

LCD Tech Team Meeting

7/13/21

Attendees: Kathy, Mary, Adam, Aubin, Jason Taylor, Trevor Reid, Peggy

## Ecological Connectivity in the CCE

- Rationale
  - Will be modeling functional connectivity for CMP selected species - because there is just a handful of species, it is recommended that coarser scale approach used to complement
  - Ecological integrity includes both biotic and abiotic
- Approach
  - Using index of ecological integrity (Kevin McGarigal) - Brad Compton has been super helpful in sharing code!
  - It's a vetted process and worked well for north east LCC - may want to adapt for this landscape
  - Will be presenting the connectedness metric
- Connectedness metric
  - Measure of physical continuity of ecological features
  - Crown is divided into raster; connectedness is measured for each pixel on the landscape
    - Describes how ecological flows from cell to cell are impeded or facilitated by surrounding landscape
- Ecological Features
  - Human development,
    - Hard development (building and paved roads); road capacity - proxy for road traffic - used CMP roads layer
  - Climate
    - Mean annual temp and mean annual precip
    - Want to keep variables as uncorrelated as possible, but we can think about what variables may be most appropriate
  - solar energy
    - Theobald - predicts solar radiation
  - chemical and physical substrate
    - Soil variables - % clay, pH, and soil depth
  - physical disturbance
    - Slope - fire, avalanches, landslides
      - Fire layer was patchy - seemed to bias areas to areas of fire
      - Maybe need a more continuous layer
  - Moisture
    - Wetness index based on DEM - amount of moisture at any point on the landscape
  - Hydrology
    - Stream temp, flow gradient, flow volume
  - Vegetation



## Questions:

- Using annual average precipitation.
  - where are places that don't get too cold in springtime? - those areas promote more precip in rain form than snow form - for montane species, that becomes critical (ie. native salmonids); mix and match climate data input
- Internally, there may not be high connectivity in Glacier - imagining a small critter getting around in intense, rocky mountain slopes
  - Could do a large intact block analysis
  - We are not necessarily thinking about how species are moving within that protected block (Glacier), but rather thinking about the connection between that block and another block
- Data source for land use/land cover - used CEC landcover layer
  - Commission on Environmental Cooperation
  - If we want to model the current landscape and model future forecasted landscape, maybe we don't even want to include vegetation in current analysis
  - Have you checked out the Impact Observatory?
    - Kathy poked around - it's very coarse, and bad at picking out linear developed features
- Why is such an artificial boundary appearing on an ecological map?
- using the CMP boundary, not the Crown LCD boundary
- Peggy and Kathy will schedule a meeting with Danielle to catch her up on this

## Phase 1 tech report

- Incorporated Peggy's comments
- Hoping to finalize and put on the website soon!