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# Application of Geospatial Technologies in Animal Welfare

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# Background

- n There is growing public interest in animal welfare.
  - q Change.org petitions
  - q Wildlife Crime Tech Challenge
  - q Nonhuman Rights Project
- n Climate change will affect the welfare of livestock.
  - q Animal welfare is a priority research area of the U.S. Department of Agriculture.

# Project Activities

- n Performed an online comprehensive search of the activities and research involving the use of geospatial technologies in animal welfare
- n Summarized the results in a website
- n Learned about the areas where further research efforts are needed, the main players, and their locations
- n Examining possible topics for collaboration with other departments in our campus and/or with other universities
- n Looking at funding sources

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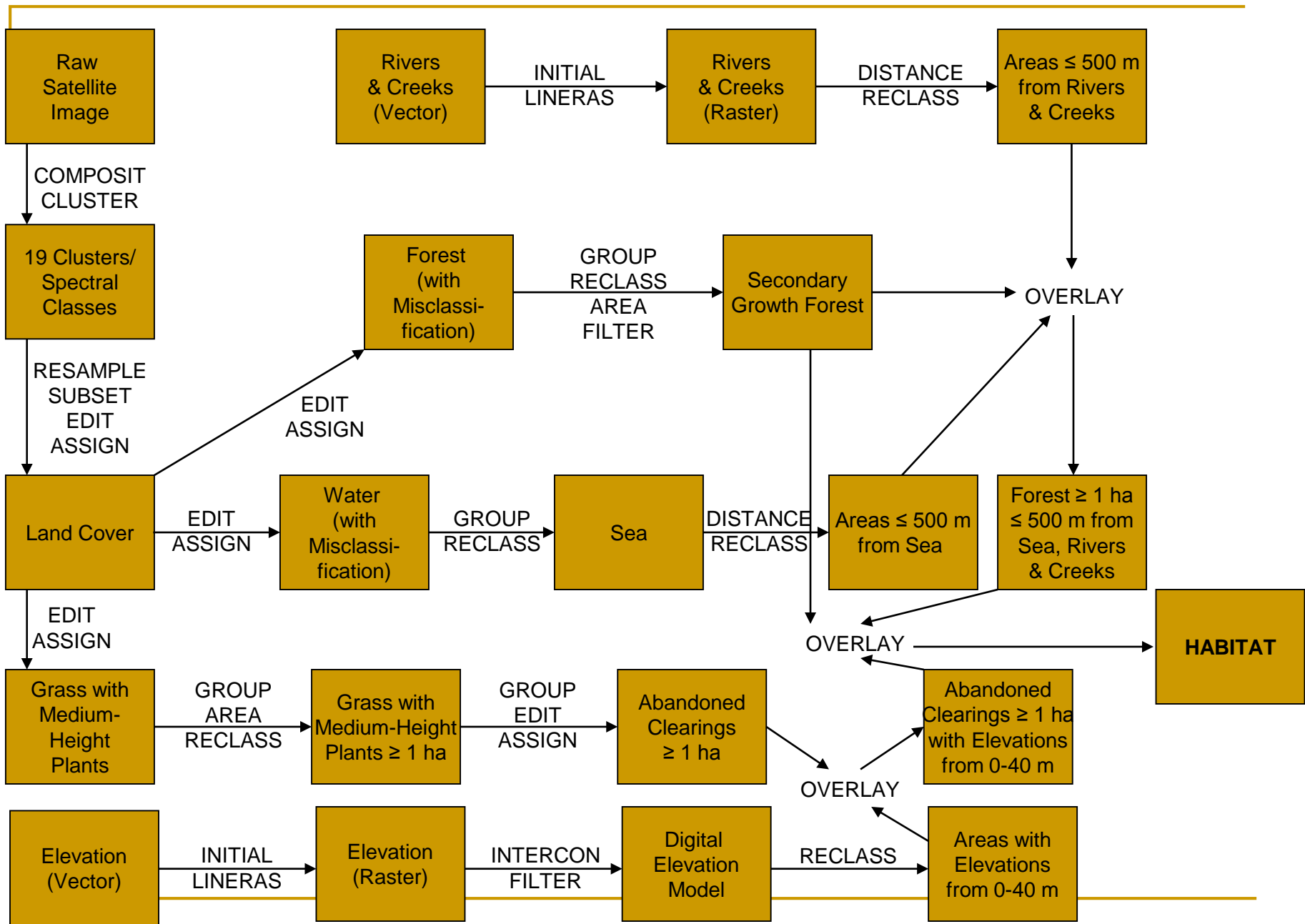
# Departments that can be involved with animal welfare projects

- n Geospatial Engineering
- n Agriculture
- n Biology
- n Electrical Engineering
- n Computer Science
- n Geography
- n Law
- n Criminal Justice

# Modeling and mapping habitats

- n One of the early applications of the geospatial technologies in animal conservation
- n For my M.S. degree in Remote Sensing at the University of the Philippines, Diliman, I delineated the habitat of the Philippine tarsier (*Carlito syrichta*).





**Philippine Tarsier GIS Habitat Mapping Model using IDRISI**

# Tracking animal movement



# Using UAVs to prevent poaching





# Attaching GPS receivers and sensors to cows to monitor their health



# Managing land use to minimize bird strikes in airports



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# Other mapping projects

- n Home ranges, esp. of endangered species
- n Legislation, humane laws
- n Animal crime and cruelty cases

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# Challenges

- n Collaboration among scientists in different fields
- n Technology limitations
- n Research funding
- n Cost of equipment
- n Conflicting interests
- n Cultural barriers

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# Our Interests and Expertise

- n GIS
- n Machine Learning
- n Crowdsourcing
- n Social media

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# Questions?

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