



American Black Bear (*Ursus americanus*) Colormorphs in the United States and Canada



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Introduction

- American black bears are a widely distributed mammal across North America, occupying a range of ecosystems and environmental conditions
- Black bears are having varied coat color morphology across their range, with predominately black coats in the east and variable coat color in the west.
- Overall, however, the distribution and genetic or environmental bases of pelage colour are poorly understood
- Previous research evaluating coat color morphology occurred more than 30 years ago, prior to the widespread open-access occurrence records and significant human modification.
- We used open-access citizen science database of animal occurrence records from iNaturalist to assign coat color morphology to 1346 American Black bears.

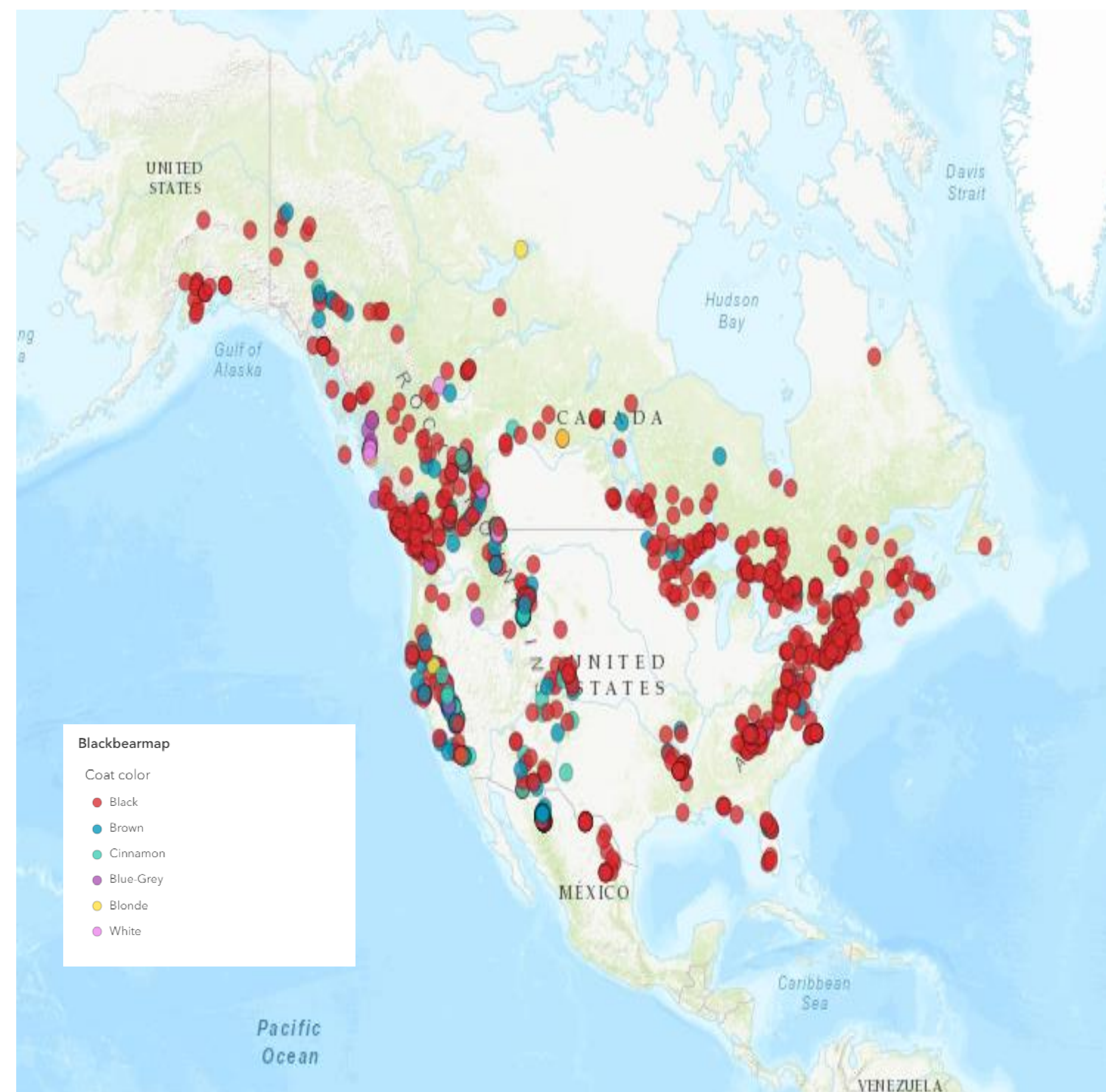
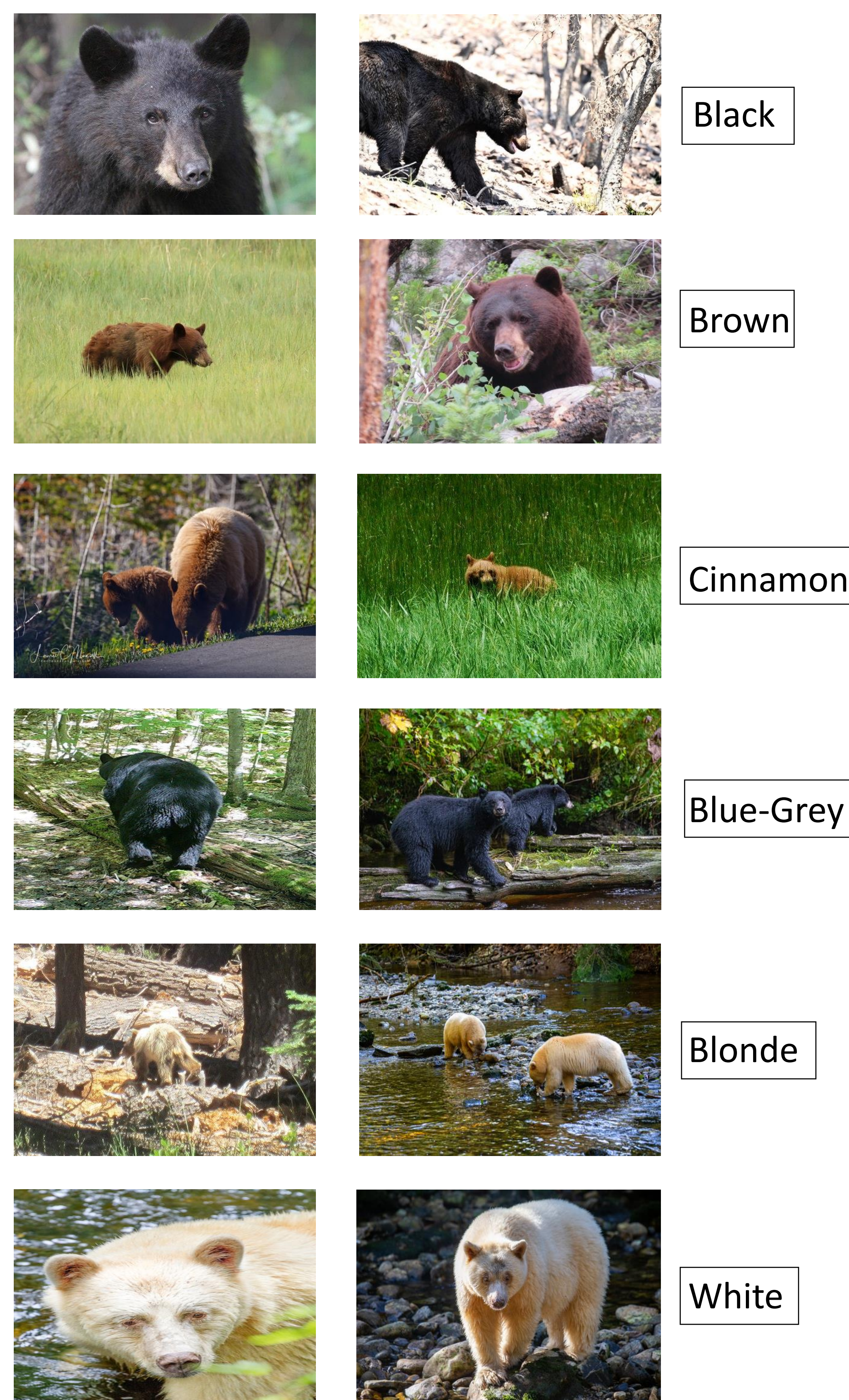
Research Questions

- What colormorphs will be the most prominent and will the colormorphs change depending on the environment?
- Have coat color distributions changed over time?

Methods

- We downloaded all research-grade records of American black bear - those with a photograph and community-verified species ID – this resulted in 8,500 records.
- We randomly sampled 20% of the records for review.
- Each photograph was assigned a coat color – for individuals with more than one color, we assigned the dominant (75% or more) color to the photo.
- We then collected the photos that had a set colormorph and analyzed the data using.
- The analyzed data then was transferred to ARGIS and placed onto a map of North America.

Results



Conclusions

- Black colormorph: 1,011
- Brown colormorph: 188
- Cinnamon colormorph: 79
- Blue-Grey colormorph: 29
- Blonde colormorph: 18
- White colormorph: 9
- We found that black and brown with some cinnamon colormorphs were more prominent in the eastern side of North America.
- The western side of North America showed more diversity in colormorphs that are more allusive such as: blonde, white and blue-grey.
- We believe that colormorphs are formed by their environment and the effects of climate change could be monitored by open-accessed citizen science occurrence data.
- Our data could also be beneficial to get a better understand on the American Black bears behavioral patterns.

References

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