

Introduction to GIS

Overview

- What is GIS ?
- Who uses GIS ?
- What can I do with GIS?
- Data in GIS
- Software's
- Concept of layering in GIS
- What should be in a map?

What is GIS?

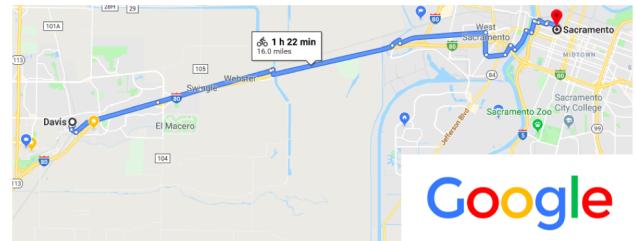
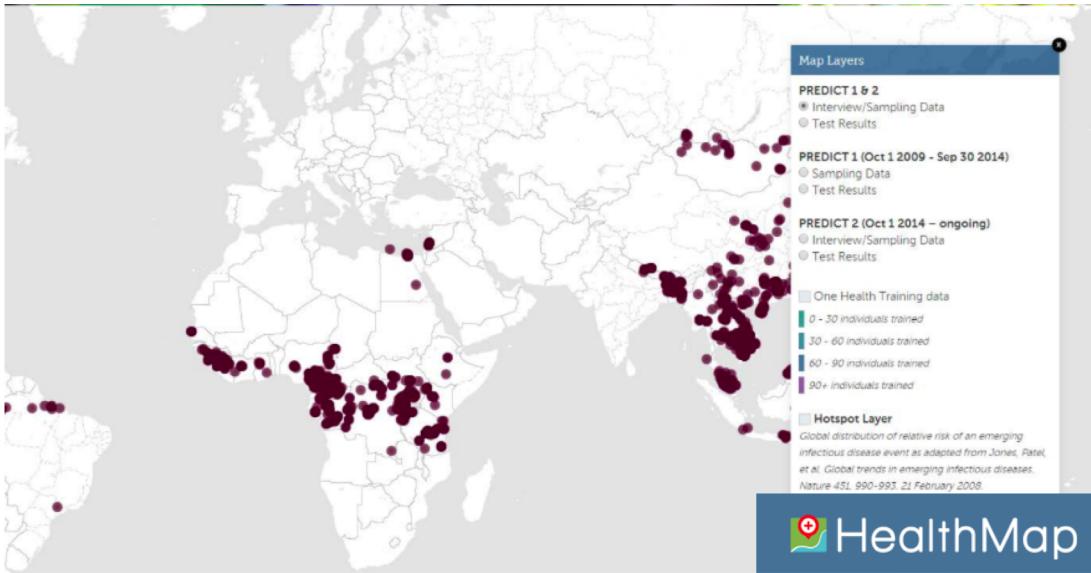
Geographic
Information
System



“Geographic Information Systems is a computer-based tool that analyzes, stores, manipulates and visualizes geographic information, usually in a map.”

In other words: Use a software to connect data to a map in order to visualize and analyse it

Who uses GIS?



Google



What can I do with GIS?

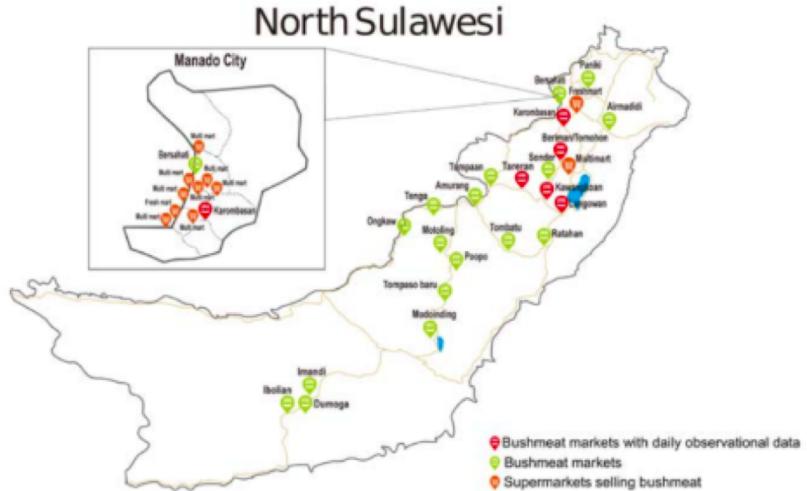
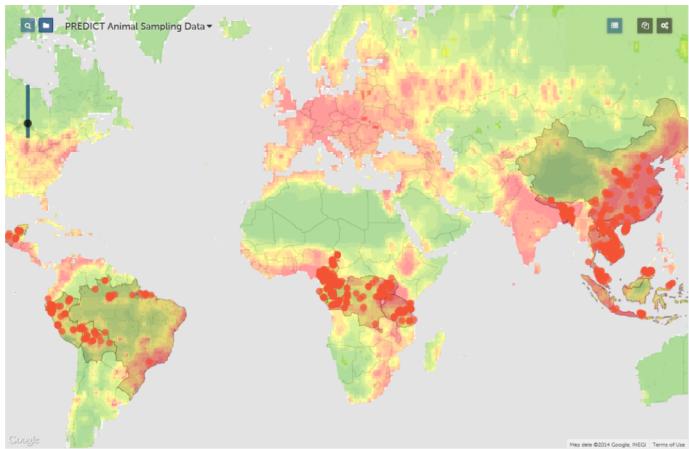


FIGURE 2. Map of the wildlife trade/value chain in North Sulawesi, Indonesia. Green markers indicate bushmeat markets surveyed by PREDICT, and red denotes markets where daily observational data were recently collected. Supermarkets where bushmeat is also available are marked in orange.

VIEW DATA AND CREATE MAPS

What can I do with GIS?



PERFORM STATISTICAL ANALYSIS

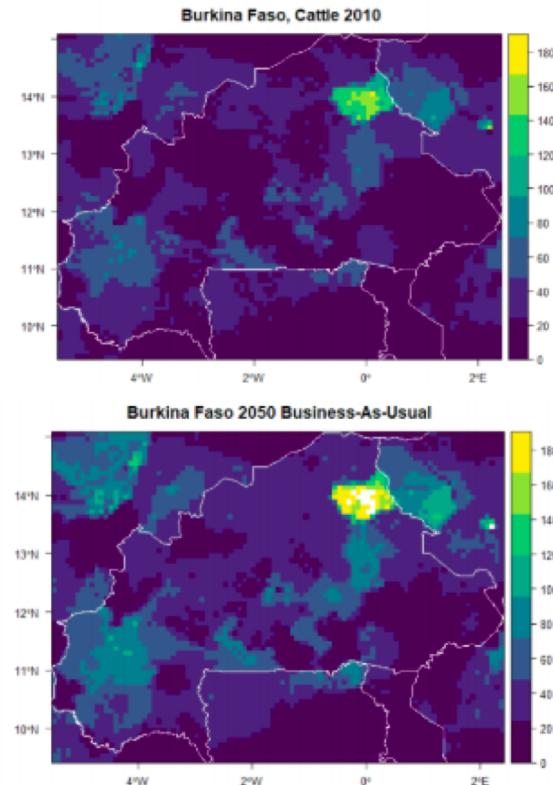
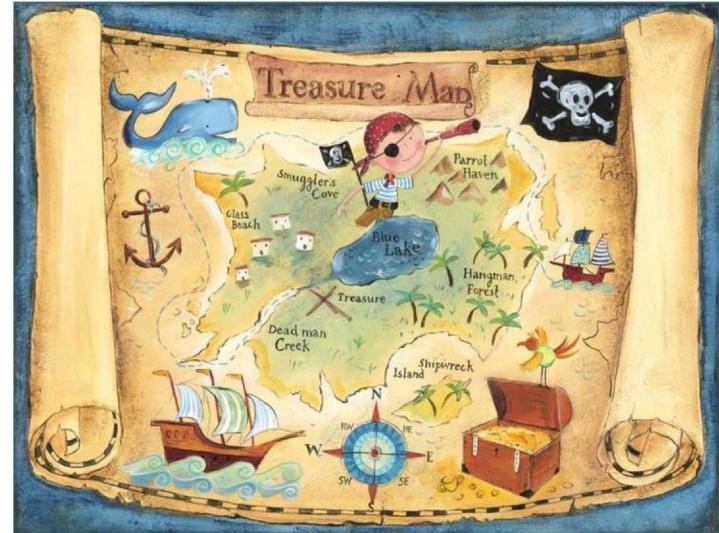


FIGURE 5. Forecasted changes in cattle density for Burkina Faso from 2010 to 2050 under a business-as-usual scenario. Maps produced by PREDICT as part of the Africa Sustainable Livestock 2050 (ASL2050) project in collaboration with FAO.

What can I do with GIS?

Estimate areas, distances....



.... And More !

From a Satellite image to GIS

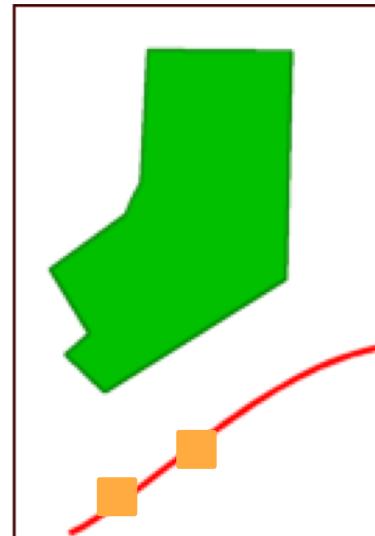


Real World

From a Satellite image to GIS



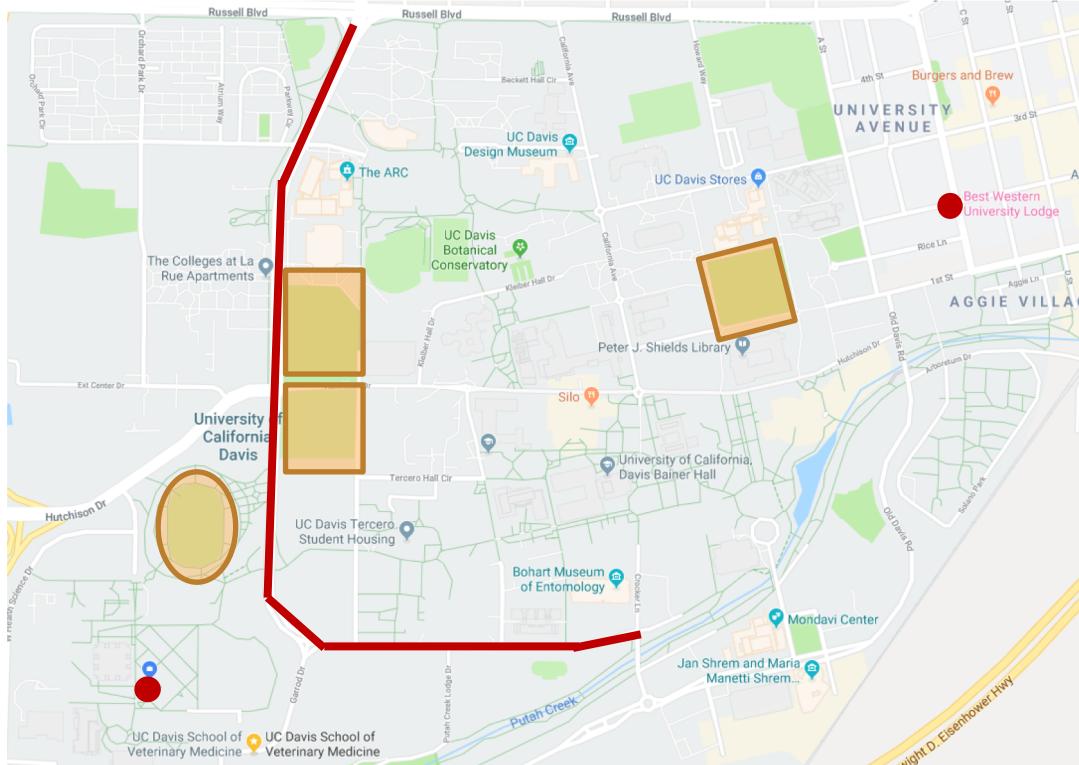
Real World



Vector

Vector Data

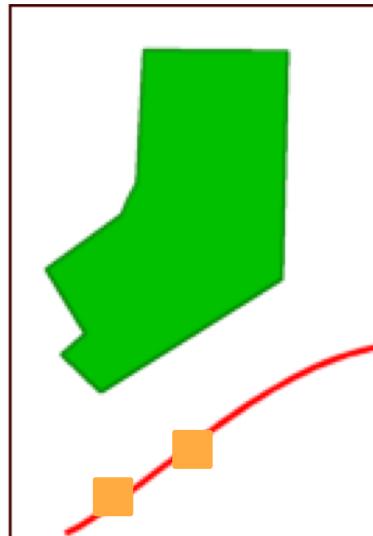
- Points
- Lines
- Polygons



From a Satellite image to GIS



Real World

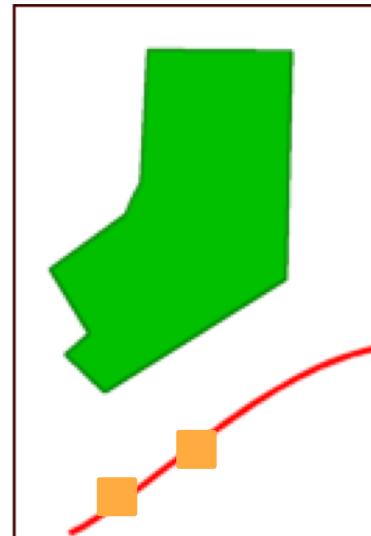


Vector

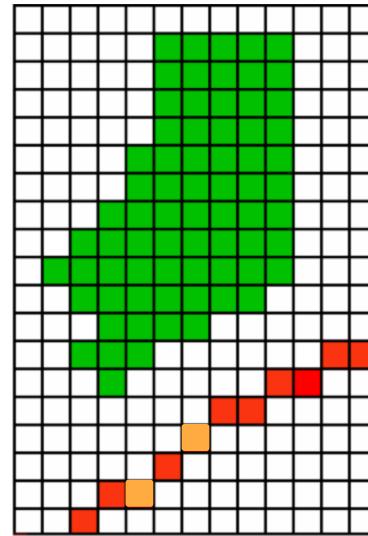
From a Satellite image to GIS



Real World



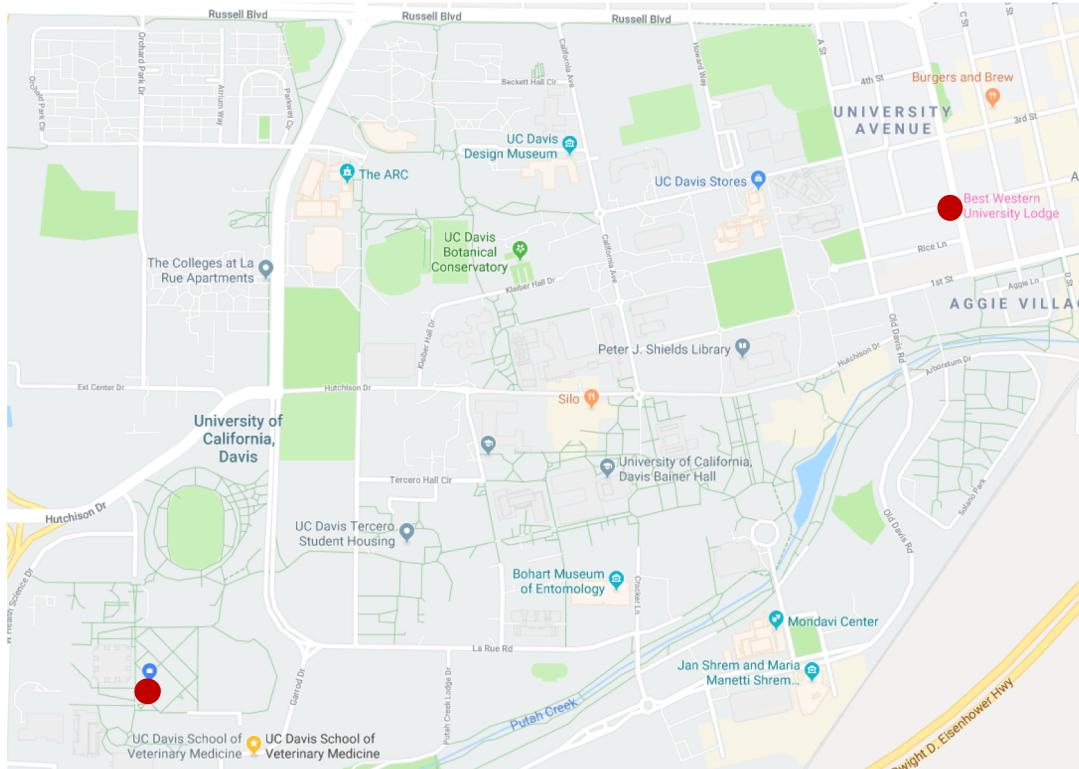
Vector



Raster

Vector Data

- Points

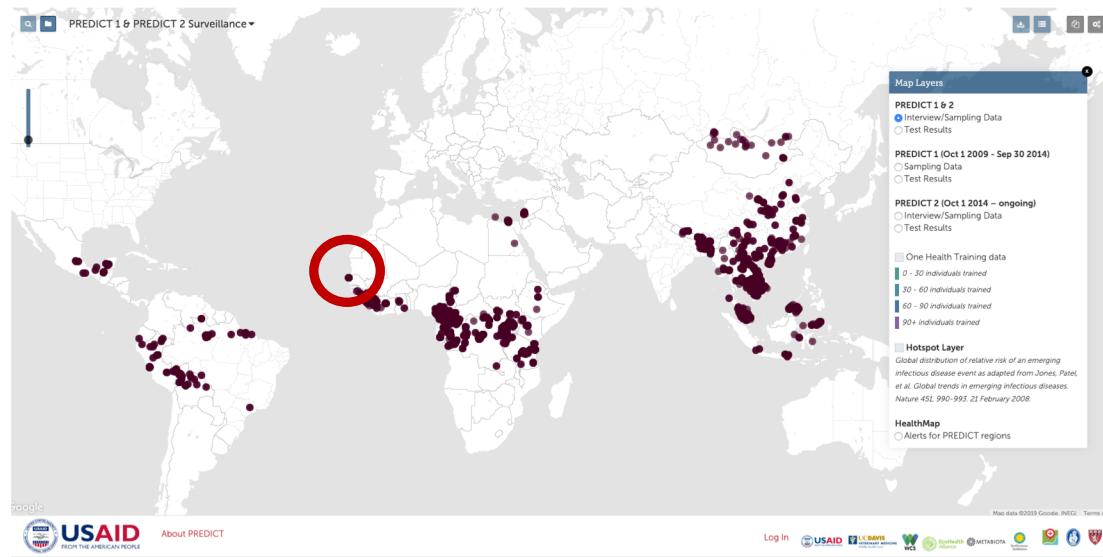
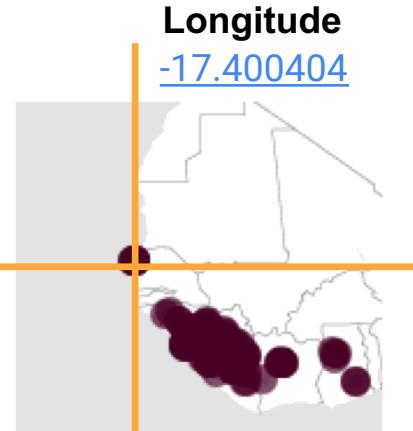


Vector Data: Point

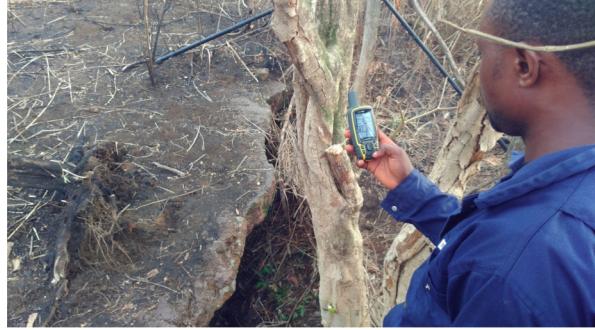
A point is defined by its coordinates: **Latitude** and **Longitude**

There are different units for coordinates.

Both latitude and longitude have to be in the same unit



Vector Data: Point



Can you identify what is the location of this point without using your computer?

38.532194, -121.761469

Vector Data: Point

Latitude: - 90 to 90

Longitude : -180 to 180

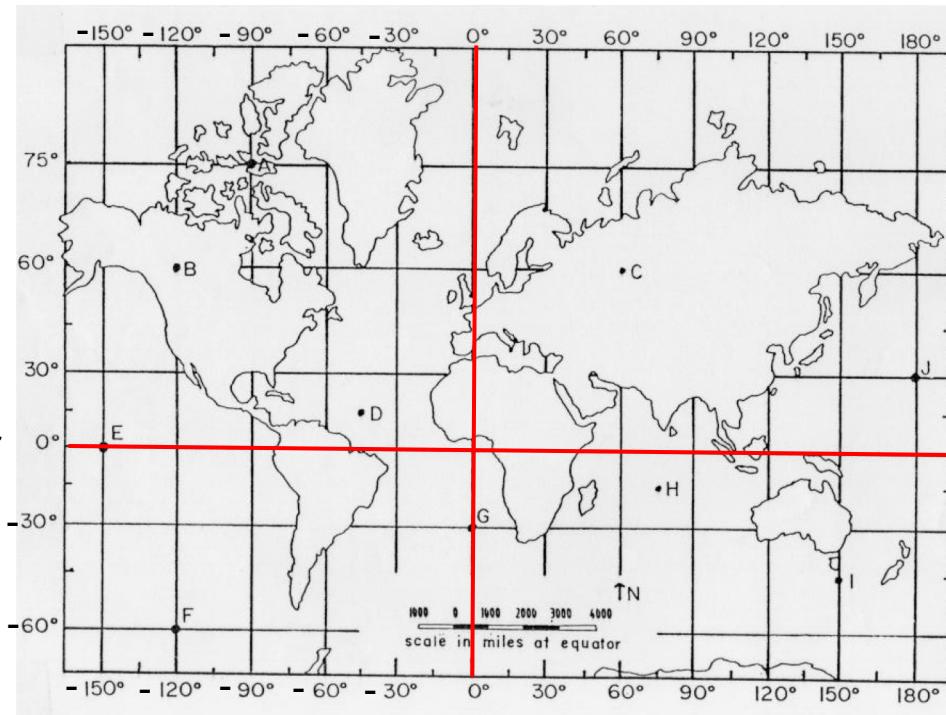
38.532194, -121.761469

Thus !!

38.532194 is a Latitude

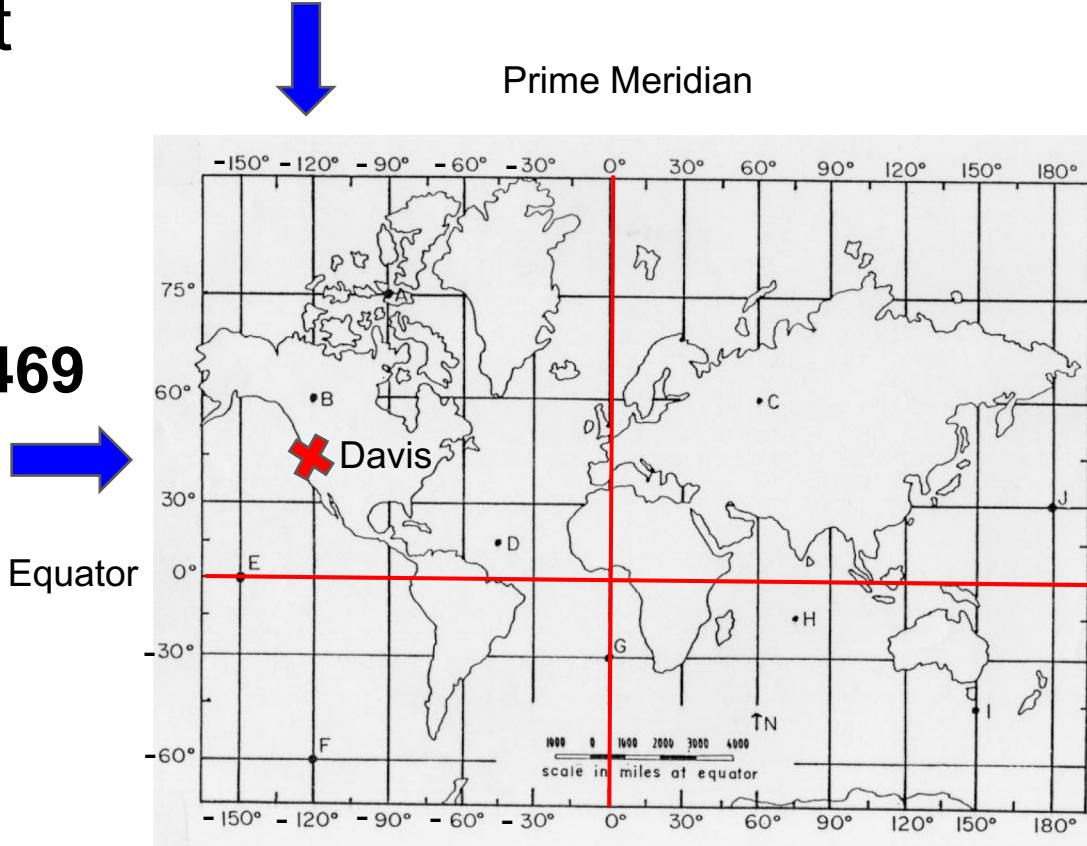
-121.761469 is a Longitude

Prime Meridian



Vector Data: Point

38.532194, -121.761469



HUMAN QUESTIONNAIRE LIVING LOCATIONS

This map displays a pin for the GPS location entered for Q9 - Where do you live? of the human questionnaire.
Grey pins indicate the GPS location was not provided for the participant(s).



What are the GIS software's?

Free



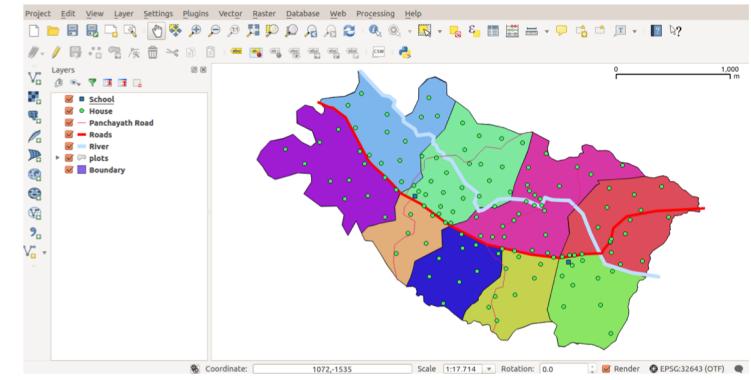
You have to pay



ArcGIS

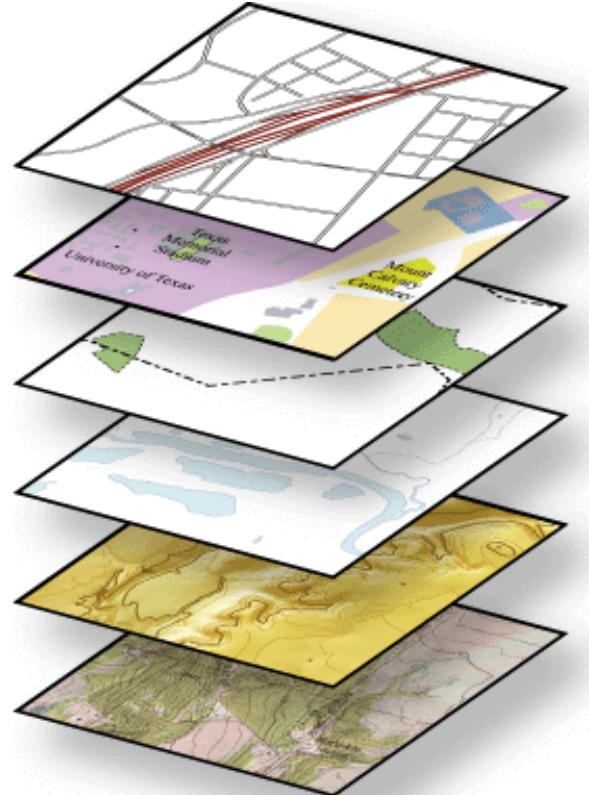
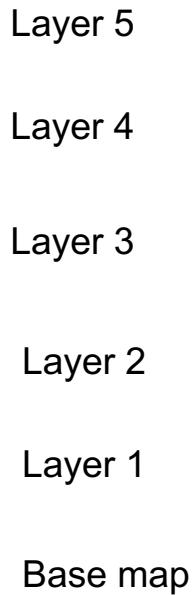
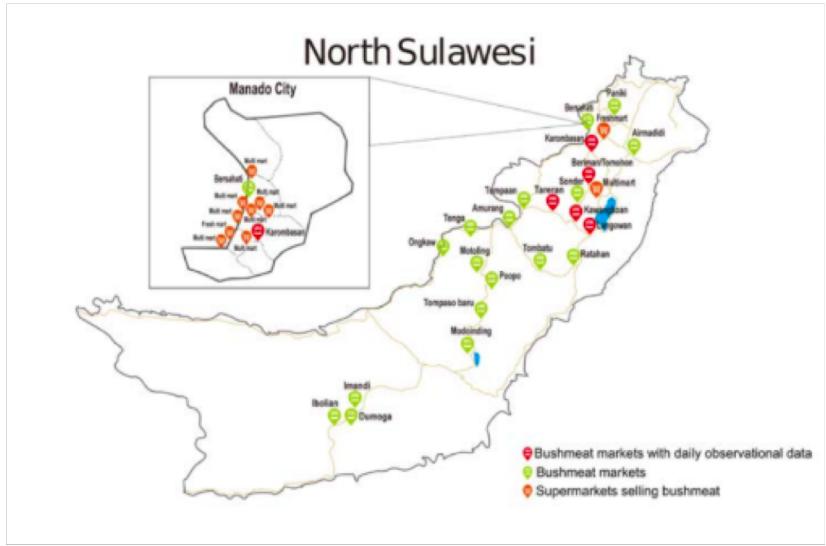
Would you consider these tools as GIS softwares?



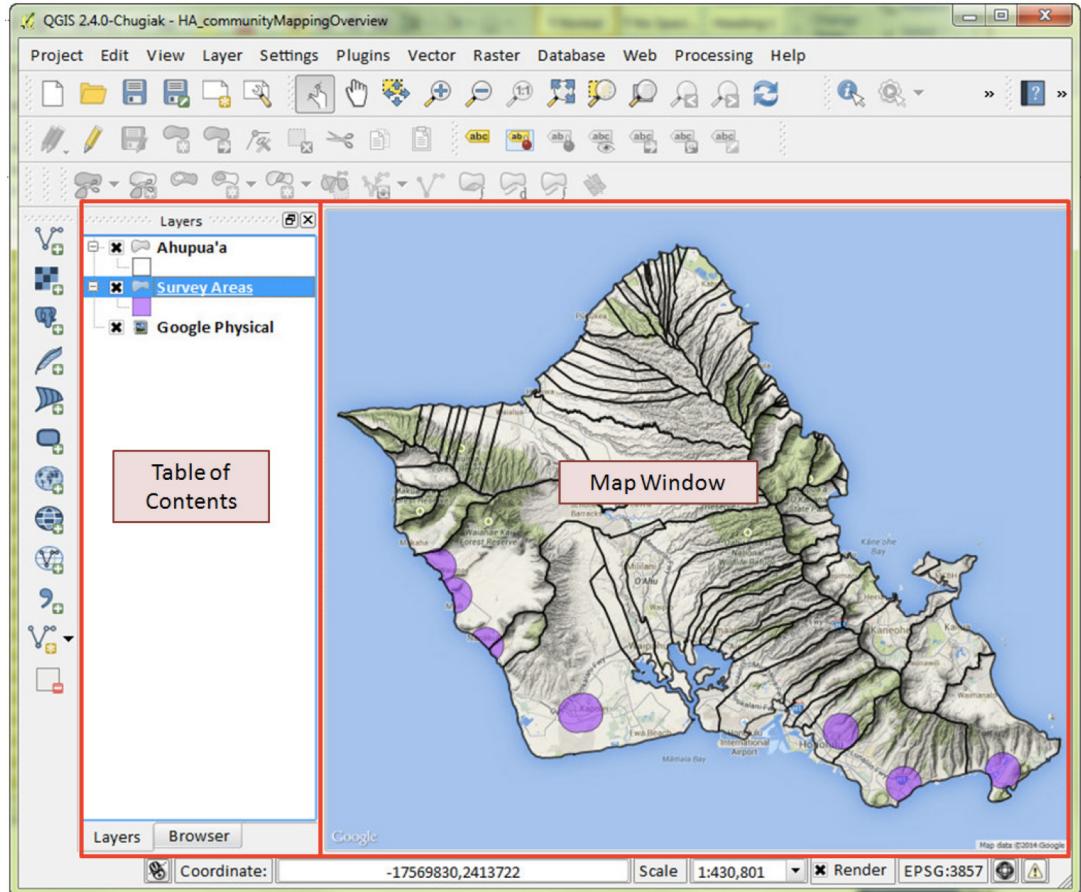
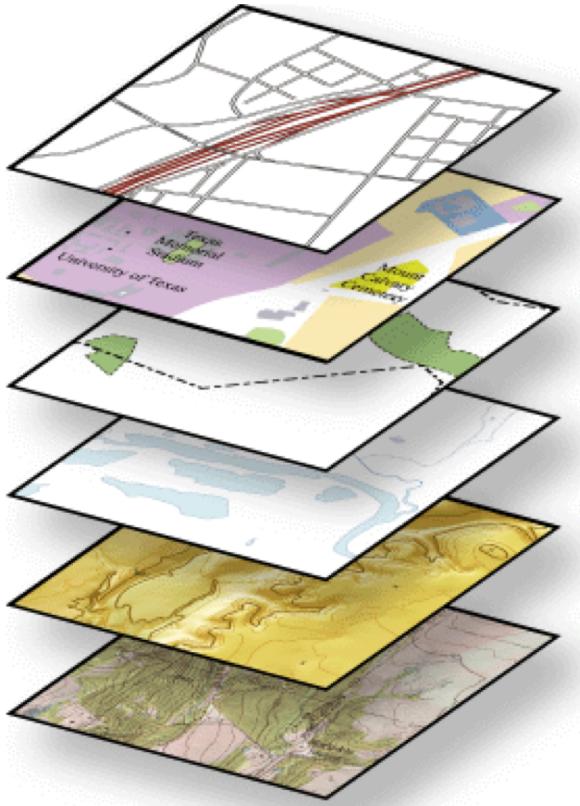


Quantum GIS

Concept of layering in GIS



Concept of layering in GIS



What Should be in a map?





THANK YOU