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Snakes on a Plain: Paleontology, Archeology, and History of the Rattlesnake and Garter Snake in Western Ohio.



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Background

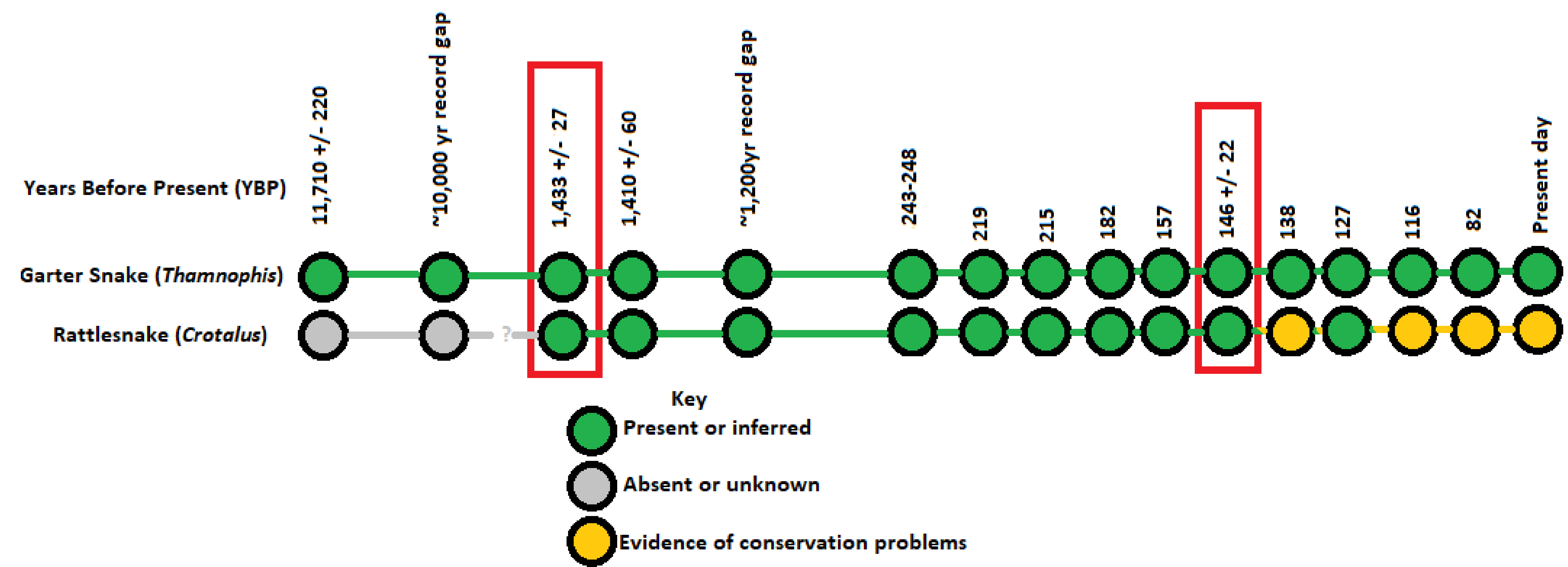
Taylorville MetroPark is part of a system of parks and river habitats meant to conserve natural resources in the Dayton Ohio metropolitan area. Among these natural resources are paleontological remains of past organisms that once inhabited the area. Establishing a record of these are fundamental to understanding the history of organisms in response to environmental stressors and establish past and present distribution. However, to date, no inventory or understanding of non-Paleozoic fossil resources has been completed in the area. Thus, the objective of this study was to conduct landscape surveys of caves and other post-Pleistocene fossil and subfossil sites to develop an inventory of recent biota in the area. Of particular note from this survey, and the focus of this presentation, were the remains of two snakes: the garter snake (*Thamnophis sp.*) and the rattlesnake (*Crotalus sp.*)



Figure 1: Photos of a living garter snake (left) and rattlesnake (right). Photos not to scale.

Contextualizing the importance of this study - the histories of both snakes in the state of Ohio, especially on the Erie Lake-Plain and the Till-Plains of western Ohio, are incomplete. The garter snake is a widespread native in the area today, and while it appeared in the latest Pleistocene Epoch (~12,000 years ago), there is little fossil/subfossil record of this animal between the Pleistocene and the modern era. The rattlesnake, has no Pleistocene record and, because it is currently rare in the state, the history of its migration into and inhabitation of Ohio is unknown.

Results & Discussion



The chart above (Figure 2) details the patterns of appearance for each of the genera recovered during this investigation arranged along a timeline from the end Pleistocene to present day. Each filled in cell represents a report of snakes either as fossils or historical and scientific records. Cells were filled in as green when a genus was either confirmed present as fossils/historical records or inferred to be present based on confirmations from sources and fossil sites older and younger than the cell in question. Cells were filled in gray when the genus's presence in the region was either absent or not known, and orange was used when historical records reported evidence of a declining population.

While it is clear from fossil records and historical accounts that *Thamnophis* appeared in the region during the upper Pleistocene and persisted to this day, *Crotalus* must have appeared sometime in Ohio sometime between the Pleistocene-Holocene boundary and our discovery of *Crotalus* subfossils (highlighted in red) from 1,433 years before present (YBP). Furthermore, historical accounts of rattlesnakes in Ohio do not provide evidence of any kind of rarity until after the 146 YBP date assigned to another set of subfossils from our investigation. Of the three consecutive historical reports to be made after 146YBP, two recommend the killing of rattlesnakes for the first time in the historical records of reptiles from this region. This suggests that the decline of *Crotalus* in Ohio is fairly recent and may have been instigated by humans.