WHAT IS A PHENOMENON?

phe·nom·e·non

/fəˈnämə¸nän,fəˈnämə¸nən/

noun

plural noun: **phenomena**

1. a fact or situation that is observed to exist or happen, especially one whose cause or explanation is in question.
   "glaciers are unique and interesting natural phenomena"

   Similar: occurrence | event | happening | fact | situation | circumstance

2. a remarkable person, thing, or event.
   "the band was a pop phenomenon just for their sales figures alone"

   Similar: marvel | sensation | wonder | prodigy | miracle | rarity | nonpareil

WHAT IS A PHENOMENON?

A lightning strike

WHAT IS A PHENOMENON?

A Country

WHAT IS A PHENOMENON?

A Coastline

WHAT IS A PHENOMENON?

A dog on a kayak!

Anything and everything are phenomena!

TYPES OF PHENOMENA

Discrete Objects: Distinct boundaries

Continuous Fields: Lack Distinct boundaries

TYPES OF PHENOMENA

Discrete Objects: Distinct boundaries

-Dimensions can be exactly measured

-Countable

Continuous Fields: Lack Distinct boundaries

-Everywhere has a value

-Infinitely divisible

TYPES OF PHENOMENA

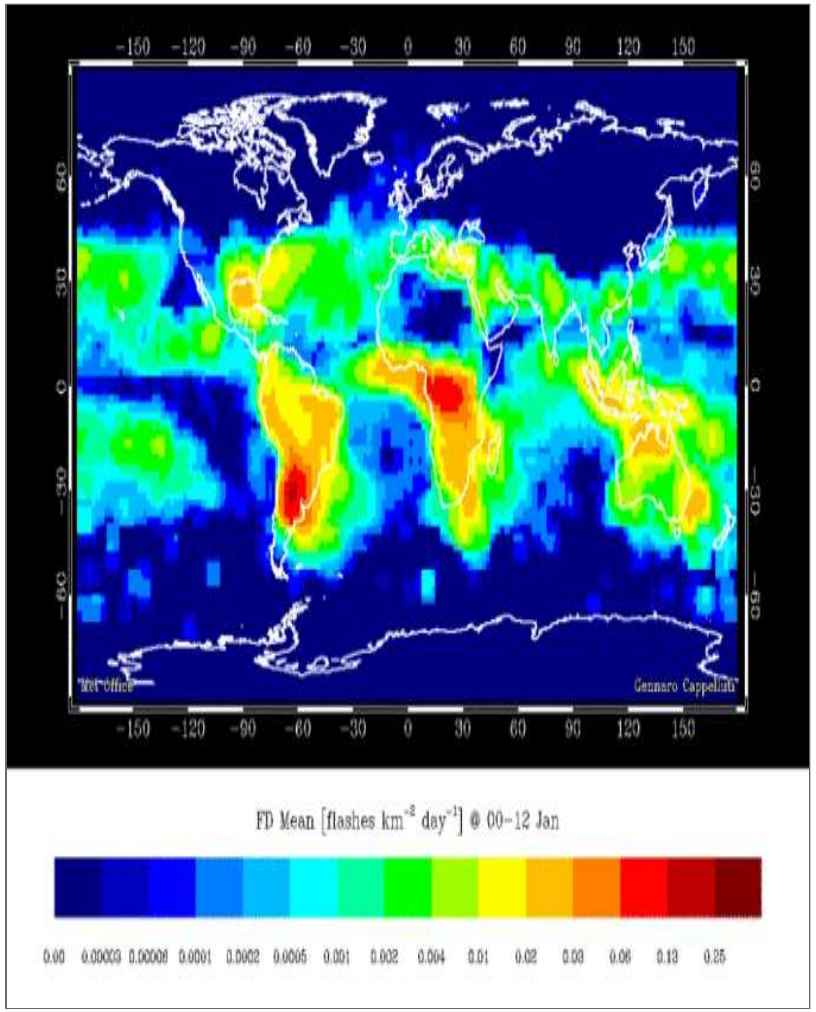
Whether a phenomenon is **discrete** or **continuous** depends on our *perspective* and the *scale* of our analysis. Many phenomenon are a bit of both.

LIGHTNING

- A **strike** is a discrete object
- A lighting bolt …?

LIGHTNING

- A **strike** is a discrete object
- A lighting bolt …?
- Strike **frequency** is a continuous field

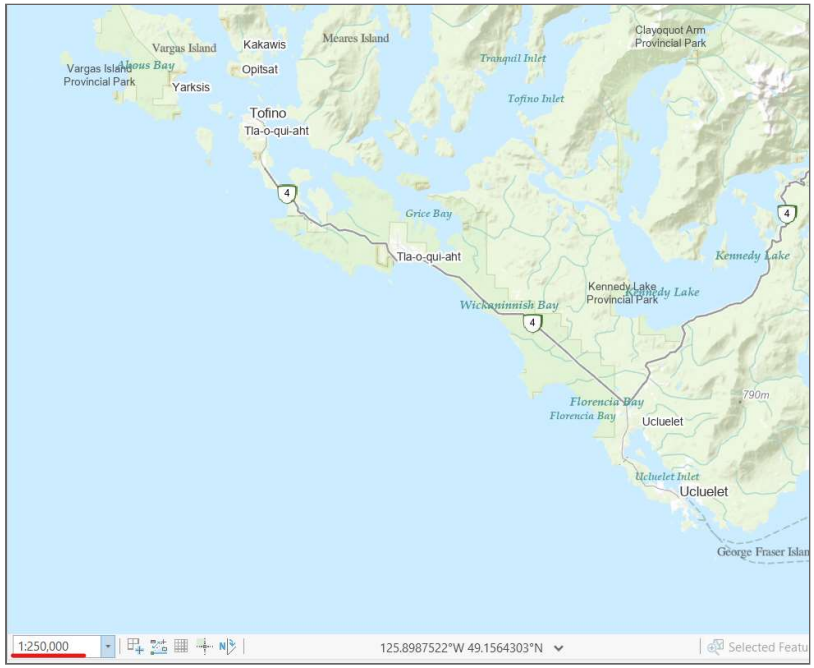


COASTLINE

- Continuous field at **large scale**

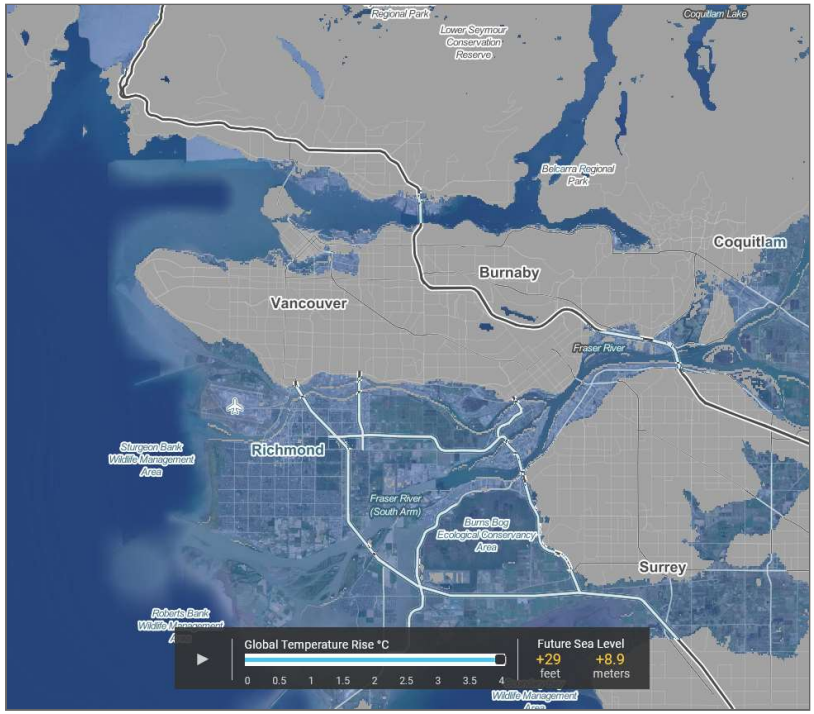
COASTLINE

- Continuous field at **large scale**
- Discrete object at **small scale**



COASTLINE

- Continuous field at **large scale**
- Discrete object at **small scale**
- Unless you change the ***time scale***



TYPES OF PHENOMENA

That said, it is a helpful framework as long as we recognize the discrete vs. continuous dichotomy is not a perfect classification.

DISCRETE OBJECTS

Buildings

- Concrete Boundaries
- Countable
- Real Physical Object

DISCRETE OBJECTS

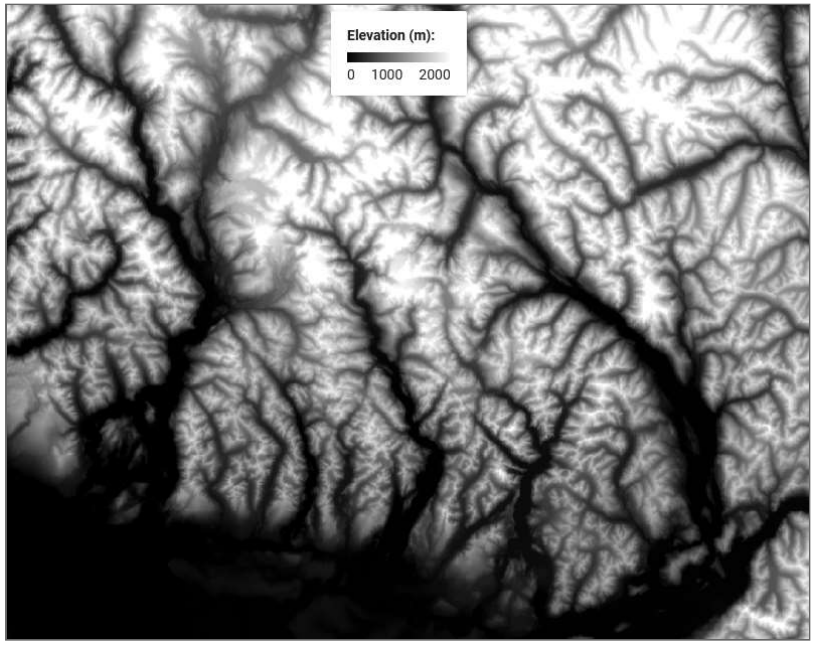
Political Boundaries

- Distinct Boundaries
- Countable
- Not a Physical Object

CONTINUOUS FIELDS

Elevation

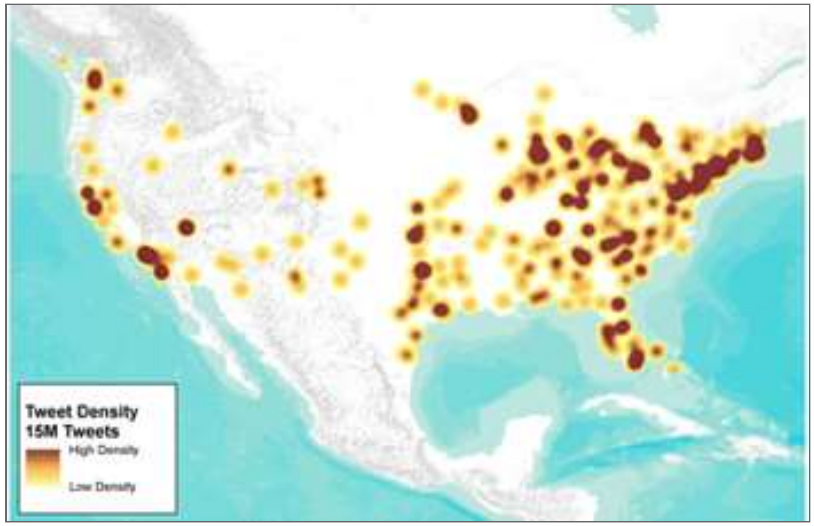
- Everywhere on Earth
- No "number of elevations"
- A physical property



CONTINUOUS FIELDS

Density of tweets

- Everywhere has this too
- Derived from something countable
- Not a physical property



WORKING TOGETHER

In Module 1, you used discrete data (deaths) to calculate a continuous field (Kernel Density).

WORKING TOGETHER

In this Module:
You sample a continuous field (NDVI) with discrete objects (census units).