Response to Reviewer #3

**Thank you for your detailed comments and criticisms that will no doubt make this manuscript stronger. All changes made in response to your comments are described below. We hope that you find the revisions satisfactory. Responses to your comments are written here in bold.**

There are some inconsistencies in numbers/numerals, capitalization, citation format, etc that I did not comment on. **All efforts were made to ensure these inconsistencies were removed during the revisions of the manuscript.** However, I do have a few more pressing concerns. My major concerns are related to the lack of yearly variation (only 1 year study) and the focus on Calgary with limited usefulness for other metropolitan areas. Numbered comments below refer to specific lines of the manuscript.

**In response to the first major concern, we agree that our study is limited to just one year and this presents an issue concerning variation at the annual scales. However, in this particular case, our study was designed to provide the first set of data on diet in Calgary, and will be strengthened by current/continuing research that further investigate coyote diet in Calgary. A more detailed response is found below (point 14) where the reviewer refers to this concern again.**

**In response to the second major concern, regarding potential lack of relevance of our results to other metropolitan areas: The authors recognise that the results from our study do not necessarily represent the coyote diet of any other metropolitan area, but we also believe our readers will understand this principle prior to applying our findings elsewhere. This is one of the reasons, in fact, that we decided to study coyote diet in Calgary; it has never before been investigated and we were interested to know how similar or different it was as compared to other areas. However, we believe our findings (particularly the general dietary trends, including coyotes primarily eating natural prey such as small rodents, vegetation and deer, though with presence of anthropogenic content also in some scat) aligned with findings of other studies of coyotes in or near urban areas (*e.g.* Cepek 2004, Morley *et al*. 2007,** **Grigione *et al*. 2011), which yields evidence that our results in fact do have relevance to other metropolitan areas. We believe that since our results generally are consistent with other studies, this substantiates not only our work but also strengthens others.**

4. You don’t generally think of urban centers” as traditional “habitat types”. I would reword to remove habitat type (maybe replace with cover type) and to specifically state something about non-traditional cover types. **Changed to “(...)expanded their range across numerous habitats, even non-traditional cover types such as urban centres”**

5. City does not need to be capitalized. **Capitalization of “city” removed throughout document.**

6. Most people don’t call Sylvilagus floridanus hares. **Changed “hare” to “hare and rabbits”**

7. Microtus is misspelled. **Spelling corrected.** Also why list Microtus spp. and Microtus pennsylvanicus separately? **Removed “Microtus pennsylvanicus”, left just “Microtus spp” instead.** 27-29.

How is their keystone status relevant to your study in an urban environment? Please explain. **This paragraph was used to establish the ecological importance of coyotes in the urban environment. Added “As such, coyotes are an important component of urban ecosystems as they promote biodiversity and ecosystem health” at end of paragraph to emphasize this point.**

33-34. Any studies in the United States in urban areas? Coyotes don’t care much about political boundaries. **Revised sentence to: “Though coyote diet has been studied in some suburban and urban areas in North America (e.g., Quinn 1997, Morey *et al*. 2007, Grigione *et al.* 2011), it has never been investigated in Calgary, despite apparent public concerns towards coyotes”**

36-37. This sentence is awkward. Please recast. **“Media publications cited deliberate feeding, access to garbage, and concerns were raised by the public about coyotes consuming domestic pets” rephrased as “Deliberate feeding of coyotes and access to garbage were cited in media publications, and concerns were raised by the public about coyotes consuming domestic pets”**.

57-59. Don’t know journal style but don’t think you need to repeat the scientific name each time. **Repetition removed.**

8. When was this study conducted? **Dates are mentioned on (original) lines 84-85, in the paragraph following Fig 1. We have also stated them earlier for added clarity.**

9. What are the “habitat types available in the city”. Please specify. **Added “*e.g.* grasslands, coniferous forest, riparian habitat” and Table 1, which provides data on habitat type in each park, amongst other information.**

10. Home range is an area. How do you get a diameter from this? **We assumed a circular home range and calculated the diameter of a circle.**  Provide the specific number that you are using to show your spatial independence. Still no guarantee that areas are spatially independent—there are some basic GIS based tests to evaluate this. Please demonstrate statistical independence of the sites. **Because we have no movement, home range or activity data on coyotes in Calgary, we cannot be certain that the study sites are spatially independent from one another. We made an attempt to choose sites spatially independent from one another (so that we are not resampling the same coyotes in multiple sites) by using home range information from other studies. We used a circle as a surrogate to unknown home range shapes in order to calculate diameter, which we then used as a guideline to judge spatial independence across sites. We acknowledge this is an assumption we have made based on the best available data. Details have been added to the manuscript to clarify this process.**

11. The parks manage habitat for coyotes? Please reword and clarify. **Rephrased as “where land is managed for public use by the city of Calgary”.**

12. What are the sizes of these areas? Need more details on the study areas overall. After reading through the manuscript you spend lots of time talking about difference among areas but you provide the reader no background on the actual sites themselves. **Table 1 added with information on park size, habitat types, and age of each site. In addition, descriptive information on sites added in text as well.**

75-79. This section seems out of place. You are justifying a method but present it as a literature review. Combine into the next sentence and reduce and improve flow. **Section moved, adjusted, and partially deleted.**

13. Schakleton is spelled differently in literature cited section. **Corrected spelling to “Shackleton”, and ensured correct spelling was used throughout.**

14. You study is greatly limited by only having 1 year of data. There is no temporal variation. If your goal is to provide baseline data which you indicate I think you have failed. You could collect three years of data and have drastically different results, so this one year of data does not tell you much. **We understand the possible variation in diet from one year to the next and have made an attempt to clarify in the revised manuscript this limitation. While ideally this study would have collected scat over multiple years, it was not possible due to limitations in scope and resources. However, other studies have taken place and will in the future to collect data and determine if there are differences and what annual variation exists in coyote diet. This study represents the first piece of information on coyote diet in the region, and it will be built upon. We have also made an effort to situate our findings in the literature to get a sense of whether this system seems similar or different to others with this first set of data. We have also briefly mentioned results from one of these subsequent studies (Fortin-McCuaig unpublished) to address this concern. Interestingly, Fortin-McCuaig (unpublished) has found similarly high predominance of small mammals and herbaceous plants in urban coyote diet, with low levels of anthropogenic food items and domestic pets despite collecting during a year with extremely low berry production. In addition, it is not unheard of to have only one year or less of scat collection for such studies, and while this is not ideal, we still feel such studies are of value (*e.g*. Fedriani *et al*. 2001, Alvarez-Casteñeda and González-Quintero 2005).**

15. What are the minimum and maximum lengths of the transects? The mean and SE of the transects? Did you walk them and collect everything you could see or just in a straight line (i.e., if you see scat on the other side of the road do you collect it?) How do you get a linear feature (transect) to traverse at least a 3 km2 area? Please clarify. **Section describing transects and scat collection methods clarified with detail on lengths and procedures. Variation in transects took place as necessary to maximize samples collected (as mentioned in text). The transect taken was not recorded each time out.**

98-100. You spend some time on distinguishing coyote and fox scat. What about the dog scat? Provide specific details on how you distinguish coyote from dog scat particularly scavenging and or feral dogs. Colour should depend on what they eat. I’m not convinced about your ability to separate dog and coyote scat. **Further detail provided on morphological characteristics of coyote versus dog scat. All scats that the lead author was uncertain about were removed from analysis.** 110-112. Aside from the appendices you don’t really use your gps data (and truly at the scale you present you can mark a point on the map). Either use it or delete this section. **Sentence referring to GPS deleted.**

16. Which sited had less than 30 scats? Were they the smallest sites or did they just have less scat? What seasons were lacking? How did you randomly select? What was done to reduce temporal-dependence? How many scats were collected from each site? Why did you subsample anyway? You should maximize the value of those data. **A table was added with the numbers of scats analysed from each site and season. At sites where more than 30 scats were collected per season, samples would be separated by date and samples were randomly chosen from each date until at least 30 samples were analysed. If a large number of scats were collected from the same site on one day, it is these scats that would typically be cut from analysis. This subsampling was done both to reduce over-emphasis of results from one short time period during the season, as well as to make the most use of limited time resources.**

17. How did you identify species based on scale pattern only? Medulla pattern is more variable than scale pattern (i.e., many species have the same scale pattern). **Medulla and scale patterns were used in identification. Thanks for catching that error. Sentence now reads: “comparing the scale and medulla patterns”.**

18. What guides/references were used to identify insects and birds? **Respective references were inserted in the sentence referring to bird and insect identification.**

19. The point-frame method is not new. Please cite a standard reference. **Cited Chamrad and Box 1964.** Why did you present this as English units (inch) and present things elsewhere in metric? **Switched inches to centimetres.**

20. How does his minimize biased emphasis? Won’t the removal add to bias against lesser food items? **We only removed items less than 2% of the scat (so, functionally, those of 1% and less). For instance, if there is a single hair, this was removed from analysis. In this case, it seems unlikely that a coyote scat would contain only 1 hair of a prey species it consumed. It may have instead ingested this fur while consuming other items from the environment, or perhaps while grooming (some samples contained one or two coyote hairs).**

21. You really should use the original citations. **We were not clear which citations the reviewer is referring to, though added “Sokal and Rohfl (1995)” in addition to Alverez-Casteñeda and González-Quintero reference, assuming that is what you were referring to.**

158-159. I don’t recall seeing these acronyms defined in the text, just in figure 1. **Full names for acronyms added in text as appropriate.**

22. Cite the original source for the Shannon diversity index. **Replaced “Colwell and Futuyma 1971” to “Shannon and Weaver 1949”.** Why did you use the aggregated data for diversity index? You could have multiple small mammals for example and this would greatly under represent the diet diversity (more commonly referred to as dietary breadth). **We did not use the aggregated data for diversity. Methods have been clarified to ensure this is understood. We also incorporated the term dietary breadth as suggested.**

23. What are the alpha levels for your tests? **Do you mean for the Shannon index? Assuming so, we have added in the methods section “An alpha level of 0.05 was used to determine significance”.**

193 Why are you presenting 2-dimensional data in a 3-dimensional graph? Please use 2- Dimensional graphs for 2-dimensional data! Same for figures 3 and 4. **All** **graphs changed from 3-dimensional to 2-dimensional.** Also the order of the food items does not correspond to anything—list them alphabetically, by order of importance, or the same order as you have them in the methods. **They have been listed in the same order as they are in methods.**

199-203. This paragraph is meaningless jargon. You don’t tell us anything about these sites so who cares—yes things are different at each site. **Paragraph rephrased and acronyms removed or reduced.**

202-203. How can small mammals be most common and then deer be most common in NGW. Both can’t be most common. Do you mean more common than in comparison to the other sites? Much of the results needs to be reworded to better clarify your meaning (209-212, etc.) **Results reworded to clarify meaning.**

24. Is this proper format for the table? **Format updated to match table formatting seen in CATE publications.**

25. Correct and good point. But this again is where good study site descriptions would help. Are there many residences at the sites? What about traffic patterns? **Study sites descriptions are more detailed, as earlier mentioned. Actual numbers on traffic not available.**

26. Change relationships to relations. **Changed as suggested.**

336-337. Your study should have done this. Strict diet studies were great 50 years ago but our science has evolved beyond this simplistic approach. **We agree not evaluating availability is a limitation, but due to the scope and resources available, the availability was not measured. The purpose of the study was to attain a sense of the diet of coyotes and especially how it related to conflict in Calgary (topic of a different published manuscript).**

27. What evidence? **We were unsure what this comment refers to. To address, we changed “evidence” to “photographic evidence from a Calgarian” (originally line 366) and added the photograph. Also changed “evidence” on (original) line 418 to “contained anthropogenic food items”.**

28. Look at your data and the Chicago data and make an educated guess. You should have the data available. **It is unclear what this comment refers to. Assuming it was (original) lines 388-390, we have made a firm statement on what we predict is happening.** 429-430. Doubtful. Anecdotal sightings will probably provide a more useful index. By the time you see an issue in the scat I would think it is too late. Plus what are you going to do? You provide no details on solutions to reduce conflict. **Removed original sentence and replaced with “Any future increases in anthropogenic content in coyote scat should be regarded as an indication that better garbage management and public education about coyotes in the city is needed, whereas decreases in anthropogenic content may be a sign that management steps taken are effective”**

29. What problems are you referring to? **Paragraph containing this was removed as suggested by another reviewer.**

30. The symbols in the figures are way larger than in the legend and some don’t even look like any in the legend. Make them smaller so we can see which ones are represented—there may be numerous one hidden for all we can tell. The best solution would be to make the symbols proportion to the number represented so we can see what is occurring. **Figures replaced with Figure A1.**

31. Some journals you use volume and issue and some volume only. **Issue numbers removed for consistency.**