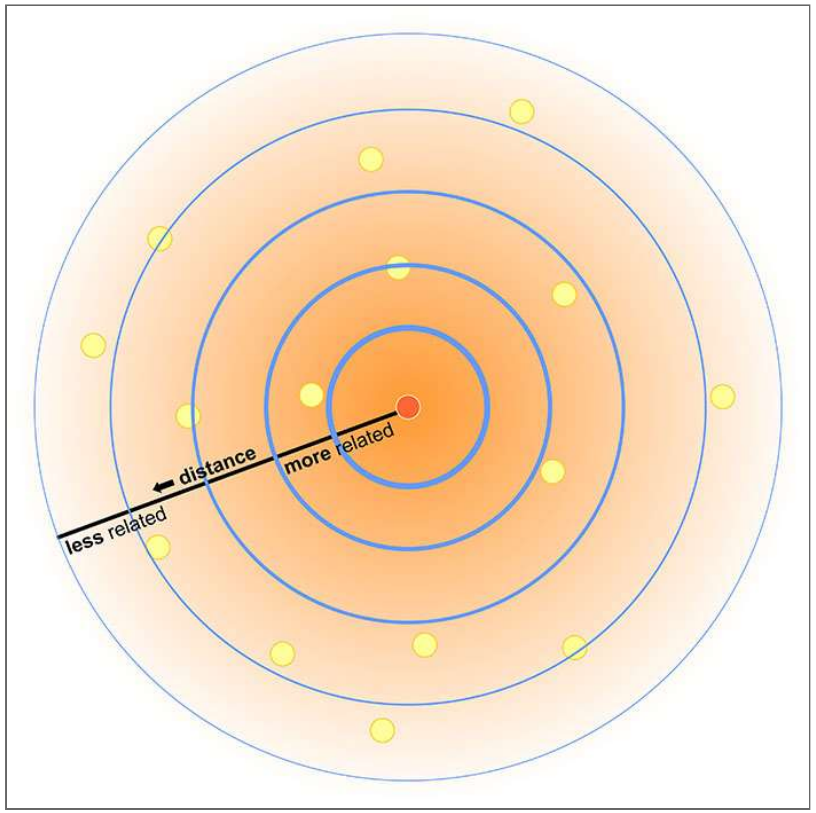
FIRST LAW OF GEOGRAPHY

"Everything is related to everything else, but near things are more related than distant things."

-Waldo Tobler



FIRST LAW OF GEOGRAPHY

This might seem obvious:

- Students in the same class interact more.
- Orca pods in different areas develop different dialects.
- Hemlocks in Vancouver are more related to each other than to Hemlocks in New Brunswick.

FIRST LAW OF GEOGRAPHY

There is **nuance** to the statement. It is not a grantee of **similarity**.

- Vancouver's average snowfall is < 30 cm/yr
- Grouse Mountain frequently exceeds 9 m/yr.

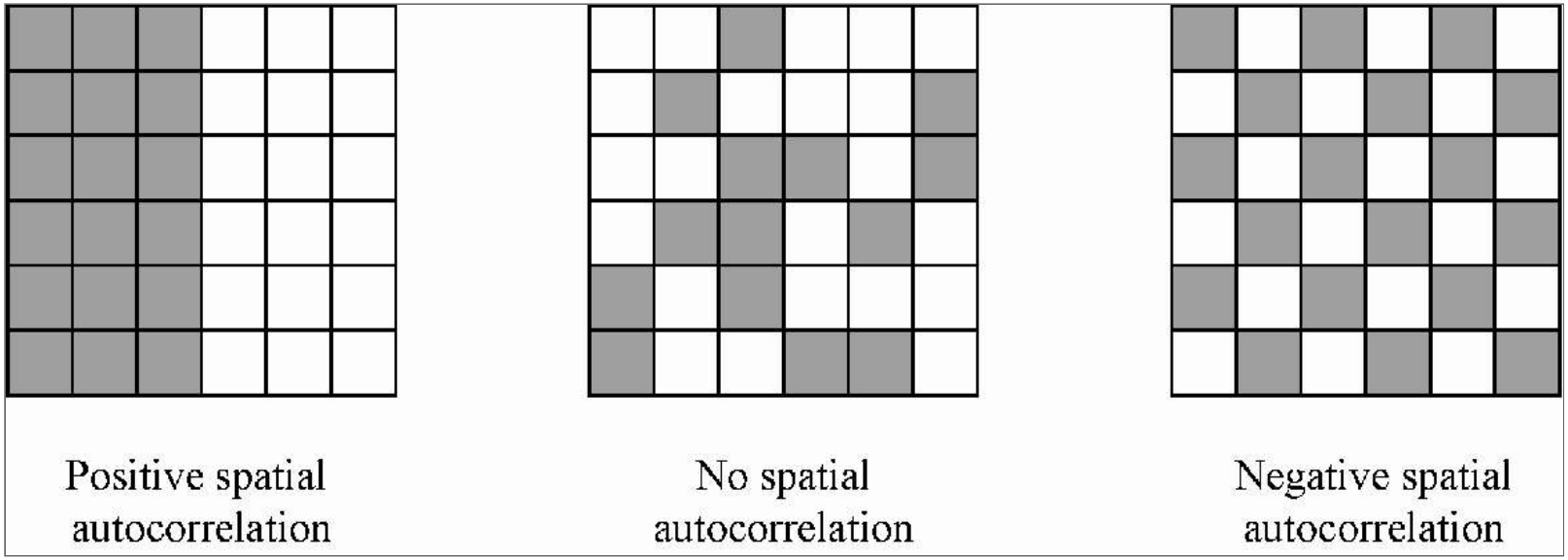
SPATIAL HETEROGENEITY

Uneven distribution across space, characteristic of many natural systems.

MAP THE FOREST NOT THE TREES

We don't need the location of every tree to map a forest. Use average presence of trees over a larger area instead!

SPATIAL AUTOCORRELATION



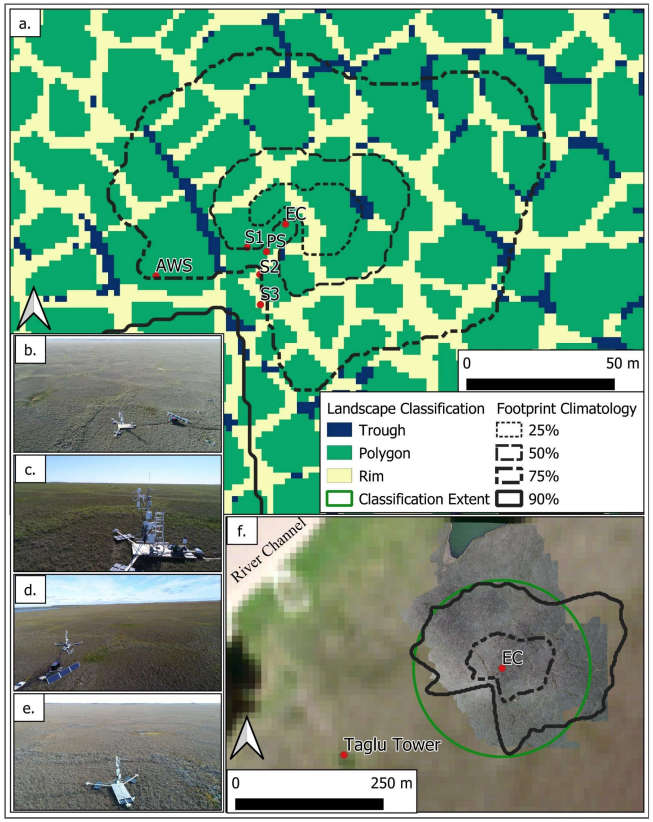
Measure of similarity across space.

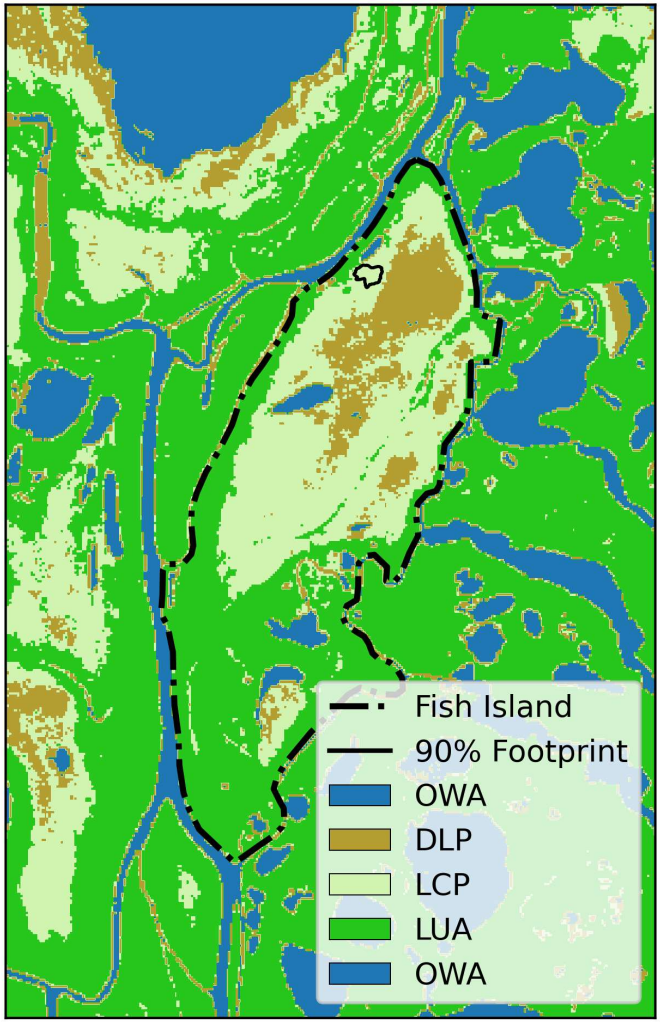
SIMILARITY ACROSS SPACE

Natural systems are typically heterogeneous, but also spatially autocorrelated.

- Allows a key assumptions when representing spatial data.
- Closely linked to scale. What is heterogeneous at a large scale, could be **homogeneous** at a smaller scale.

SCALE DEPENDENCE





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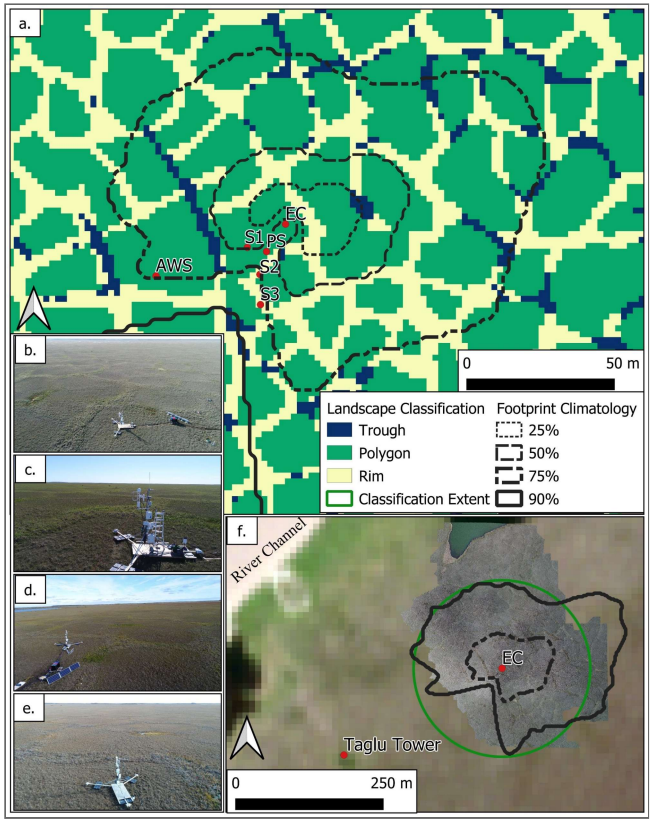
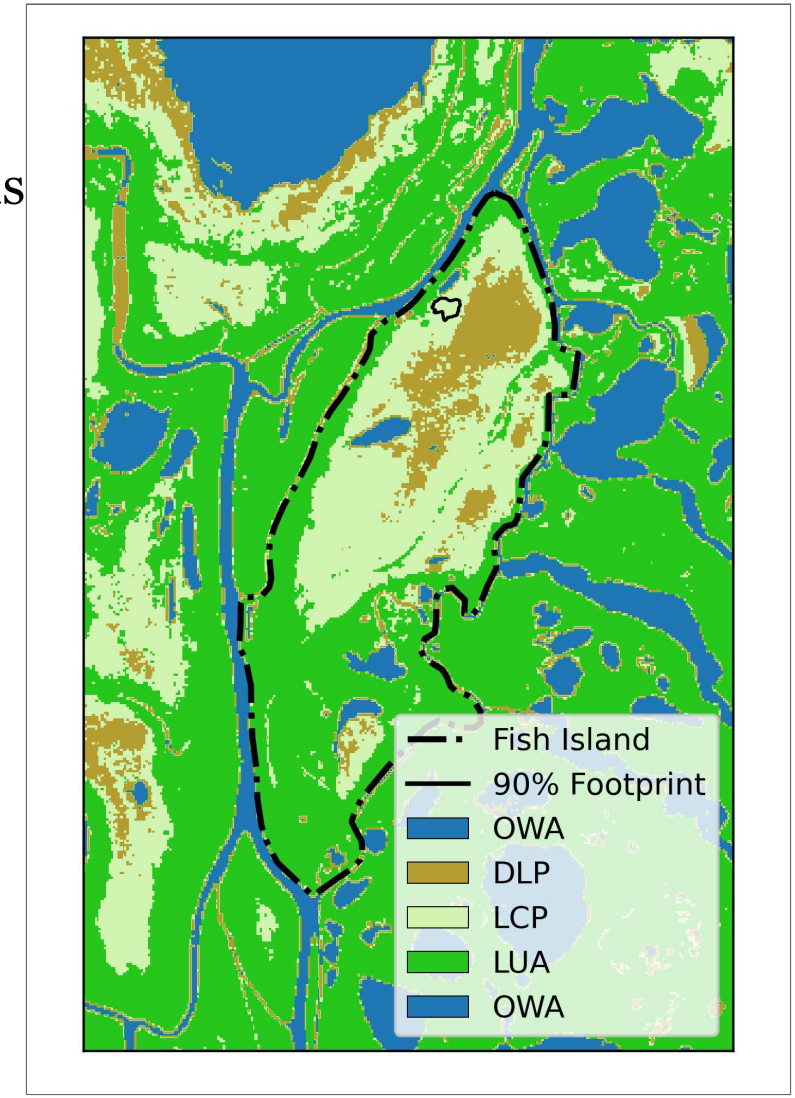


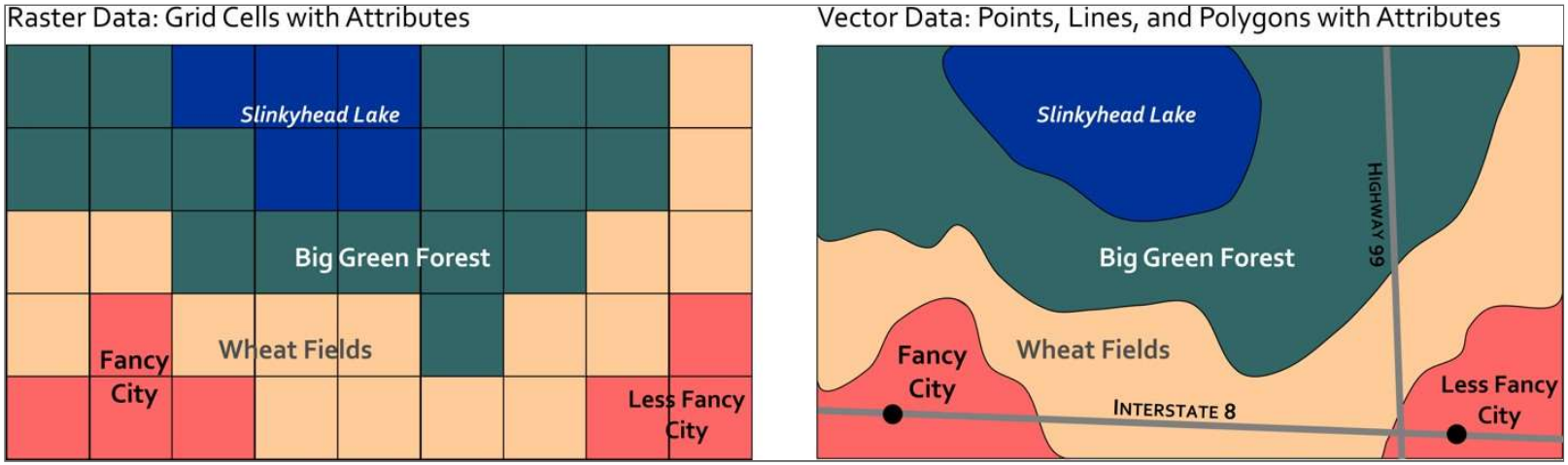
Acknowledge the heterogeneity where appropriate.

SCALE DEPENDENCE

Count on spatial autocorrelation and call a unit homogeneous where appropriate.



SPATIAL DATA MODELS



We can exploit spatial autocorrelation to simplify our representation of spatial data.