Ecosystem Classifier

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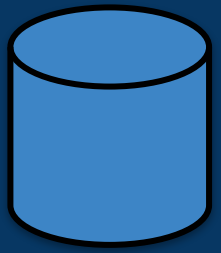
- Stakeholder Presentation #3-
11/13/2024

Dataset sources



- **VIIRS (EOGDATA)**

  Radiation data

- **Land Data Assimilation (LDAS)**

  Elevation datasets by NASA

- **Moderate Resolution Imaging Spectroradiometer (MODIS)**

  Climate and vegetation data (NDVI & EVI) by NASA

- **Open-Elevation.com**

  Elevation data

Development

1. **Global data acquisition**

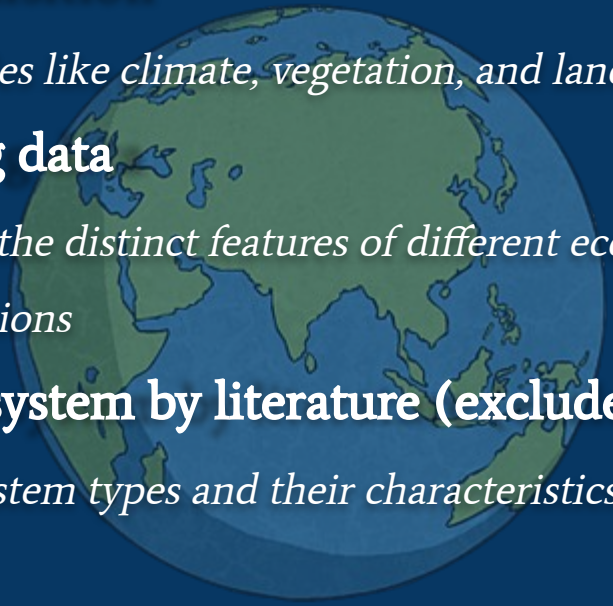
   environmental variables like climate, vegetation, and land cover characteristics

2. **Sampling training data**

   Help the model learn the distinct features of different ecosystems, ensuring that it can make accurate predictions

3. **Definition of ecosystem by literature (excluded oceans)**

   defined specific ecosystem types and their characteristics



Classifications

- **Artificial-Urban-Buildings**
  (New York City, Paris)
- ***Artificial-Agriculture-Fields***
  (Niedersachsen, Wisconsin)
- **Natural-Forest-Boreal/Taiga**
  (Alberta, Siberia)
- **Natural-Forest-Temperate**
  (Black Forest, Yellowstone)
- **Natural-Desert-Hot**
  (Sahara Desert, Kalahari Desert)
- **Natural-Desert-Cold**
  (Gobi Desert)

Total of 15 → **113 parameters**

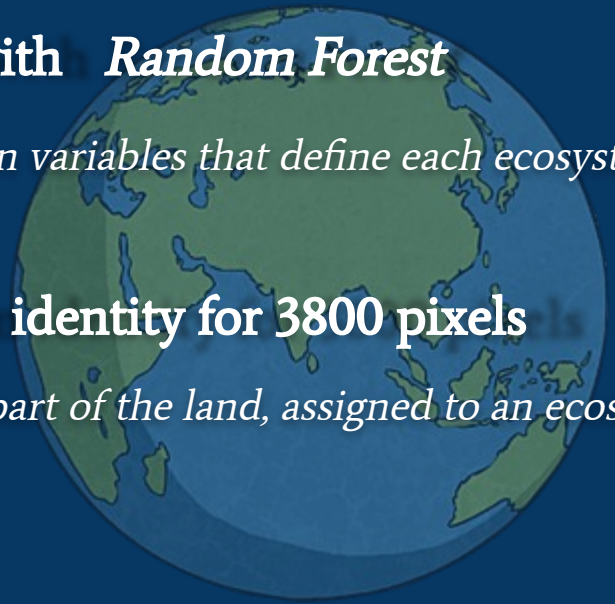
Development

4. **Training model with *Random Forest***

   Relationships between variables that define each ecosystem type

5. **Define ecosystem identity for 3800 pixels**

   Represents a specific part of the land, assigned to an ecosystem type based on the model's prediction



Thank you for your attention!

Q&A