

**A New Species of Salamander in North Carolina  
*Desmognathus planiceps*, Rockingham County**

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**Above photo: Jeff Beane**

**Additional photos: Brian Bockhahn**

*Desmognathus planiceps* is a species of salamander occurring in a small portion in southwestern Virginia. It has a broad and flat head, a flattened body and laterally flattened tail. *D. planiceps* is similar looking to several other species in the genus, including *Desmognathus fuscus*. It can be differentiated by *D. planiceps* having a flattened head, dorsal pattern and spots on venter.

Previous extensive sampling and DNA barcoding in the Rockingham County and along the Mayo River area revealed only *D. fuscus*, (Beamer and Pyron 2022).

The Mayo River is a wild and pristine river that flows from Roanoke, Virginia through two forks, then enters North Carolina at a series of rocks and rapids and flows several undisturbed miles until Mayodan where there are two dams before the Mayo ends at the Dan River. Several small class I rapids are located along this stretch, many that were used as fish weirs by the American Indians and then later as mill sites. One class 3 rapid called the boiling hole is on the main river. Falls Creek is a tributary of the Mayo and includes an 18' waterfall that was also a mill site. Upstream there are many drainages of varying water flow.

The geographic and geologic folds in this part of North Carolina have produced several "montane" species occurring in this "island" habitat in north central Rockingham County, N.C. These include Hairy-tailed Mole, *Parascalops breweri* and Ruffed Grouse, *Bonasa umbellus*.

The area also contains isolated populations of Roanoke Logperch, *Percina rex*; Edmunds Snaketail, *Ophiogomphus edmundo*; and pending documentation of Appalachian Mountain Chorus Frog (*P. brachyphona*, sensu stricto), the northern clade of this recent split.

On July 17, 2021 Ty Smith and Evan Spears first found *D. planiceps* in North Carolina just a few hundred feet from the state line near Falls Creek Falls. They photographed one individual under a rock. Their familiarity with the species from its known range in Virginia led to a belief that it should also occur in nearby North Carolina.

On March 1, 2022 I surveyed the same site as Smith and Spears, but did not find any individuals. However, looking at two nearby intermittent drainages I found 4 adults and 5 sub adults. They all appeared to show characteristics of *D. planiceps*. I collected a single specimen for DNA barcoding at the Salamander lab, but the specimen was lost in the lab before it could be analyzed.

On February 28, 2025 I returned to the same drainages with park ranger Tim Abee and we found several adults, subadults and larva. Three vouchers were collected for the NC Museum for barcoding. DNA testing by Bryan Stuart determined their mitochondrial cytochrome c oxidase subunit I gene matched specimens from its known range in Virginia.

Adults, subadults and larva were observed in three separate upper drainages in close proximity to each other. Each drainage was only a few feet wide, well-shaded with hardwoods and varying degrees of water flow. In the drainages there was minimal overlap with Southern two-lined Salamanders, *Eurycea cirrigera*, which was more common in the lower parts of the drainage with steadier flow and creek that was widened to 5-10 feet. In the upper parts of the drainage the *D.*

planiceps were not found, and in these drier areas White-spotted Slimy Salamanders, *Plethodon cylindraceus* were present instead.

A geographic note was submitted to *Herpetological Review*, the journal of the Society for the Study of Amphibians and Reptiles, to officially document the new state record (Bockhahn, B, J. Beane, B. Stuart 2025)

NC Biodiversity Project page: [Amphibians of North Carolina](#)



**Desmognathus planiceps**

- Flat head on all ages
- Desmo pattern on back
- Subadults have orange stripe on top of tail
- Some adults lose pattern and darken
- Black specks on ventral
- Adults 5" plus
- Subadults 2-5"
- Larval 1"