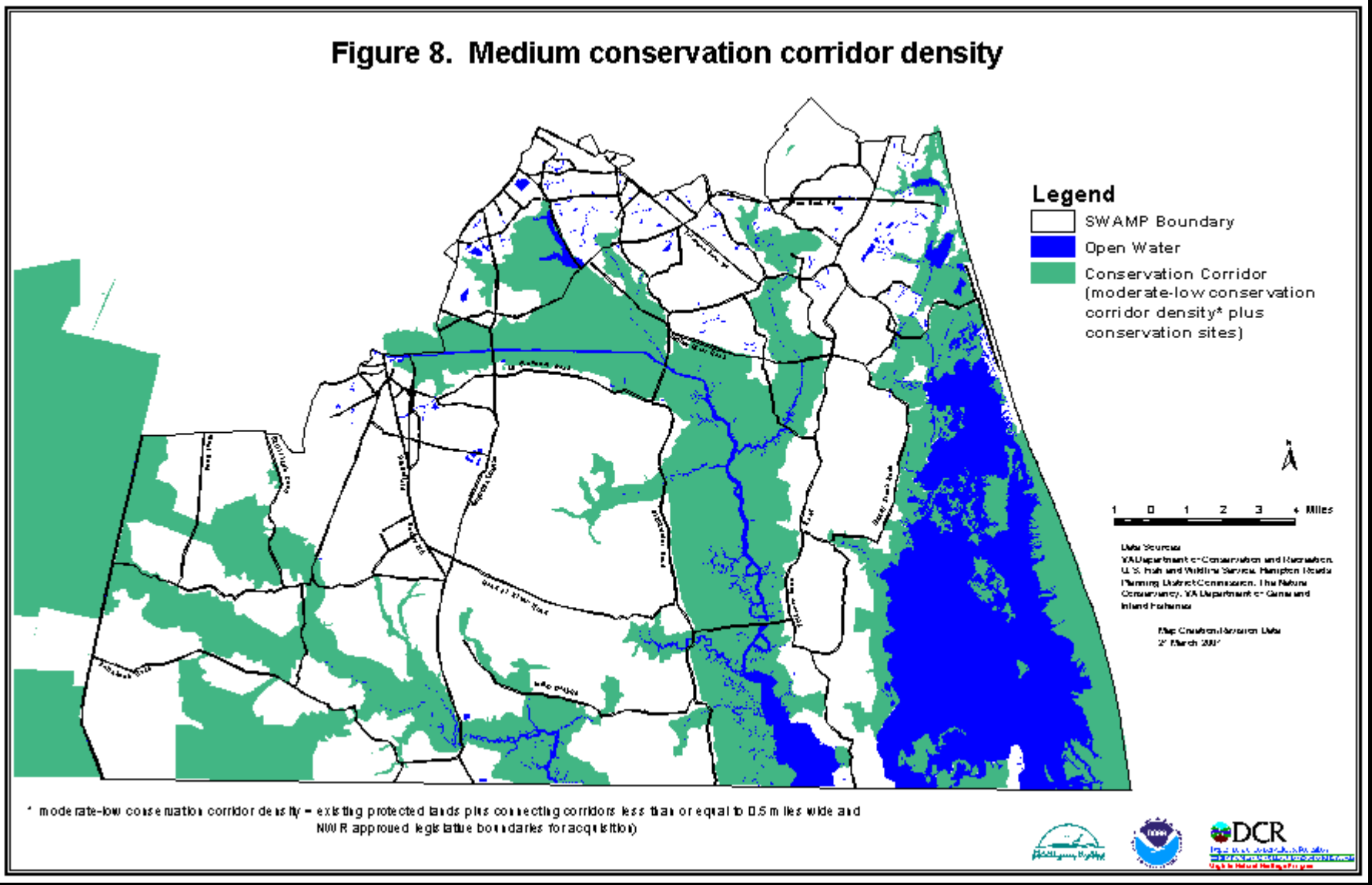
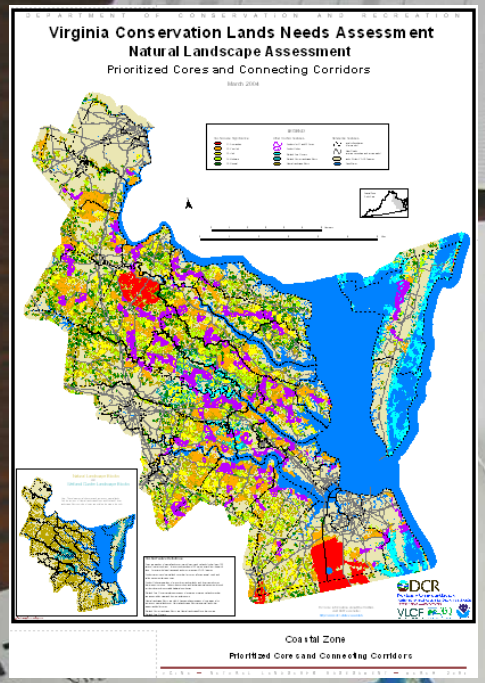
Virginia Natural Landscape Assessment

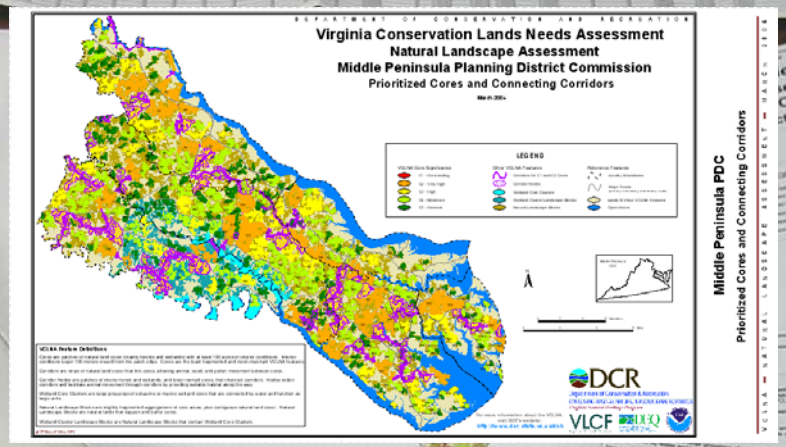
The VaNLA is a landscape-scale GIS analysis for identifying, prioritizing, and linking natural habitats in Virginia.

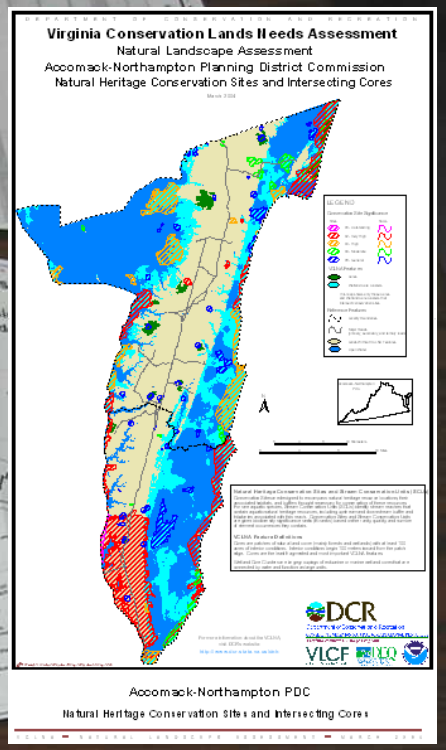
Southern Watersheds Area Management Plan

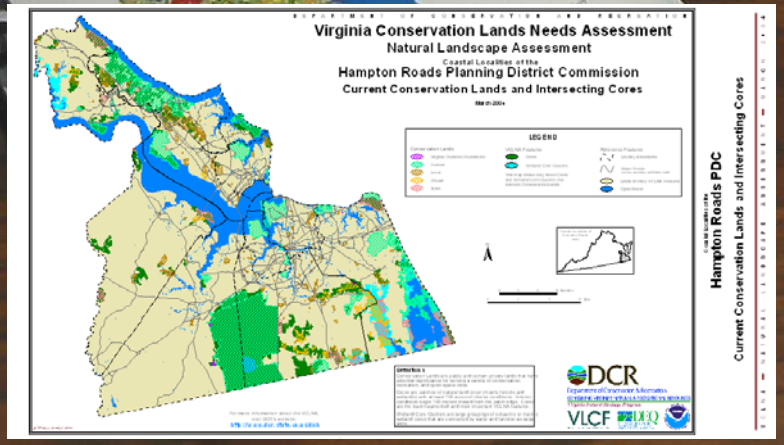


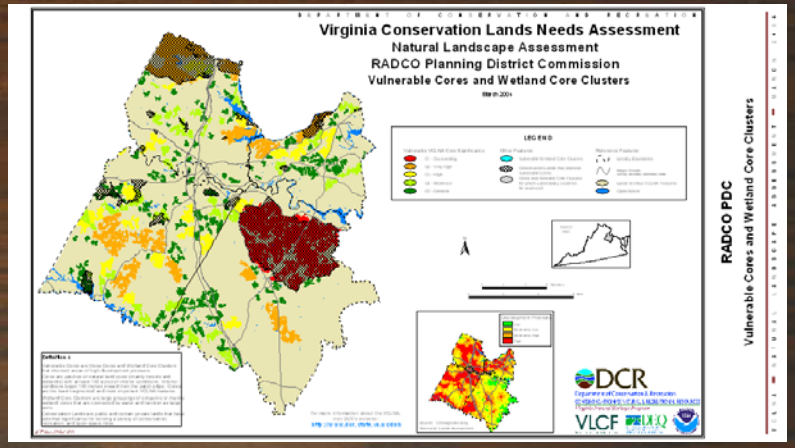
Coastal Zone Natural Landscape Assessment



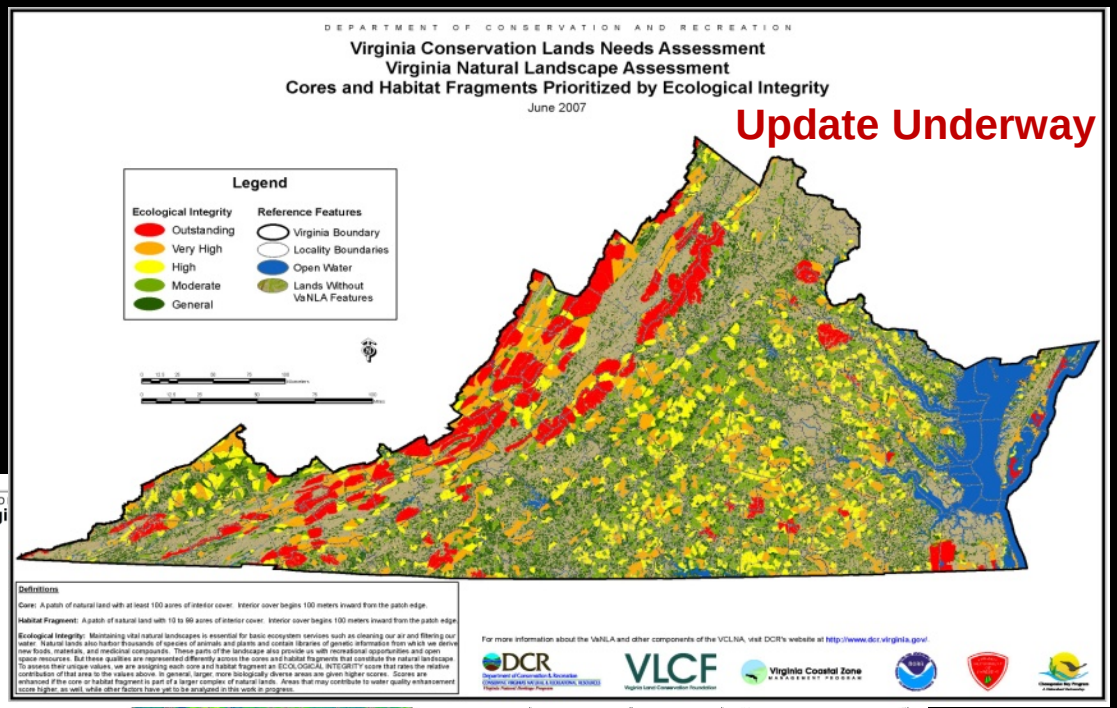


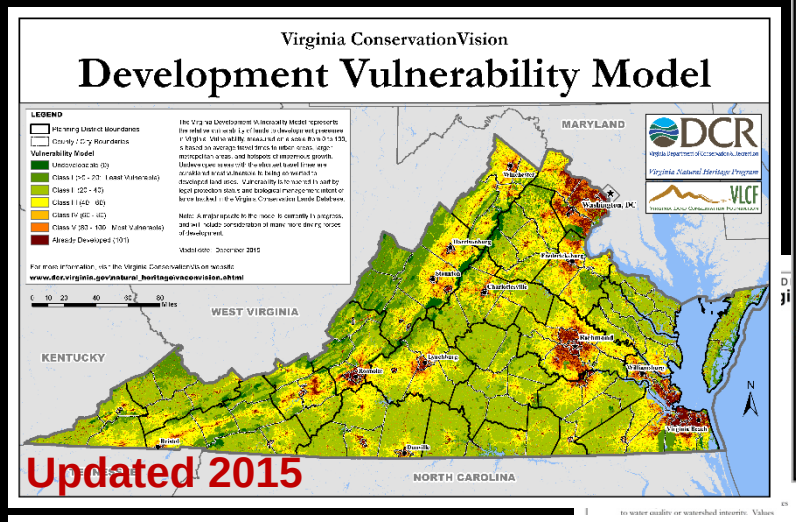


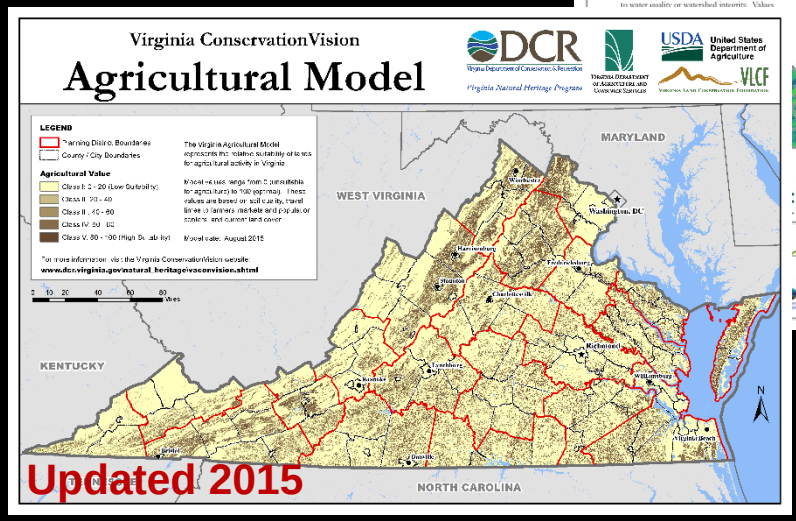


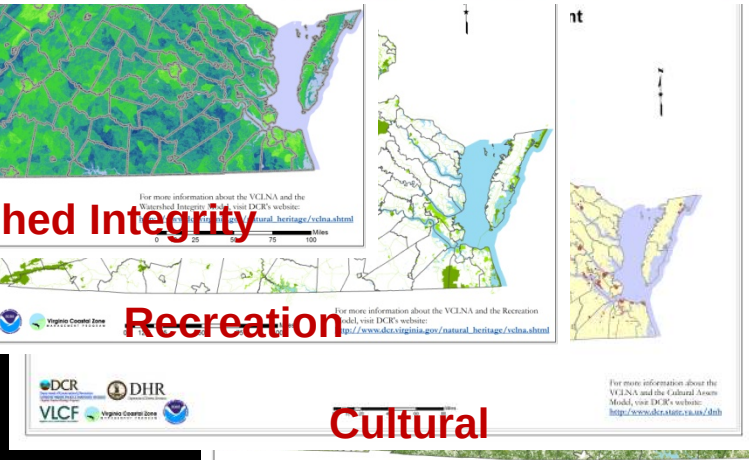


Virginia ConservationVision

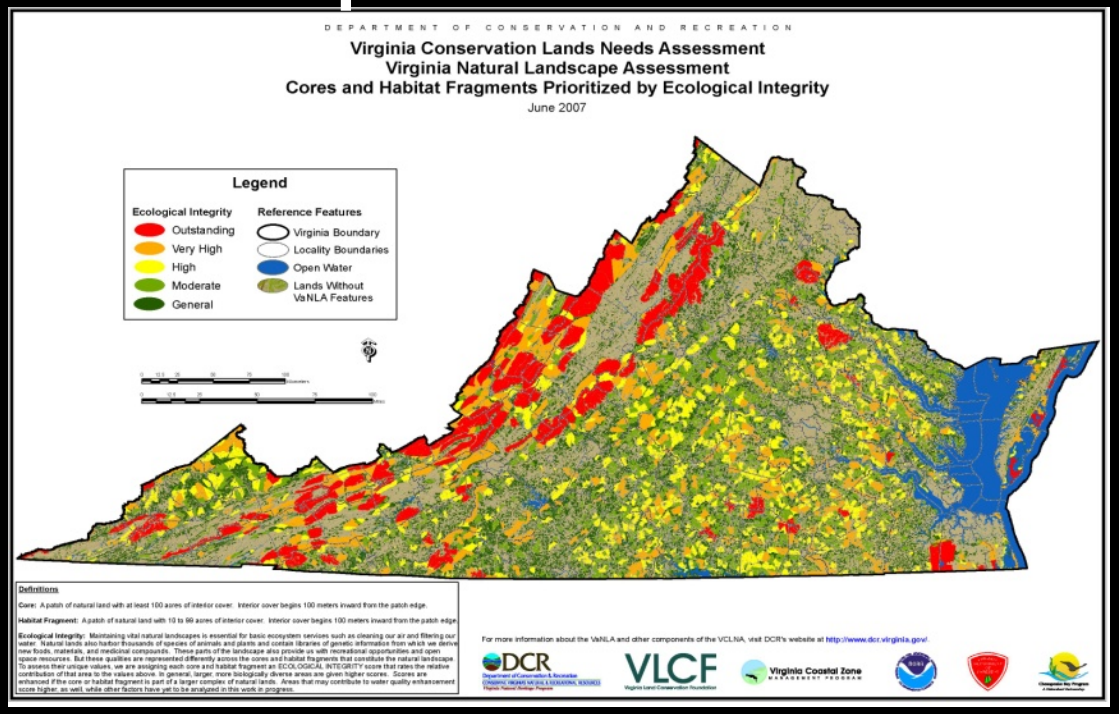








Virginia Natural Landscape Assessment



Objective: Identify and prioritize remaining lands that provide a network of intact natural habitats, biodiversity, and functioning ecosystem services.

Benefits of VaNLA Networks

- wildlife and plant habitat
- biodiversity conservation
- open space
- recreational opportunities
- groundwater recharge
- maintenance of water quality
- carbon sequestration
- crop pollination
- protection from storm and flood damage
- erosion control and sediment retention

An estimated one out of every three bites of food we eat comes from a pollinator.
Source:
North American Pollinator Protection Campaign

The Coastal Virginia Ecological Value Assessment: a collaborative integration of conservation datasets and priorities in Virginia

Virginia Coastal Zone
MANAGEMENT PROGRAM

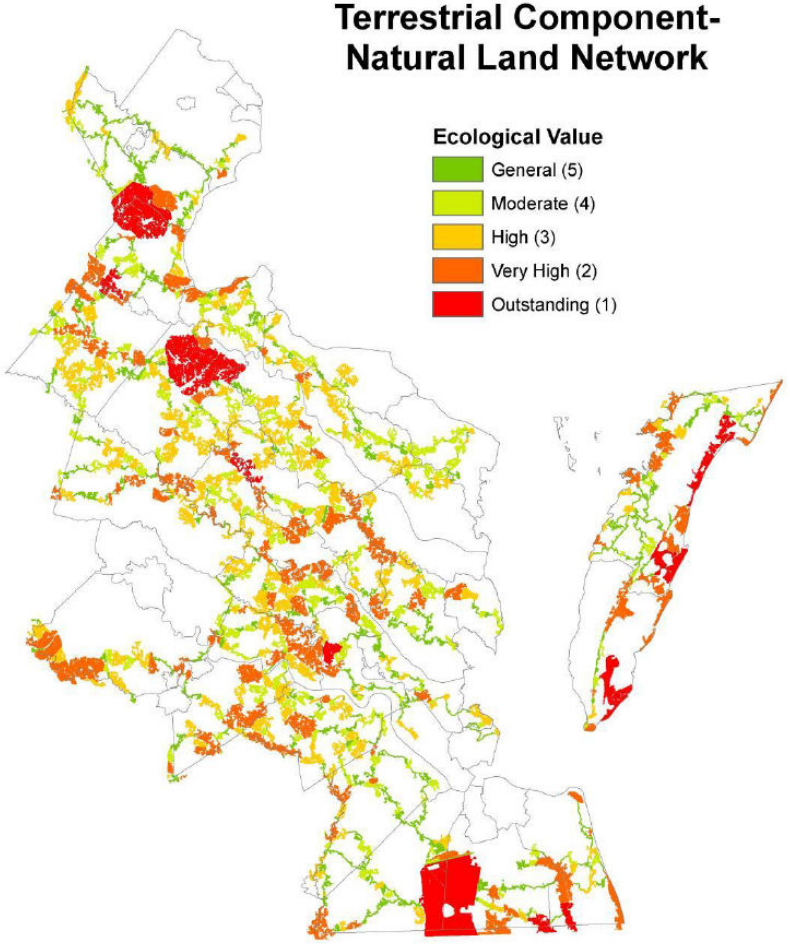
VIRGINIA Department of Game & Inland Fisheries

VCU Virginia Commonwealth University

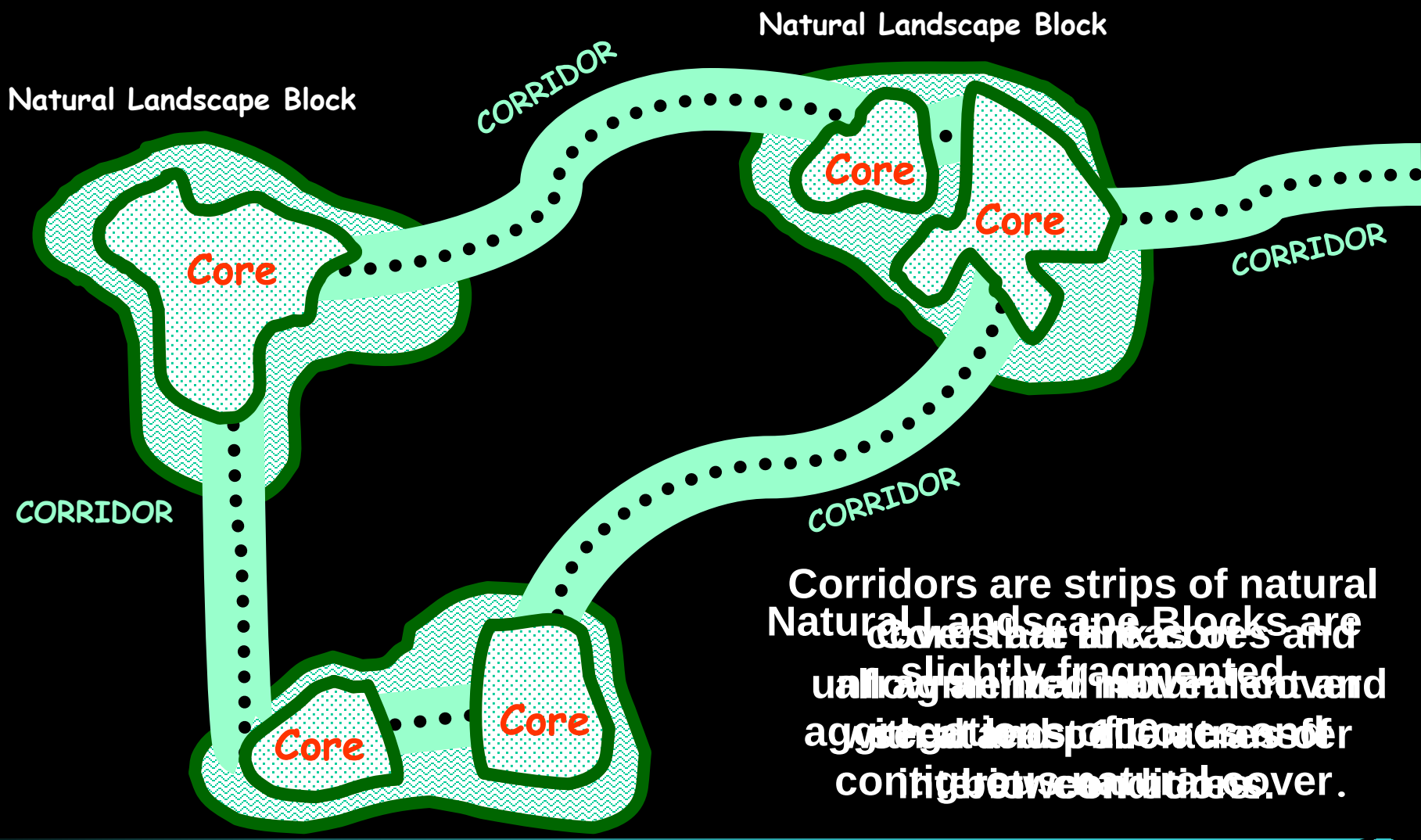
Center for Coastal Resources Management

William & Mary VIMS

DCR
Department of Conservation & Recreation
CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

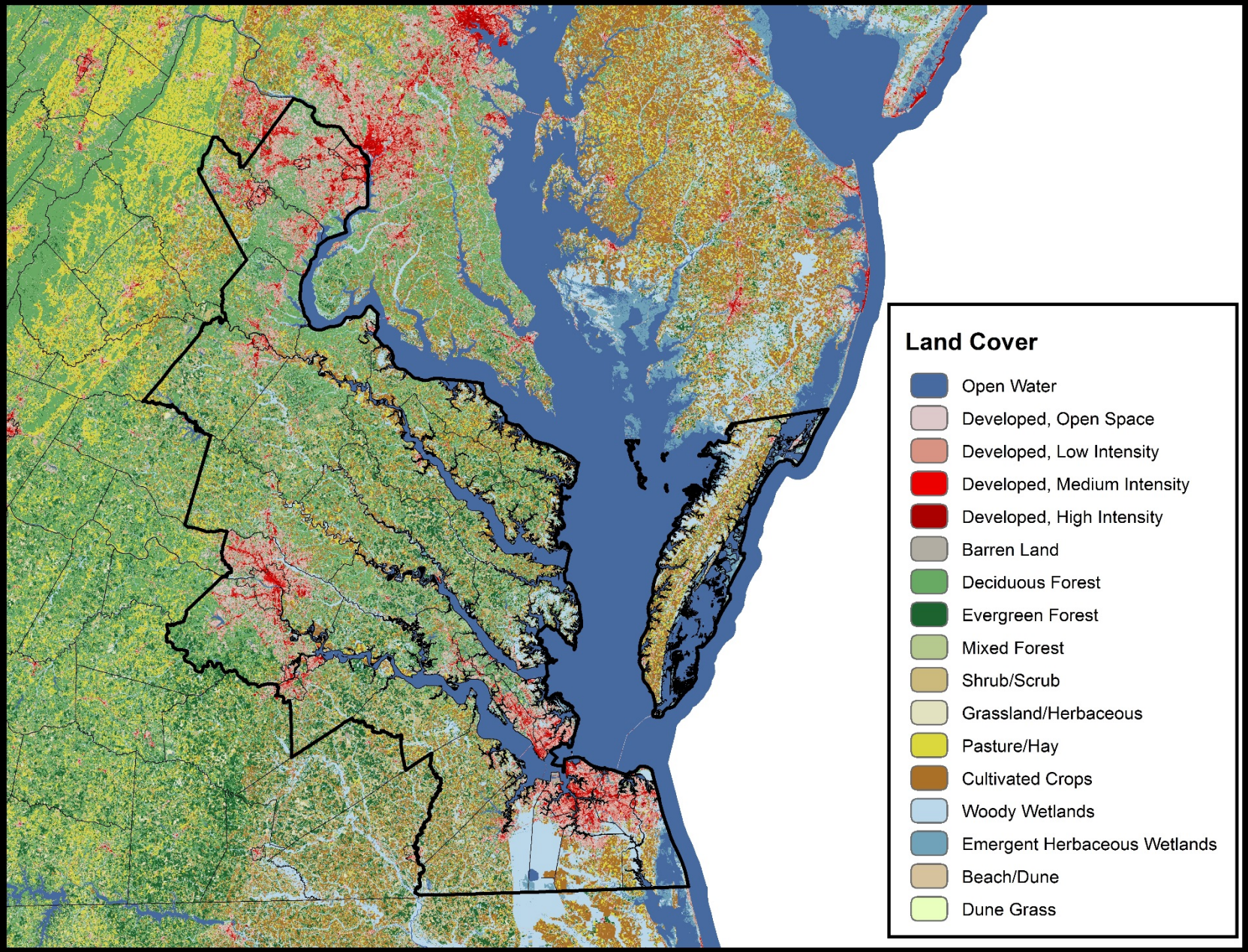


Conceptual Model of VaNLA



Corridors are strips of natural
Natural Landscape Blocks are
slightly fragmented

Land Cover

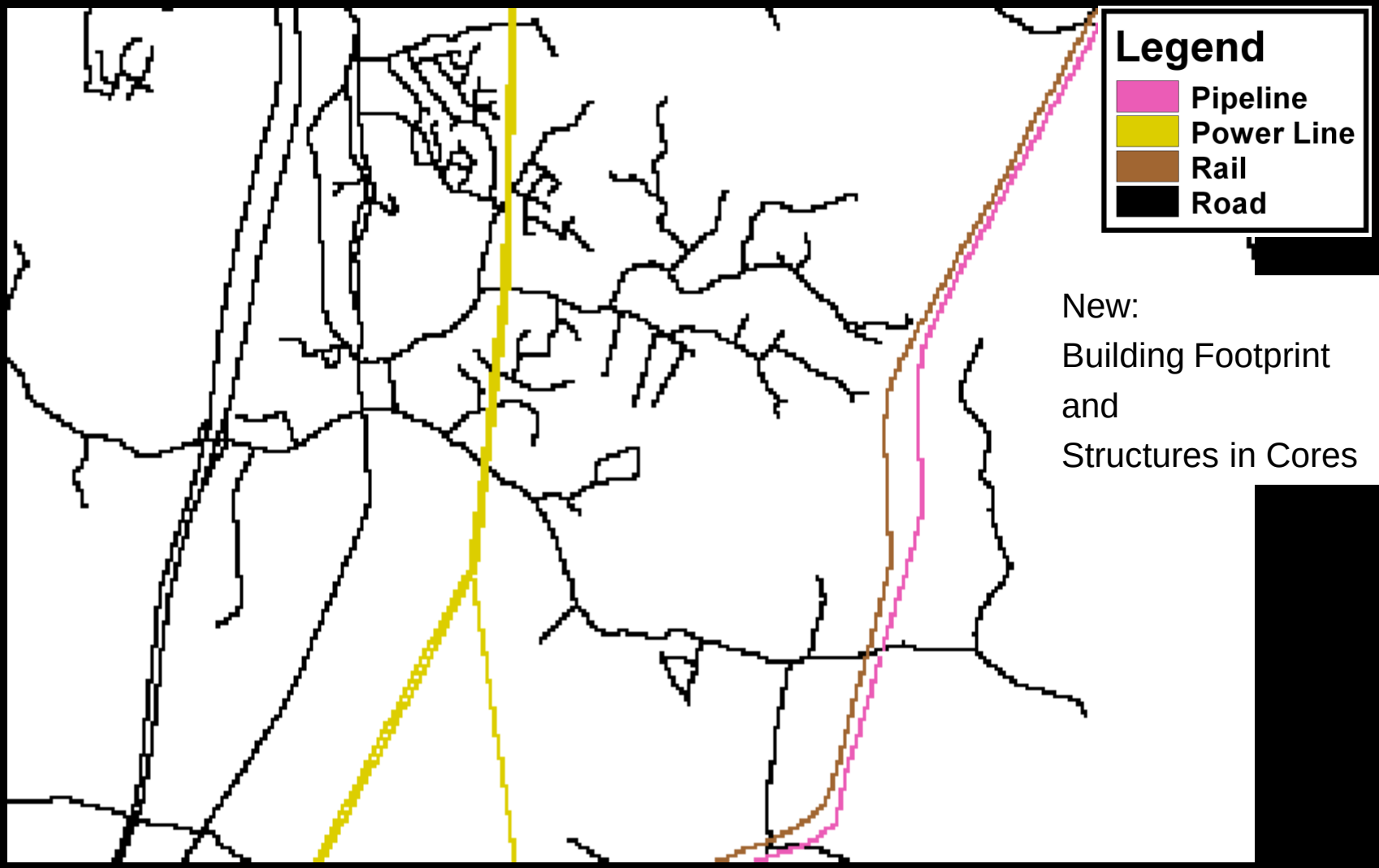

Land Cover
Open Water
Developed, Open Space
Developed, Low Intensity
Developed, Medium Intensity
Developed, High Intensity
Barren Land
Deciduous Forest
Evergreen Forest
Mixed Forest
Shrub/Scrub
Grassland/Herbaceous
Pasture/Hay
Cultivated Crops
Woody Wetlands
Emergent Herbaceous Wetlands
Beach/Dune
Dune Grass

Cores Development

Cores are areas of unfragmented natural cover with at least 100 acres of interior cover.

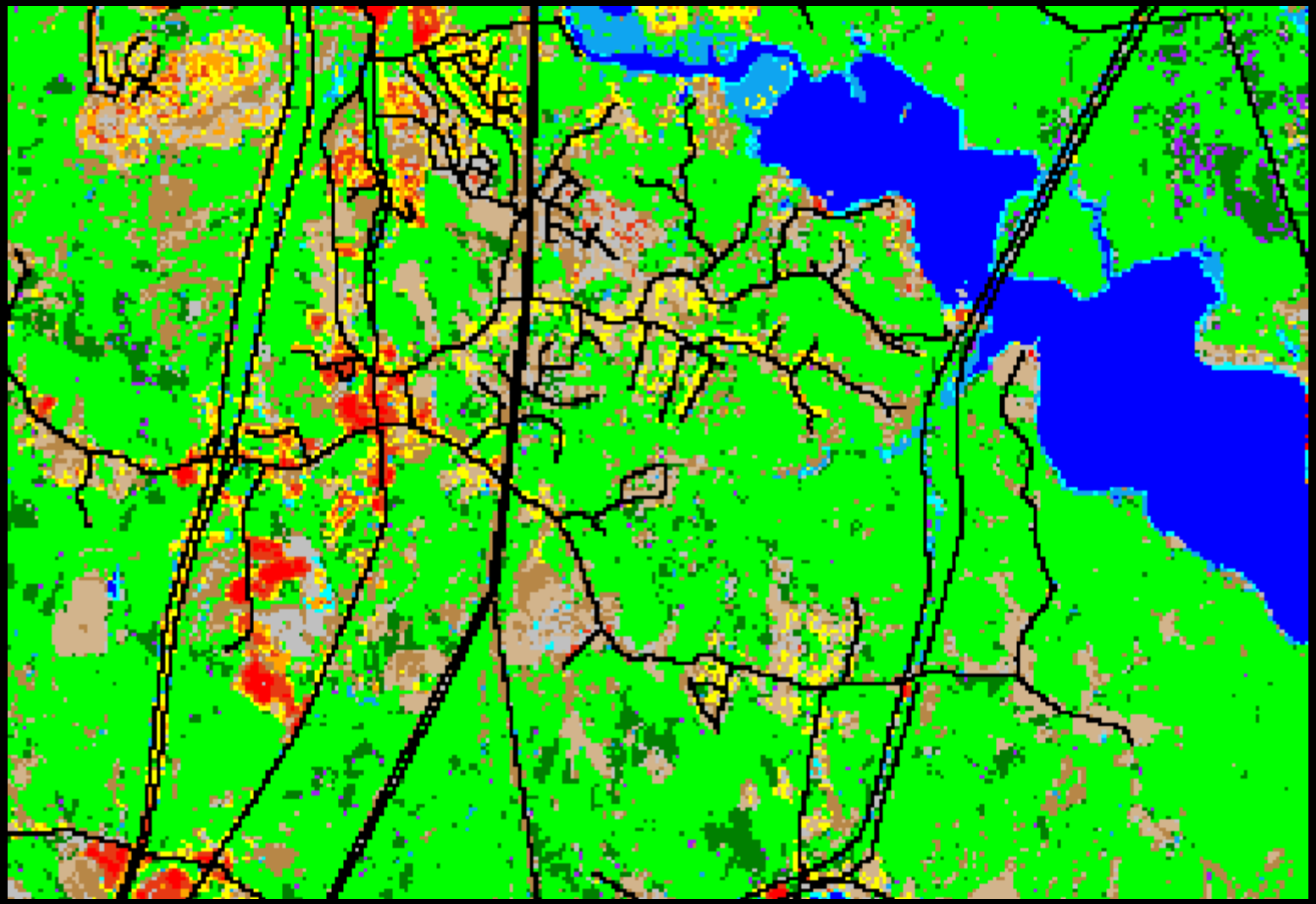
They are bounded by anthropogenic land cover, roads, railroads, power line corridors, and pipeline corridors

Fragmentation Layer

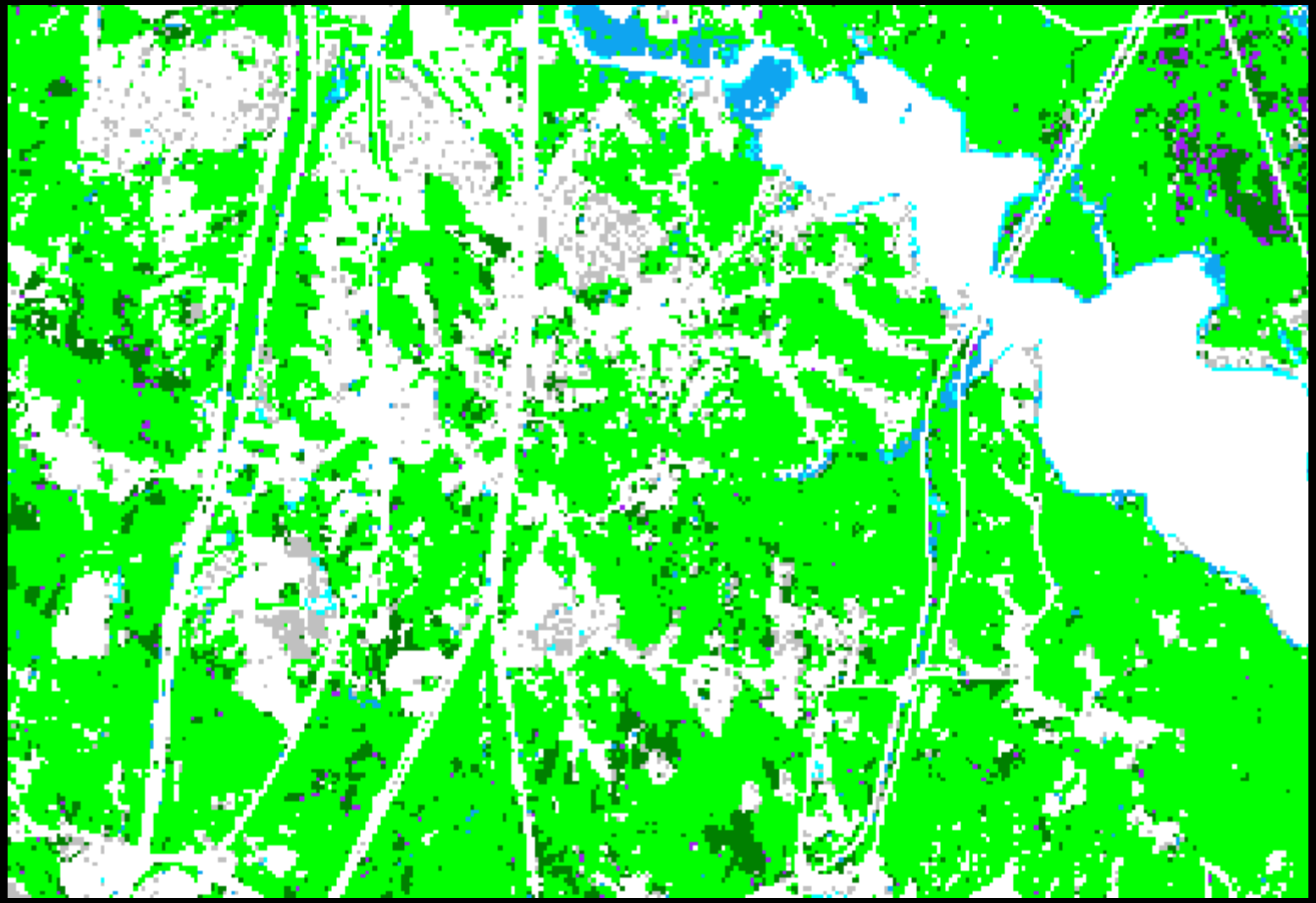


New:
Building Footprint
and
Structures in Cores

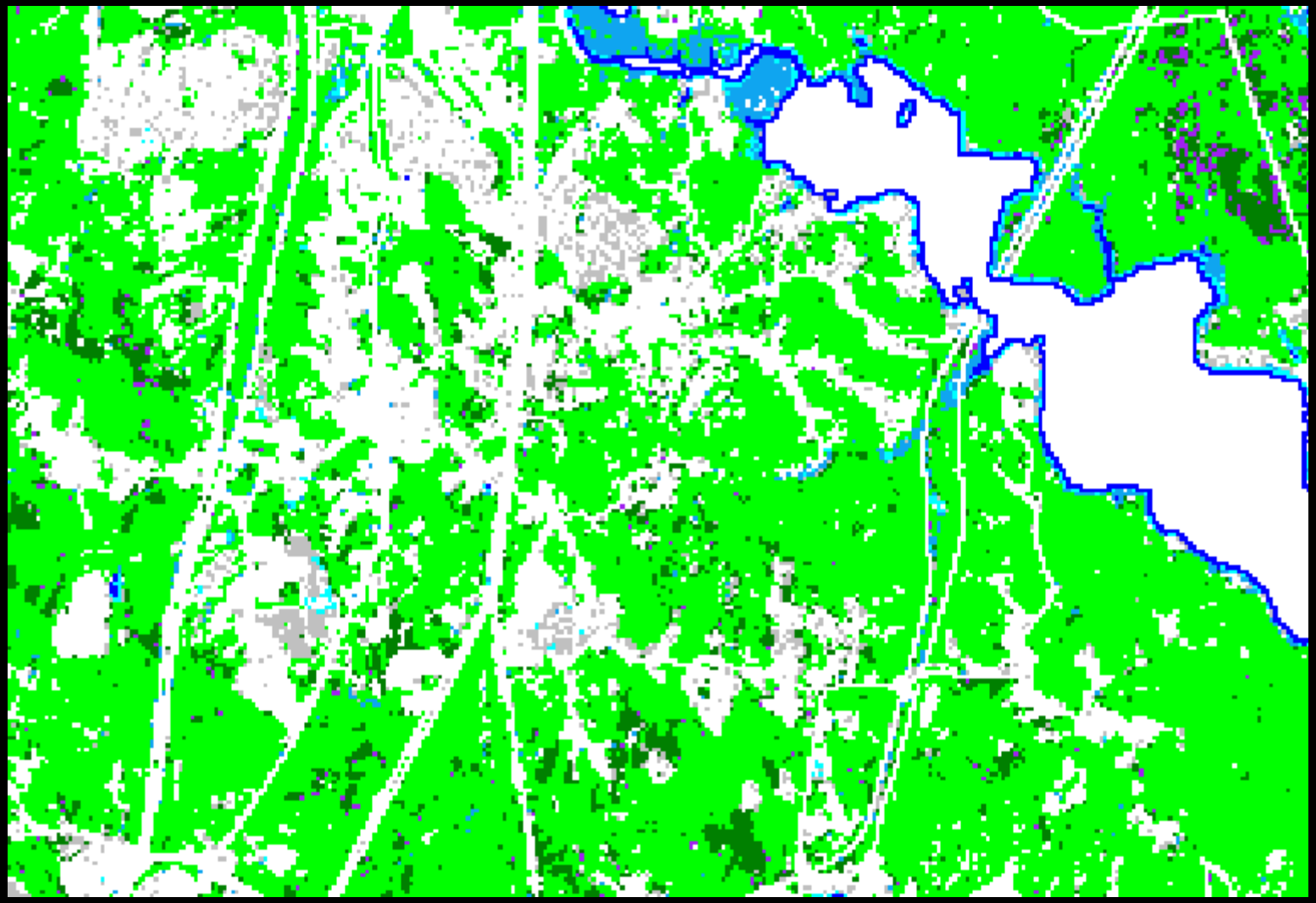
Fragmented Land Cover Image



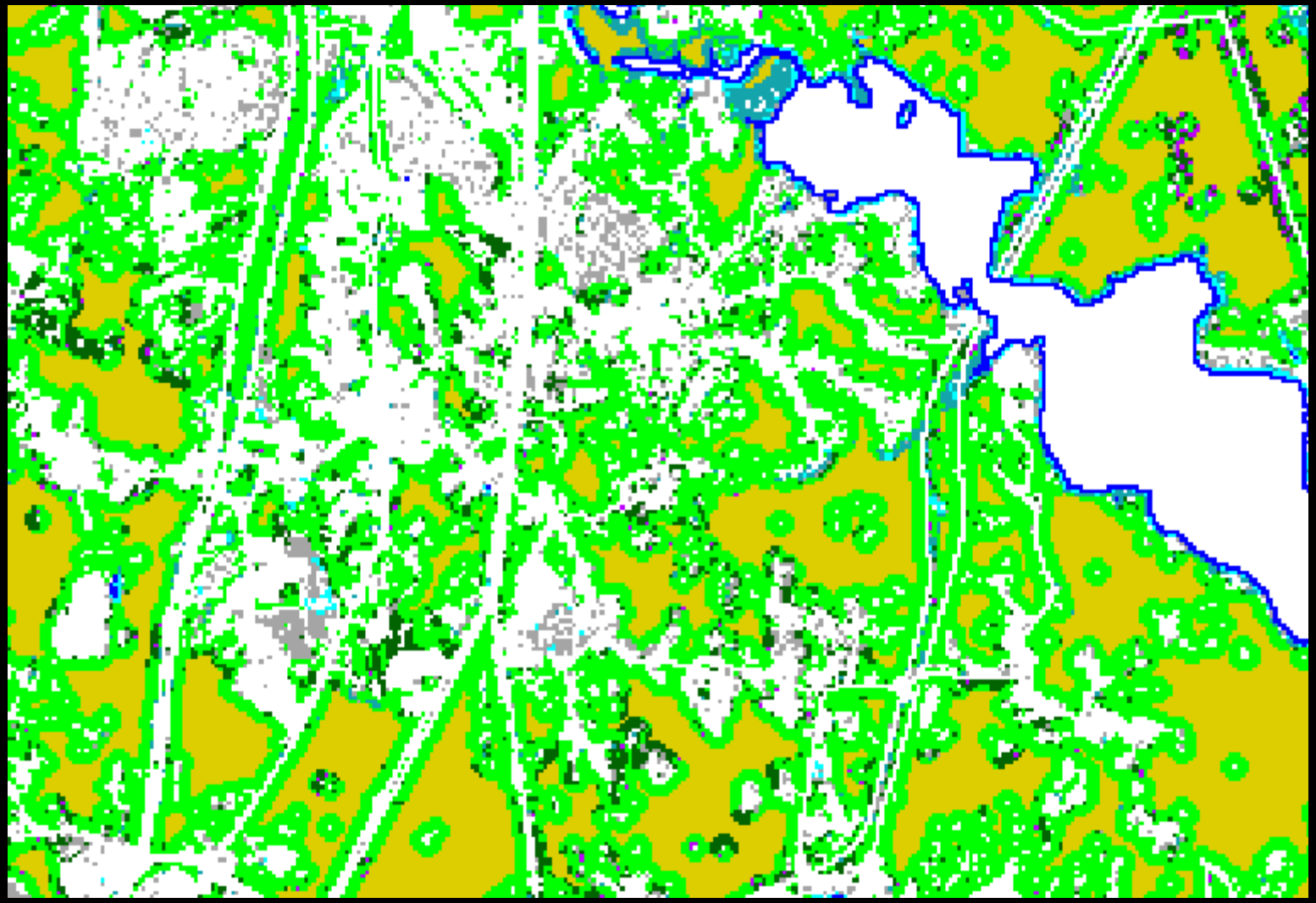
Natural Land Cover



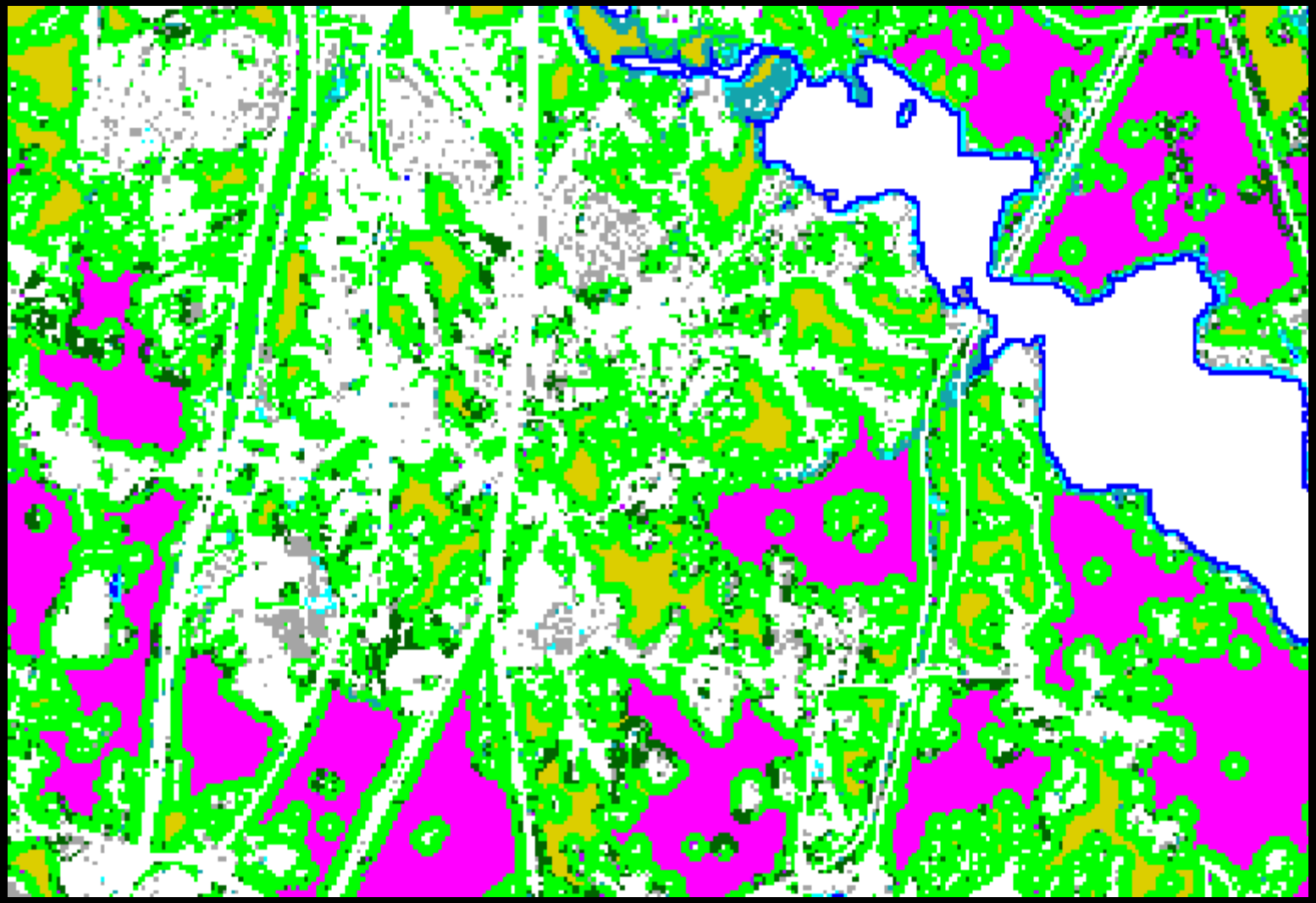
Natural Land Cover Plus Near-Shore Water



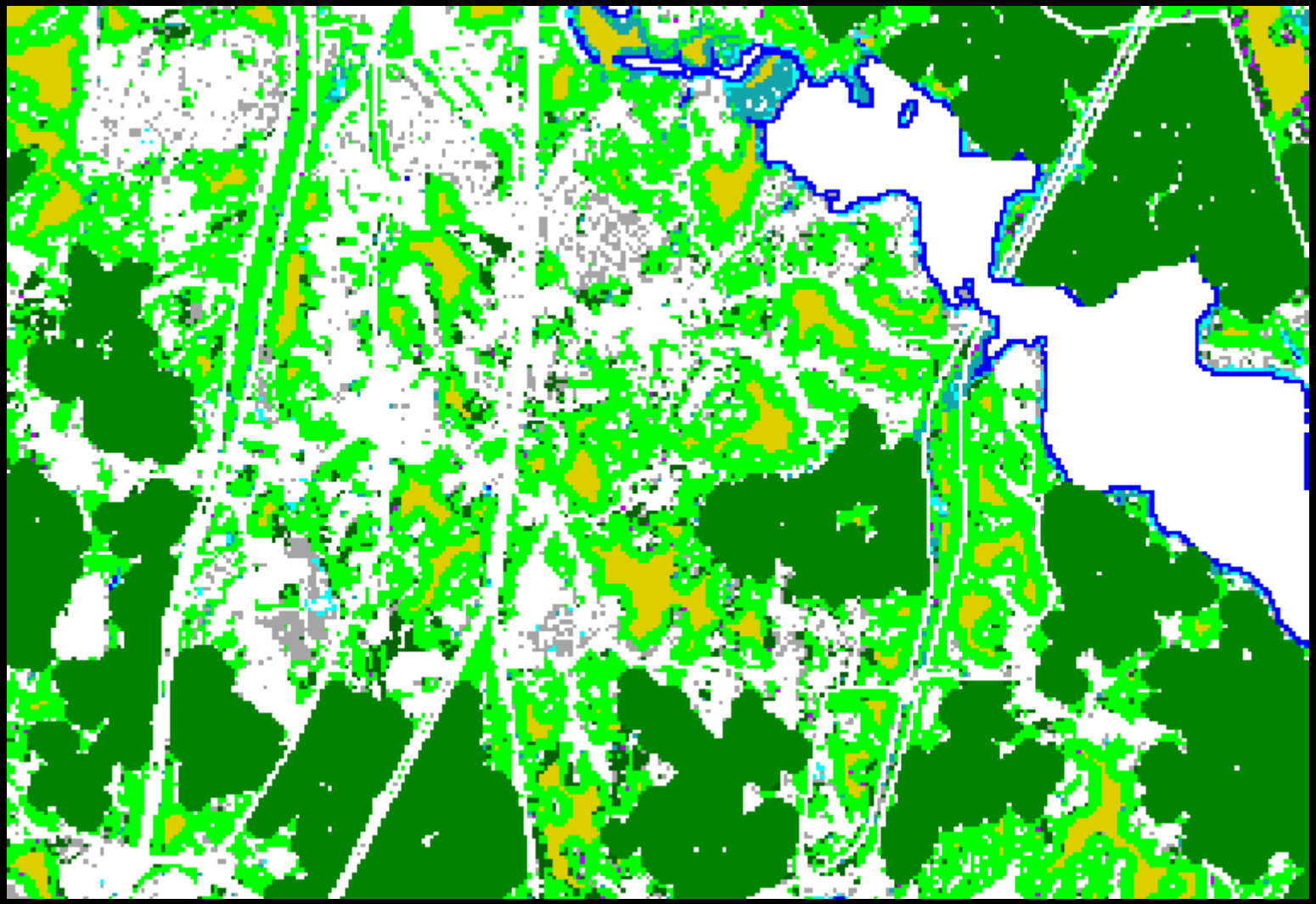
Interior Natural Area



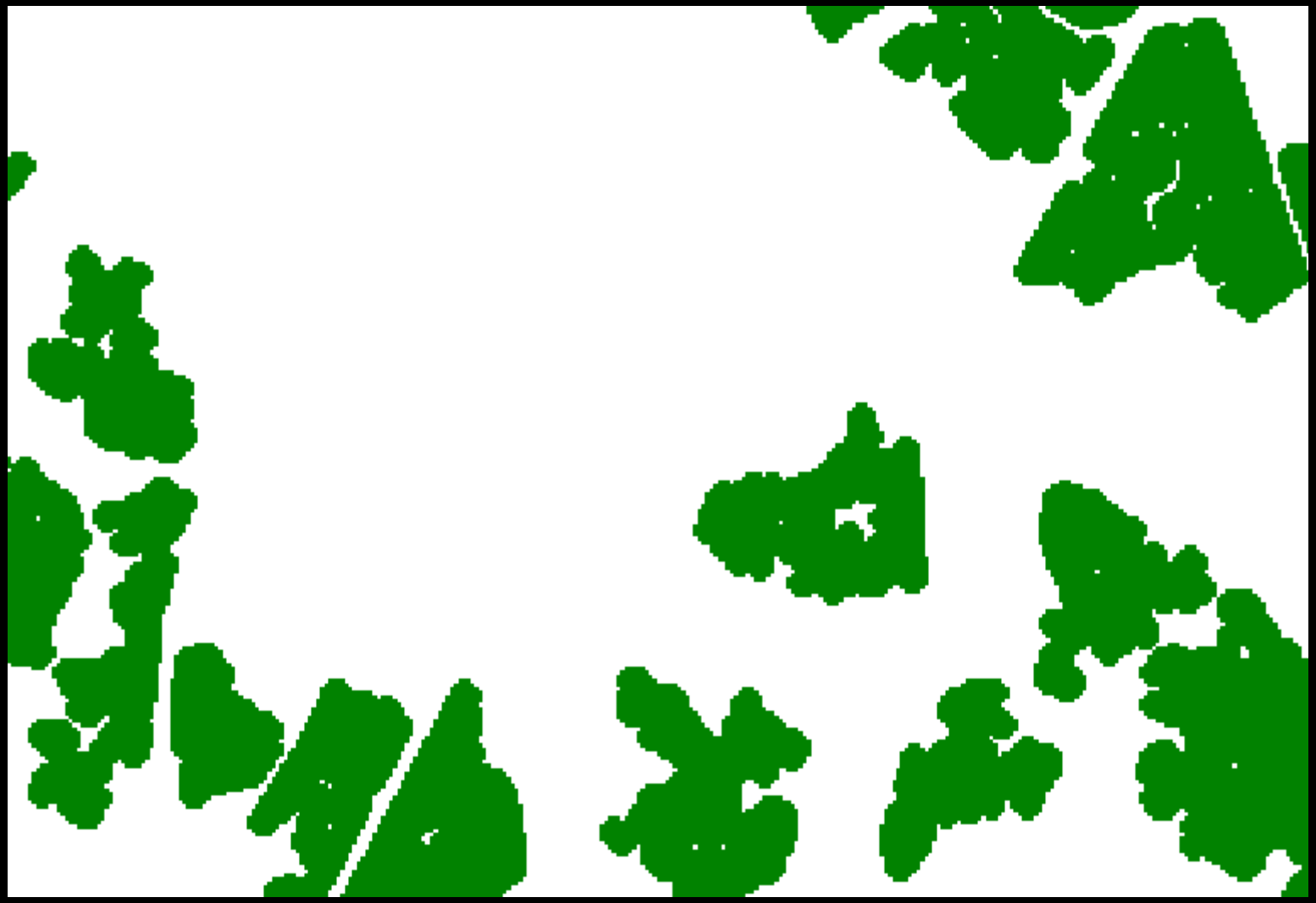
Interior Natural Area >100 Acres



Cores



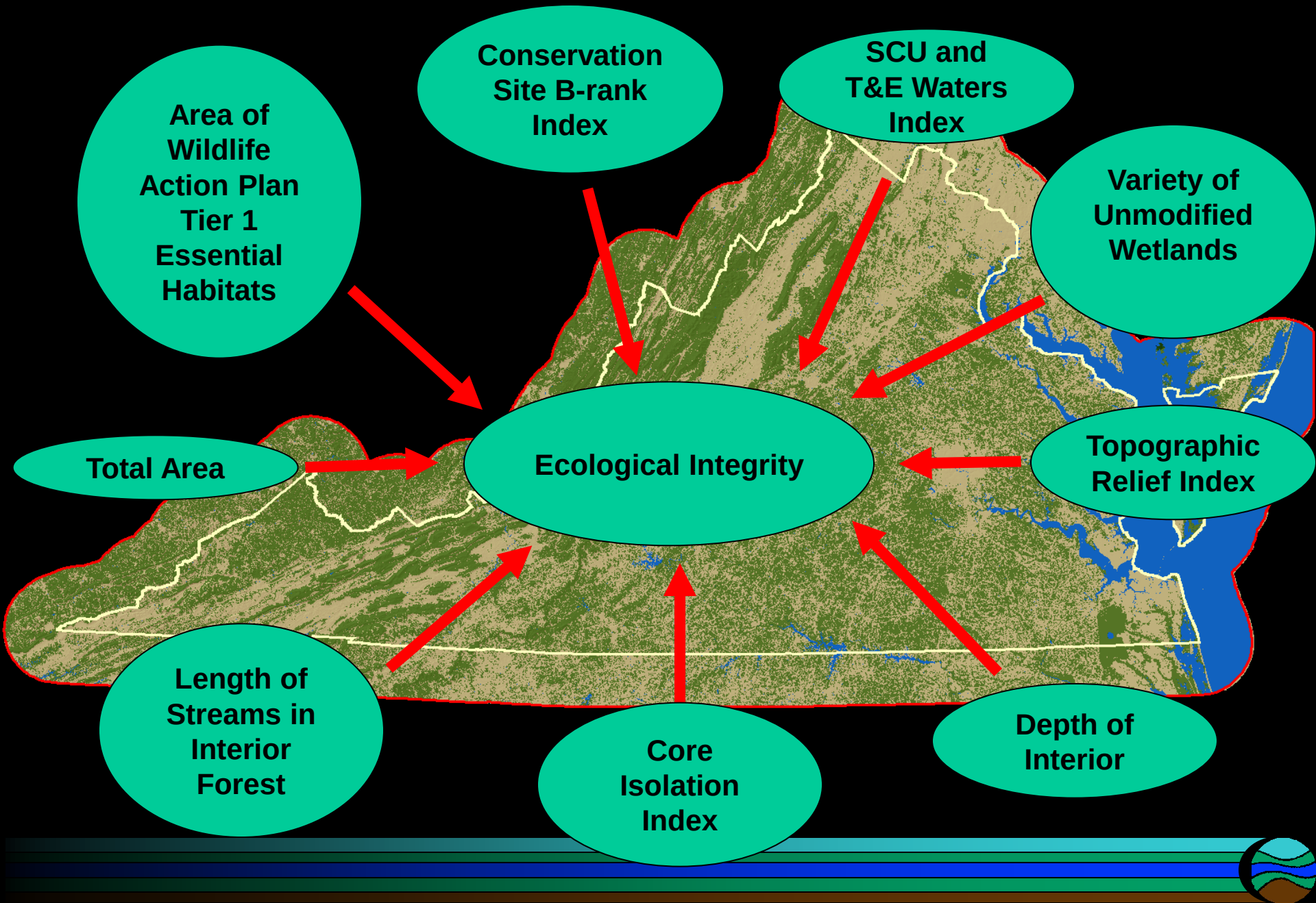
Cores

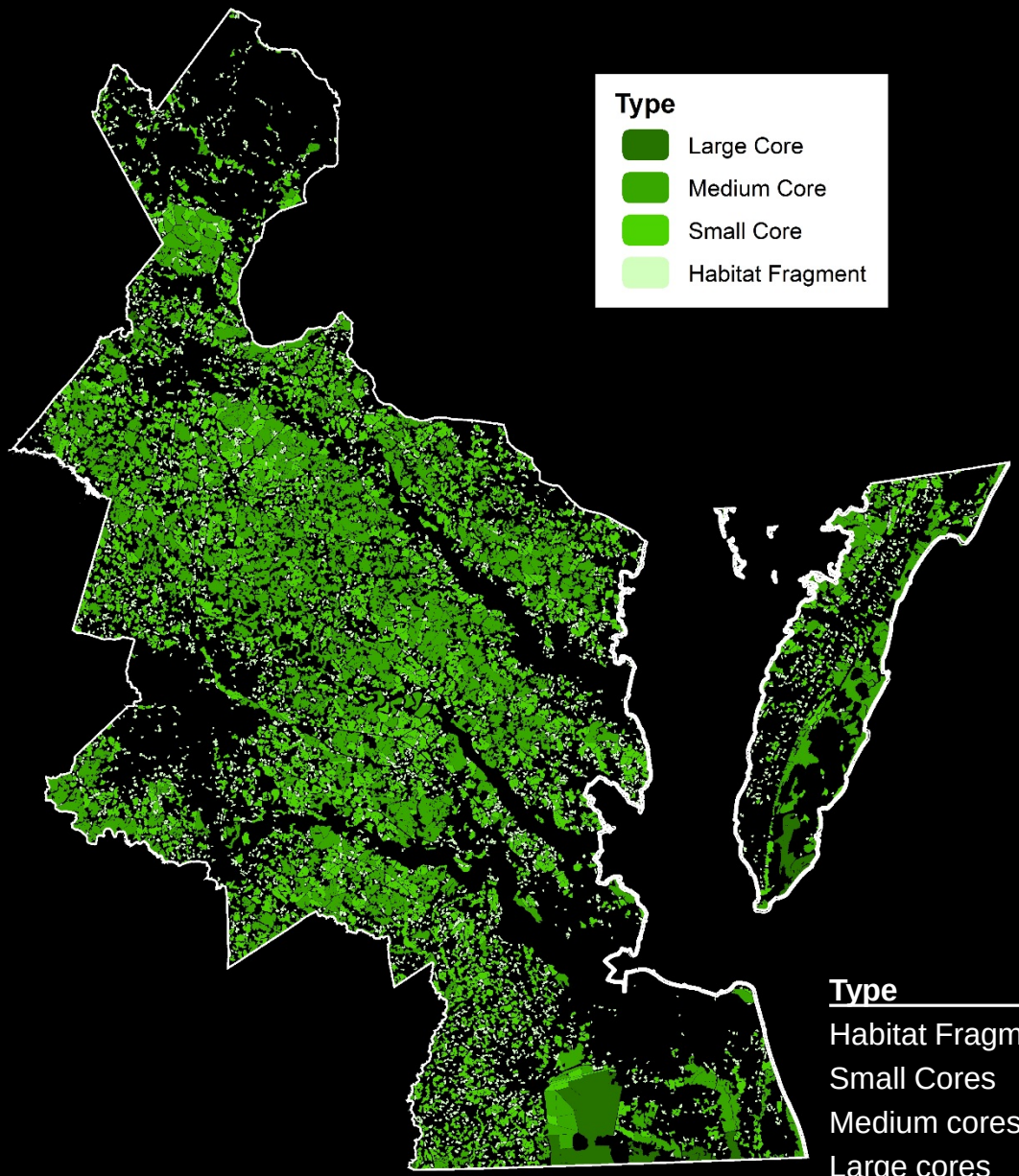


Prioritization - Ecological Integrity

Maintaining vital natural landscapes is essential for basic ecosystem services such as cleaning our air and filtering our water. Natural lands also harbor thousands of species of animals and plants and contain libraries of genetic information from which we derive new foods, materials, and medicinal compounds. These parts of the landscape also provide us with recreational opportunities and open space resources. But these qualities are represented differently across the cores and habitat fragments that constitute the natural landscape. To assess their unique values, each core and habitat fragment has been assigned an ECOLOGICAL INTEGRITY score that rates the relative contribution of that area to the ecosystem service values above. In general, larger, more biologically diverse areas are given higher scores. Scores are enhanced if the core or habitat fragment is part of a larger complex of natural lands. Scores also are increased for those cores and habitat fragments that contribute to water quality enhancement.

Ecological Integrity Model

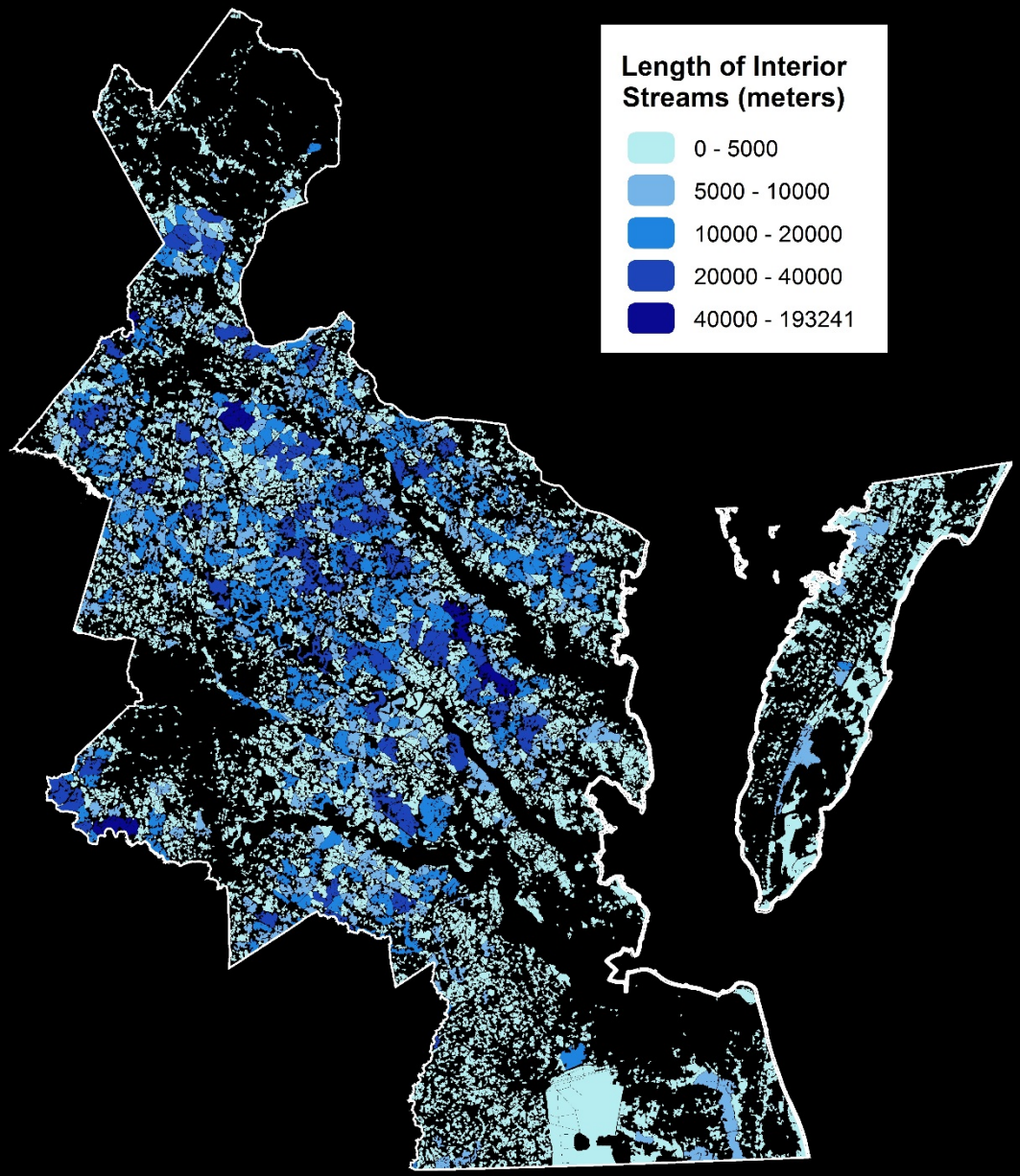


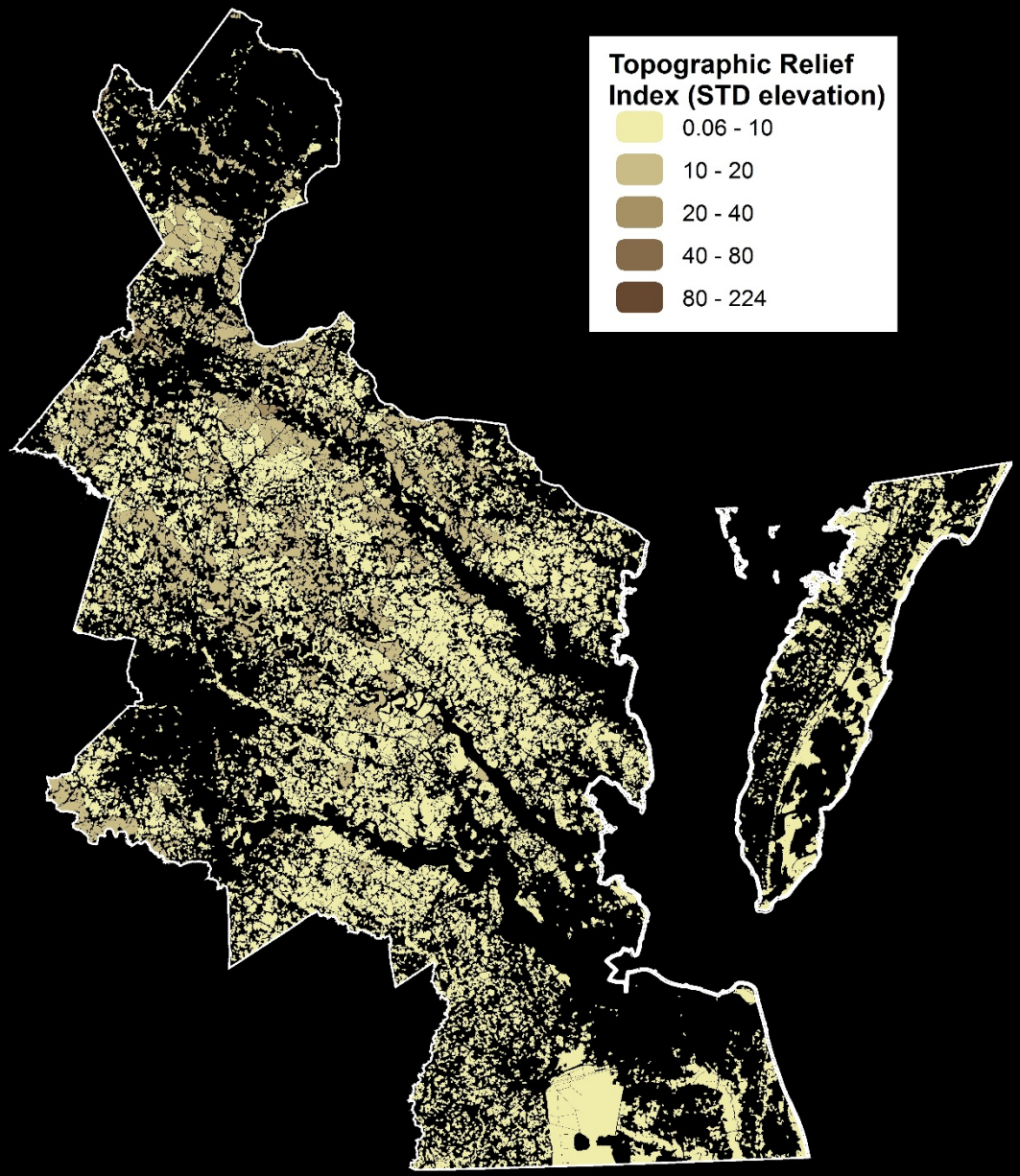


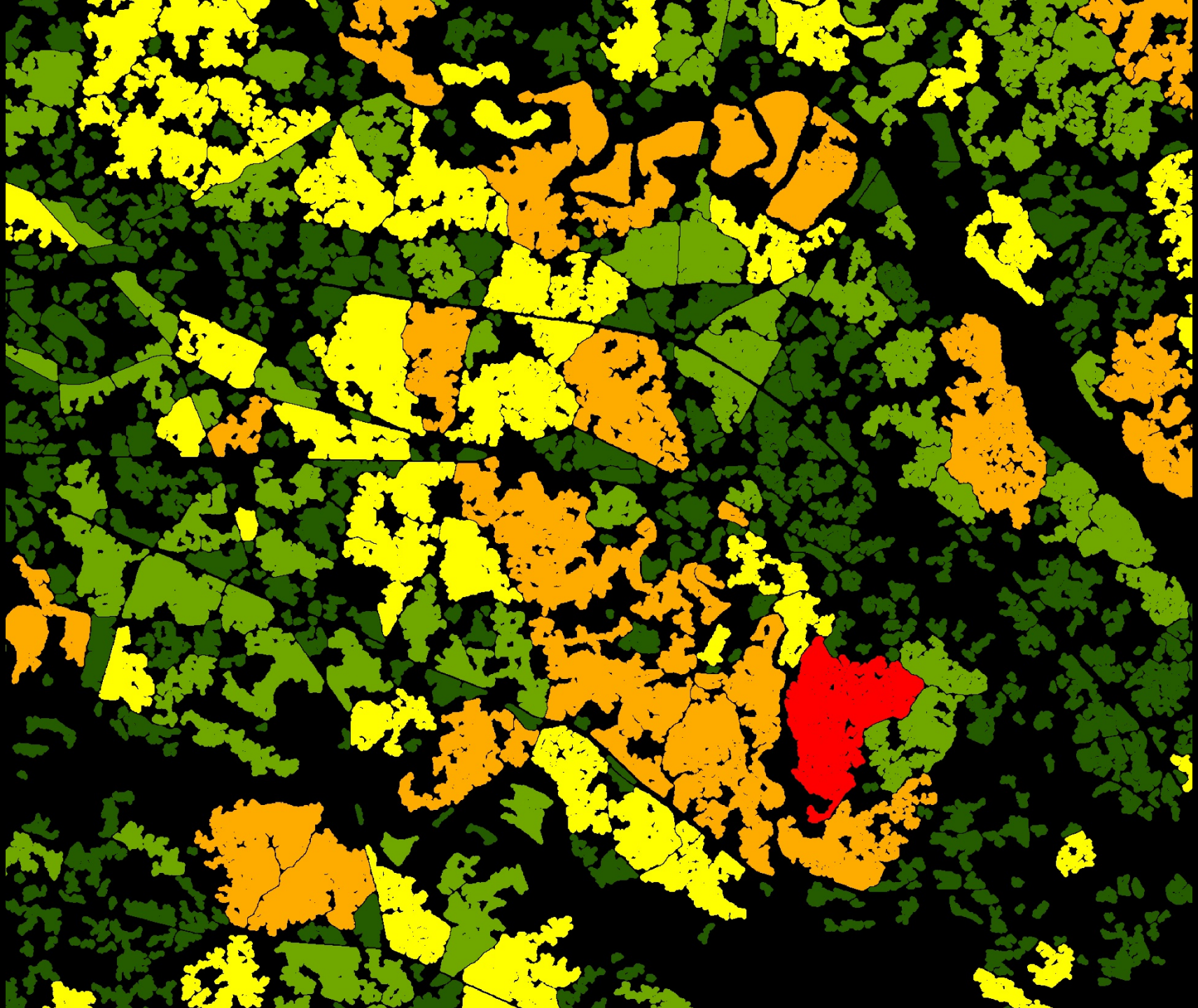
	Acres of Interior	
Type	**Minimum**	**Maximum**
Habitat Fragments	10	< 100
Small Cores	100	< 1000
Medium cores	1000	< 10000
Large cores	10000	< ∞

Great Dismal Swamp Area

VaNLA 2007
VaNLA 2016


Length of Interior Streams (meters)
0 - 5000
5000 - 10000
10000 - 20000
20000 - 40000
40000 - 193241


Topographic Relief Index (STD elevation)
0.06 - 10
10 - 20
20 - 40
40 - 80
80 - 224



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