

PEER-EDITED NOTES

PREDATION ATTEMPTS BY THE WESTERN YELLOW-BELLIED RACER
(*COLUBER CONSTRICTOR MORMON*) ON THE PLATEAU STRIPED WHIPTAIL
(*ASPIDOSCELIS VELOX*)

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Abstract.—Predator-prey interactions are typically infrequently observed. However, we report on observations of three predation attempts by the native Western Yellow-bellied Racer (*Coluber constrictor mormon*) on the introduced Plateau Striped Whiptail (*Aspidoscelis velox*) in Cove Palisades State Park, Jefferson County, Oregon. Triploid parthenogenetic *A. velox*, which is naturally distributed in parts of Arizona, Colorado, New Mexico, and Utah, has become established in the state park, where predator-prey interactions between these species are likely frequent occurrences. Our observations indicate that, behaviorally, *A. velox* often eludes attacks from *C. c. mormon*.

Key Words.—Oregon; predation; colubrid snakes; parthenogenetic; whiptail lizards.

Predation and successful foraging are vital to the survival of an animal; however, direct observations of such events are rarely witnessed first-hand (i.e., Wilcox and Sibanda 2023). Nevertheless, predation attempts and successes must occur quite frequently for such predatory organisms to survive. We report three predation attempts by the native Western Yellow-bellied Racer (*Coluber constrictor mormon*) on the introduced Plateau Striped Whiptail (*Aspidoscelis velox*) in the Cove Palisades State Park, Jefferson County, Oregon.

This predator species is an actively foraging and opportunistic snake that occurs over most of North and Central America from southern Canada to Guatemala (Crother 2017). It inhabits a wide variety of habitats including grasslands, woodlands, meadows, and substeppe desert (Shewchuk and Austin 2001). This ophidian consumes a variety of invertebrate and vertebrate prey including grasshoppers, crickets, small mammals, snakes, lizards, and amphibians (Halstead et al. 2008). Halstead et al. (2018) found that a population of this snake in Florida commonly preyed upon the actively foraging Six-lined Racerunner (*Aspidoscelis sexlineatus*).

Triploid parthenogenetic *A. velox* is also an actively foraging lizard that naturally occurs in parts of Arizona, Colorado, New Mexico, and Utah (Cole et al. 2019), but has been introduced to Cove Palisades State Park, Jefferson County, Oregon (Kusaka et al. 2024). It was suggested that the species was introduced to north-central Oregon sometime before 1970 (Storm et al. 1995). *Aspidoscelis velox* occupies a wide range of habitats including desert scrub, grasslands, and Pinon-Juniper Woodlands (Persons and Wright 2009). In Oregon, the lizard inhabits rocky juniper-grown areas on the west

side of Lake Billy Chinook in Cove Palisades State Park (Storm et al. 1995).

We observed *C. c. mormon* launch attacks on *A. velox* in three separate occasions in Cove Palisades State Park. As part of another research project to assess the status of *A. velox* in the park, two observers surveyed in the park from about 0900–1400 during 17–18 July 2023 in the vicinity of the Deschutes Campground and the Tam-a-láu Trail (Kusaka et al. 2024). On 17 July 2023, while surveying the area close to the campground right before the Tam-a-láu Trail head, we observed three unsuccessful predation attempts on *A. velox* by *C. c. mormon*.

The first predation attempt occurred at 1000, when observers spotted a *C. c. mormon* moving through the vegetation. Observers followed behind to accurately identify the snake, during which they observed the snake raised its head slightly, sped up, and dart forward after a passing *A. velox*. The *C. c. mormon* was unsuccessful at catching or biting the lizard, but continued to chase after the lizard, so observers continued to follow the interaction and observe if a successful predation event would occur. Shortly after, the *A. velox* sprinted away and was lost from sight behind vegetation and under a fence sectioning off part of the Deschutes campground. The *C. c. mormon* continued in the general direction but slowed pursuit until it seemed to stop following the lizard and moved in a different direction. The predation attempt was over quickly, but observers followed for an extra 2 min to see if more predation attempts would occur.

At 1005 while moving back to the initial location where the survey was interrupted by the first observation, observers noticed another *C. c. mormon* chasing another *A. velox* through the vegetation. This *A. velox* was darting

swiftly from one patch of vegetation to another and through grasses with the *C. c. mormon* following close behind. When the snake got close (ca. 0.5 m), it darted forward trying to strike at the *A. velox*, which sprinted several meters away and was lost from sight behind more vegetation. This observation was also over quickly, but we did not follow either lizard or snake further as we would not have been able to confirm if any new *A. velox* spotted was the same lizard being initially chased. We are confident that these two predation attempts involved different pairs of *C. c. mormon* and *A. velox* due to the short time frame and distance (≥ 20 m) between observations, and with the animals travelling in opposite directions from each other.

The final observation occurred at 1036 and was very similar to the previous predation attempts in which the *C. c. mormon* seemed to be following the *A. velox*, only for the lizard to successfully outrun the snake. Throughout these seemingly unsuccessful predation attempts, we tried to stay a minimum of 3–5 m away from the animals with the distance varying due to the density of the vegetation. All three predation attempts occurred between 1000 and 1036 just south of the Tam-a-láu trailhead near the B-loop campground (Fig. 1) in a landscape dominated by grasses and big sagebrush (*Artemisia tridentata*).

It was likely that only one or a few individual *A. velox* were initially introduced to the Cove Palisades State Park, but as a parthenogenetic species they have continued to persist and spread (Kusaka et al. 2024). Given the multiple predation attempts we observed in a relatively short time period (three observations over 2 d of surveying), these types of predator-prey interactions between *C. c. mormon* and *A. velox* may be quite common. The introduction of *A. velox* to Cove Palisades State Park, adds another potential prey to the opportunistic feeding habits of *C. c. mormon* and could be or become an important food source as *A. velox* continues to spread in Oregon.

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LITERATURE CITED

- Cole, C.J., J.E. Cordes, and J.M. Walker. 2019. Karyotypes of the North American parthenogenetic whiptail lizard *Aspidoscelis velox*, and return of *Aspidoscelis innotatus* to the synonymy of *A. velox* (Reptilia: Squamata: Teiidae). *American Museum Novitates* 3936:1–8.
- Crother, B.I. (ed.). 2017. Scientific and standard English names of amphibians and reptiles of North America north of Mexico, with comments regarding confidence in our understanding. *Herpetological Circular* 43:1–102.
- Halstead, B.J., H.R. Mushinsky, and E.D. McCoy. 2008. Sympatric *Masticophis flagellum* and *Coluber constrictor* select vertebrate prey at different levels of taxonomy. *Copeia* 2008:897–908.
- Kusaka, C.M., K.L. Utsumi, J.E. Cordes, A.J. Barley, R.C. Thomson, L.J. Livo, and J.M. Walker. 2024. *Aspidoscelis velox* (Plateau Striped Whiptail) in Jefferson County, Oregon, USA: persistence of an introduced triploid parthenogenetic species of lizard. *Western Wildlife* 11:42–49.
- Persons, T.B., and J.W. Wright. 2009. Plateau Striped Whiptail (unisexual). Pp. 402–405 in *Lizards of the American Southwest: A Photographic Field Guide*. Jones, L.L.C., and R.E. Lovich (Eds.). Rio Nuevo Publishers, Tucson, Arizona.
- Shewchuk, C.H., and J.D. Austin. 2001. Food habits of the racer (*Coluber constrictor mormon*) in the northern part of its range. *Herpetological Journal* 11:151–155.

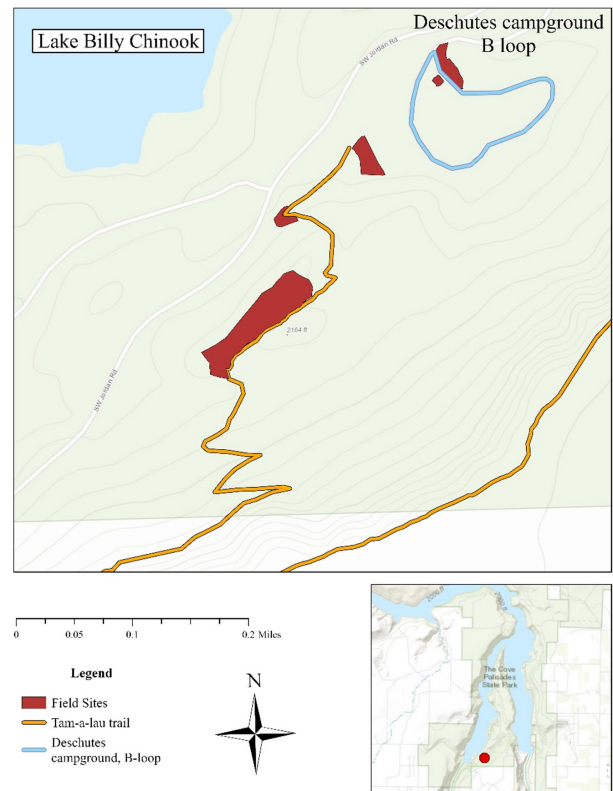


FIGURE 1. Map of the Deschutes campground, relative to Lake Billy Chinook, and the Tam-a-láu Trail (orange), Cove Palisades State Park, Jefferson County, Oregon. The red polygons represent the flat areas of habitat surveyed where adult Plateau Striped Whiptails (*Aspidoscelis velox*) were observed. Predation observations occurred in the middle polygon (3rd from the top) by the start of the Tam-a-láu Trail. The location of Cove Palisades State Park and the Deschutes campground in Oregon (red dot) can be seen in the map in the bottom right corner.

Storm, R.M., W.P. Leonard, H.A. Brown, R.B. Bury, D.M. Darda, L.V. Diller, and C.R. Peterson. 1995. Reptiles of Washington and Oregon. Seattle Audubon Society, Seattle, Washington.

Wilcox, J.T., and N.C. Sibanda. 2023. North American Deermouse (*Peromyscus maniculatus*) predation by a Steller's Jay (*Cyanocitta stelleri*). *Western Wildlife* 10:18–20.



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