Feral Camel Movement in the Northern Territory, Australia

Sabrina Dalinsky ('13) and Virginia Brink ('14)
Paul Smith's College


Photograph: Northern Territory government/EPA

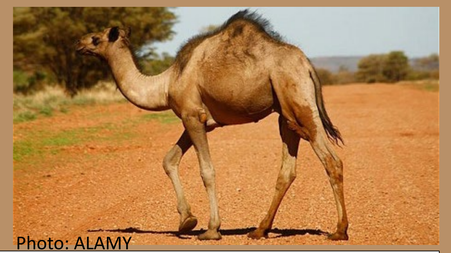


Photo: ALAMY

Project Goal: Analyze use versus availability of the landscape by feral camels in the Northern Territory, Australia

Introduction

Between 1840 and the 1900s, dromedary camels (*Camelus dromedarius*) were introduced in Australia for transportation purposes. Due to increased use of motorized vehicles, these camels were released. The current wild population of dromedary camels in Australia is increasing rapidly. They are affecting Australia economically, socially, and environmentally. Knowing how different aspects of the landscape affect camel movements using use versus availability will allow managers to understand where to focus mitigation efforts. In this project we utilized use versus availability to determine how the landscape affects the use of land versus the availability within 2 camels' homerange.

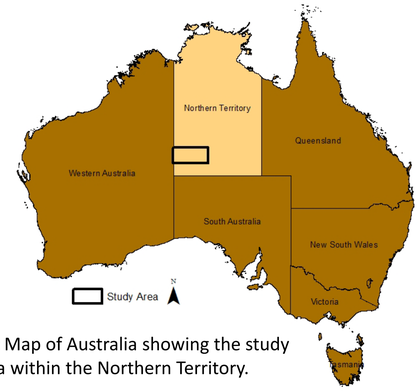
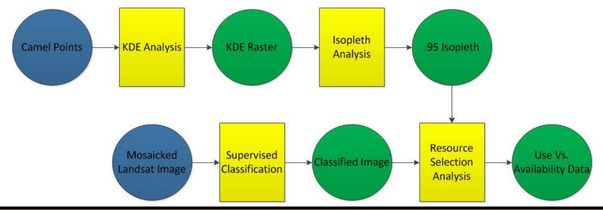


Figure 1: Map of Australia showing the study area within the Northern Territory.

Methods

General Approach: With Landsat imagery, we established 3 land classes (Water, Wet Vegetation, and Dry Vegetation) using a supervised classification, which allowed us to differentiate between classes. We then established a home range for each animal using telemetry points provided by Dr. Gordon Grigg and calculated availability and use of the habitat present.



Results

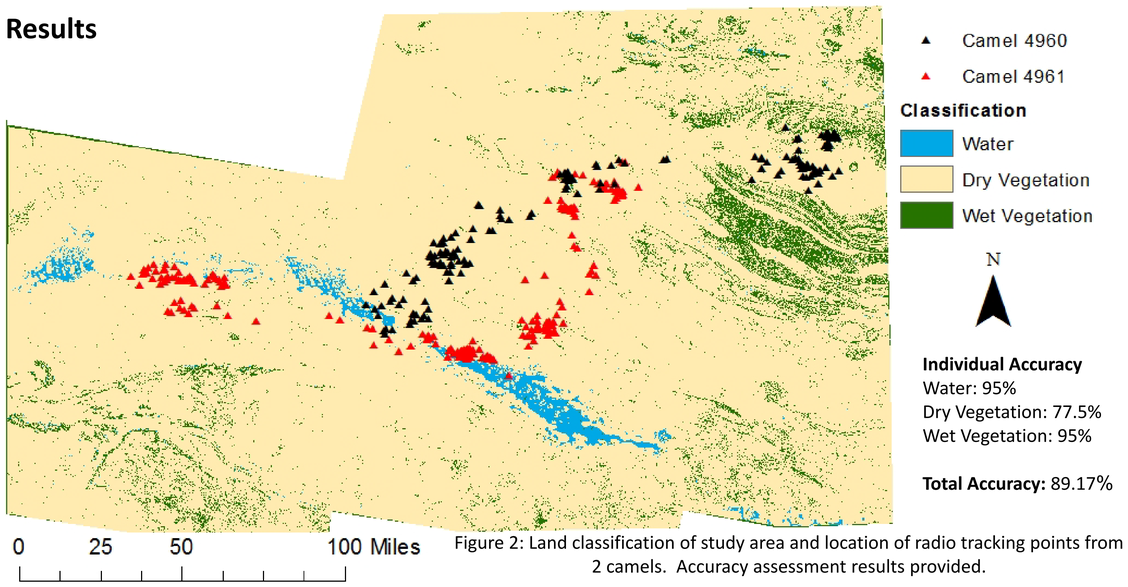


Figure 2: Land classification of study area and location of radio tracking points from 2 camels. Accuracy assessment results provided.

Use vs. Availability Ratios

Use versus availability is a method that provides a ratio of what a species uses with what habitat is available. If ratio = 1 habitat is used relative to availability, above 1 = habitat is preferred, below 1 = habitat avoided/not preferred.

Classes	Use vs. Availability Ratio
Water	0.66
Dry Vegetation	0.96
Wet Vegetation	2.27

Table 1: 95% kernel home range for Camel 4960
Red = Avoided, Green = Preferred

Classes	Use vs. Availability Ratio
Water	0.77
Dry Vegetation	1.01
Wet Vegetation	0.77

Table 2: 95% kernel home range for Camel 4961
Red = Avoided, Green = Preferred

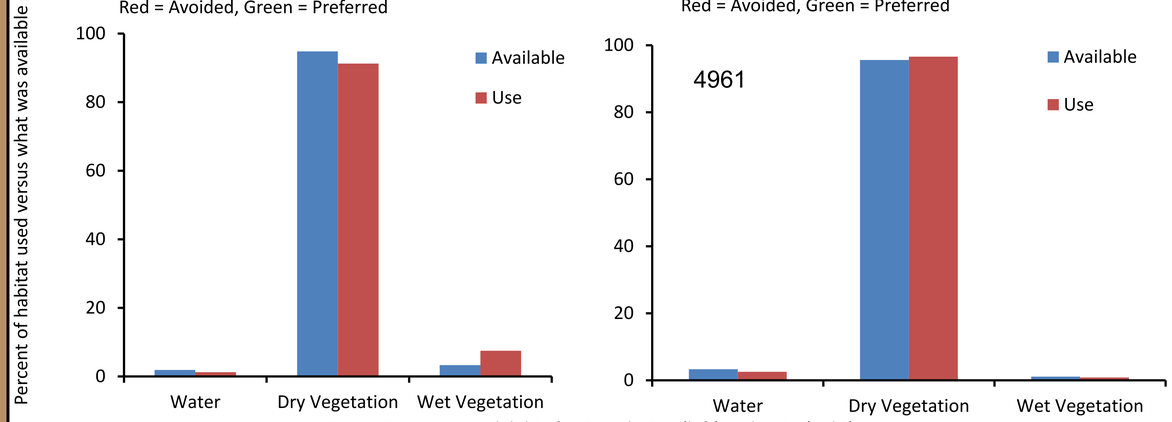


Figure 2: Use vs. availability for Camel 4960 (left) and 4961 (right).

Results Summary

- Camel 4960 preferred the wet vegetation class over dry vegetation and water. Water had a low ratio, most likely due to its small presence in the habitat.
- Camel 4961 preferred dry vegetation over water and wet vegetation, and this may be due to the high availability of dry vegetation, as shown in the map above.
- These camels differ in their use of land classes due to the difference in habitat types where they traveled.

Conclusions

1) Managers should not just focus on areas with water.
2) Water is not as available in this region compared to the other habitat types, though the camels do tend to travel to and around water bodies.

Acknowledgment : Dr. Gordon Grigg

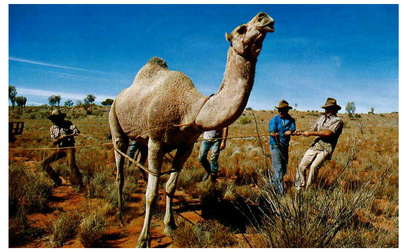


Figure 4: Radio collaring of Camel 4961 (photo by Dr. Gordon Grigg).

Literature cited

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