

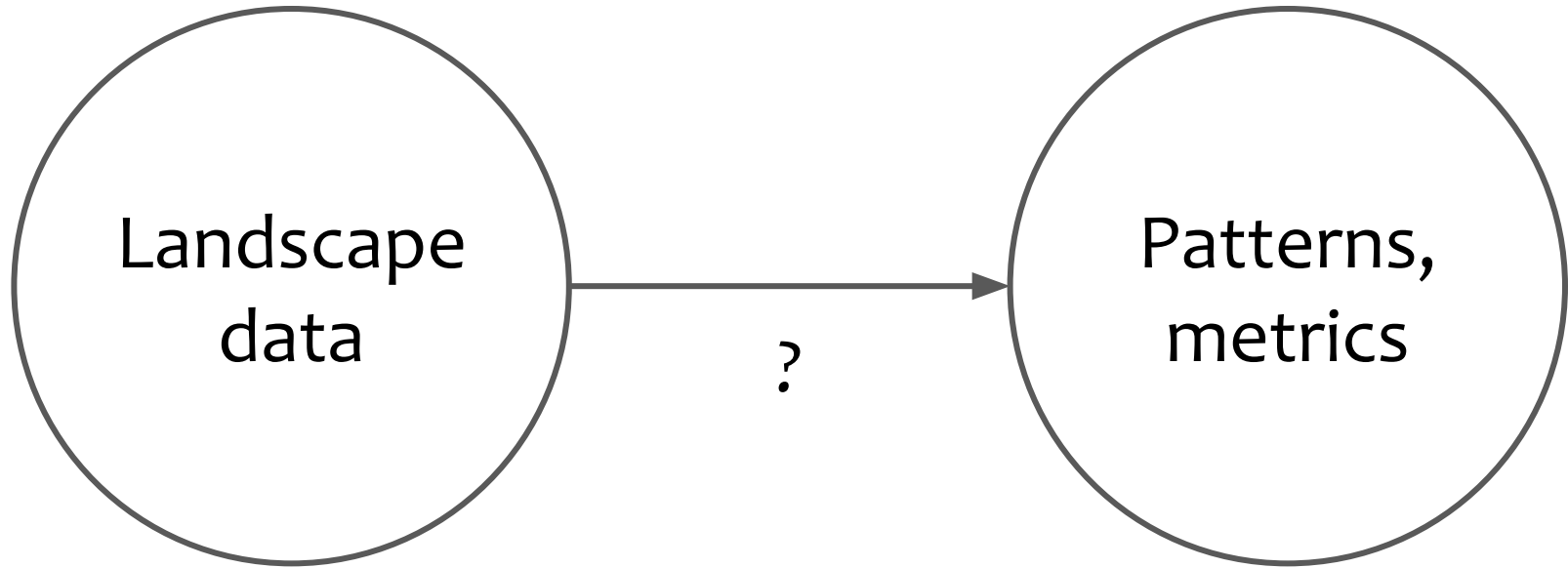


# Mapping Landscape Patterns and Connectivity: LandSCaPeN

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Geo for Good 2019 | 18 Sept 2019, 1-2 pm | Valley Oak Room

# Theory of learning (understanding)



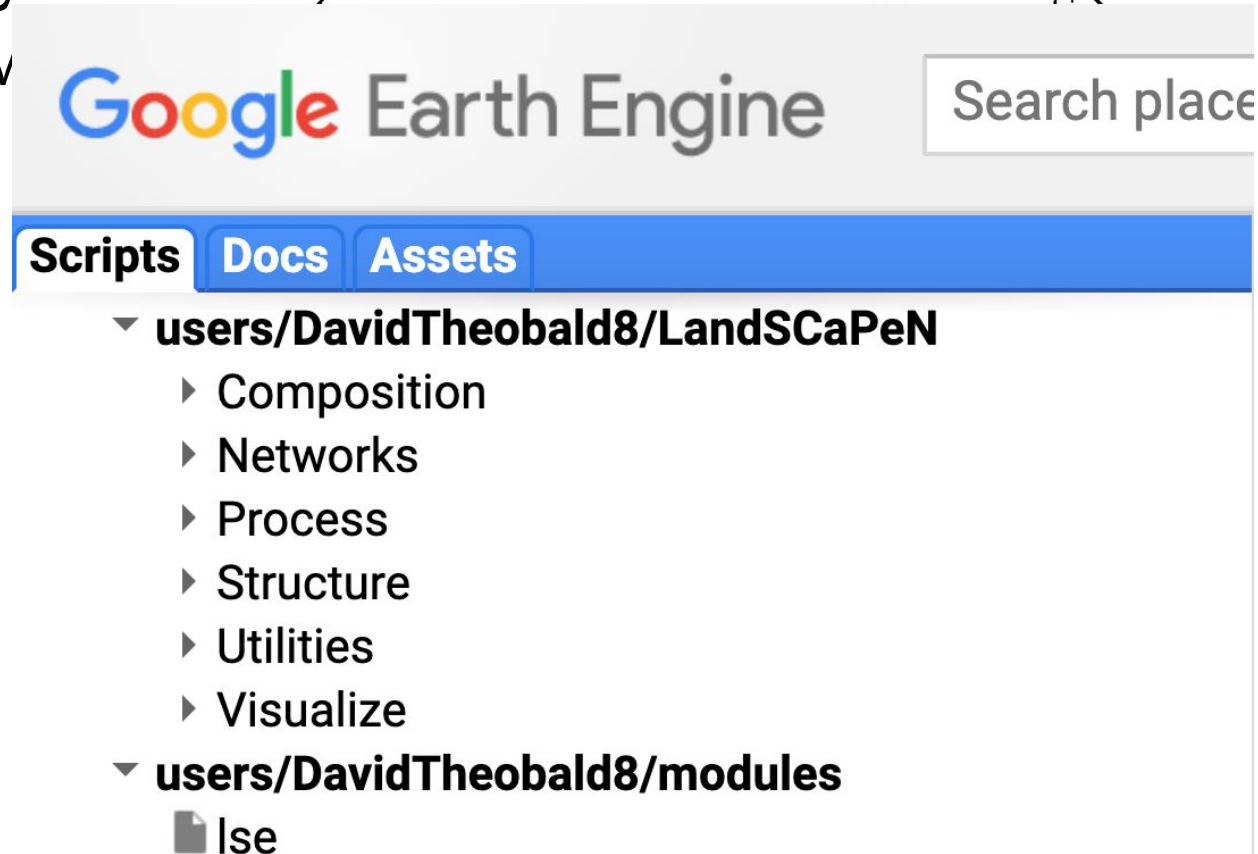
# Landscape Ecology Conceptual framework

Composition

Structure

Process (function)

[Noss 1990](#)



# Key concept: scale

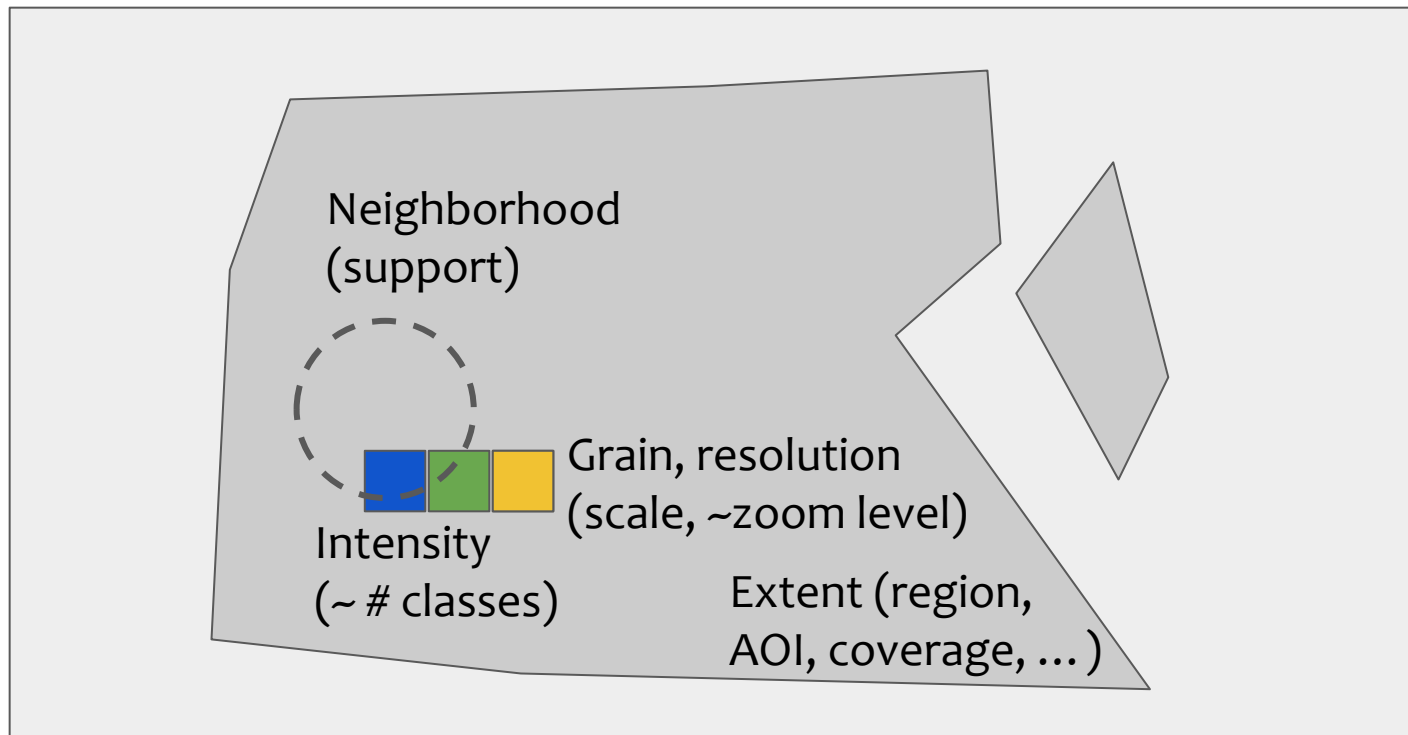
bounds

## Levels

Landscape

Class

Patch



# Key concept: LandSCaPeN tools

1. A module (**lse**): provides ability to share code between scripts
2. Worked example scripts that use **lse**

## ▼ users/DavidTheobald8/modules



### ▼ users/DavidTheobald8/LandSCaPeN

- ▼ Composition
  - Calculate descriptive stats (vector)
  - Calculate summary stats ( vector)
  - Calculate summary stats (image)
- ▶ Networks
- ▼ Process
  - Calculate hierarchical watershed connectivity (US)
  - Calculate hierarchical watershed connectivity (global)
  - Calculate landscape connectivity resistant kernel canopy cover
  - Calculate landscape permeability
- ▼ Structure
  - Create landscape mosaic
  - Create landscape signature
- ▼ Utilities
  - Calculate values to ranks
  - Convert meters to decimal degrees
  - Show descriptive stats on class values
  - Show geometry information
  - Snap image to nestle in global image
- ▼ Visualize
  - Visualize Tissot indicatrix
  - Visualize global rivers
  - Visualize points as circles

# Set up for demos/hands-on

1. [This](#) document:

**[bit.ly/g4g\\_lse](https://bit.ly/g4g_lse)**

2. Get Code editor repo for [LandSCaPeN](#) (refresh browser?)
3. Resources: [tech doc](#), [conceptual diagram](#)
4. Playing with scripts
5. [Feedback](#)






# Scripts

Rough ordering...




## ▼ users/DavidTheobald8/LandSCaPeN

### ▼ Composition



- 1  Calculate descriptive stats (vector)
-  Calculate summary stats ( vector)
- 2  Calculate summary stats (image)

### ▶ Networks







### ▼ Process

- 5  Calculate hierarchical watershed connectivity (US)
-  Calculate hierarchical watershed connectivity (global)
- 6  Calculate landscape permeability

### ▼ Structure




- 3  Create landscape mosaic
-  Create landscape signature

### ▼ Utilities

-  Calculate values to ranks
-  Convert meters to decimal degrees
-  Show descriptive stats on class values
-  Show geometry information
-  Snap image to nestle in global image
- 4  Summarize image by zones



### ▼ Visualize

-  Visualize Tissot indicatrix
- 7  Visualize global rivers
-  Visualize points as circles