

# Comments on aggregation and scale

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Capital thinking. Globally minded.



# Some complex issues between accounts

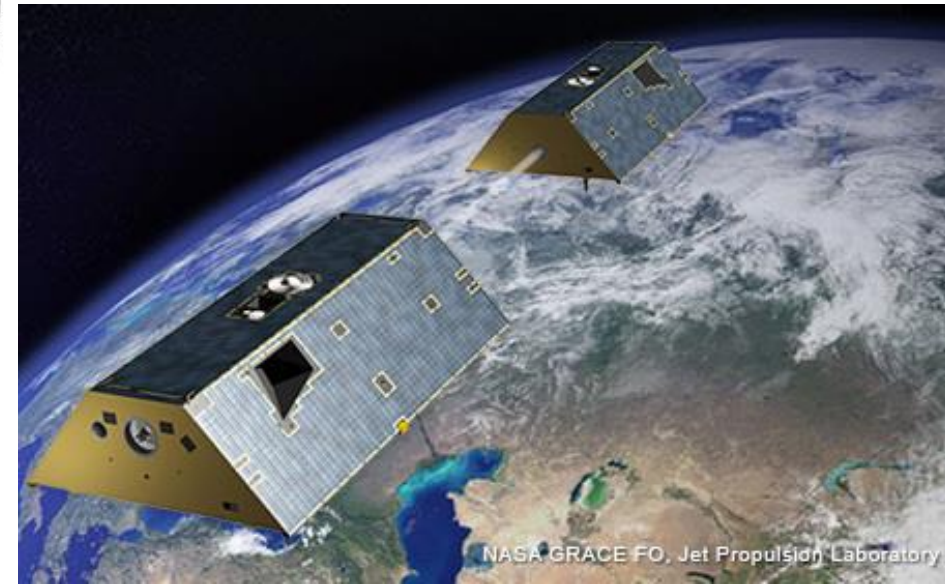
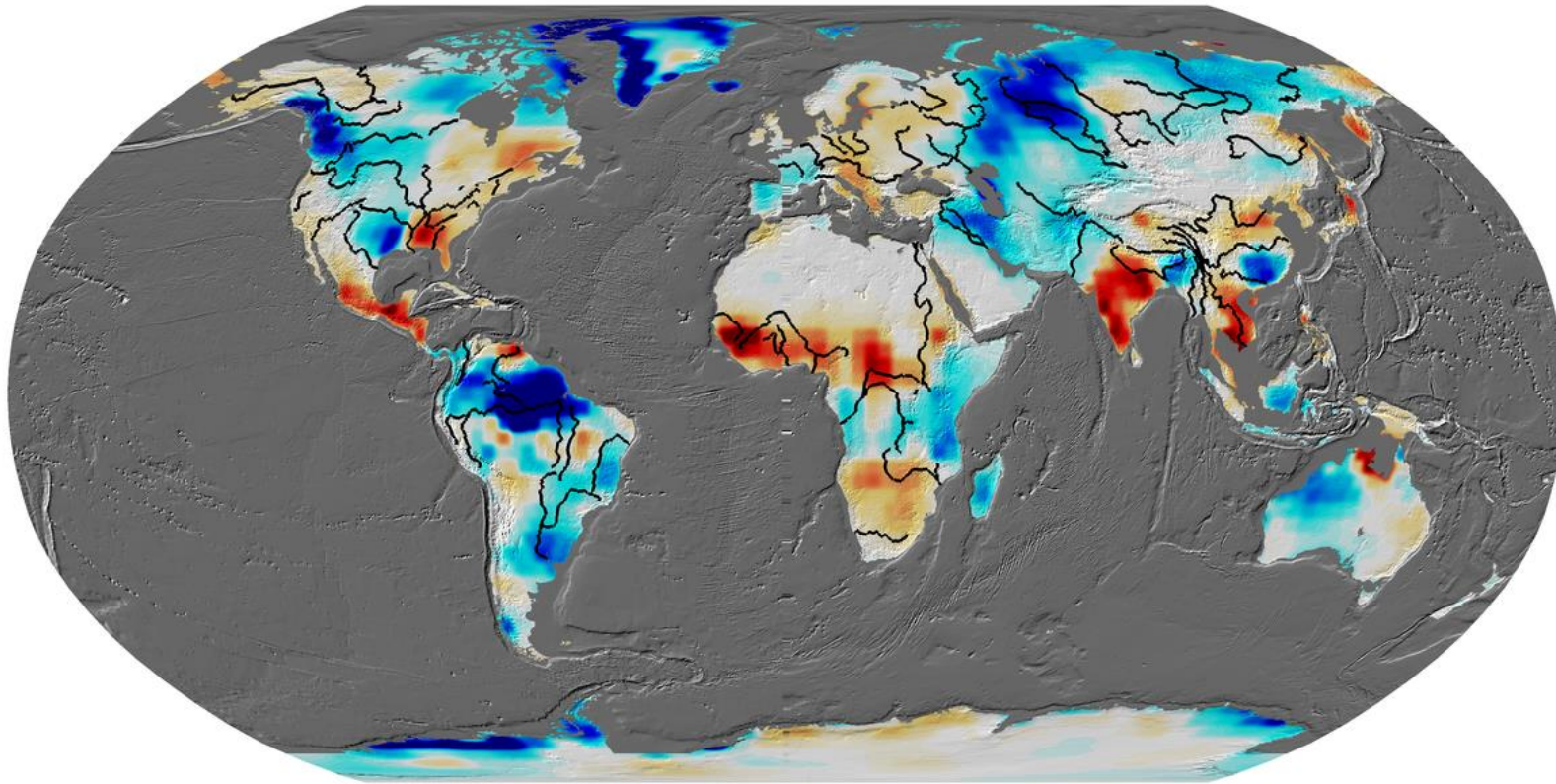
- Water regulating services- regulation of low flow versus peak flow as different services
- Disaggregation of type of service from a single biophysical account! Regulation vs provisioning etc.

Key is maintaining ability to recover spatial and other info going back from tables to interrogate

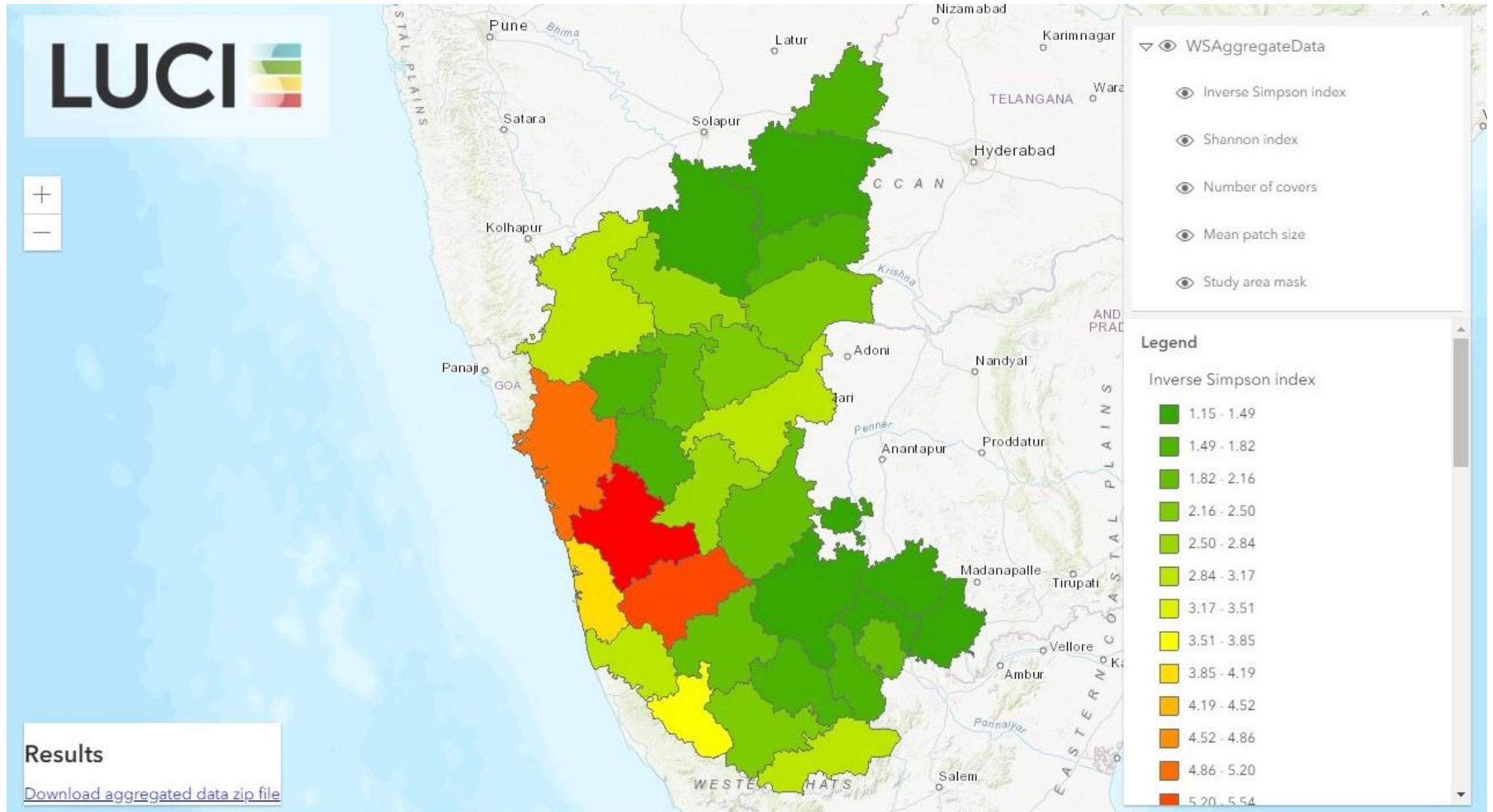
Some things can't be measured or calculated at small scales, e.g. many biodiversity indices. At what scales are calculations vs reporting meaningful? (see our proposed change in condition definition)

- For other services such as water and carbon we may keep calcs at small scale and although reporting more aggregated info, avoid loss of information

Input data aggregation e.g.:  
GRACE – mm water anomaly at  $\sim 100\text{km}$



# Habitat metrics: Karnataka districts







## Create aggregation grid

[Tutorial](#) [Help](#)

### Shapefile

Shapefile showing extent of aggregation grid (zip all the shapefile files up and upload as one zip file)

Choose File No file chosen

### Width of each cell in aggregation grid (km)

100

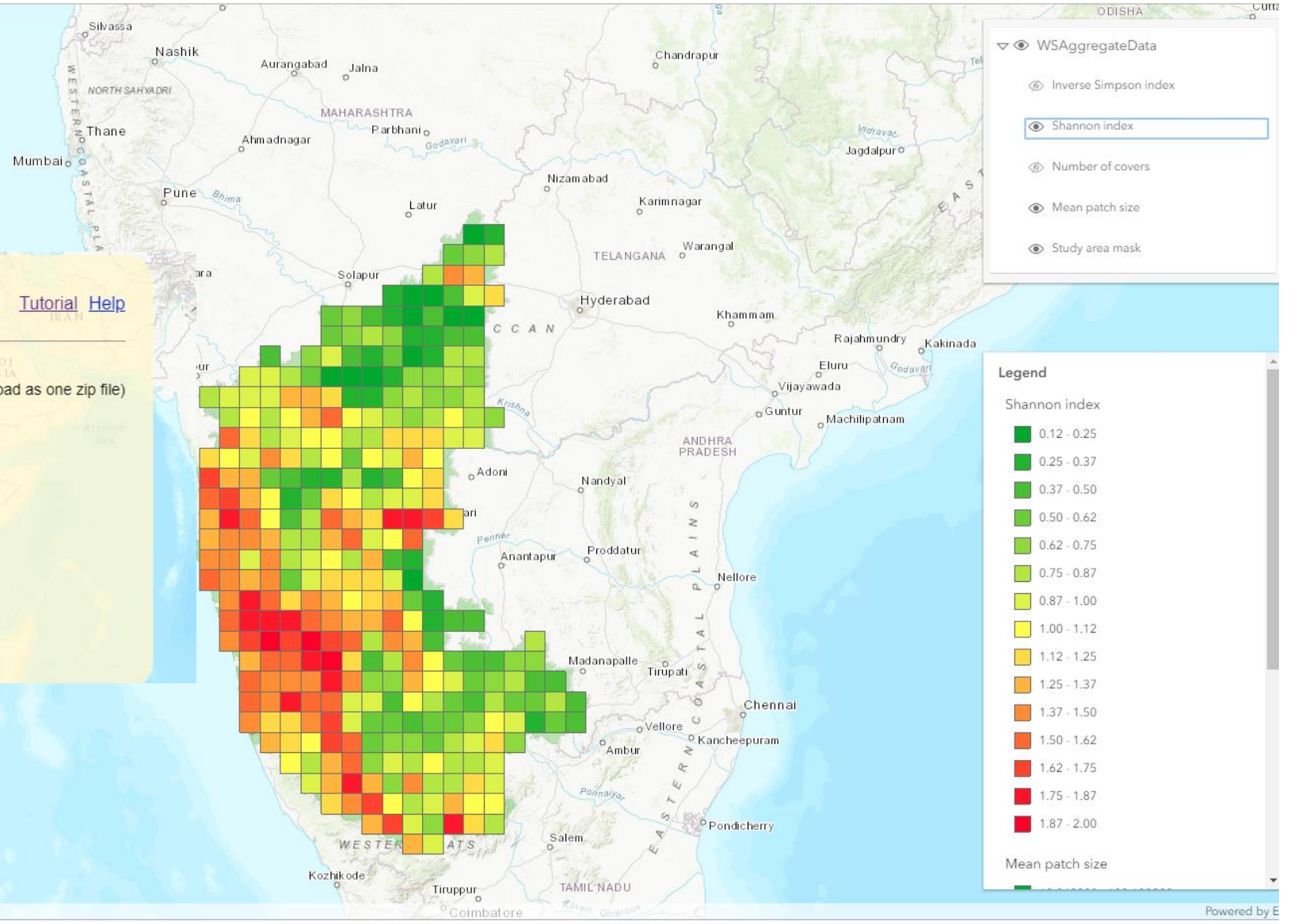
### Grid coverage

- Rectangular, covering full extent of boundary feature class
- Grid covers area bounded by boundary feature class only

Create aggregation grid

### Results

[Download aggregated data zip file](#)



WSAggregateData

- Inverse Simpson index
- Shannon index
- Number of covers
- Mean patch size
- Study area mask

### Legend

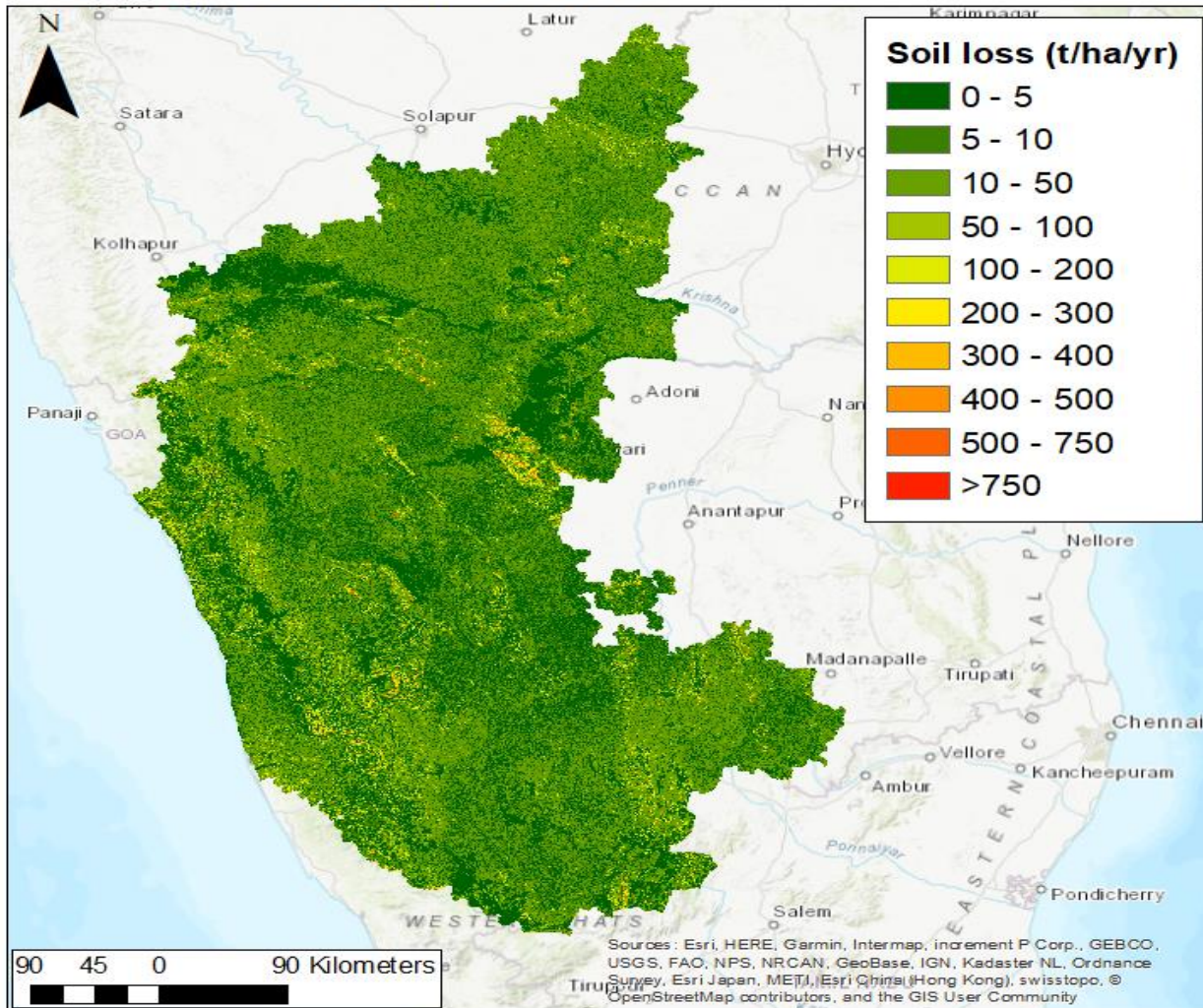
Shannon index

- 0.12 - 0.25
- 0.25 - 0.37
- 0.37 - 0.50
- 0.50 - 0.62
- 0.62 - 0.75
- 0.75 - 0.87
- 0.87 - 1.00
- 1.00 - 1.12
- 1.12 - 1.25
- 1.25 - 1.37
- 1.37 - 1.50
- 1.50 - 1.62
- 1.62 - 1.75
- 1.75 - 1.87
- 1.87 - 2.00

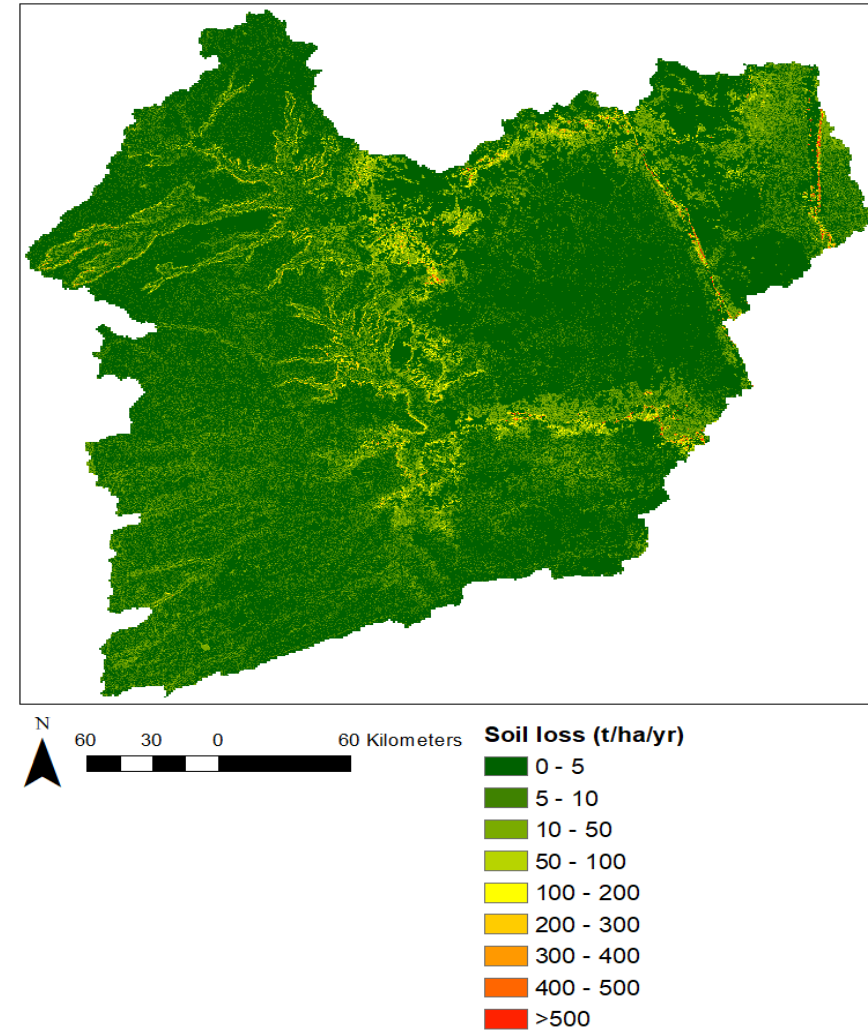
Mean patch size

# RUSLE output, “default” GIS scaling

Karnataka: Annual soil loss

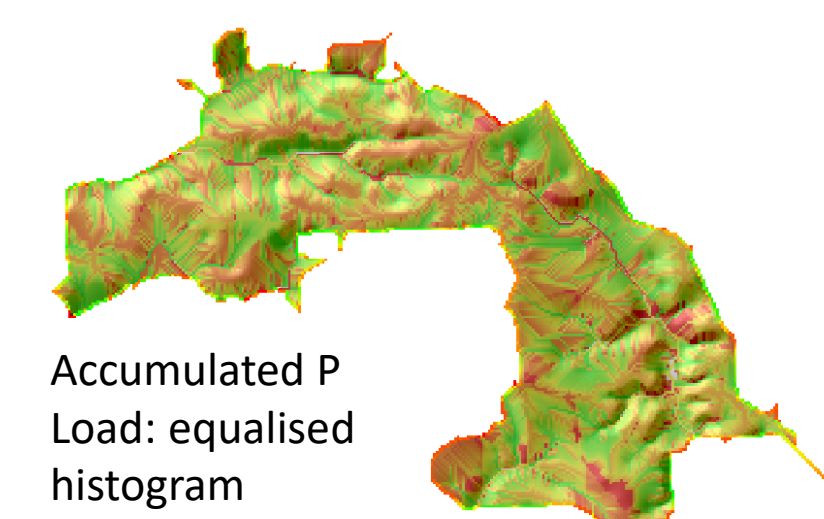
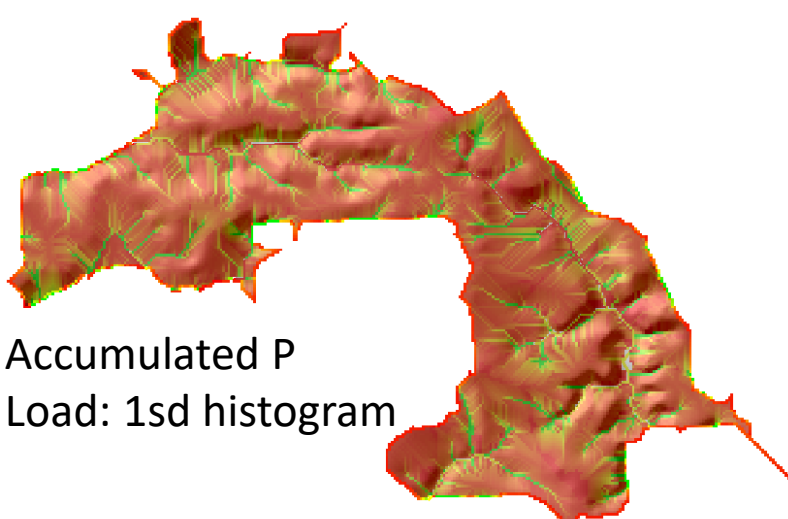
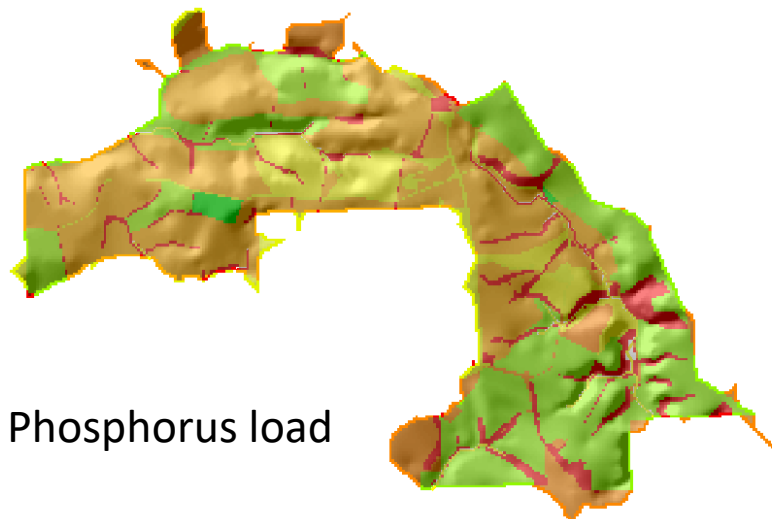
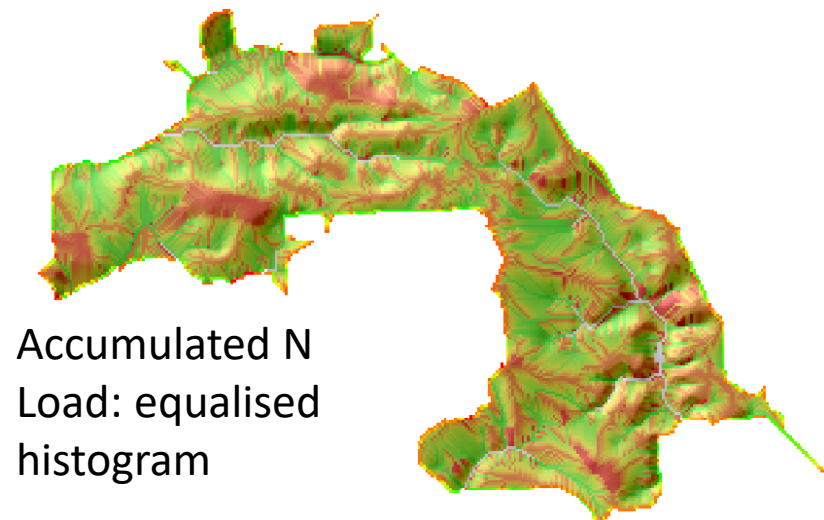
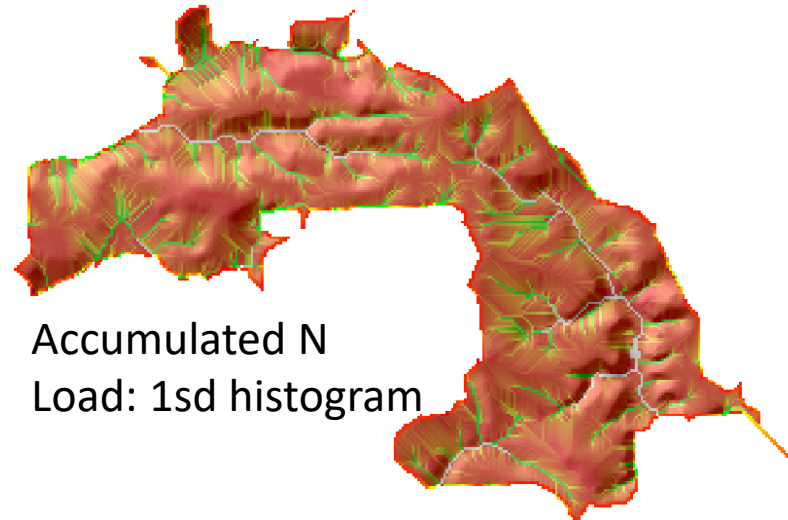
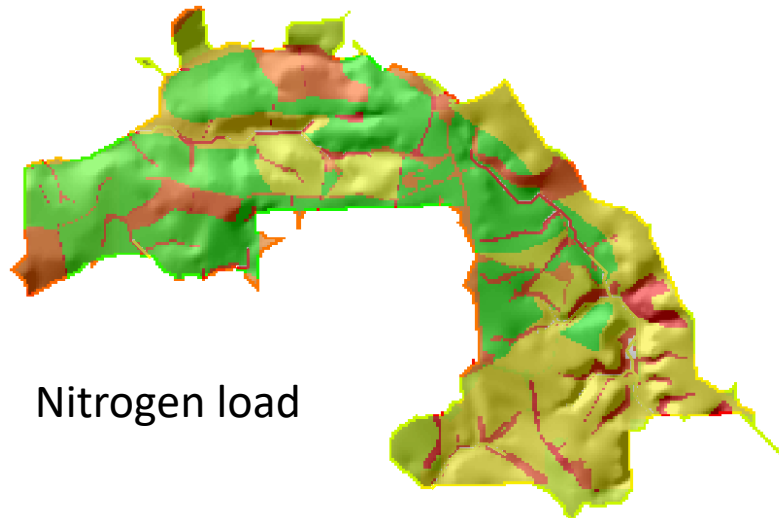


Rio Grande Basin: Annual soil loss





# Changing scaling changes interpretation

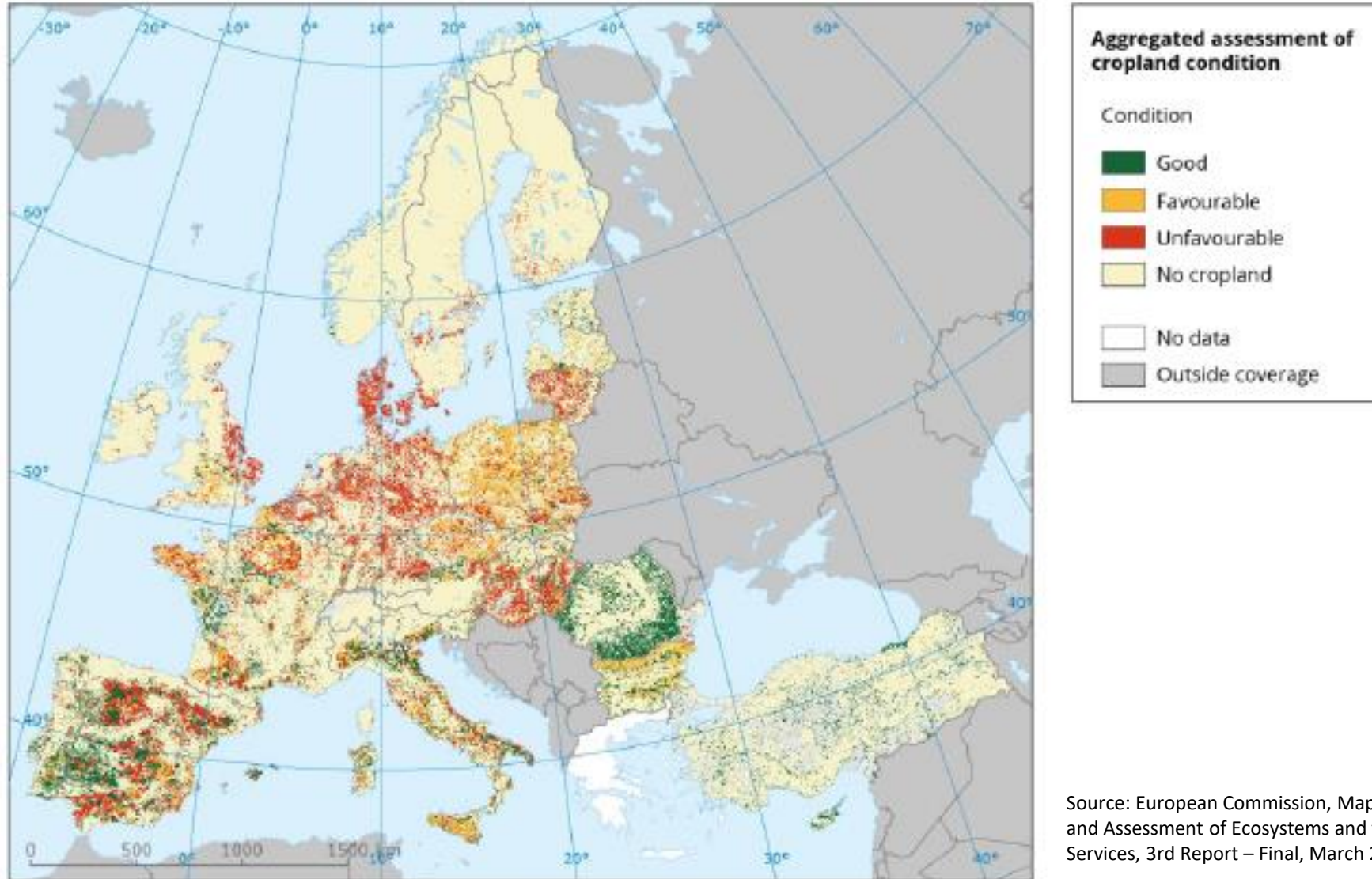


# For condition (& other normalized accounts?)

- Our reference condition will set the scale- issues with global reporting?
  - Implications of taking “natural” as a reference: collapses information on range of variation in modified landscapes (at first pass look)
  - Implications of swapping between ecosystem types as they change – danger of losing information on major loss of “naturalness”, carbon, biodiversity, etc.



# Europe: aggregated assessment of cropland condition



Source: European Commission, Mapping and Assessment of Ecosystems and their Services, 3rd Report – Final, March 2016.