

# Deep dive: raster data



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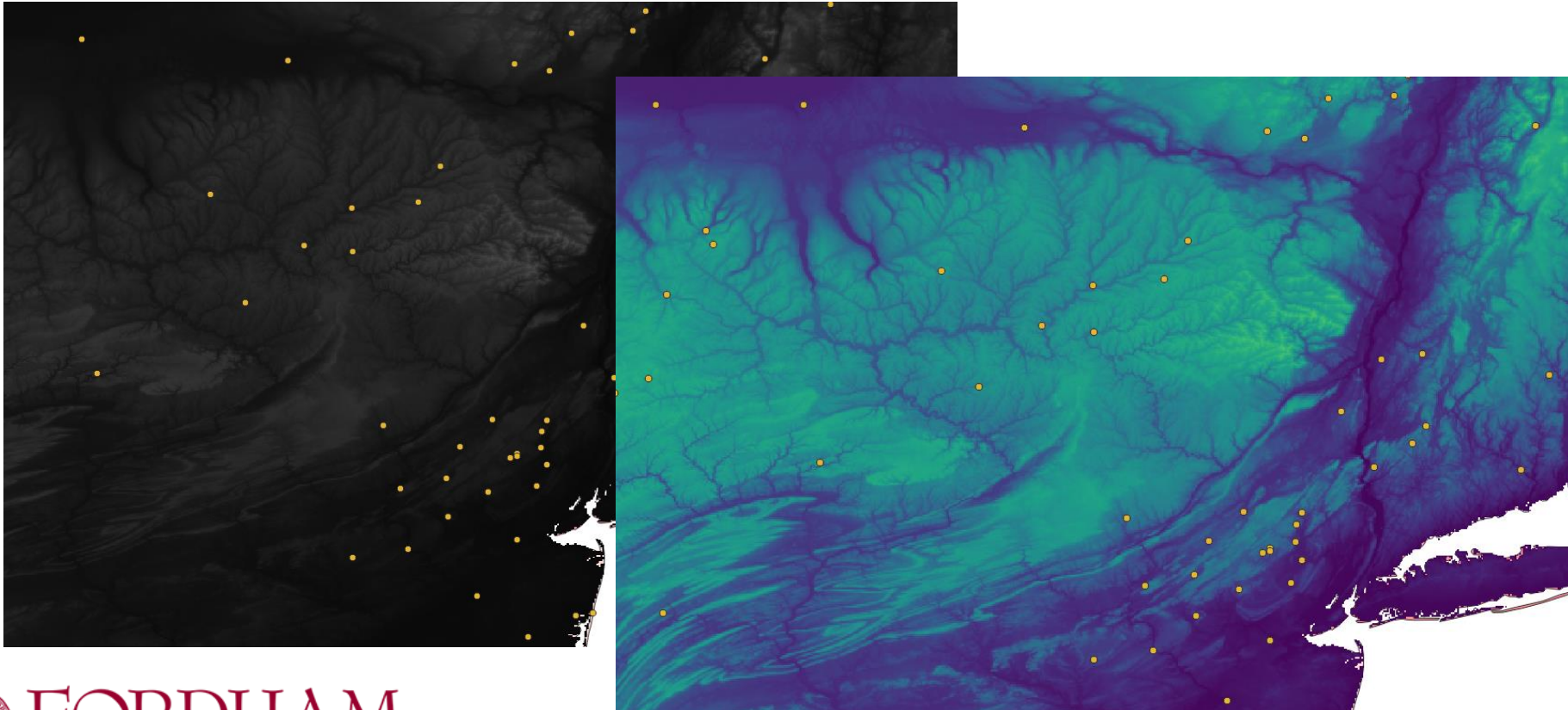
Biodiversity Informatics Scientist

Center for Biodiversity and Conservation

American Museum of Natural History

# Raster data

- Rasters can be rendered to have custom colors
- No attribute table

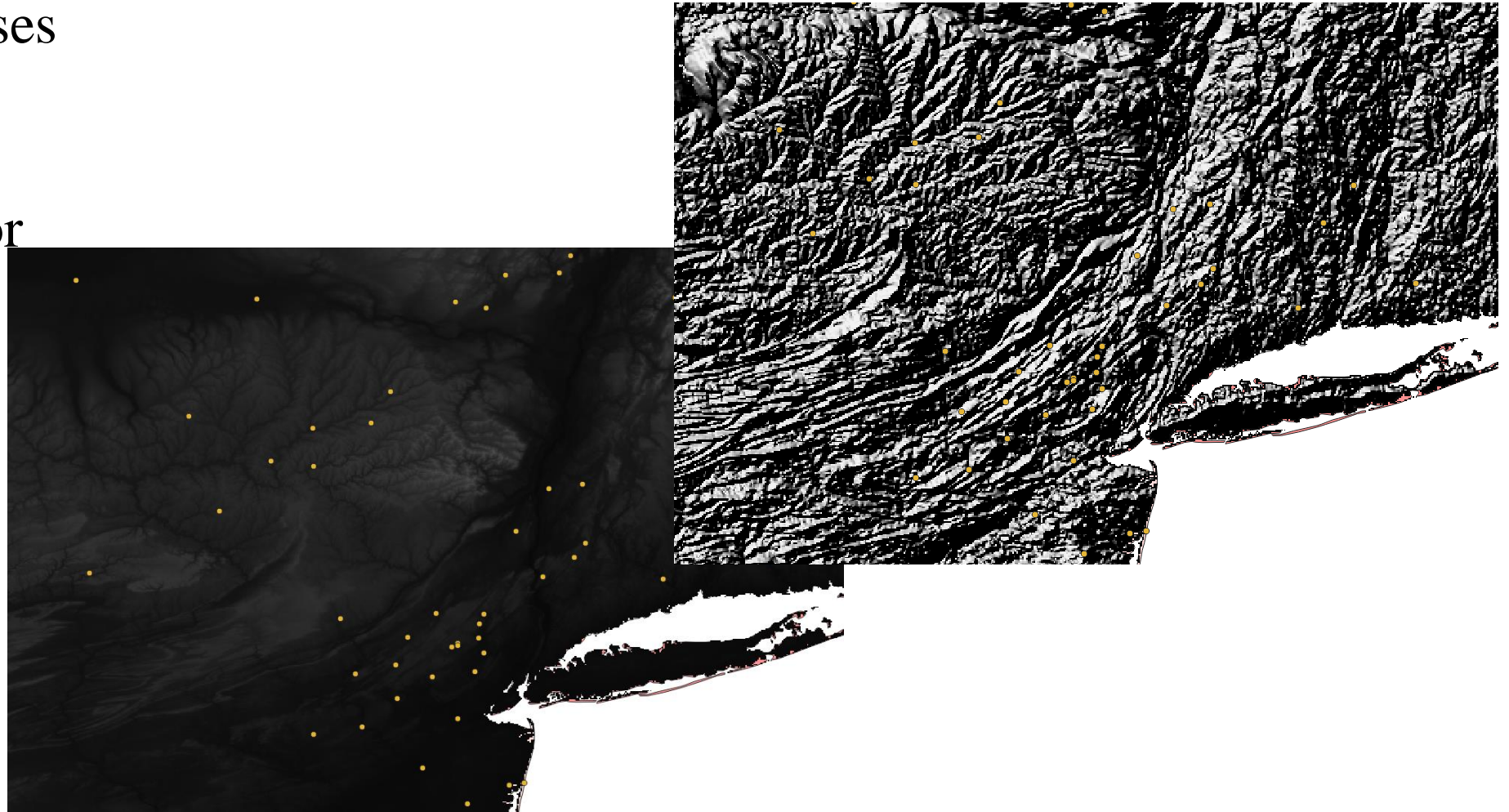


**FORDHAM**

THE JESUIT UNIVERSITY OF NEW YORK

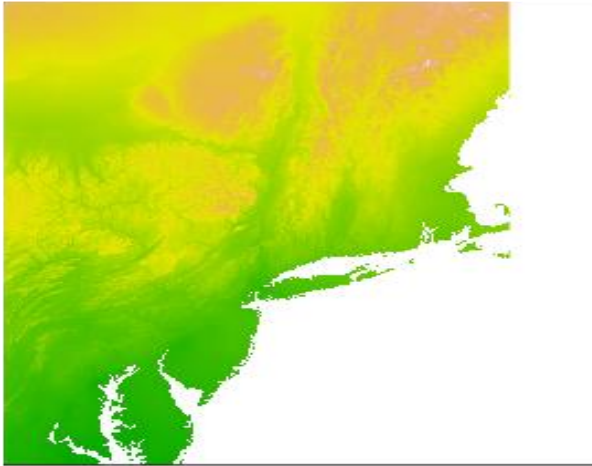
# Raster data

- Elevation rasters can be used to create hillshade layers
- Viewshed analyses
- Slope
- Aspect
- Raster Calculator



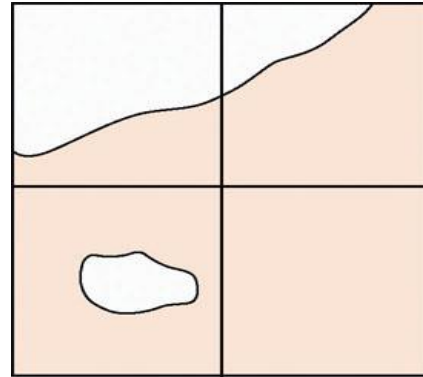
# Raster data

RASTER	VECTOR
Resolution is explicit in the size of the grid cells / pixels	Resolution is difficult to define and therefore typically poorly defined (not rigorous)

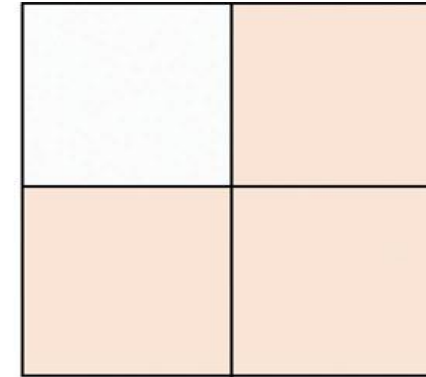


# Raster data

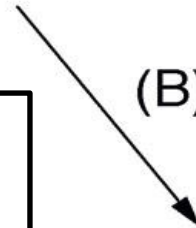
Conversion  
from vector to  
raster data



(A)

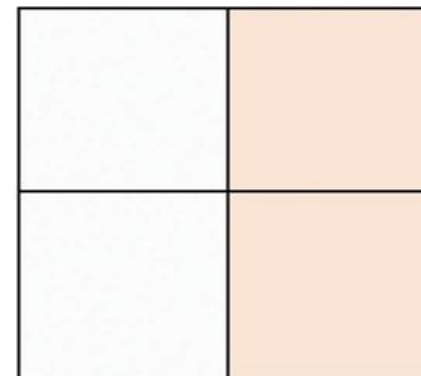


(B)



**A) the largest share rule**

**(B) the central point rule**



# The nature of spatial data

Tobler's First Law of Geography:

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

Most of the things we are interested in are not randomly distributed in space.

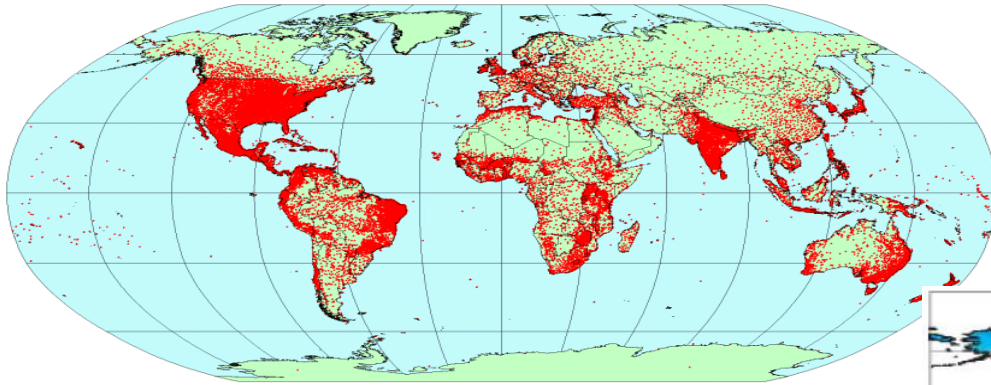
Con: Need to correct for spatial autocorrelation and bias in analyses

Pro: Allows for interpolation

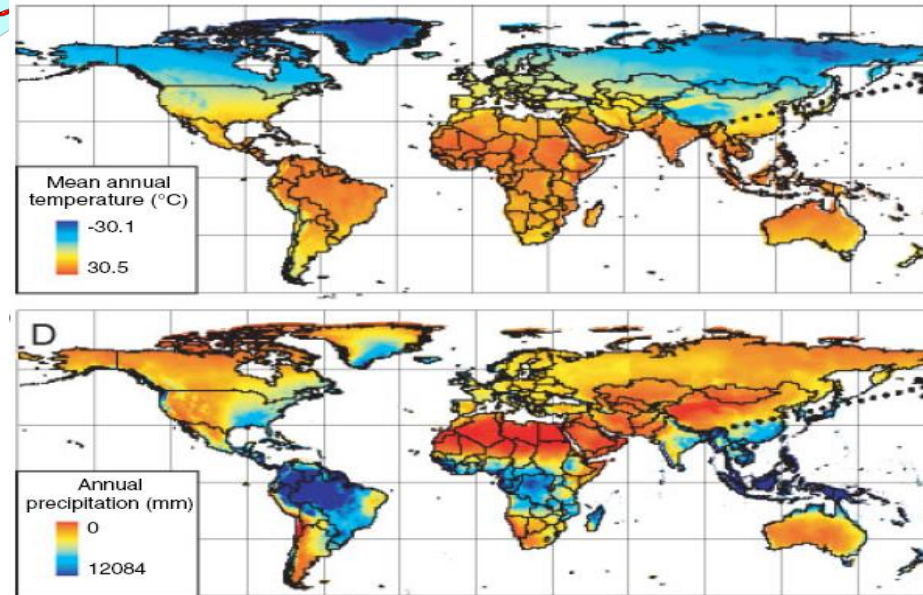


# Raster data

Conversion from vector to  
raster data



Weather station records  
(vector point data;  
Hijmans et al. 2005)



Interpolated raster climate surfaces (WorldClim)