Intro to QGIS

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Learning objectives

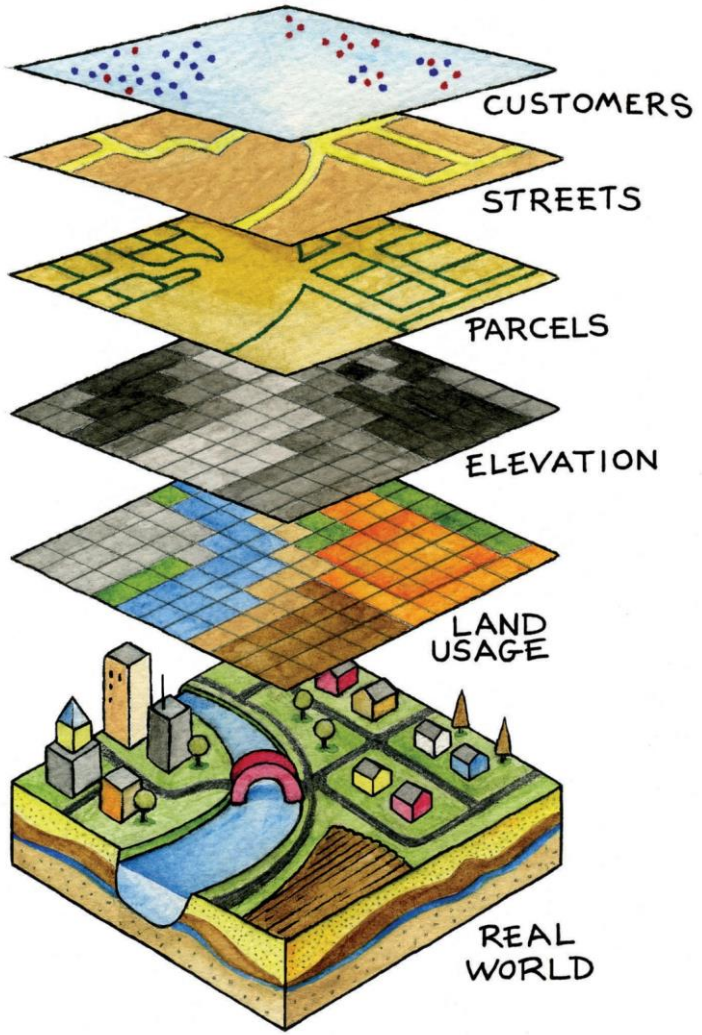
- Basic GIS concepts
- Understanding QGIS Workflow
  - Add a base map
  - Add point data on software
  - Create map layout

Basic GIS concepts

- GIS= Geographical Information System (a map connected to a database)
  - Visualize
  - Map
  - Manage spatial data
  - Spatial analysis
- QGIS= Quantum GIS: Free and Open source GIS software
  - Alternative to ESRI/ArcGIS

Basic GIS concepts

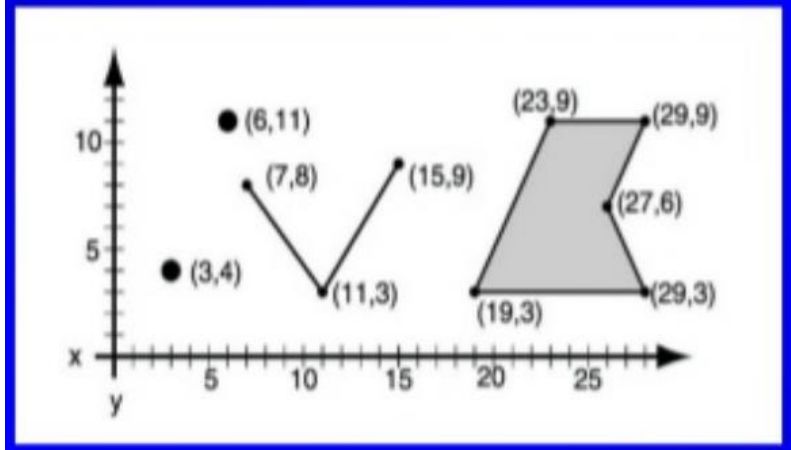
- Map is a superposition of Layers
- Each layer represent a specific type of information
- Each layer is georeferenced



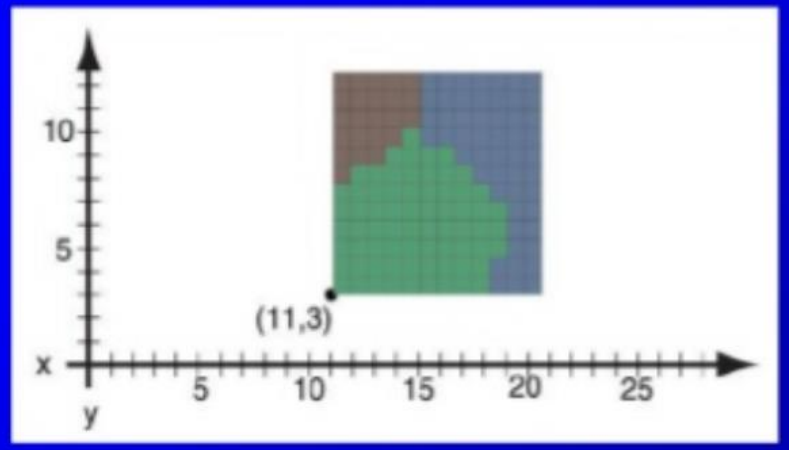
Eric Purpur

A layer can be represented as a vector or as raster

- *Vector* create feature layers
  - Point
  - Lines (direction and length)
  - Polygons (area, centroids, and perimeter)



- *Raster* create surface layers
  - Records information about each element on a fixed grid as pixels (E.g.: Satellite images, aerial photos)



Nancy Warren

Objects are geographically located by coordinate systems

Geographic Coordinate System

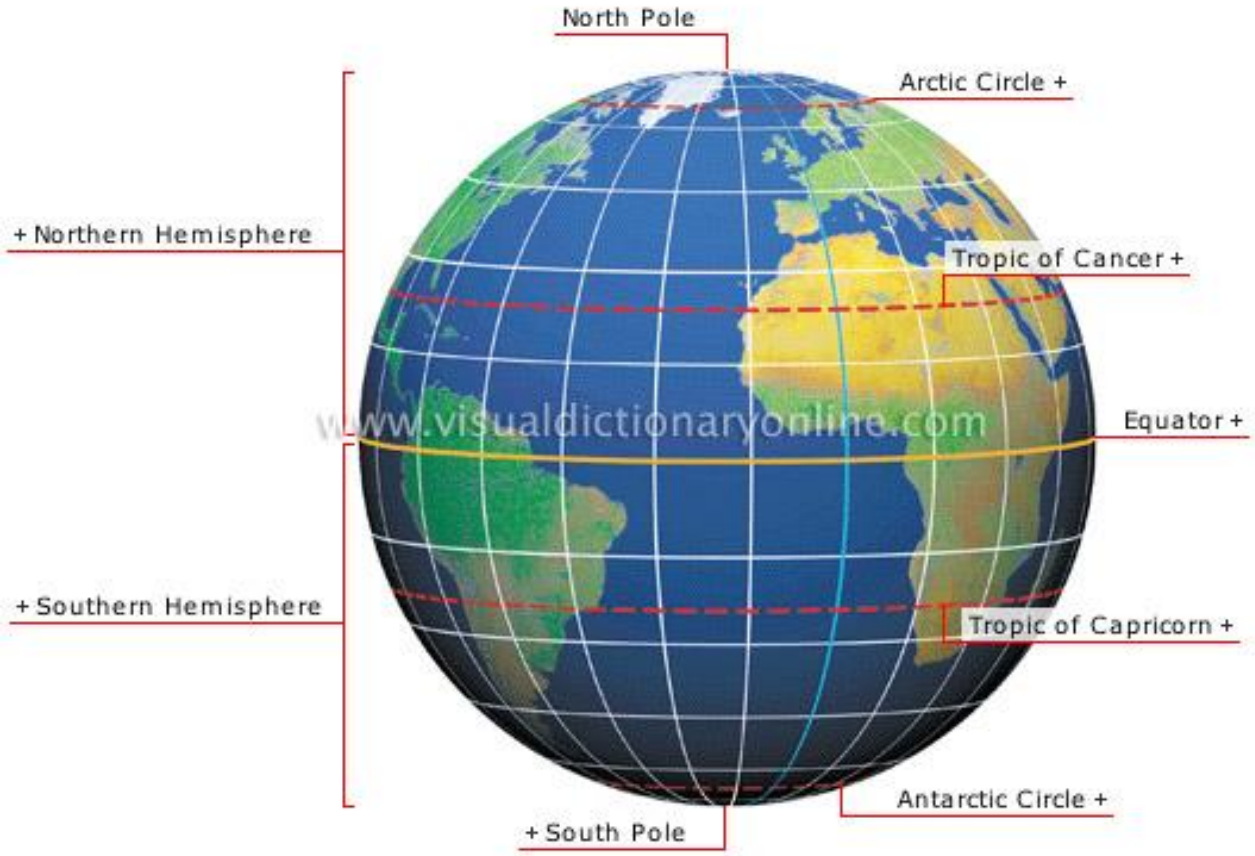
a network of intersecting lines

-latitude (North/South)

-longitude (East/West)

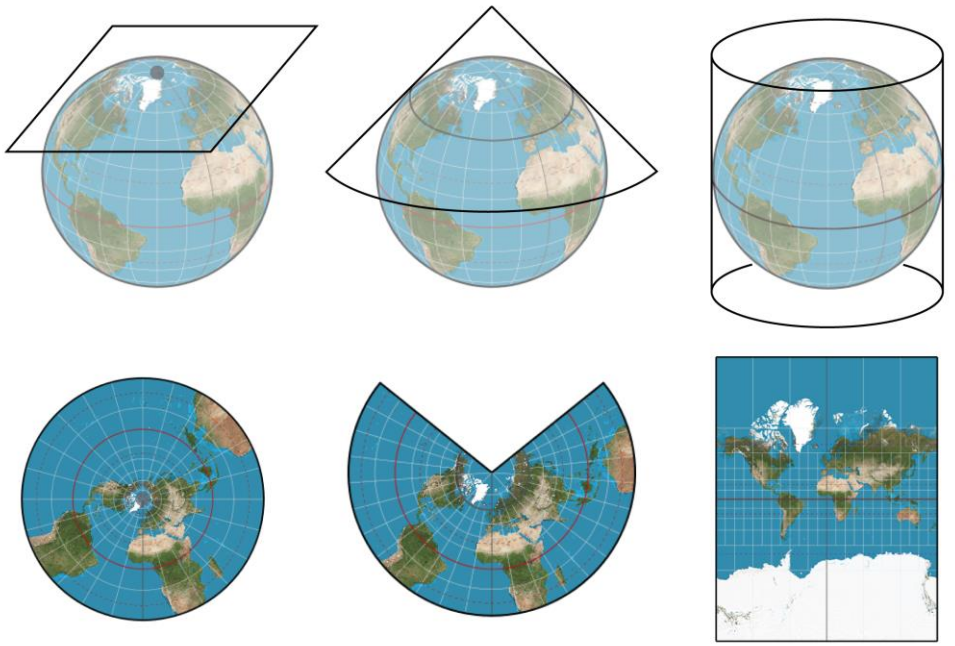
Eg: 3.790334°N

10.020218° W



Map projection

- Projection is transformation between angular coordinates and planar coordinates.
- The round shape of the earth make it difficult to represent it on a flat surface
- Distortion
- Different projection has its own field of focus.
- Data or layers of a same map project should be display on the same projection



Attribute table

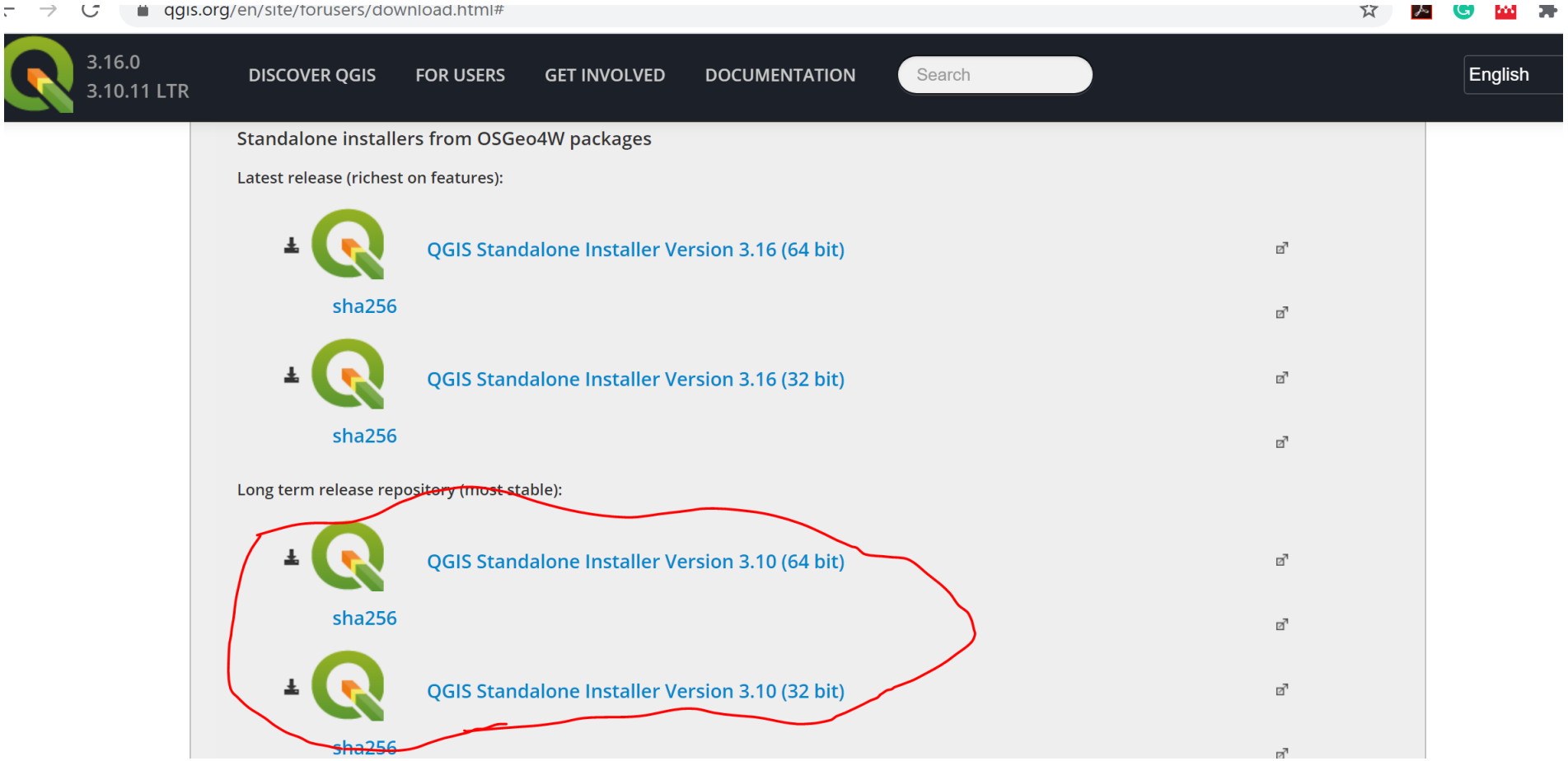
Object attributes **Object location** Object attributes

	A	B	C	D	E	F	G	H	I	J	K	L
	ID observat	Mort	Observatio	Group	Sub group	Species	Date	Latitude	Longitude	Animal loca	State of the	cause of death
	1	0	Animal	Fish	Other fish	Others fish	01/11/2020 09	2.938501	9.908488	Autres	Mort	Chassé
	2	0	Animal	Fish	Other fish	Others fish	02/11/2020 13	2.570033	9.824786	Au marché	Mort	Chassé
	3	0	Animal	Fish	Other fish	Others fish	02/11/2020 14	2.716768	9.870193	Sur la plage	Mort	Chassé
	4	0	Animal	Fish	Other fish	Others fish	04/11/2020 14	2.570033	9.824786	Au marché	Mort	Chassé
	5	0	Animal	Fish	Other fish	Others fish	08/11/2020 09	3.083075	9.97262	Au marché	Mort	Chassé

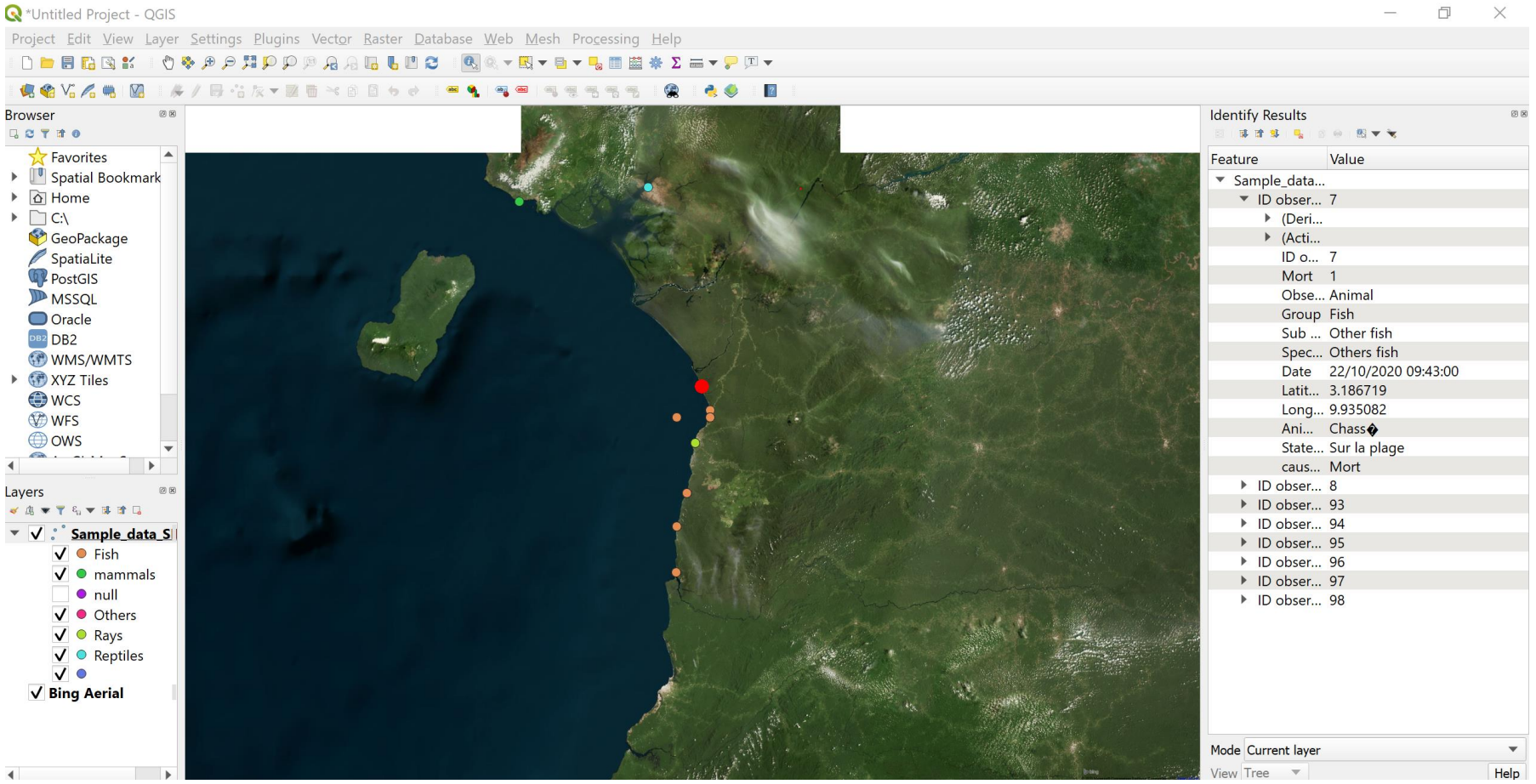
QGIS WORKFLOW

Download QGIS and Install

https://qgis.org/en/site/forusers/download.html#



QGIS interface



Download and install **OpenLayer** Plugin

Prepare data points

- Verify that the geographical coordinates and attributes are correct
- Convert datasheet with geographical coorinates into CSV (comma delimited)

Upload data into QGIS Software

- Add point data
- Change symbology
- Add label
- Check Attribute table

Map layout

Export map