Density of HCV forests within a given radius from each cell

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Script
density_analysis.py

Description
The model identifies the density of HCV forests (% of forest land) within a given radius from each cell and delineates areas based on defined density thresholds.

Mapset
density_analysis

Necessary preparations

1. Run the script update_NMD.py (see separate documentation) to generate an updated land-use map map
2. Copy a study area to the mapset and name it "study_area".
3. Generate a land use map and a forest map for the study area using the script density_analysis_nmd.py
   - Mapset: density_analysis
4. Count cells classified as protected or restricted forest within a given radius from each cell in the study area using the script density_analysis_count_HCV.py
   - Mapset: density_analysis_count_HCV
5. Count cells classified as protected, restricted or continuity forest within a given radius from each cell using the script density_analysis_count_HCV_kskog.py
   - Mapset: density_analysis_count_HCV_kskog
6. Count cells classified as forest land within a given radius from each cell using the script density_analysis_count_forest.py
   - Mapset: density_analysis_count_forest

4-6 can be run in parallel by opening three instances of GRASS GIS and running one in each.

Necessary input data
Generated above

Output data

Multiple output data. Main outputs include:

- **result_density_forest_HCV_[radius]m_v2**

  - density of protected or restricted forest (% of total forest land) within a defined radius from each cell

  - saved as GRASS raster and geotiff (see path in script)

- **result_density_forest_HCV_kskog_[radius]m_v2**

  - density of protected, restricted or continuity forest (% of total forest land) within a defined radius from each cell

  - saved as GRASS raster and geotiff (see path in script)

- **result_vardetrakter_[percentage]_HCV_[radius]**

  - areas having a density of protected or restricted forest (% of total forest land) exceeding a specific threshold (percentage) within a defined radius.

  - saved as GRASS raster, GRASS vector and and shapefile (see path in script)

- **result_vardetrakter_[percentage]_HCV_kskog_[radius]**

  - areas having a density of protected, restricted or continuity forest (% of total forest land) exceeding a specific threshold (percentage) within a defined radius.

  - saved as GRASS raster, GRASS vector and and shapefile (see path in script)

Usage

1. Complete the preparations

2. Open the script and uncomment the functions to run.

3. Thresholds can be set freely. To use a different radius from what is pre-filled, preparatory steps 4-6 need to be run with updated scripts.

4. Run the script from a GRASS console within the given mapset.

Updating the analysis

Just run the script after having completed the necessary preparations.