

1973

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Recommended Citation

Kramer, D. C. (1973). Distribution of the Blue-Spotted Salamander *Ambystoma laterale* Hallowell in Minnesota. *Journal of the Minnesota Academy of Science*, Vol. 39 No. 1, 30-31.
Retrieved from <https://digitalcommons.morris.umn.edu/jmas/vol39/iss1/15>

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Distribution of the blue-spotted salamander *Ambystoma laterale* Hallowell in Minnesota

DAVID C. KRAMER*

ABSTRACT — This paper brings together the known locality records of *Ambystoma laterale* in Minnesota. Recent nomenclature changes involving this salamander, its favored habitat and possible range extensions also are included.

In an effort to better understand the Minnesota distribution of *Ambystoma laterale*, more than 200 available state records that represent 19 counties have been accumulated. These records include those from the literature, private and museum collections, and personal communication with several individuals.

The range of *A. laterale* in the United States appears to extend from New England westward to central Minnesota (Uzzell, 1968). Yet, the distribution within Minnesota is poorly known. Swanson (1935) recorded its occurrence in four widely separated Minnesota localities including Hennepin, Clearwater, St. Louis, and Lake of the Woods Counties. Breckenridge (1944) noted that it appears in wooded areas from the Twin Cities north to Lake of the Woods. His range map added Carlton, Pine, Morrison, Mille Lacs, Sherburne, Hubbard and Beltrami Counties to Swanson's list. He (Breckenridge, 1944, 3rd printing) later added Cook and Crow Wing Counties. Cass County records were reported by Loomis and Jones (1948). Uzzell (1964) brought the number of Minnesota Counties with *A. laterale* literature records to 16 by mentioning, in addition to others, Isanti and Stearns Counties.

A. laterale is of particular interest because of the unusual breeding situation in which hybridization with the closely related *A. jeffersonianum* has produced the two stable triploid ($n=14$) species, *A. tremblayi* and *A. platineum*. Due to the close physical resemblance of these four salamanders they have often been confused and have come to be known as the *A. jeffersonianum* complex. The name *A. jeffersonianum* has been loosely applied to all four forms. Following the work of Minton (1954) and Uzzell (1964) the epithet *jeffersonianum* is currently applied to a form that occurs from Indiana to New England. The more northerly form, including those from Minnesota, are now known as *A. laterale*. The two triploid forms have been found at various places within the range of *A. laterale* and *A. jeffersonianum* but have not been reported from Minnesota. I am, therefore, considering all Minnesota records of the *A. jeffersonianum* complex to be *A. laterale*.

The locations of Minnesota *A. laterale* records are shown in Figure 1. Literature records are included on the map but not in the following site descriptions. Sight records are also included in Figure 1, as they help give a better picture of the state distribution. The location of each state record is described below as reported by the collector or observer.

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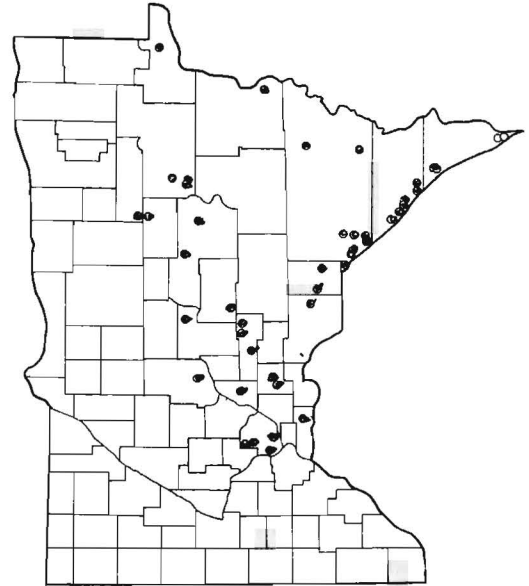


FIGURE 1. Dots represent approximate locations at which *Ambystoma laterale* has been collected or observed.

Abbreviations used in the descriptions are as follows: UM, Bell Museum of Natural History, University of Minnesota; CM, Carnegie Museum; AMNH, American Museum of Natural History; UMMZ, University of Michigan Museum of Zoology; UMD, University of Minnesota at Duluth; DCK, David C. Kramer, personal collection; SJU, St. John's University; BSC, Bemidji State College; AHS, Anoka High School; CWNHA, Crow Wing Natural History Area; MSJC, Mesabi State Junior College; MC, Macalester College; sr, sight record.

Site Locations in State

Beltrami Co.: Moose Lake (UM 297); Evan Hazard, BSC, (sr) West shore of Lake Pimushe, T147N, R30W. Sec. 17; Arthur Keenan, Regional Forest Supervisor, (sr) Sec. 16, T148N, R32W.

Cass Co.: Four miles west of Hackensack (UM 2255-7).

Clearwater Co.: All records are from Itasca State Park. NW side of Mary Lake (UM 2821-7, UM 2850-70, UM 3898-9); Near Elk Lake (UM 2805-20, UM 4164-72); Itasca Park (UMMZ 126581, AMNH 51645, CM 6278, CM 20555-7).

Cook Co.: Grand Portage (UM 1793-4); 2.5 mi. W., 4.5 mi. N. of Schroeder (AMNH 77310-2); 5 mi. W. 4 mi. N. of Schroeder (AMNH 77313); Jerry Wagner, AHS, (sr) 12 miles north of Hoveland.

Crow Wing Co.: Douglas Keran, CWNHA, (sr) T144N, R28W, Sec. 20 and 29.

Hennepin Co.: Lake Minnetonka (UM392, UMMZ 51118-9); Minneapolis (UM 459); Jerry Wagner, AHS, (sr) Carver Nature Center; James A. Jones, MC (sr) West side of Anderson Lakes in Eden Prairie.

Hubbard Co.: Itasca Park, Mary Lake (UM 3873-4).

Isanti Co.: Isanti County (UM 1653, UMMZ 122868).

Koochiching Co.: Near International Falls (DCK 313-6).

Lake Co.: Gooseberry Falls State Park (UM 1819); Sec. 1-57-7, Baptism R. (UM 1820); Manitou Ri. (UM 1821); Near Split Rock R. (UM 1822; Sec. 55-55-8 (UM 1824); Sec. 16-54-10 (UM 1825).

Lake of the Woods Co.: Rocky Point (UM 1525).

Mille Lacs Co.: S.W. Mille Lacs (UM 409-10); Vineland (UM460-1); Mille Lac (UM 861); 5 mi. N.E. of Page (UM 1702).

Morrison Co.: Lake Alexander (UM 366).

Pine. Co.: Sturgeon Lake (UM 357-60, UM 58, UM 198).

St. Louis Co.: Duluth (UM 1798); Sec. 27-53-12 (UM 1817); Sec. 15-52-R12 (UM 1823); Sec. 5-51-13 (UM 1818); 4 mi. N. Proctor (UMD 49); Lester River (UMD 70); Gregory Hanson, (sr) On small islands in the Island Lake Reservoir; Glenn Mazham, (sr) Normanna Township; Matt Levar, (sr) West shore of Burnside Lake; Glenn Mauston, MSJC, (sr) 15 mi. N. of Cook.

Sherburne Co.: Literature record only (Breckenridge 1944).

Stearns Co.: SJU, Collegeville (UMMZ 122784); 1 mi. S. Collegeville (DCK 310-11); St. John's University (4 specimens, SJU, uncataloged).

Washington Co.: Jerry Wagner, AHS, (sr) Lee and Rose Warner Nature Center.

Several additional Minnesota *A. laterale* records are from Itasca Park. However, since this park covers parts of Clearwater, Becker, and Hubbard Counties, the county origin of these records is unknown. These records are: Itasca Park (UM 90, UM 398-9, UM 465, UM 862, UM 1207, UM 3875, UM 31, UM 32, UM 78, BSC, 1 specimen, uncataloged).

Availability of Favorable Habitat

This study does not appreciably extend the Minnesota range of *A. laterale* as reported by Breckenridge (1944); in wooded areas from the Twin Cities north to Lake of the Woods. It does bring together the diverse and obscure records of this salamander and shows the known distribution within its range. The gaps in the distribution, as illustrated in Figure 1, possibly reflect lack of collecting. However, there is no reason to expect an organism to be found in all areas of its geographic range since habitats vary considerably from place to place. Yet, the hardwood and mixed hardwood and coniferous forests favored by *A. laterale* are found in many areas of Minnesota from which the salamander has not been reported. It is, therefore, anticipated that *A. laterale* will be found in additional areas of favorable habitat within its presently known range. Considering the preferred habitat of *A. laterale*, it is also possible that additional records will extend its range slightly westward in Minnesota and perhaps to the southeastern portion of the state.

Acknowledgments

The author is grateful to those who responded to requests for records of *Ambystoma laterale* and particularly to those who provided much of the above information.

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