Animal Mortality on Big Dalton Canyon Road and Glendora Mountain Road

Patrick Gavit, April 2025

Introduction

Two roads traverse the mountain foothills north of Glendora, California- Big Dalton Canyon Road and Glendora Mountain Road. The habitat bisected by these two roads is home to many animals, including mammals, reptiles, amphibians, birds, and arthropods. Over the last ten years, animals found dead on the road have been documented by the author on iNaturalist. This report summarizes the data for road mortality on the two roads. Data for this report was collected while surveying for snakes in the foothills above eastern Glendora from 2016 to 2024[1]. As part of that snake survey, the author also documented road mortality on the two roads for all animals, which form the basis for this report. Most of the time period overlaps with the snake survey, however data for this report includes Dec 2015 to Feb 2025. Monitoring roadkill can be a valuable way to determine local population densities without the need to observe live animals[2].

Reptiles were the most common animal found dead representing about 60% of the total followed by mammals and amphibians. The most common reptile was snakes and the two most common snake species were Southern Pacific Rattlesnakes and San Diego Gopher Snakes. Since this data was obtained while doing a snake survey and writing a summary report on road mortality of all animals was not envisioned from the beginning, Western Fence Lizards were not documented since they were so numerous. All other animals found dead on the road were photographed and documented on iNaturalist.

Survey Coverage Area and Methods

Big Dalton Canyon Road is a paved road that leads up to Big Dalton Canyon Dam (Figures 1-4). There are three gates that control vehicle traffic into Big Dalton Canyon (BDC). The first gate is 0.1 miles from Glendora Mountain Road and prevents vehicle traffic into BDC at certain times. The exact time the gate is opened and closed each day varies but is approximately at sunrise and sunset, respectively. Pedestrians are allowed past the gate even when it is closed. Gate number two is about 1.2 miles from Glendora Mountain Road and is normally always closed. Vehicles going to Big Dalton Dam can open the gate but there are only a few each day thus roadkill numbers past this gate are low. Pedestrians can go past this gate and continue up the canyon. The third gate is at 1.7 miles from Glendora Mountain Road. This gate can be opened only by vehicles going to the dam. No pedestrians are allowed past this gate and thus this is the edge of the study zone along Big Dalton Canyon Road.

Glendora Mountain Road parallels Little Dalton Canyon (LDC) on the east side and then makes a 180 degree turn through LDC and proceeds to parallel LDC on the west side (Figures 1, 5-7). At the junction with the Colby Trail, GMR turns north again and proceeds up the coastal slope of the San Gabriel Mountains. There is one gate on

Glendora Mountain Road that is 0.6 miles from Big Dalton Canyon Road. On certain occasions the gate is closed such as on holiday weekends or if there is a fire in the mountains. Pedestrians can normally go past the gate when it is closed. Early in 2024 a berm was created along most of Glendora Mountain Road (Figure 7). This may have acted as a barrier for some animals to enter the road. Surveys on Glendora Mountain Road typically did not go further than 0.5 miles past the Colby Trail intersection and rarely up to the Ridge Trail junction.

In general, one trip per week to either Big Dalton Canyon Road or Glendora Mountain Road was made between 2015 and 2018. From 2019 to 2021, the survey frequency increased to twice per week and after that, three times per week. Trips to either Big Dalton Canyon Road or Glendora Mountain Road were mostly as part of a run, but sometimes as part of a walk/hike or a drive along the road. Animals found on the shoulder of either road were included since it is likely they were struck by a vehicle and either thrown off the road or managed to move to the shoulder before they died.

Results and Discussion

A total of 184 animals were documented as dead on Glendora Mountain Road and Big Dalton Canyon Road from December 2015 to February 2025 by the author. Reptiles were the most common class of animals found dead on either road in the study area. They accounted for 110 individuals or 60% of the total (Figure 8). Mammals and amphibians were the next most common roadkill animal class found during the survey. Within the reptile class, snakes were the most encountered deceased animal followed by lizards (Table 1 and Figure 9). Since Western Fence Lizards were found to be a very common roadkill species, but were not documented during the survey it is possible that they were more numerous than snakes. A breakdown of the roadkill snake species found in the survey is shown in Figure 10. Southern Pacific Rattlesnakes and San Diego Gopher Snakes were the most common snake species. Of all the snakes seen during the survey by the author 64% were deceased (Figure 11). The percent of road killed snakes was higher on Glendora Mountain Road vs Big Dalton Canyon Road (Figures 12 and 13). This can be explained by the greater volume of traffic and generally higher rate of speed of the vehicles on Glendora Mountain Road.

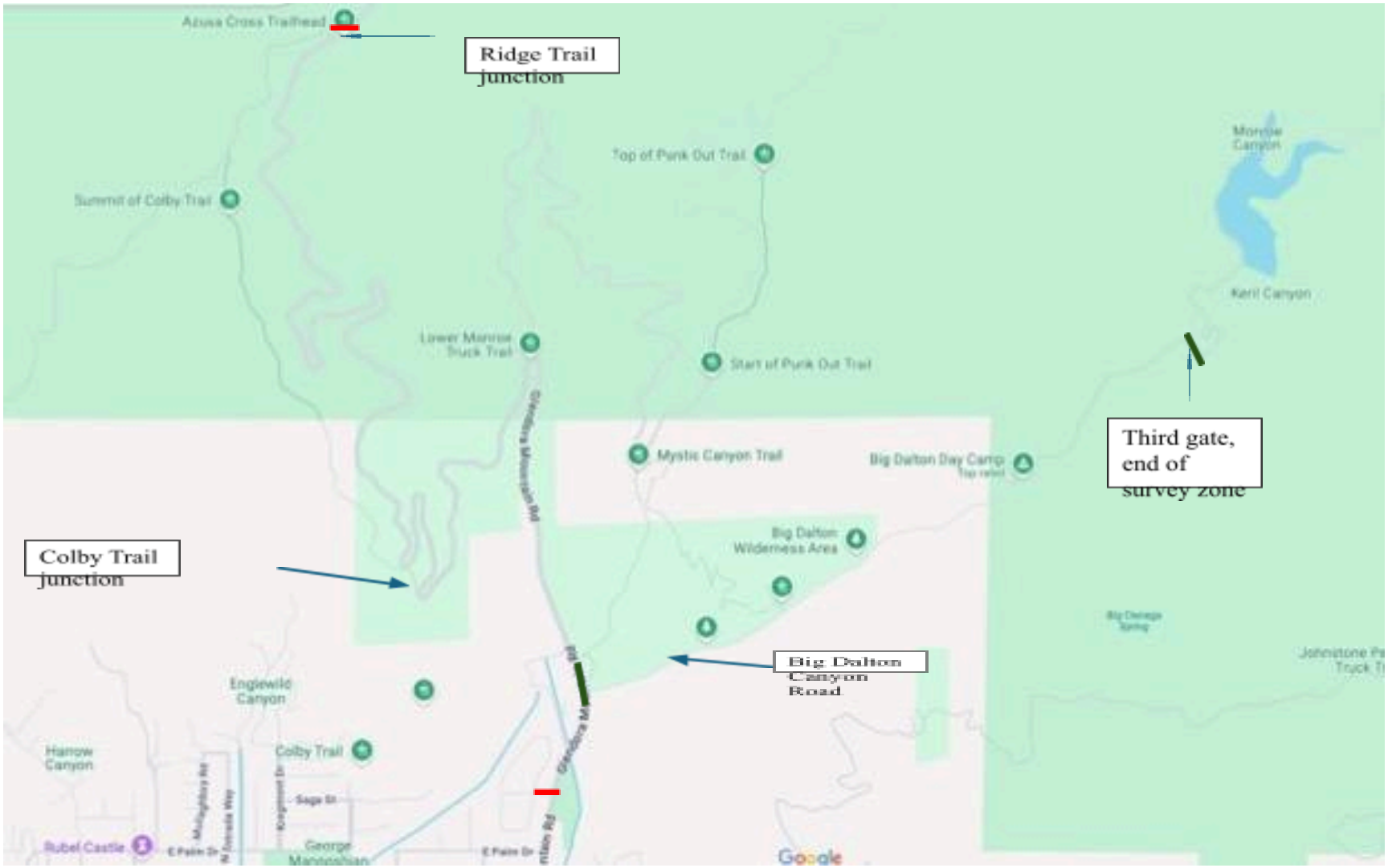


Figure 1: Map showing Glendora Mountain Road and Big Dalton Canyon Road. All the roadkill observations on Glendora Mountain Road were between the red dashes. On Big Dalton Canyon Road, the observations were between the dark green dashes.

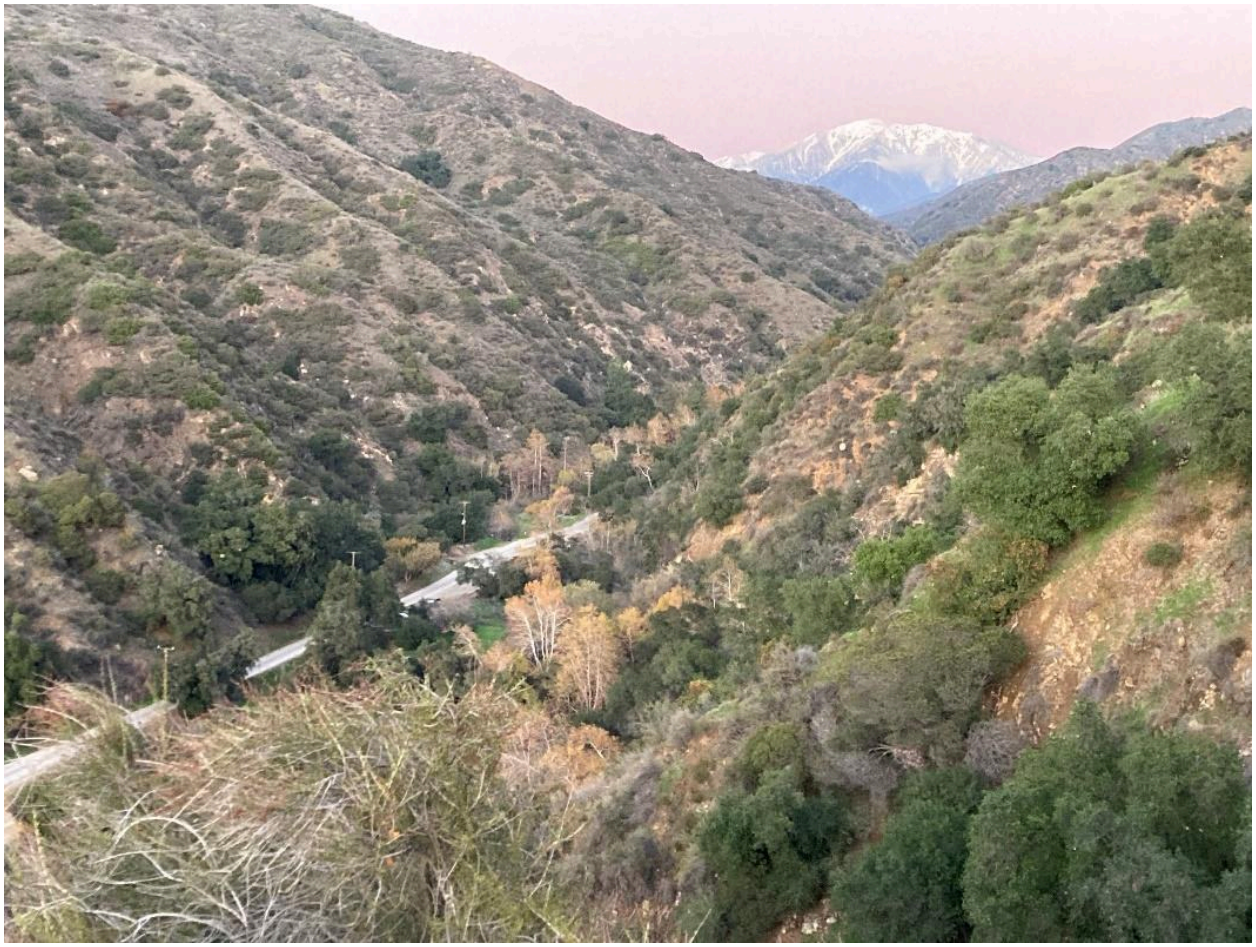


Figure 2: Big Dalton Canyon Road through Big Dalton Canyon looking northwest, Dec. 13, 2022. Mt Baldy is in the background.



Figure 3: Big Dalton Canyon looking east, August 14, 2024.



Figure 4: Big Dalton Canyon looking east, August 14, 2024.



Figure 5: Little Dalton Debris Dam at delta of Little Dalton Canyon. Glendora Mountain Road is seen at the other end of the canyon. Photo taken Dec. 24, 2022.



Figure 6: Looking Southeast at the south end of Little Dalton Canyon. The Little Dalton Debris Dam is seen at the canyon bottom. Glendora Mountain Road is seen at the other end of the canyon. Photo taken March 19, 2023.



Figure 7: Glendora Mountain Road facing south showing berm on side of road, July 29, 2024.

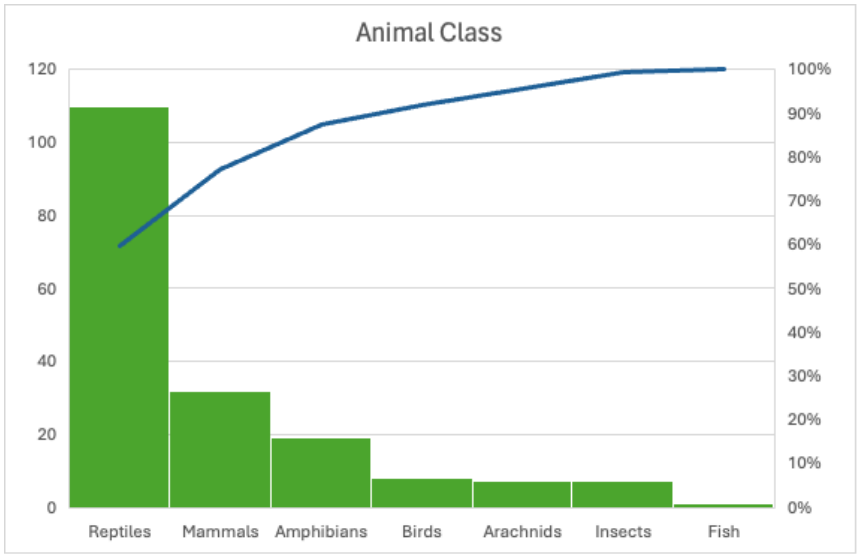


Figure 8: Pareto chart of animal class.

Table 1: Road kill animals in each animal type

Animal Group	Number
Snake	95
Lizard	15
Toad	11
Squirrel	9
Newt	8
Bird	8
Spider	7
Butterfly	4
Opposum	3
Rodent	3
Fox	3
Mammal	3
Skunk	2
Wasp	2
Chipmunk	2
Domestic Cat	2
Coyote	1
Fish	1
Raccoon	1
Cricket	1
Mole	1
Rabbit	1
Bat	1

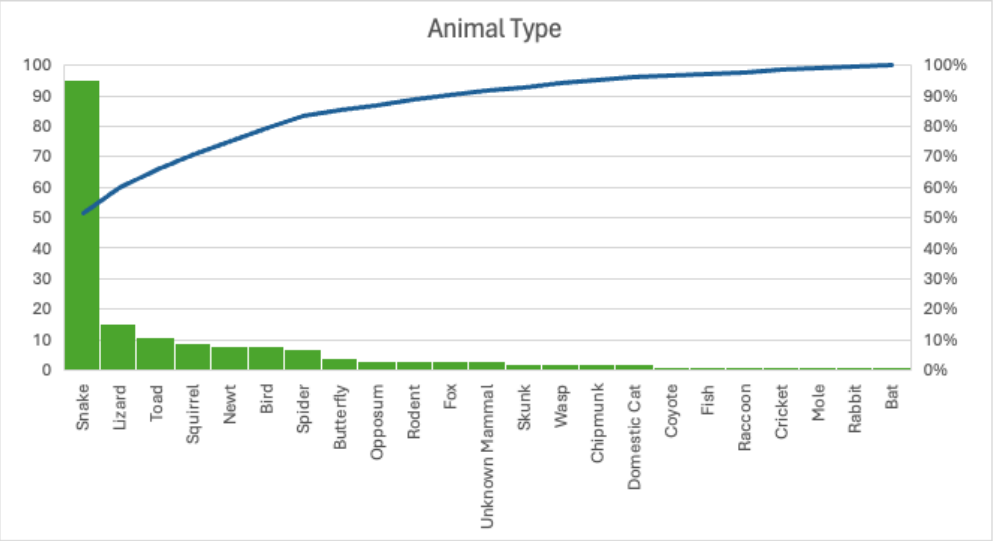


Figure 9: Pareto chart of animal type.

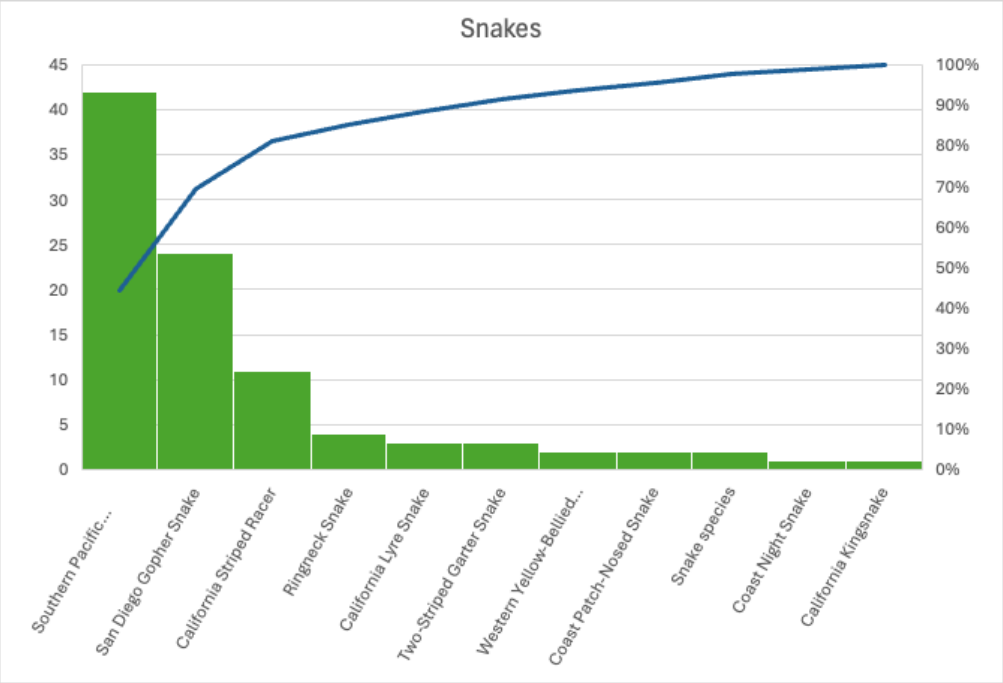


Figure 10: Pareto chart of snake species

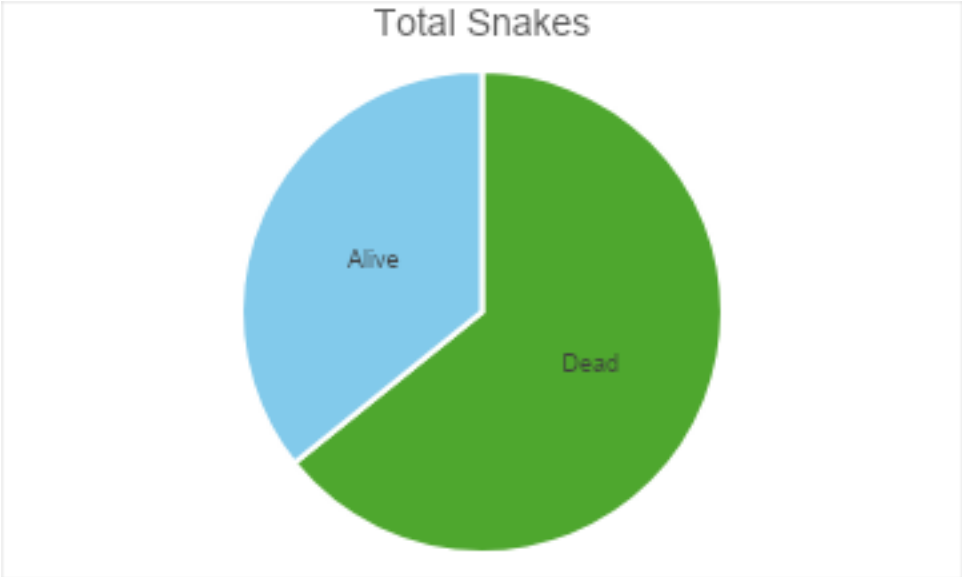


Figure 11: Distribution of live and dead snakes on both roads.

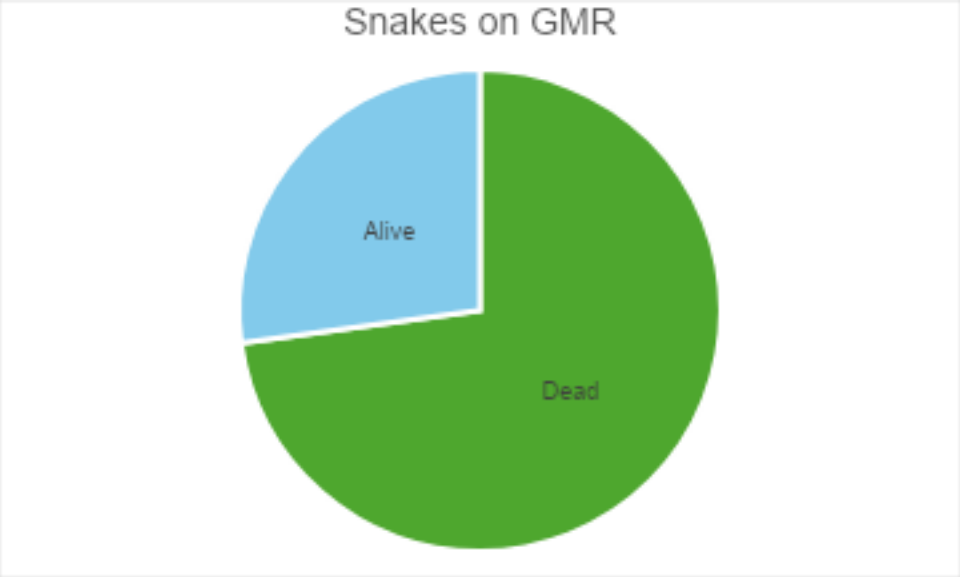


Figure 12: Distribution of live and dead snakes on Glendora Mountain Road.

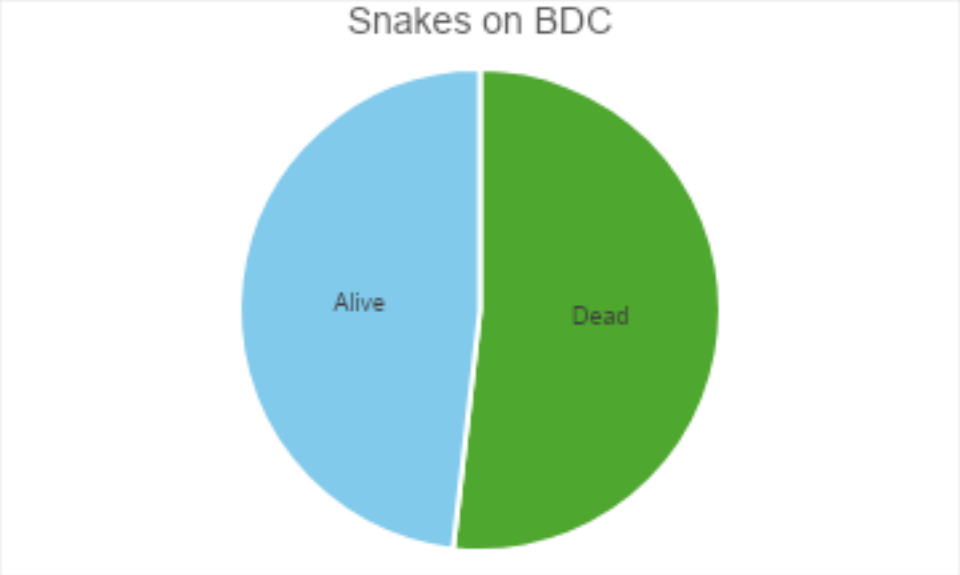


Figure 13: Distribution of live and dead snakes on Big Dalton Canyon Road.

Snakes are frequent victims of vehicle traffic for several potential reasons: 1) they are typically slow moving, 2) they tend to seek out pavement for thermoregulation, 3) they do not react to approaching vehicles, and 4) drivers are less likely to avert running over snakes as opposed to larger animals.

An important question for consideration is what impact road mortality has on local populations and whether it can lead to local extirpation. For snakes that are uncommon

to rare, it is possible that road mortality could affect the population viability in the local area. One example could be the Western Yellow-Bellied Racer. Only two observations of this snake have been confirmed on iNaturalist in the entire San Gabriel Mountain range. They were both on Big Dalton Canyon Road about 0.5 miles apart. These observations were in 2016 and 2019 and both were found dead on the road. Other researchers have found that roads have a significant impact on local population persistence. In one study the survival rate of Giant Anteaters in road vicinity areas was lower than those living far from roads [3,4]. Some of the animals found were obviously discarded on the road such as the fish and possibly the two domestic cats. It seems unlikely that domestic cats would travel that far away from residential neighborhoods on their own. The two cats were found near the Colby Trail junction with Glendora Mountain Road. Lizards were represented by Southern Alligator Lizards and Western Whiptail. All three local squirrel species were found during the survey and include Western Gray Squirrel, Eastern Fox Squirrel, and California Ground Squirrel.

Conclusion

Reptiles were the animal group most often encountered dead on Glendora Mountain Road and Big Dalton Canyon Road followed by mammals and amphibians. Reptiles comprised about 60% of all dead animals observed from Dec 2015 to Feb 2025. Snakes were the most observed reptile (Western Fence Lizards were not included in this survey). Of the 95 snakes documented, the most common were Southern Pacific Rattlesnakes and San Diego Gopher Snakes. These two snakes were also the two most common live snakes found during a snake survey in the foothills above eastern Glendora[1]. There is no evidence that road mortality is impacting local snake population numbers. Further study would be needed to determine whether Western Yellow-Bellied Racers are declining due to road mortality.

References

1) https://www.glendorawildlife.com/snakes
2) A.L.W. Schwartz, F.M. Shilling, and S.E. Perkins, The value of monitoring wildlife roadkill. European Journal of Wildlife Research, 66 (18), 2020, https://doi.org/10.1007/s10344-019-1357-4
3) F. Ascensao and A. L. J. Desbiez, Assessing the impact of roadkill on the persistence of wildlife populations: A case study on the giant anteater. Perspectives in Ecology and Conservation. 20 (3), 2022, pp 272-278
4) R. Barrientos, F. Ascensao, M. D'Amico, C. Grilo, and H.M. Pereira, The lost road: do transportation networks imperil wildlife population persistence. *Perspect. Ecol. Conserv.* 19 (4), 2021, pp 411-416