

Do coyotes (*Canis latrans*) residing on the Palos Verdes Peninsula select different prey as a result of residing in a wildland-urban interface?

Introduction

The coyotes of the Palos Verdes Reserve live in a wildland urban interface which is a transitional zone between unoccupied land and human development. It is believed that this kind of environment influences what the coyotes eat. We focused on prey consumed by coyotes and contrast our results with those obtained in other areas, particularly the Santa Monica Mountains. Monitoring was also done for the National Communities Conservation Plan (NCCP)



Figure 1. Location of Filiorum, Portuguese Bend, and Forrestral Reserves on the Palos Verdes Peninsula

Methods

- Trackers were individually taught by Ann Dalkey for consistency in data collection in all surveys.
- Each year tracking was conducted November thru March over consistent routes.
- Coyote tracks and scat location were noted on a map and also investigated for prey items.
- Data were electronified and assembled in a database.
- Prey categories included unidentified, Avian (bird), Cat, Invertebrate, Rodent, Small mammal, Large mammal, Anthropogenic and Vegetation.
- During 2007-2008 and 2009-2010, scat samples were analyzed for prey using stereoscopes.
- Prey items were determined in the field for the later datasets.
- Scat deposition patterns were mapped using GIS software.
- Prey data normalized against survey rates for each preserve to calculate relative abundance
- Prey categories were subjected to a Kruskal-Wallis One Way Analysis of Variance in significant trends using Sigma Plot/Stat.

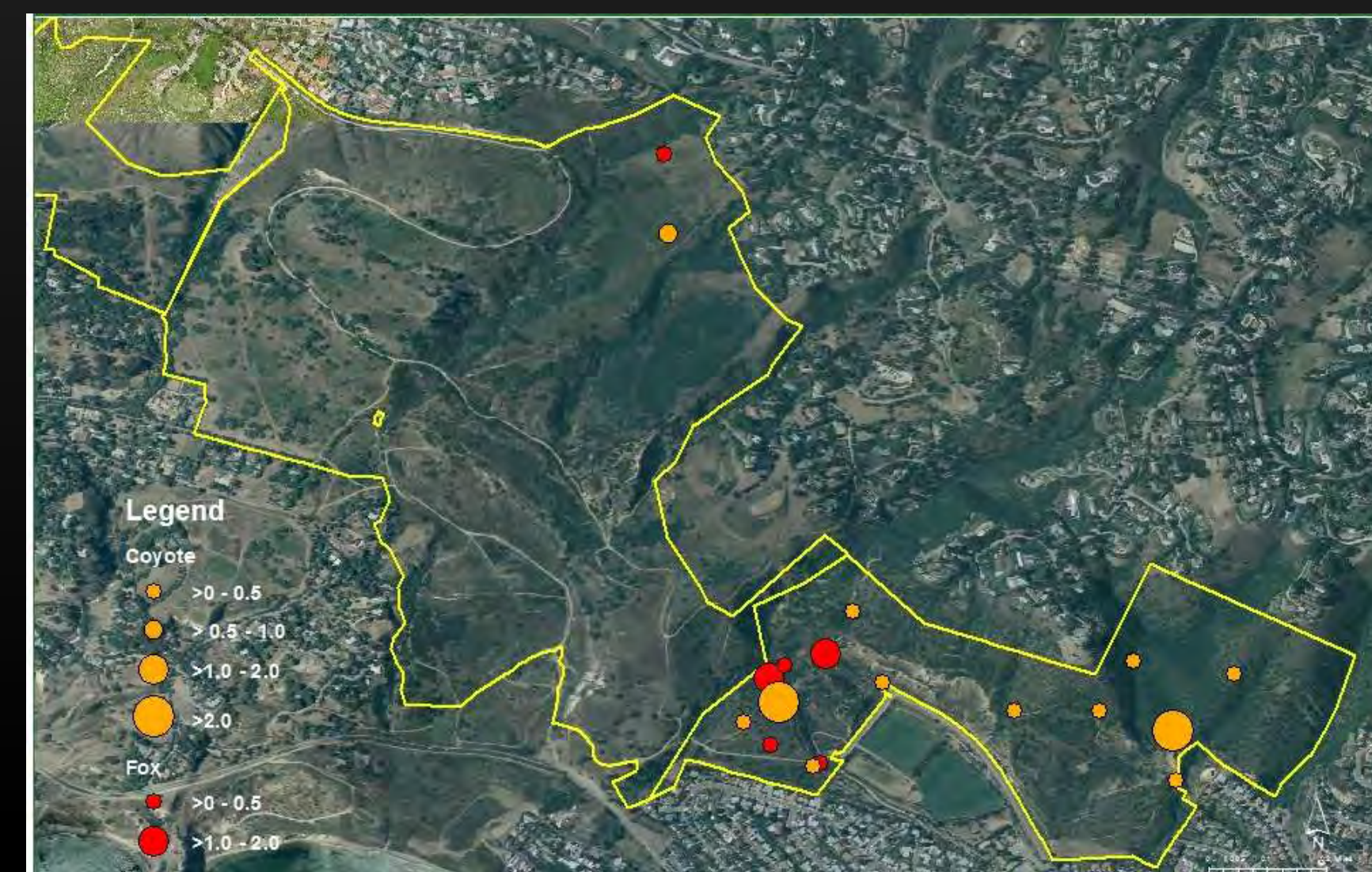


Figure 2. Normalized coyote and fox scat deposition 2007-08.

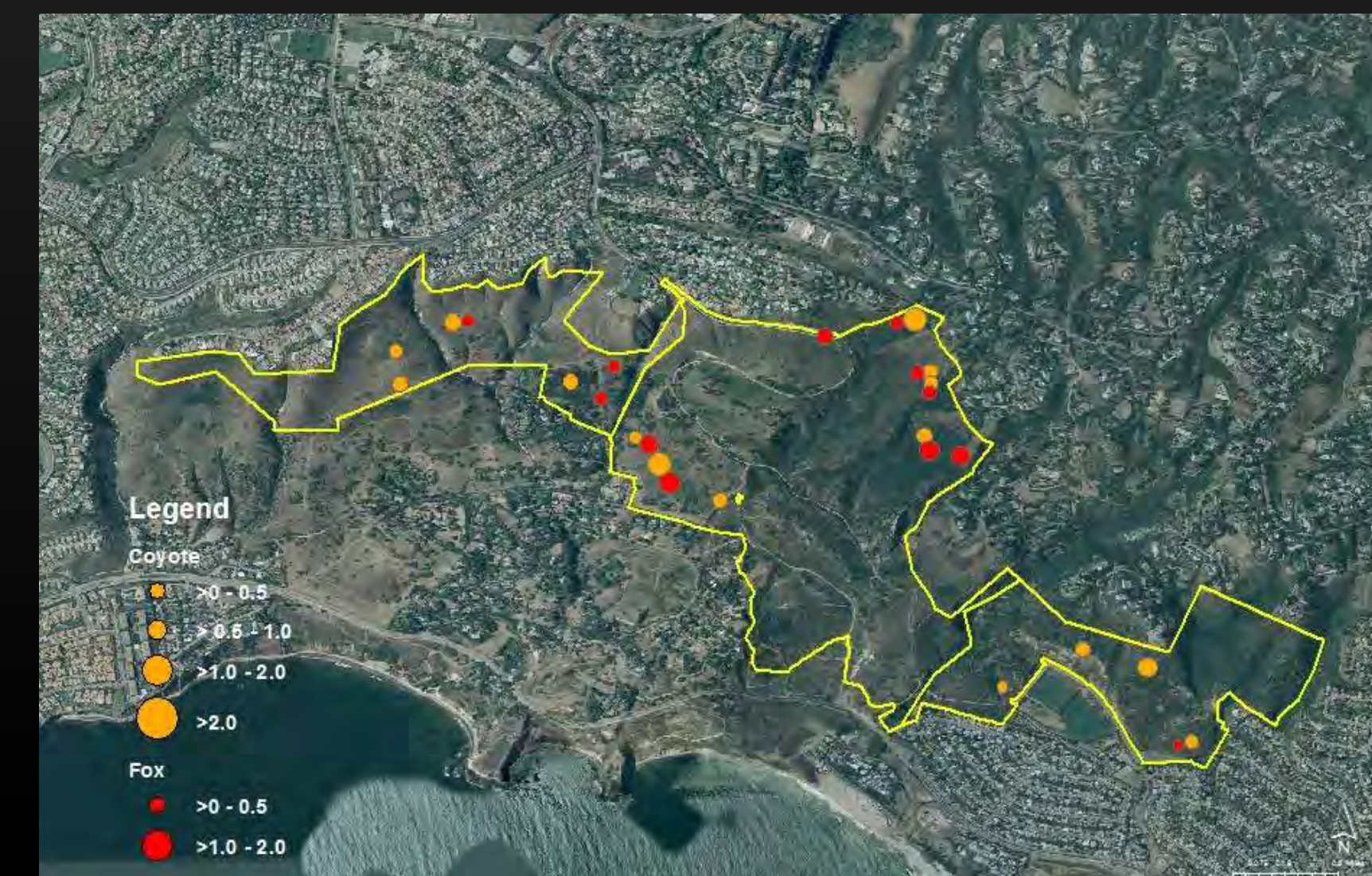


Figure 3. Normalized coyote and fox scat deposition 2014-15.

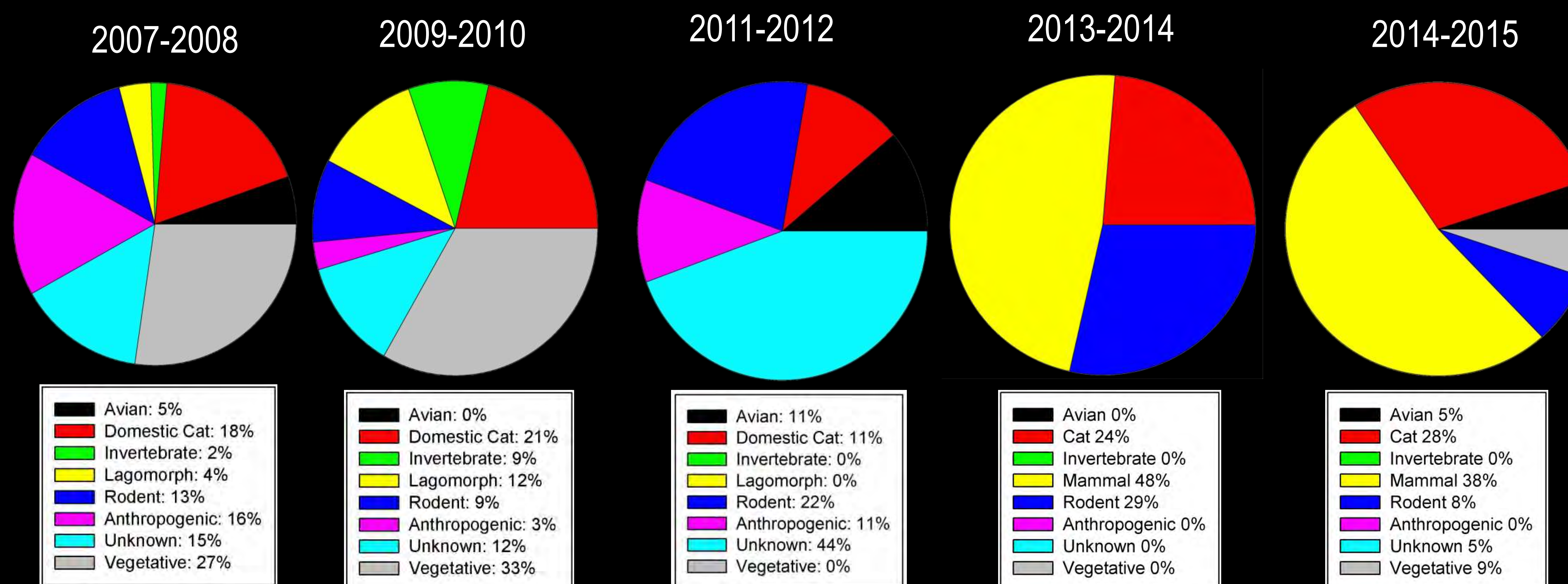


Figure 4. Percentages of prey consumption for all surveys.

Table 1. Results of the Kruskal-Wallis One Way Analysis of Variance on Ranks over five years.

Group	N	Missing	Median	25%	75%
2007-08	8	0	0.136	0.0455	0.173
2009-10	8	0	0.106	0.0606	0.167
2011-12	8	0	0.0938	0.000	0.156
2013-14	8	0	0.000	0.000	0.262
2014-15	8	0	0.0513	0.000	0.179

H = 1.911 with 4 degrees of freedom. (P = 0.752)

Results

The dietary patterns of coyotes are influenced by the rain. When it is dry the plants give out less food and that causes a decline in coyotes main source of food large mammals and rodents. This causes them to eat domesticated cats as an alternative food source. When there is rain the plants give out more food and this causes the rodent and rabbit populations to increase, and thus leads to coyotes turning their attention back to them.

Discussion

- There was more coyote scat observed in 2007-08 at Forrestral preserve. Changes of 2007-08 scat data compared with 2014-15 data shows a decrease in coyote visitation rate in Forrestral (Fig. 2).
- In 2014-15 there was coyote depredation in the City of Rolling Hills, nearby the preserves which may have been a factor.
- Coyote diet had the highest proportion of cat during the years of 2013-2014 (24%) and 2014-2015 (28%) (Figure 4)..
- We believe that the recent drought has impacted the availability of prey due to the lack of forage of forbs and other seed producing plants.
- However there was no significant difference in prey categories from 2007-2008 (Table 1).
- However we believe a trend is present, resulting from impacts on prey availability as a result of the drought.
- For example, during Nov-Dec 2014 the prey percentages for cat were high while the percentages for rabbits and rodents were small.
- Then the percentages reversed for Jan-Mar 2015 after it rained with rodents and rabbits increased and cats declined (personal observation).
- Our results are different compared to that found by Fedriani et. al. (2000) in the Santa Monica Mountains where coyotes diet mainly consist of rodents and rabbits and there is a smaller human population with associated cats to prey upon.

Literature Cited

- Fedriani J.M, T. K. Fuller, R. M. Sauvajot, E. C. York. 2000. Competition and intraguild predation among three sympatric carnivores. *Oecologia* 125:258–270
- Ghert S.D., 2006, Urban coyote Ecology and management, Joy ann fischer, School of environmental and natural resources,

Acknowledgments

Ann Dalkey
Palos Verdes Peninsula Land Conservancy
ESRI