

**Interagency Special Status Species Program  
Odonate Survey of Bogs, Fens, and Shallow Ponds  
Okanogan-Wenatchee National Forest**

**John Rohrer  
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**SPECIES LIST AND RANKS:**

	<u>ISSSP</u>	<u>Global</u>	<u>WA State Rank</u>	<u>WA State Status</u>
<i>Aeshna sitchensis</i> Zigzag Darner	Sensitive	G5-Secure	S2-Imperiled	none
<i>Aeshna subarctica</i> Subarctic darner	Sensitive	G5-Secure	S2-Imperiled	Monitor
<i>Coenagrion interrogatum</i> Subarctic bluet	Sensitive	G5-Secure	S1-Critically Imperiled	Monitor

**FIELD UNIT(S):** Methow Valley, Entiat, and Tonasket Ranger Districts

Terrestrial Restoration and Conservation Strategy (TRACS) Ecoregions, Priority Watershed IDs, and Priority Habitats: Okanogan Ecoregion, #74 Upper Chewuch, marshes; and East Cascades/Modoc Plateau Ecoregion, #20 Entiat River and #44 Mad River, wet meadows, seeps and springs

**PROJECT LEAD(S):**

John Rohrer	Matt Marsh	Jesse McCarty
Okanogan-Wenatchee NF	Okanogan-Wenatchee NF	Okanogan-Wenatchee NF
24 West Chewuch	1 West Winesap	2108 Entiat Way
Winthrop, WA 98862	Tonasket, WA 98855	Entiat, WA 98822
(509)996-4001	(509)486-5116	(509)784-4630
FAX 996-2208	FAX 486-1922	(509)784-9402
<a href="mailto:jrohrer@fs.fed.us">jrohrer@fs.fed.us</a>	<a href="mailto:mdmarsh@fs.fed.us">mdmarsh@fs.fed.us</a>	<a href="mailto:jmccarty@fs.fed.us">jmccarty@fs.fed.us</a>

**PROJECT OBJECTIVES:** The project objective was to investigate appropriate sites on the Okanogan-Wenatchee National Forest for the presence of sensitive odonate species. The three Region 6 sensitive species listed above were suspected, but not known, to occur on the 3 ranger districts where we surveyed. The documentation of the presence of any of these species would be an addition to their known range and may have implications for management activities at or near the site.

**BACKGROUND:** Prior to this project there had been no records of any odonate surveys on the Methow Valley, Entiat, and Tonasket Ranger Districts. This project initiated the implementation and documentation of surveys for sensitive odonates at sites with suitable habitat. The zigzag darner (*Aeshna sitchensis*) has known records on the Tonasket RD and to the south and east of the Methow Valley RD (Jordan, Jepsen, and Huff, 2011, Species Fact Sheet). Conservation considerations for this species include “*Survey for new sites near the known site at Bunchgrass Meadows (Colville NF), and elsewhere in northeast Washington. The species may occur in upland bog/fen habitat along the northern Washington border, a region that has not yet been surveyed for odonates and is in critical need of inventory.*” The subarctic darner (*Aeshna subarctica*) has 2 known records in Washington, one to the east and one to the south of the

Methow Valley RD and Tonasket RD, both northeast of Entiat RD (Fleckenstein and Huff, 2011, Species Fact Sheet). Conservation considerations for this species include “*Survey for new sites, in appropriate habitat, between known sites and south, through the WA Cascades.*” The subarctic bluet (*Coenagrion interrogatum*) has 2 known records in Washington, both to the east of the Methow Valley RD and Tonasket RD, and northeast of Entiat RD (Fleckenstein and Huff, 2007, Species Fact Sheet). Conservation considerations for this species include “*Survey for new sites near the known sites and elsewhere in NE WA.*”

**METHODS:** We contracted with Dr. Dennis Paulson, retired University of Puget Sound professor and recognized regional/national expert on odonates, to train and instruct us on odonate collection and identification techniques. He spent one day with Rohrer, McCarty, Marsh and others on the Methow Valley Ranger District, primarily in the field at 3 different wetlands near the town of Winthrop. We also received assistance throughout our 2 years of surveys from Darci Dickenson, entomologist at the Wenatchee Fire Sciences Lab, who took an interest in this project and accompanied us on several of our surveys.

We conducted surveys at 16 bog, fen, or shallow pond areas on the Methow Valley, Entiat, and Tonasket Ranger Districts (Table 1). Sites were selected based on habitat required by the three sensitive species (high elevation fens/bogs) and accessibility. Two of the sites were surveyed in both 2013 and 2014, and the remainder were surveyed only during one year.

**Table 1.** Wetlands surveyed for odonates on the Okanogan-Wenatchee National Forest during 2013-2014.

<b>Name</b>	<b>District</b>	<b>Year</b>	<b>T</b>	<b>R</b>	<b>S</b>	<b>Elev</b>
Bailey Mtn Pond	Tonasket	2013	35N	30E	20	5070
Barnell Meadows	Tonasket	2013	35N	29E	35	4380
Big Blue Meadows	Entiat	2013	28N	18E	19	5400
Blackpine Beaver Ponds	Methow Valley	2014	32N	21E	6	4000
Cougar Meadow	Entiat	2014	28N	18E	28	5800
Cub Creek Headwater Ponds	Methow Valley	2014	36N	20E	11	4400
Cutthroat Lake	Methow Valley	2014	35N	17E	13	4960
Falls Creek Bog	Methow Valley	2013/14	37N	21E	17/18	4430
Hunters Meadow	Entiat	2014	28N	18E	20	5600
Leroy Pond	Methow Valley	2013	36N	22E	6	3620
Mission Pond	Methow Valley	2014	32N	21E	17	2960
Mount Annie Pond	Tonasket	2013	37N	30E	22	4370
Ortell Fen	Methow Valley	2013/14	37N	20E	13	5140
Roger Lake	Tonasket	2013	36N	23E	4	5870
Siegel’s Slough	Methow Valley	2014	36N	21E	16/17	3580
Two Little Lakes	Entiat	2014	28N	18E	7	5700

We surveyed on warm sunny days late in the summer and focused on the adult life stage. We followed the protocol in Attachment 5 of the Species Fact Sheet for the zigzag darner by Jordan, Jepsen, and Huff (2011). At least 2 people were present at each survey. The details of each survey effort were recorded including time, weather, and number of surveyors. We identified each specimen captured and photographed individuals of each species at each location. If identification of a specimen was uncertain, key measurements were recorded and were sent along with photographs to Darci Dickenson and Dr. Dennis Paulson.

**RESULTS AND DISCUSSION:** We captured and identified a total of 31 species of odonates (Table 2). The Region 6 sensitive zigzag darner was found at 5 different sites. The subarctic darner and subarctic bluet were not found. The most common species were the variable darner, found at 12 of the 16 sites, and the northern spreadwing, found at 9 of the 16 sites. The Falls Creek bog had the largest diversity of species of the 16 sites with 16 different species captured, including the zigzag darner (Photos 1 and 2).

**MANAGEMENT IMPLICATIONS:** One of our primary interests with odonates and the wetland habitats they require is how they are affected by forest management activities. Tree removal from timber sales or other forest vegetation manipulation projects is limited around typical odonate habitats by riparian protection guidelines that are often “no-cut” buffers. However, livestock grazing, though guided by conditions to limit use of riparian areas, is more difficult to regulate and use can exceed desired conditions during some years. Siegel’s Slough (Table 2) was one of the sites we visited with Dr. Paulson on our training day in 2013. That site is within an active cattle grazing allotment and receives a lot of use, sometimes in excess of FS guidelines, which was evident on our training visit. We questioned Dr. Paulson specifically about the impacts of livestock grazing on odonates and their habitats, referring to conditions we were viewing at Siegel’s Slough. The site is a long, narrow, shallow pond. The water depth is shallow enough that emergent vegetation exists in 95% of the pond. Cattle impacts were limited to the shoreline and adjacent uplands. My personal summation of Dr. Paulson’s assessment was, even though he did not approve of the level of livestock use evident at the site, it was not impacting odonates to a great degree because of the predominance of emergent vegetation in the pond that was not being altered by livestock. Odonates need water, emergent vegetation, and, for some species, trees to perch in. As long as forest management activities are not reducing those habitat components to any degree, the effects to odonates would be minimal. Three of the 5 sites where we documented the zigzag darner are within active cattle grazing allotments (Falls Creek Bog, Leroy Pond, and Ortell Fen)(Photos 1, 3, and 4). Similar to Siegel’s Slough, these sites had abundant emergent vegetation that was not being utilized by cattle, whose impacts were primarily limited to the water’s edge.

Despite our training by Dr. Paulson and assistance from Mrs. Dickenson, we are still novice odonatologists and likely missed species at each site, either from unpolished capture technique, poor timing of the surveys, and/or not enough time and effort put into the surveys. We hope to continue with odonate surveys on the Okanogan-Wenatchee NF on 2 fronts; long-term monitoring of some of the sites where we documented zigzag darners and continued searching for the three Region 6 sensitive species at new sites.

**Table 2.** Results of odonate surveys on the Okanogan-Wenatchee National Forest during 2013-2014.

Species	Bailey Mtn Pond	Barnell Meadows	Big Blue Meadows	Blackpine Beaver Ponds	Cougar Meadow	Cub Creek Headwaters	Cutthroat Lake	Falls Creek Bog
<b>SPREADWINGS</b>								
Spotted Spreadwing				X				X
Northern Spreadwing		X					X	X
Emerald Spreadwing								X
Lyre-tipped Spreadwing								X
<b>POND DAMSELS</b>								
Western Red Damsel						X		
Vivid Dancer								
Taiga Bluet				X				
Boreal Bluet								
Alkali Bluet								
Pacific Forktail								
Sedge Sprite								X
<b>DARNERS</b>								
Lance-tipped Darner						X		X
Lake Darner				X				X
Variable Darner	X	X		X		X		X
Sedge Darner				X			X	
Paddle-tailed Darner				X			X	
Zigzag Darner							X	X
Black-tipped Darner								X
<b>EMERALDS</b>								
American Emerald		X						
Ringed Emerald			X		X		X	
Mountain Emerald	X		X		X		X	X
<b>SKIMMERS</b>								
Hudsonian Whiteface			X				X	
Dot-tailed Whiteface								
Belted Whiteface								
Four-spotted Skimmer	X							
Variegated Meadowhawk		X						X
Black Meadowhawk				X		X	X	X
Cherry-faced Meadowhawk				X			X	X
White-faced Meadowhawk				X			X	X
Striped Meadowhawk								X
Band-winged Meadowhawk								

**Table 2 (continued).** Results of odonate surveys on the Okanogan-Wenatchee National Forest during 2013-2014.

Species	Hunters Meadow	Leroy Pond	Mission Pond	Mt. Annie Pond	Ortell Bog	Roger Lake	Siegel's Slough	Two Little Lakes
<b>SPREADWINGS</b>								
Spotted Spreadwing								
Northern Spreadwing		X	X	X	X	X	X	
Emerald Spreadwing		X		X	X			
Lyre-tipped Spreadwing								
<b>POND DAMSELS</b>								
Western Red Damsel			X					
Vivid Dancer							X	
Taiga Bluet					X			
Boreal Bluet			X					
Alkali Bluet			X					
Pacific Forktail			X					
Sedge Sprite								
<b>DARNERS</b>								
Lance-tipped Darner							X	
Lake Darner								
Variable Darner	X	X	X	X	X	X	X	
Sedge Darner	X				X			
Paddle-tailed Darner	X		X				X	X
Zigzag Darner		X			X	X		
Black-tipped Darner							X	
<b>EMERALDS</b>								
American Emerald						X		
Ringed Emerald					X			X
Mountain Emerald	X							
<b>SKIMMERS</b>								
Hudsonian Whiteface							X	X
Dot-tailed Whiteface							X	
Belted Whiteface							X	
Four-spotted Skimmer							X	
Variegated Meadowhawk								
Black Meadowhawk			X		X			
Cherry-faced Meadowhawk	X		X		X			
White-faced Meadowhawk		X	X		X		X	
Striped Meadowhawk			X					
Band-winged Meadowhawk					X			



Photo 1. Falls Creek Bog on the Okanogan-Wenatchee National Forest.



Photo 2: Zigzag darner at Falls Creek bog.



Photo 3. Leroy Pond on the Okanogan-Wenatchee National Forest.



Photo 4. Ortell Bog on the Okanogan-Wenatchee National Forest.



Photo 5. Black Meadowhawk at Cutthroat Lake on the Okanogan-Wenatchee National Forest.