



Analyzing Oryx Movement After Release

Sujal Umrikar

College Park Scholars – Science & Global Change Program

Computer Science
sumrikar@umd.edu

CPSG359G

College Park Scholars Academic Showcase, May 3, 2024



Disclaimer:

No data from the Oryx project, nor any intermediate results, is allowed to be shared publicly. As such, the following presentation DOES NOT display any data nor results from the project. Instead, it focuses upon the background, goals, methods used in researching the data, and future research regarding the project.

Introduction:



Image from <https://www.pexels.com/photo/scimitar-oryx-on-brown-field-15057786/>

Scimitar Oryx (*Oryx dammah*) are an endangered species of oryx which have been driven to near extinction. A captive-breeding program has been established to preserve the species, and this program has been slowly reintroducing captive individuals back to the wild. These captive individuals are given trackers with which data is collected, and my role was to aid in analyzing that data.

Site Information:

Bill Fagan Lab

3235 Biology-Psychology Building

Dr. Bill Fagan

Site Goal: Applying models to field research to aid conservation efforts in a quantitative manner.

My Part: Analyze the movement of formerly captive Oryx which were released into the wild.

Methods:

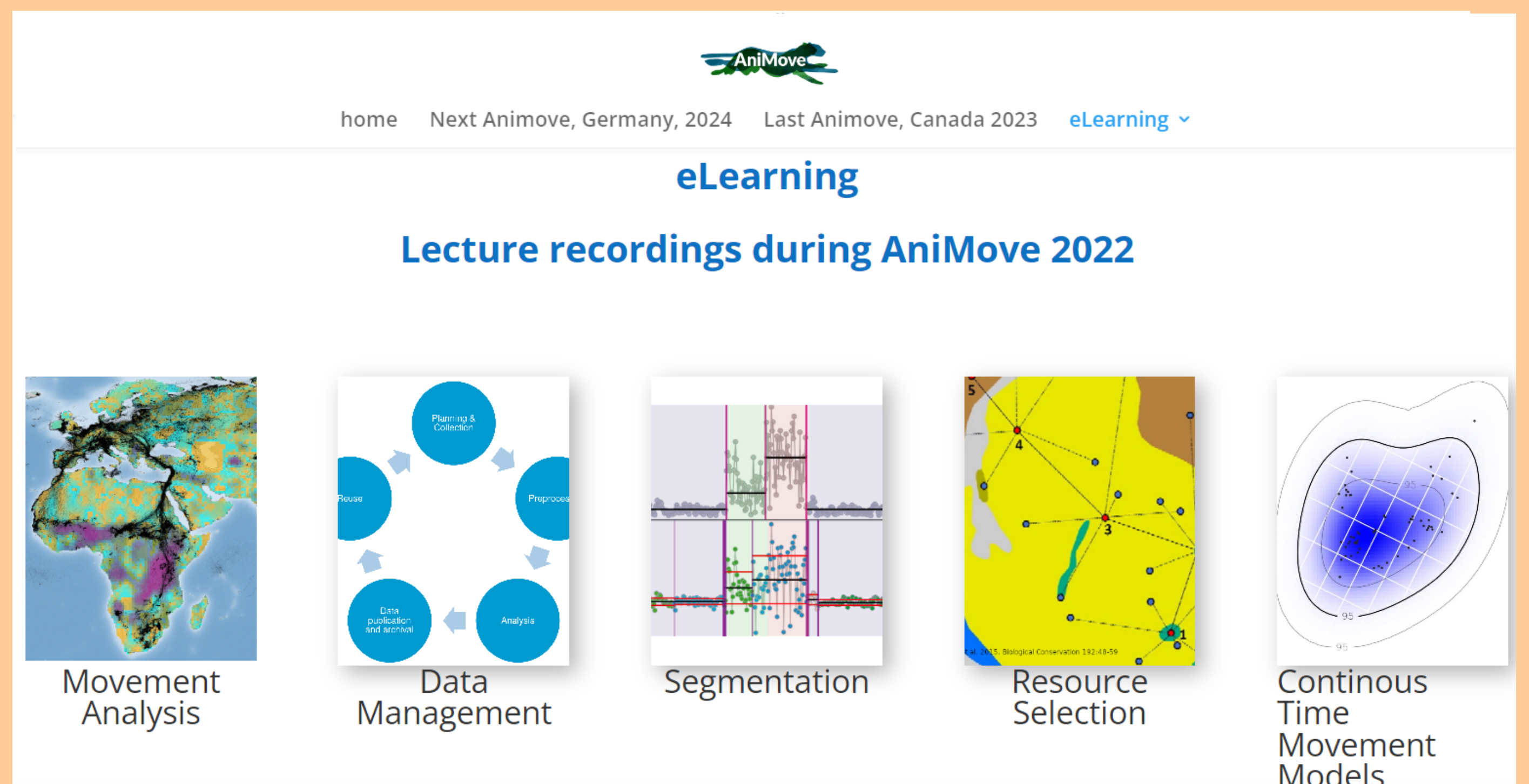


Image from <https://animove.org/elearning/>. This website helped me learn how to filter and plot the data I was given.

An oryx's tracker provides the longitude, latitude, transmission date, and collar ID, from which distance and speed can be calculated. The data is then plotted in Rstudio, with the aid of the CTMM and Smoove github packages, which aid in analyzing continuous time movement data.

My role was in identifying how long it may take for a captive oryx to calm down once released, and so dozens of oryx were compared to find underlying patterns in their movement over several months.

Future Research:

The movement of Oryx not only provides information about how long it takes them to calm down once they're back in the wild, but could also help detect patterns related to:

- If an individual oryx may soon die.
- Whether the weather and time of day alter oryx movement.
- How proximity to various other oryx affect an individual.
- An oryx's proximity to its original holding pen.

Acknowledgments:

Thank you to Dr. Bill Fagan for incorporating me into the project. Thank you to the lab members who cleaned the data, provided a beginner's guide to the project, and provided their input on what to do. And thank you to Dr. Holtz and Dr. Merck for their aid while I was a College Park Scholar.

