

New Localities in Southeastern Alaska for the Long-toed Salamander, *Ambystoma macrodactylum* (Amphibia, Caudata, Ambystomatidae)

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Herein I present five heretofore unpublished localities for the long-toed salamander, *Ambystoma macrodactylum*, from southeastern Alaska. One of these is a 1984 historical record for the Taku River drainage, the voucher having been examined by myself in 1992 at the Auke Bay Laboratory Fish Collection in the presence of the curator Mr. Bruce Wing. Three are records I discovered in the field during my 1992 fieldwork in southeast Alaska. One is a new insular record, the voucher for which was given to me by Dr. Stephen O. Macdonald, University of Alaska, Fairbanks, during my 1992 field studies and I have examined it, verified its identification and cataloged it into an accession catalog (#1993-10) for deposit with my other materials from Alaska.

Below, I present what I consider to be separate new localities, in a fashion similar in form to the well-recognized Society for the Study of Amphibians and Reptiles *Herpetological Review* international geographical record format:

USA: ALASKA: Mainland Southeast Panhandle, Mallard Slough area, mainland north of mouth of the Stikine River (S 1/2 of Section 32, T59S, R82E, just above tidal influence to ca. 10 m elev.); larvae and adults collected in small ponds near mouth of Mallard Slough proper on north shore (Figures 1 and 2), and adults and subadults collected under woody debris along edge of alder (*Alnus* sp.) stand adjacent to sedge (*Carex* sp.) meadow shoreline areas just south of USFS Cabin (Figures 3-6), 30 April, 30 June and 1 July 1992. Collected by author. Verified by Dana Waters, Robert Clair, Tammi Stough, and Susan Wise-Eagle. Photographic vouchers at USFWS, Juneau Field Office and author's collection (Figures 7 and 8), and preserved vouchers to be placed in the University of Alaska, Fairbanks (UAF) Aquatic collection under: UAF 1993-10: #20a-k, #21, #23a-b, #24, and #27. First record for species on mainland north and outside of the Stikine River mainstem



Figure 1. Breeding pond of *Ambystoma macrodactylum* at north side of Mallard Slough locality. Transect area of author's field work, summer 1992. Photograph by author.

corridor area (Stebbins, 1985; Hodge, 1973, 1976). Dana Waters discussed seeing four specimens being brought to Wrangell Island from this population in 1992 but collected no vouchers and it was apparently never published (Waters, 1991, 1992, and pers. com.). Apparently he never saw this species in any of this 1991 transects at Twin Lakes, Mallard Slough, or elsewhere. The series of 16 I collected in 1992 constitutes the largest known series to date from any Alaskan locality.

USA: ALASKA: Taku River system area, between Hole-in-the-Wall and Twin Glaciers. Collected by Theodore R. Merrell, Jr., 19 September 1984. NOAA Collection, Auke Bay Laboratory, Juneau, Alaska, #AB84-47. Examined and verified in 1992 by author as a subadult specimen. Also verified by Bruce Wing. First record for the Taku River drainage and northernmost known record for the species (Hodge, 1973, 1976; Stebbins, 1985). Hodge (1976) appears to have a Taku River record pictured on his map on page 49, but depicts it as a historical literature record and the size of each of his dots covers a larger area than each record represents so that it is not clear that it represents the same specimen.

USA: ALASKA: Cheliped Bay area, mainland north of the mouth of the Stikine River (N 1/2 of Section 32, T59S, R82E, ca. 5 m elev.). Egg masses only observed in muskeg-like pools just above tidal influence, April 1992. No vouchers other than author's field notes. Verified by Robert Clair, U.S. Forest Service, Wrangell Ranger District. This area lies adjacent to and north of the Mallard Slough area. This and the preceding two records constitute the second, third and fourth mainland records for the species in the state north of the Stikine River mainstem corridor, the first and only previous Alaska mainland record being at Twin Lakes in the Stikine River north bank area (Hodge 1973, 1976).



Figure 2. Another breeding pool of *Ambystoma macrodactylum* showing baited minnow trap in position at one of the author's summer 1992 field transects. This pool and that pictured in Figure 1, were also used for breeding by *Rana luteiventris* (then known as *Rana pretiosa*) and *Rana sylvatica* that year. Photograph by author.



Figure 3. View of the Mallard Slough *Ambystoma macrodactylum* locality at the coastal spruce/alder forest stand edge along the *Carex*-lined meadow at the edge of the intertidal zone, where salamanders were found both under woody debris at the edge of and within the stand, and under driftwood at the higher intertidal levels inundated only during higher tidal events. Photograph by author, July 1992. Note bay water edge and distant mountains along Stikine River to the south in the lower far right.



Figure 4. Interior view of coastal spruce/alder forest stand at the Mallard Slough *Ambystoma macrodactylum* locality, another 1992 field transect of the author's. Note the very large skunk cabbage, indicating the wetland nature of the area. Photograph by author.



Figure 5. A piece of woody debris on the *Carex* (sedge) dominated meadow beach at the Mallard Slough *Ambystoma macrodactylum* site. This piece was actually utilized by salamanders collected for the site's voucher series. Note the very thick herbaceous and grass layers at the site. Photograph by author, summer 1992.



Figure 6. Another view of the forest stand edge and the beach meadow where *Ambystoma macrodactylum* was collected at Mallard Slough, southeast Alaska. Note the high grass layer and the woody debris under which salamanders were collected. Photograph taken summer 1992 by the author.

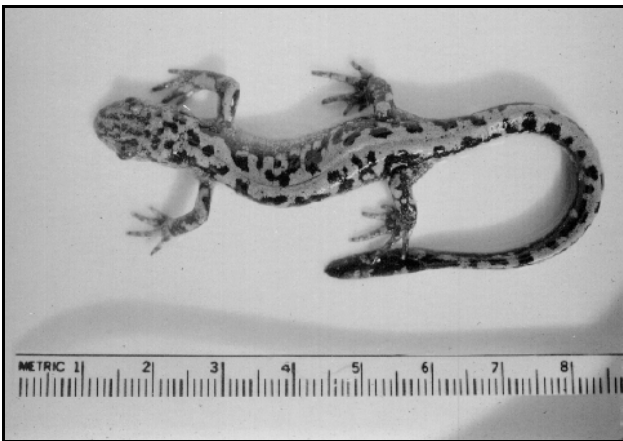


Figure 7. Voucher specimen, adult long-toed salamander, *Ambystoma macrodactylum*, from Mallard Slough area, southeast Alaska, 1992. Photograph by Gregory Norman and the author in laboratory under lighting. Scale is in millimeters. Note extremely long toes of hind feet. Compare with Hodge (1976) Plate 2 on Page 35 and Plate 1 on page 37; also compare with Stebbins (1985), Plate 2.



Figure 8. A voucher photograph of three adult *Ambystoma macrodactylum* from Mallard Slough area, southeast Alaska. Note the bright gold-colored variations on the dorsal surfaces. Photograph by Gregory Norman and the author in laboratory under lighting.



Figure 9. A view of one of the author's 1992 transects at Twin Lakes, Stikine River area, southeast Alaska, where no *Ambystoma macrodactylum* were found by Waters in 1991, or by the author in 1992. This is the site Hodge reported on in 1973 and 1976. Compare Hodge's habitat figure for Twin Lakes on his page 49 (1976). Photograph summer 1992, by author.

USA: ALASKA: near mouth of Andrew Slough, mainland south side of Stikine River mainstem, 3 m in front of Alaska Department of Fish and Game Cabin (T60S, R84E, Section 3, elev. ca. 5 m), under downed wood piece embedded in sand under a thick over growth of blackberry vines. UAF 1993-10: #29; collected 21 July 1992 by author and observed by Tammi Stough, of Wrangell, Alaska. This record constitutes the first record of the species on the Alaskan mainland south of the Stikine River mainstem (Hodge 1973, 1976; Waters, 1991, 1992; Norman 1999).

USA: ALASKA: Stikine Delta Island Group, Farm Island, Binkley's Slough, pond near USFS Cabin area (SE 1/4 of Section 3, T61S, R83E). UAF 1993-10: #30; collected 25 July 1992 by Stephen O. MacDonald. Verified by author. Second insular record for state (Norman, 1999) and first record for the Stikine Delta Island Group and also the first insular record for the Stikine drainage per se (Hodge, 1973, 1976; Stebbins, 1985; Norman, 1999).



Figure 10. Never before published voucher photograph of *Ambystoma macrodactylum* hatchlings from the Sokolof Island, Alexander Archipelago, population of Norman (1999). Photograph by Gregory Norman and the author in laboratory under lighting. Scale in millimeters.

Discussion

Waters (1992) discusses the possibility of *Ambystoma macrodactylum* being introduced to Wrangell Island in 1991 by some unidentified persons who acquired their specimens from the Mallard Slough population(s), but he was never able to field confirm them as introduced on Wrangell Island. My own visual and minnow trap surveys on Wrangell Island in 1992, around the area reported to me by Waters (1992, pers. com.), did not confirm the introduction either. My own surveys for long-toed salamanders on Mitkof Island in 1991 and 1992 did not verify their presence there (Norman, pers. obs.; Norman and Hassler, 1995).

According to Schmidt (1953: p. 20) there were no published records of this species occurring north of southern British Columbia prior to that date. Nor does Slevin (1928) or Stebbins (1951) give any localities for *Ambystoma macrodactylum* in southeast Alaska. I requested a number of museum records from across the United States in order to obtain records of amphibians and reptiles historically collected within the state of Alaska (Norman and Hassler, 1995). No records for the species prior to the Hodge report of 1973 exist in any of the various computer-generated reports I received from many nationally accredited museums. Hodge's 1973 report was indeed the first record for the species in the state of Alaska.

Waters (1992) mentions the possibility that the Twin Lakes population, on the North side of the Stikine mainstem, about halfway along the Alaska side of the Stikine River corridor, might have been extirpated since Hodge's 1973 and 1976 reports. The fact that Waters' 1991 field work (1992), and my 1992 field work (Norman, 1999; Norman and Hassler, 1995; Waters et al., 1998) all had negative results from Twin Lakes transects (see Figure 9) for *Ambystoma macrodactylum* may give some credence to his presumption. It would be very interesting to conduct further studies there to understand more fully the status of *Ambystoma macrodactylum* at Twin Lakes and throughout southeast Alaska. Figures 10 and 11 are provided as previously unpublished voucher photographs of the Sokolof Island population reported by Norman (1999).



Figure 11. Never before published voucher photograph of *Ambystoma macrodactylum* eggs on a twig at the Sokolof Island, Alexander Archipelago, population breeding pool of Norman (1999). Photograph by Gregory Norman and the author in laboratory under lighting.

Acknowledgements

This paper was initially intended for *Herpetological Review*. The first three records were reviewed by Dr. Alan M. Richmond, University of Massachusetts, editor for that journal's Geographic Distribution section; he would have published the first two but apparently never reviewed the fourth and fifth record, and rejected the Cheliped Bay record because no vouchers exist other than field notes. I revised the manuscript and submitted it to the Chicago Herpetological Society. Mike Dloogatch edited the manuscript. Greg Goldsmith, USFWS, Arcata, California, helped greatly with creation of the map. I thank Nora Foster who registered my accession with the Alaska Aquatic Collection, University of Alaska, Fairbanks, as #1993-10 under state collecting permits SF-91-025, 92-47, SF-92-023 and Federal Permit #692350. Field investigations were funded by the USFWS, Endangered Species Division of the Ecological Services Office, Juneau, Alaska, under Research Work Order #29 to the California Cooperative Fishery Research Unit, via the Humboldt State University Foundation, Arcata, California. I particularly thank Bruce Wing, Robert Hodge, Nevin Holmberg, John Lindell, Chris Iverson, Susan Wise-Eagle, Dana Waters, Sumi Angerman, Dennis Paulson and Ernie Karlstrom. Gregory Norman assisted in photographing the live vouchers. I thank the Alaska Department of Fish and Game for use of their Stikine River cabin at Andrew Slough throughout the summer of 1992.

[Author's last-minute addition: Stebbins, R. C. 2003. A field guide to western reptiles and amphibians. Third edition. Boston: Houghton Mifflin. This book depicts a "revised" map for *Ambystoma macrodactylum* but does a disservice to the true distribution of this species in southeast Alaska by wiping a swath of bright yellow over the entire southeast panhandle area and its neighboring islands. This is not the salamander's true

distribution within the habitat matrix there, as visible in the field or as determined by the published literature.]

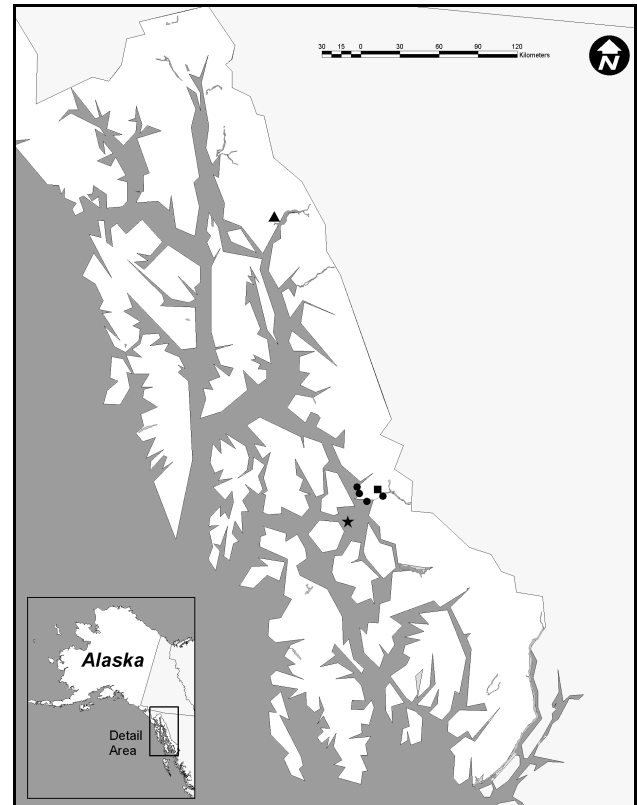


Figure 12. Known *Ambystoma macrodactylum* localities for southeast Alaska. Triangle represents previously unpublished Taku River record in Auke Bay NOAA collection. Square represents previously reported Twin Lakes, Stikine River area locality (Hodge, 1973, 1976). Star represents Sokolof Island record of Norman (1999). Circles mark new localities reported herein: Farm Island; Andrew Slough in the Stikine area; Cheliped Bay; Mallard Slough. Map generated using ArcView with the assistance of Greg Goldsmith, USFWS, Arcata, California.

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