland where all five known Maryland species of *Aeshna* can be found. Since Mount Nebo Swamp has already been identified by the HBCP as an extremely significant wetland, and the animal and plant community has already been well reported, the details of its biological uniqueness will not be repeated in this report.

Table 1 summarizes the data collected on Odonata during 1995 and 1996. Of all the Garrett County locations so far surveyed, Mount Nebo WMA has the highest diversity of dragonflies and damselflies. The main reason for this is the diversity and extent of the wetlands at Mount Nebo, and the higher spring and summer temperatures compared to my other survey sites in Garrett County.

Six species are identified in Table 1 as species which are of interest, or potential interest, to the HBCP. A summary of each is presented.

1) *Lanthus vernalis* (**Southern Pygmy Clubtail**) is known from two locations in Maryland. The Mount Nebo population was found in 1995 and the Steep Creek population (Blue Ridge Mountains in Frederick County) in 1994. This small attractive clubtail will likely turn up in other clean water streams in Western Maryland.

The larvae of *Lanthus vernalis* inhabits pools and slow moving sections of otherwise fast moving streams and is well distributed (but local) in the mountain streams of Pennsylvania and Virginia (Carle, 1982). This species is listed as S2S in Virginia.

I collected two cast skins at the edge of a small stream which runs parallel to route 2436 just before entering Millers Run on

TABLE 1: ODONATA OF MOUNT NEBO WILDLIFE MANAGEMENT AREA

	June	July	August	September
DRAGONFLIES:				
Gomphidae				
1. <i>Arigomphus villosipes</i>	X			
2. <i>Gomphus exilis</i>	C			
3. <i>Gomphus lividus</i>	X			
4. <i>Lanthus vernalis</i>*	X			
Aeshnidae				
5. <i>Aeshna canadensis</i>**			X	X
6. <i>Aeshna mutata</i>*	X	X		
7. <i>Aeshna tuberculifera</i>*			C	
8. <i>Aeshna umbrosa</i>			X	X
9. <i>Aeshna verticalis</i>*			C	
10. <i>Anax junius</i>	X		X	X
11. <i>Basiaeschna janata</i>	X			
12. <i>Epiaeschna heros</i>	X			
CORDULEGASTRIDAE				
13. <i>Cordulegaster diastatops</i> +	X			
Corduliidae				
14. <i>Cordulia shurtleffi</i> +	X	X		
15. <i>Epitheca canis</i>**	X			
16. <i>Epitheca cynosura</i>	C			
17. <i>Epitheca princeps</i>	C	X	X	
18. <i>Somatochlora linearis</i>				X
19. <i>Somatochlora tenebrosa</i>			X	X
Libellulidae				
20. <i>Celithemis elisa</i>		X		
21. <i>Erythemis simplicicollis</i>	C	X		
22. <i>Leucorrhinia intacta</i> +	X			
23. <i>Libellula axilena</i>	C			
24. <i>Libellula cyanea</i>	C	X		
25. <i>Libellula julia</i> +	X	X		
26. <i>Libellula luctuosa</i>		X	X	
27. <i>Libellula lydia</i>	X	X	X	X
28. <i>Libellula pulchella</i>	X	X	X	
29. <i>Libellula semifasciata</i>	X			
30. <i>Pachydiplax longipennis</i>	C	X	X	
31. <i>Sympetrum obtrusum</i>		X	X	X
32. <i>Sympetrum semicinctorum</i>			X	
33. <i>Sympetrum vicinum</i>			X	X
34. <i>Tramea carolina</i>	C			

35. *Tramea lacerata* X

DAMSELFLIES:

Calopterygidae

36. *Calopteryx maculata* C X

Lestidae

37. *Lestes disjunctus disjunctus*+ X

38. *Lestes rectangularis* X X

39. *Lestes vigilax* X

Coenagrionidae

40. *Amphiagrion saucium* X X X

41. *Chromagrion conditum* X X

42. *Enallagma geminatum* X X

43. *Enallagma hageni*+ X X X

44. *Ischnura hastata* X

45. *Ischnura kellicotti* C

46. *Ischnura posita* X X X X

47. *Ischnura verticalis* X X X X

48. *Nehalennia irene* X X

Key:

Bold = species of potential interest due to rarity in Maryland

X = Personal Records

C = Records from Dave Czaplak

+ = At present known from Maryland only from Garrett County

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

June 12, 1996. According to Dave Czaplak this population of *Lanthus vernalis* is reasonably healthy with adults often found on vegetation near the small stream where I collected the cast skins.

The recent separation of this species from *Lanthus parvulus* can lead to some confusion in the older literature. See Carle, 1983 for help in making identifications.

2) *Aeshna canadensis* (**Canada Darner**) had not been recorded from Maryland before 1993. In Maryland, it has to date only been recorded from Garrett County. *Aeshna canadensis* appeared to be common throughout my survey areas in 1995 and somewhat less so in 1996. The highest concentration of individuals has been at Mount Nebo WMA. Both voucher specimens and photographs have been taken.

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

The current information on *Aeshna canadensis* implies that it is

either a recent, but temporary invasion, or a long established population which has not been previously reported due to low numbers of individuals in the population. Which is true can not be answered until additional field work is completed. The southern most record of this species is Highland county, Virginia (Carle, 1983) and is listed in Virginia as a S1 organism.

3) *Aeshna tuberculifera* (**Black-tipped Darner**) presents a similar problem 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. Negro bog and Finzel Swamp. See Orr, 1996a, for 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 in 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. The single record of *Aeshna tuberculifera* from Mount Nebo WMA is from Dave Czaplak's August 20, 1994 record. In Virginia, *A. tuberculifera* is listed as a S2 organism. For details of the biology and natural history of the Black-tipped Darner see Walker, 1952.

4) *Aeshna verticalis* (**Green-striped Darner**), like most of the species in this genus, is a northern boreal strong-flying species, capable of covering great distances in flight. The Green-striped Darner has a very spotty record from Maryland with historical records from Prince George's county, a 1995 record from Anne Arundel County, and scattered records from Garrett county. The only record of *Aeshna verticalis* from Mount Nebo WMA is from Dave Czaplak's August 20, 1994 record.

Since *Aeshna verticalis* likely extends the southern border of its range during ideal years, it is difficult to determine if these individuals are from a permanent population, a temporary population, or strays from the north or west. Additional field work may well provide the information necessary to solve this riddle in the future. Although predominately a northern species, individuals have been collected as far south as Transylvania county, North Carolina (Carle, 1982). It is rarely encountered in Virginia where it is listed as a S1 organism. See Walker, 1952, for details of the biology and natural history of this species.

5) *Aeshna mutata* (**Spatterdock Darner**) is listed in Maryland as a S1

organism. The Spatterdock Darner population found in 1996 at the Beaver pond was a welcomed sight since the only other known location in Maryland of this species was Mabbatt Pond in Prince Georges county which was recently drained (Orr, 1996b). Therefore, Mount Nebo WMA is currently the only known location of this S1 listed species in Maryland. *Aeshna mutata* is also listed as S1 in Pennsylvania and New Jersey, and S2 in Virginia and New York.

I photographed and collected a female next to the dirt road (route 2436) on June 12, 1996; none were observed at the beaver pond on that day. Dave Czaplak reported 4 or 5 adults at the pond on June 30, 1996 and I recorded 1 male at the beaver pond on July 17, 1996.

This is a very bright blue darner which has a flight period earlier than the other *Aeshna* species at Mount Nebo WMA and should prove easy to monitor. See Walker, 1952, for details of the biology and natural history of this species.

6) *Epitheca (Tetragoneuria) canis* (**Beaverpond Baskettail**) appears to be restricted in Maryland to relatively high elevation beaver ponds and man-made ponds in Garrett County. It is currently recorded from 5 locations in Garrett County but will likely be found at additional sites in Garrett County.

The Beaverpond Baskettail is a widespread boreal species with the southern most record for eastern North America from Highland county, Virginia (Carle, 1982) where it is listed as S1. This species can not be separated from the more common *Epitheca cynosura* without capture. See Walker and Corbet (1978) for details on the biology, natural history, and identification of this species.

Additional surveys of the Mount Nebo WMA would likely increase the number of recorded resident odonate species. However, this location is often visited by local naturalists; especially birders.

A developing Odonata interest in many of these general naturalists insures that our knowledge of the dragonflies and damselflies of this location will grow. Therefore, I will not be requesting additional money to continue work at Mount Nebo WMA. I do however strongly recommend that the population of *Aeshna mutata* be monitored.

I would like to state my appreciation to Dave Czaplak for sharing his records with me. Dave has been documenting the odonates of Mount Nebo WMA for a number of years and his notes and observations greatly added to the value of this study.

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