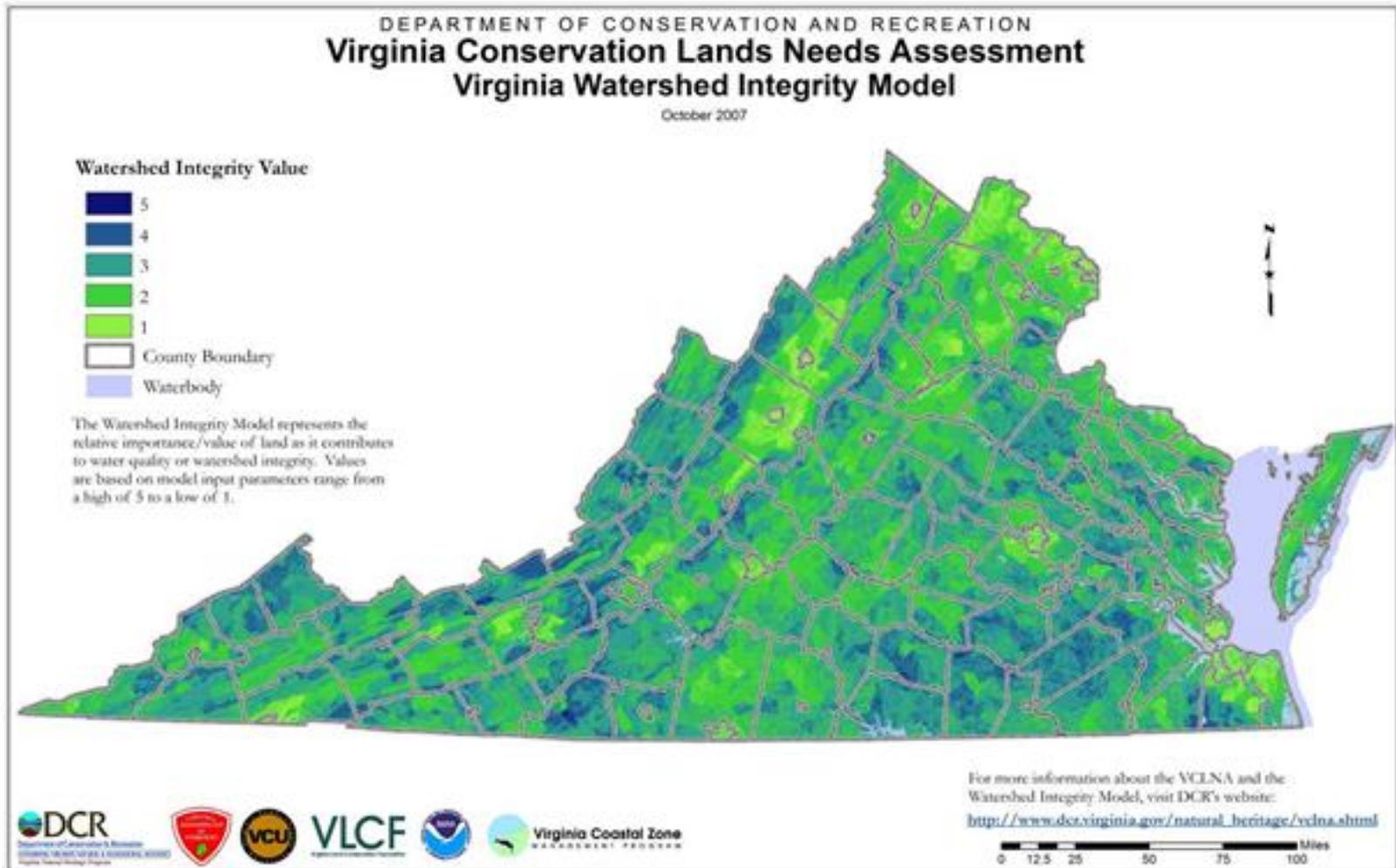

Initial Prioritization of Chowan Basin Watersheds for Healthy Waters Identification

- Use existing geospatial data for VA and NC and a modified Watershed Integrity model to ‘*triage*’ and find those areas most likely to support high-function (i.e., *healthy*) stream and river reaches. *Why?*
 - Classify 12-digit HUCs based on analysis of green infrastructure that correlates with blue infrastructure.
 - Only one of the inputs used to select three large watersheds for *Healthy Waters* database and model development in the Chowan basin.
-

Watershed Integrity Model

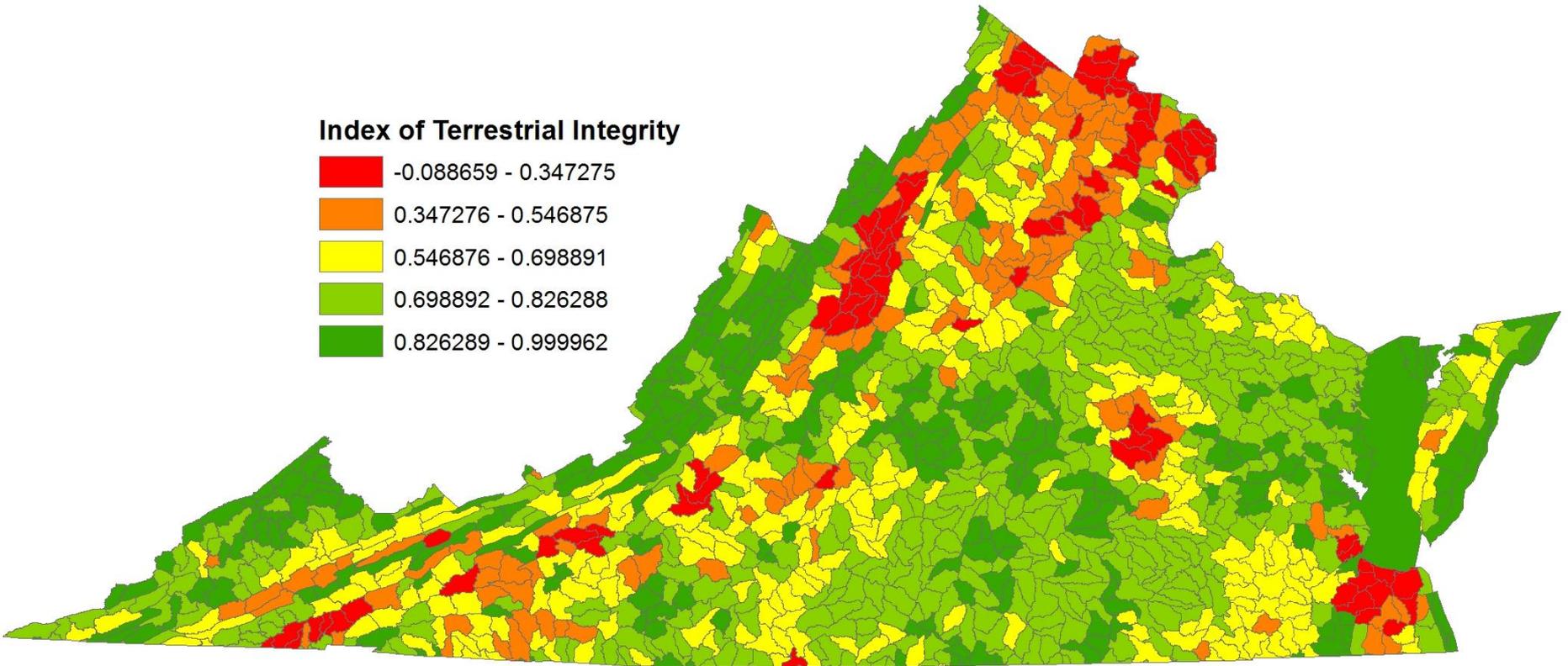
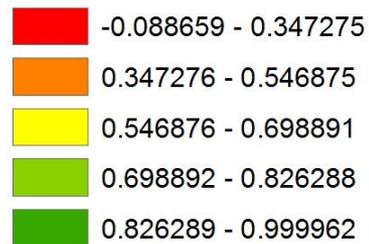


Methodology of Original Model

- **Five layers at local scale (30m resolution)**
 - Streams, shorelines, and floodplain forests and forested wetlands
 - Forests in headwaters and on steep slopes
 - Forest protecting drinking water supplies
 - Large contiguous blocks of forest; and
 - Sustainable, managed working forests
 - **Add layers representing habitat integrity at the landscape scale (12-digit hydrologic units)**
 - Index of Terrestrial Habitat Integrity
 - Modified Index of Biotic Integrity (Aquatic system health from INSTAR database)
 - **Compute *forest conservation value* via weighted overlay with 60% weight on habitat integrity**
-

Index of Terrestrial Integrity

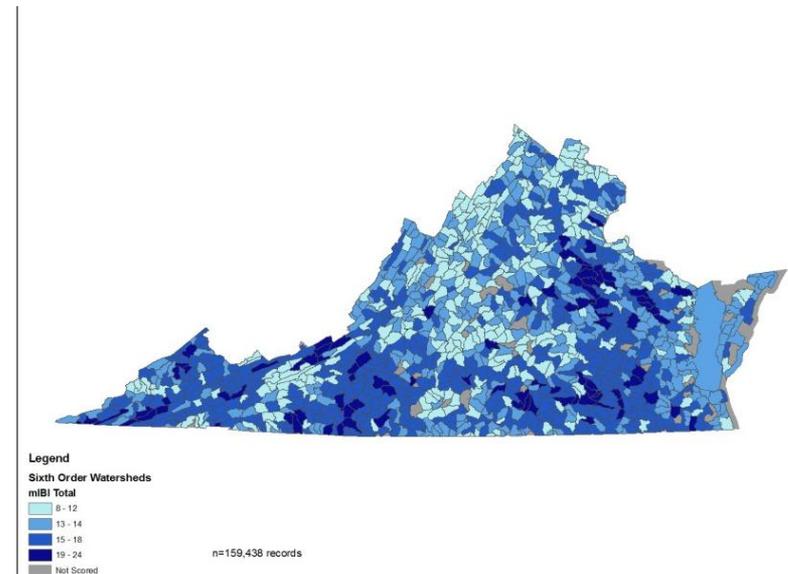
Index of Terrestrial Integrity



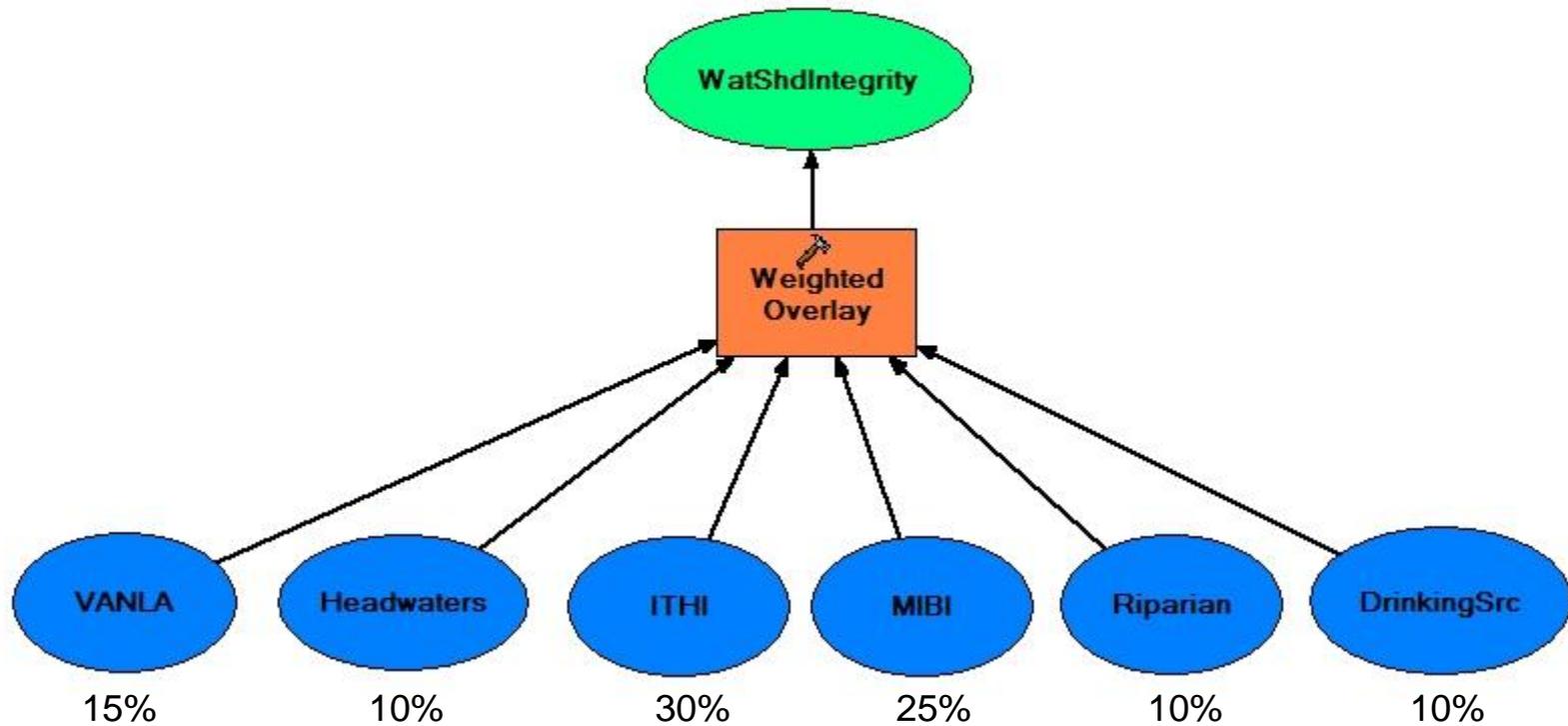
Aquatic Index

Modified Index of Biotic Integrity (*mIBI*)

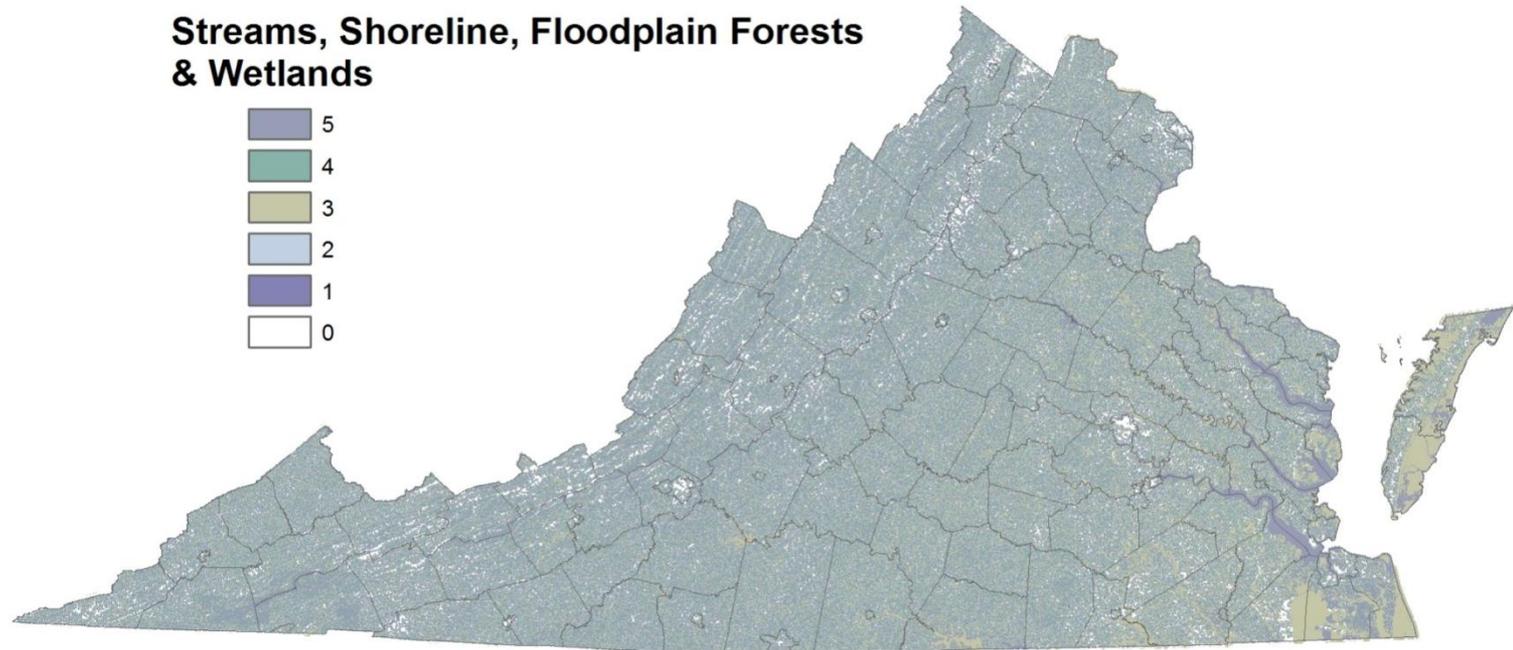
- Multimetric index
 - Number of intolerant species
 - Native species richness
 - Number of RT&E species
 - Number of non-indigenous species
 - Number of critical/significant species
 - Number of tolerant species
- Ranges between 6-30
- Broad geospatial scales (Score represents a value for the entire watershed; 12-digit HUCs)
- ***mIBI*** represents >220K records, statewide.



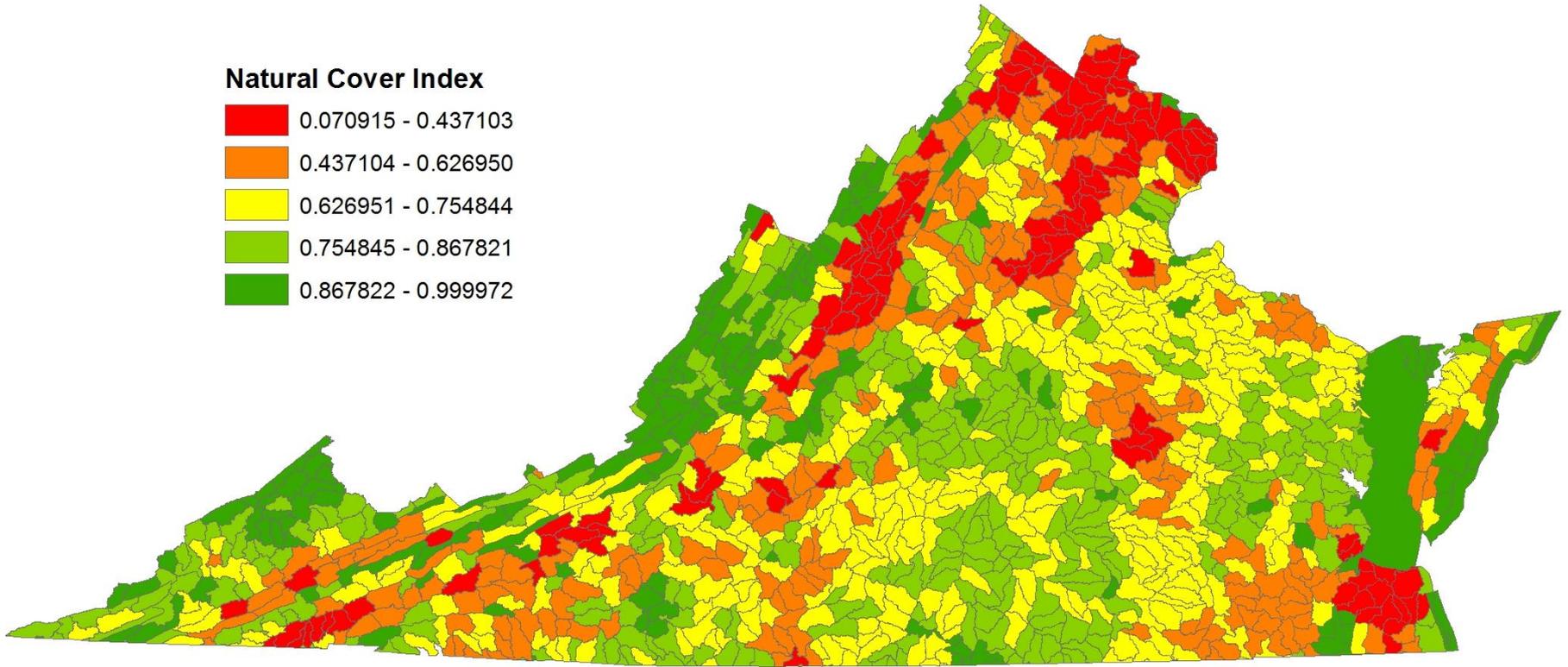
Final Statewide Output



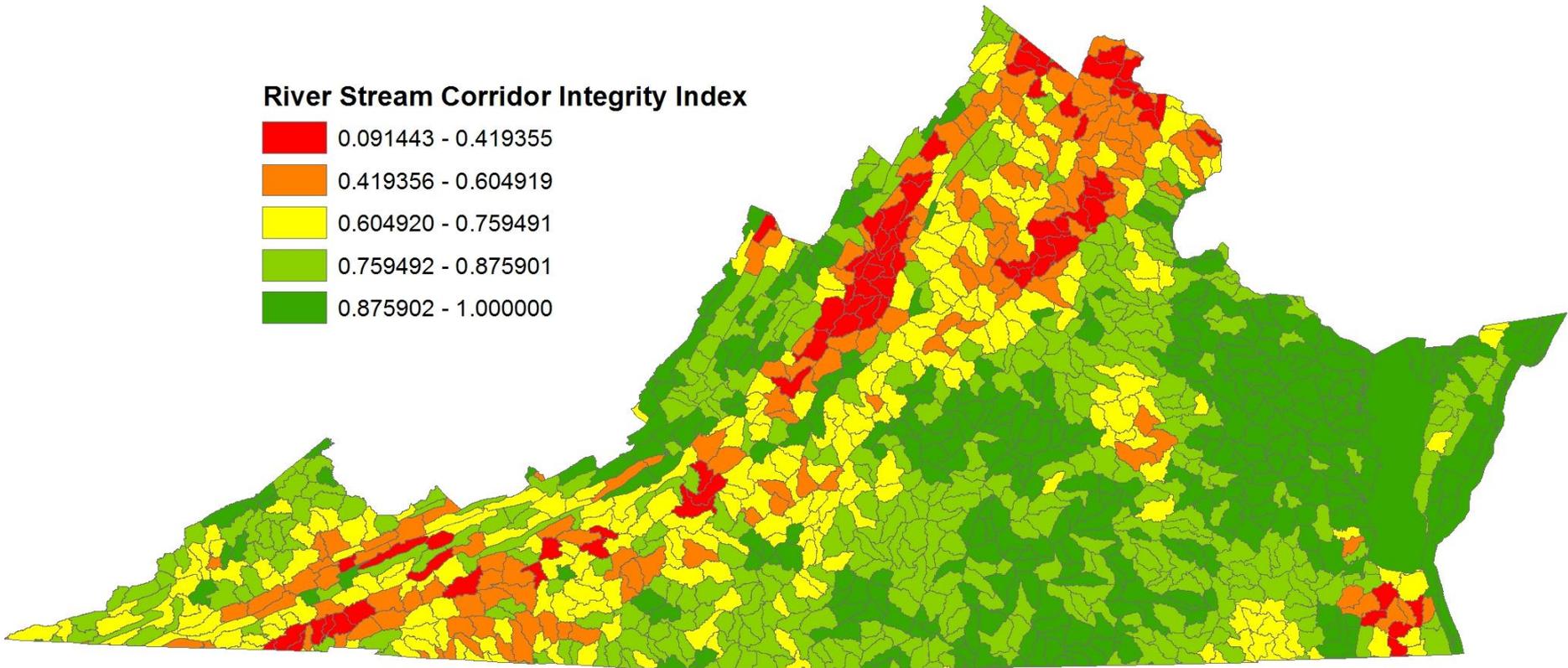
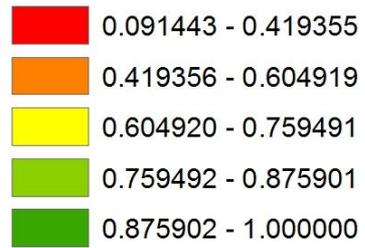
Watershed Integrity input layers proposed for Chowan Basin prioritization task



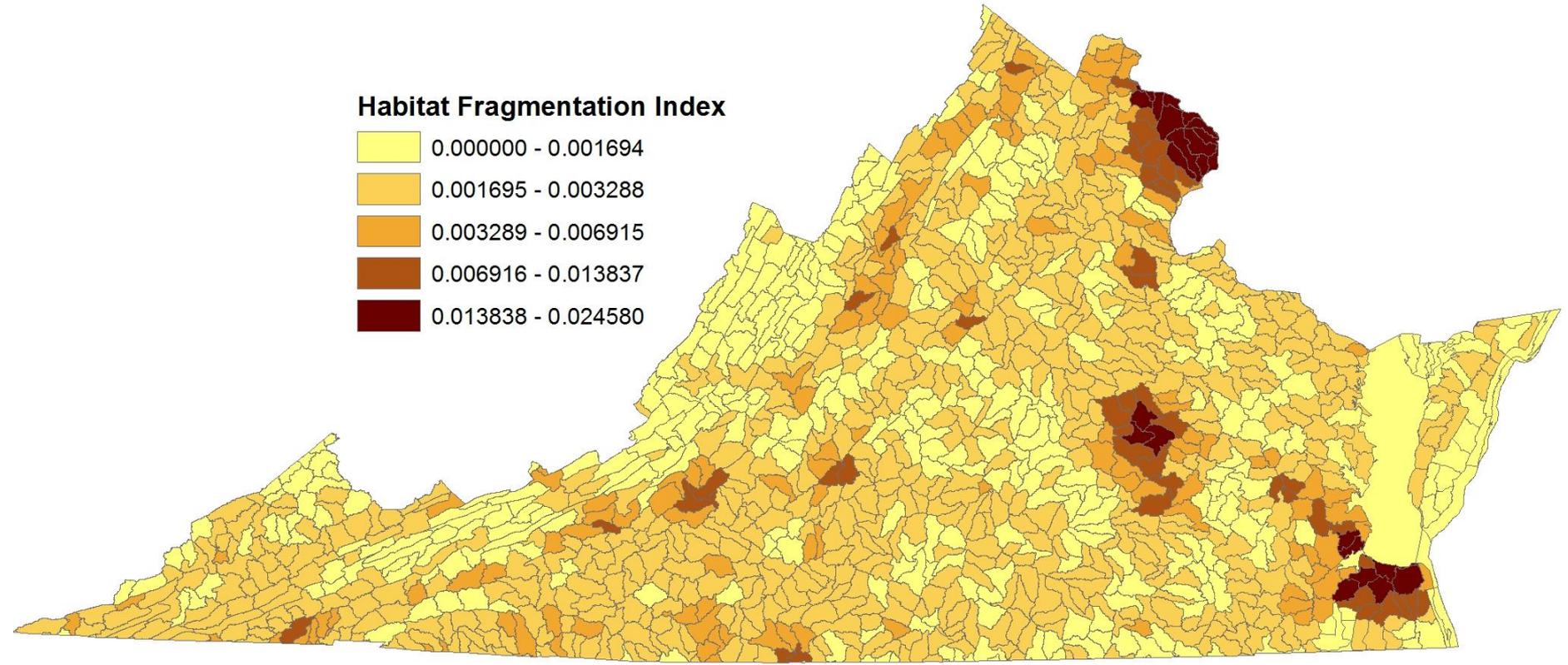
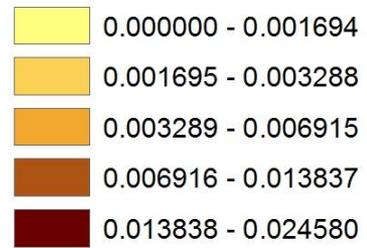
Natural Cover Index



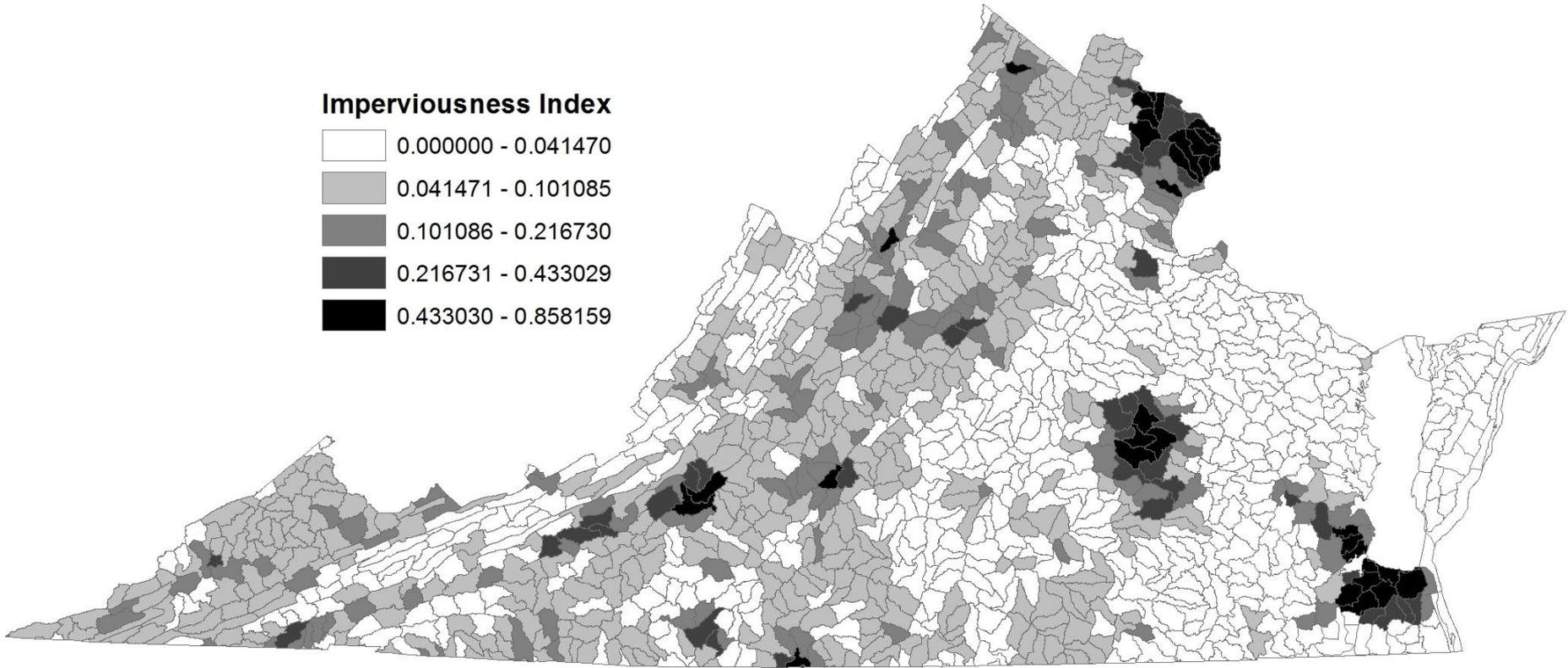
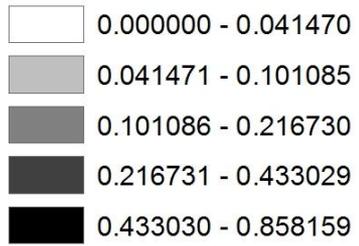
River Stream Corridor Integrity Index



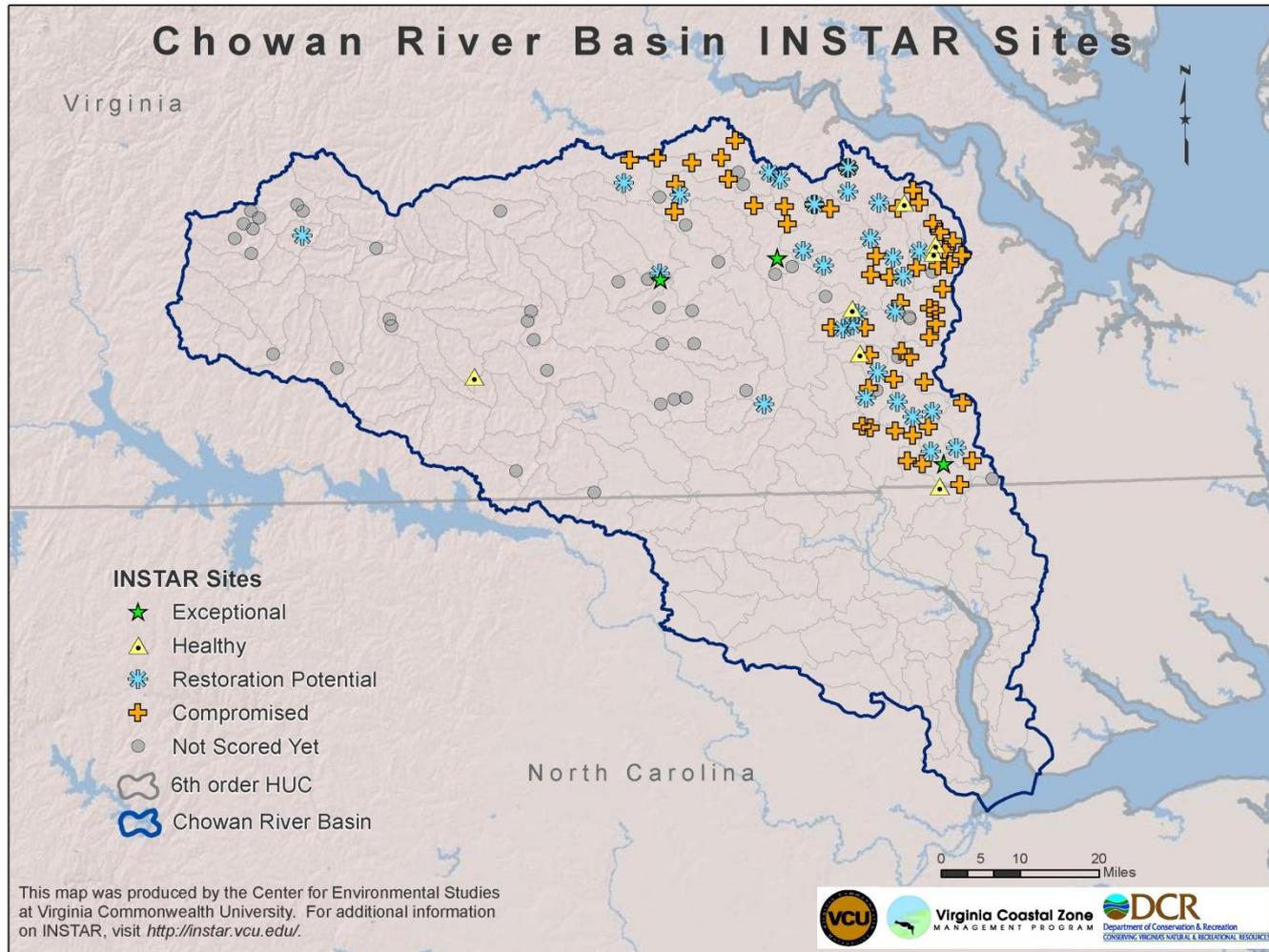
Habitat Fragmentation Index



Imperviousness Index



Existing INSTAR data for Chowan Basin



Questions?

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INSTAR application: <http://instar.vcu.edu>
