AMERICAN MUSEUM OF NATURAL HISTORY
CENTER FOR BIODIVERSITY AND CONSERVATION

GPS, & Remote Sensing

Peter Galante
Biodiversity Informatics Specialist
Center for Biodiversity and Conservation
American Museum of Natural History

Where does GIS data come from?

- GIS data created many ways

  - For example:

    On the ground

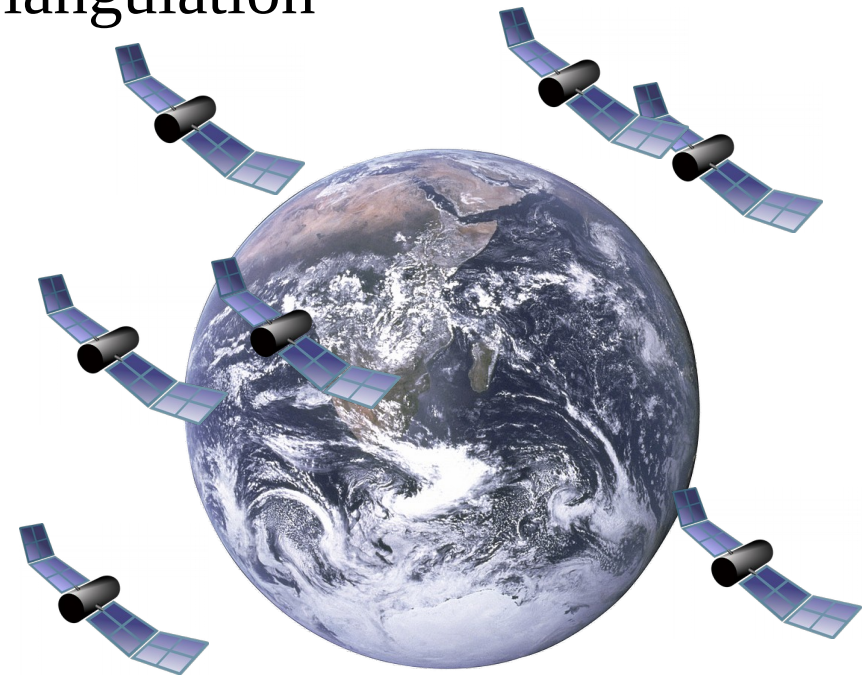
    - Handheld GPS units

    From the sky

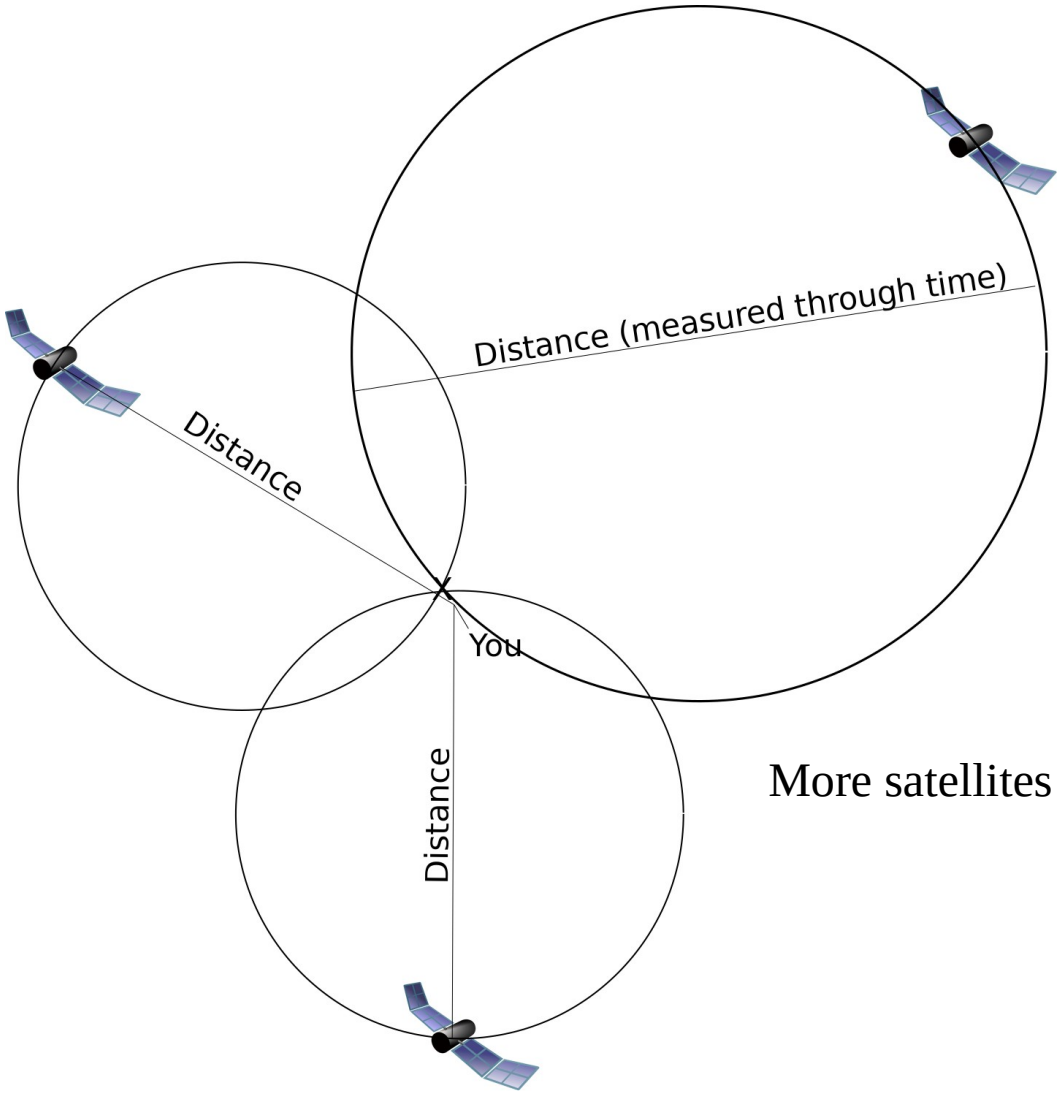
    - Airplanes
    - Birds
    - Satellites

Where does GIS data come from?

- Global Positioning System (GPS)
    - constellation of satellites
    - Originally government military use
        - now open to anybody
    - Triangulation



GPS

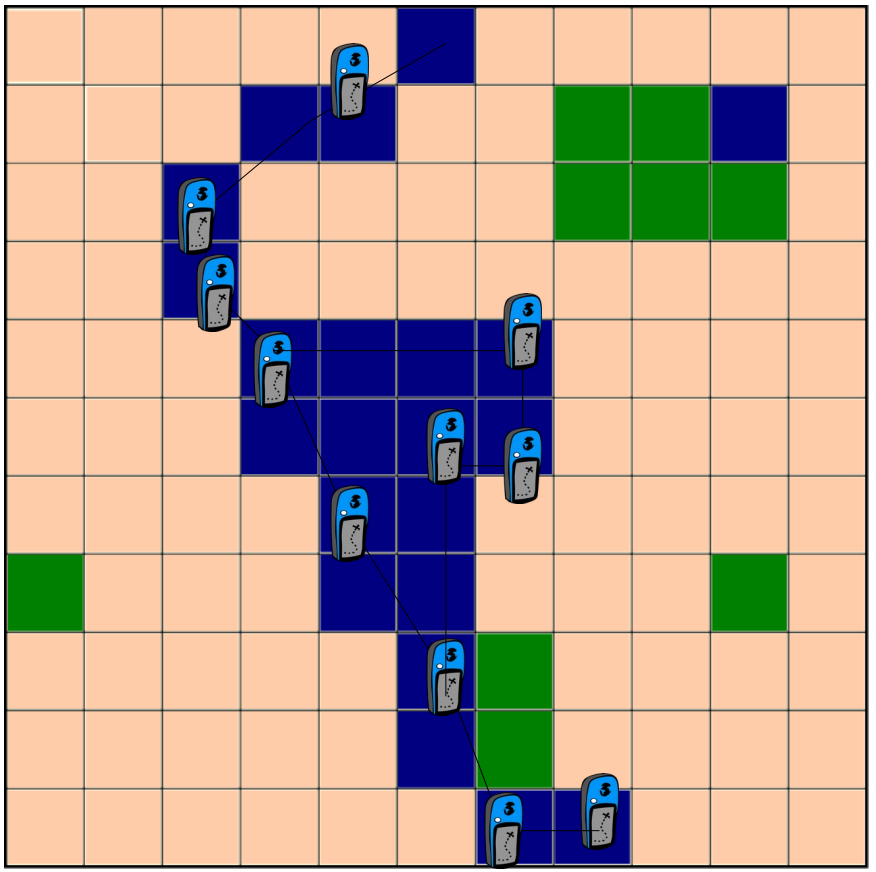


More satellites = less error

GPS

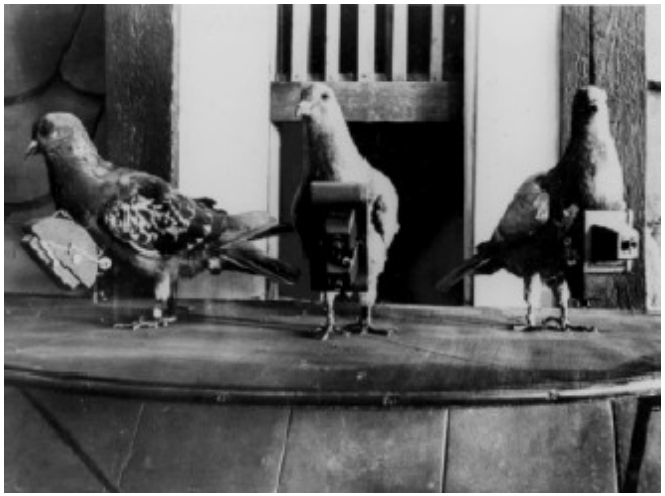
Can be used to directly generate vector data

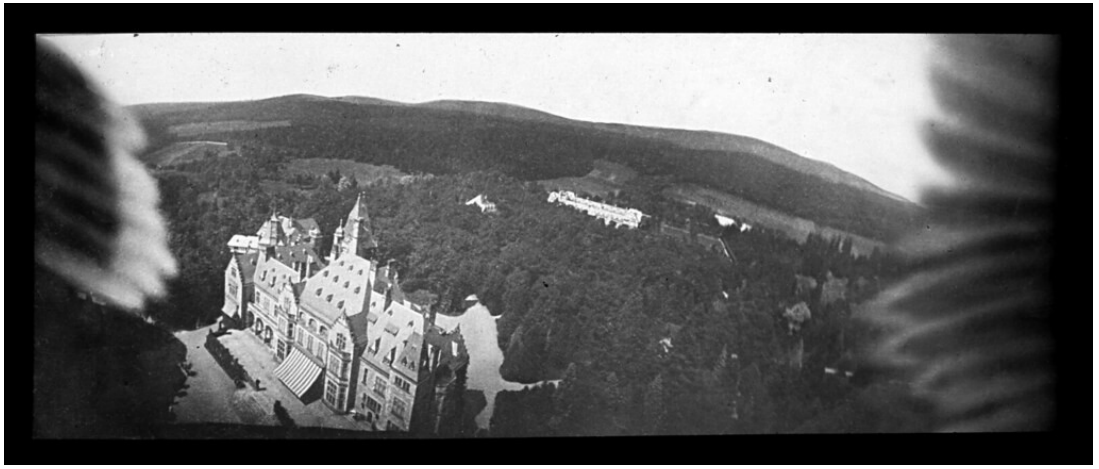
- Point data (long, lat)
- Tracks can be used to create lines (roads/rivers) and polygons (buildings, fields, forests)



Remote Sensing

Besides balloons and kites, pigeons were used to carry cameras and could be trained to fly over targets

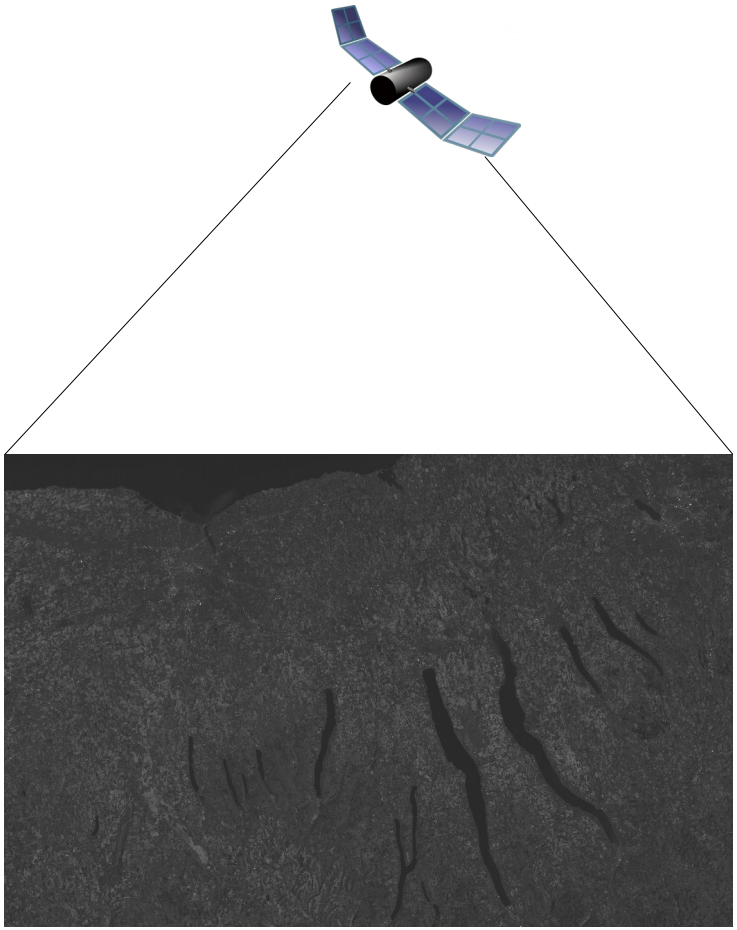




German scientist
Dr. Julius Neubronner

Remote Sensing – Past and Present

CIA's declassified Corona Program



NASA's LandSat8 satellite

GIS and Remote Sensing

- Species distributions: conservation, systematics (e.g. phylogeography)
- Global processes
- Land and sea cover and use
  - Land and environmental management
  - Protected areas
- Disaster management