RRRC Green Infrastructure Planning

Phase II Updates
May 30, 2013

Phase I Overview

- Phase I
  - VCLNA Ecological Cores Update
    - Ecological Cores updated to account for development since initial VCLNA release

Phase I Overview

- ## Phase I Results

Acres of intact cores before buffer & clip: 740,700
Acres after buffer & clip: 734,373
Acreage in cores <10 acres: 16.4

Total core acreage change(since 2000):   6,343.4 (-0.86%)

Total Number of Cores:Before buffer & clip: 1,155
After buffer & clip: 1,576
# of cores <10 acres: 420

Note that cores which lost more than 20% in land area were C5, thus cores were not reclassified since only lowest ranked cores lost area. The largest % drop in a higher-ranked core was 3.4% in one C4 area. This is good news for conservation of the largest habitat and forest cores.

Phase II Overview

- Phase II of the regional green infrastructure mapping effort will focus on updates and analysis of the VCLNA Forest Economics and Cultural Assets data layers. RRRC will update the layers to account for development and to incorporate new data sets, as available and necessary

- RRRC will also utilize DCR and local data sources to develop a protected lands layer for the region to be used in conjunction with the Forest Economics and Cultural Assets layers

- The ultimate objective of this proposed project is to provide local governments and non-profit organizations with maps and spatial data representing critical natural and cultural assets within the region to be used as a tool in planning, zoning and land conservation.

Phase II Progress

- Cultural Assets: Updates presented at February Land Use & Environment Committee meeting

- Protected Lands: Using DCR protected lands data set with checks against local parcel database information, as available; layer primarily utilized for overlay analysis, etc.

- Forest Economics: Update in progress; Removing areas based on Department of Forestry land cover data and local growth patterns
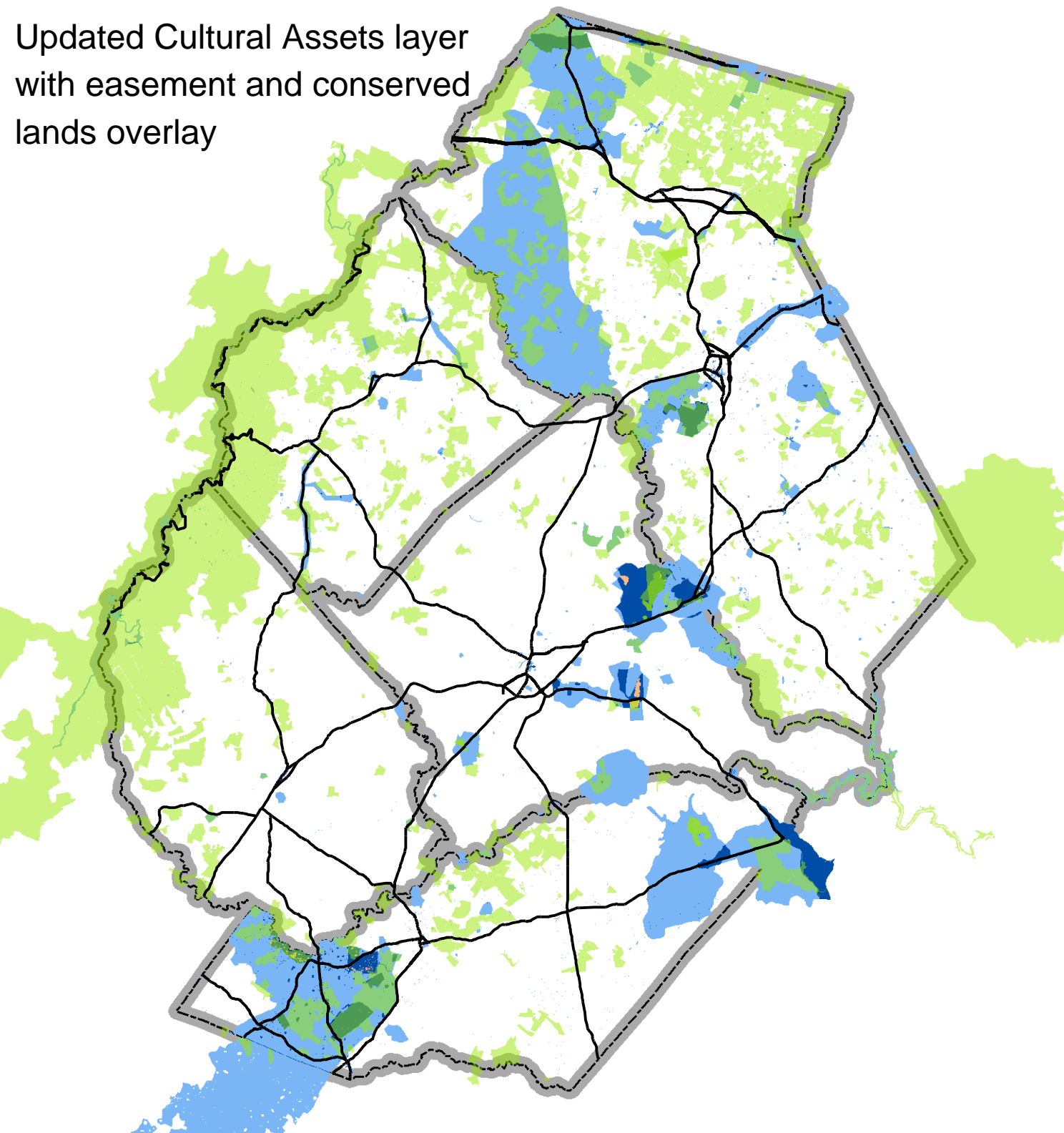
Phase II: Cultural Assets

* From the VCLNA Cultural Assets Report:

The Virginia Cultural Asset Model was developed in an effort to map the existing (and potential) culturally valuable lands in Virginia as defined by the presence of Historic Resources and / or American Indian Lands. As development pressure continues across the state, remaining resources are being irretrievably lost to development. The development of a GIS model to delineate where culturally valuable lands exist may serve as a guide to local government, consultants, and developers as to the location of culturally rich areas in Virginia. The model also serves as part of a larger green infrastructure plan, which aims to model where Virginia's conservation priorities are located to facilitate an integrated approach to planning and development.
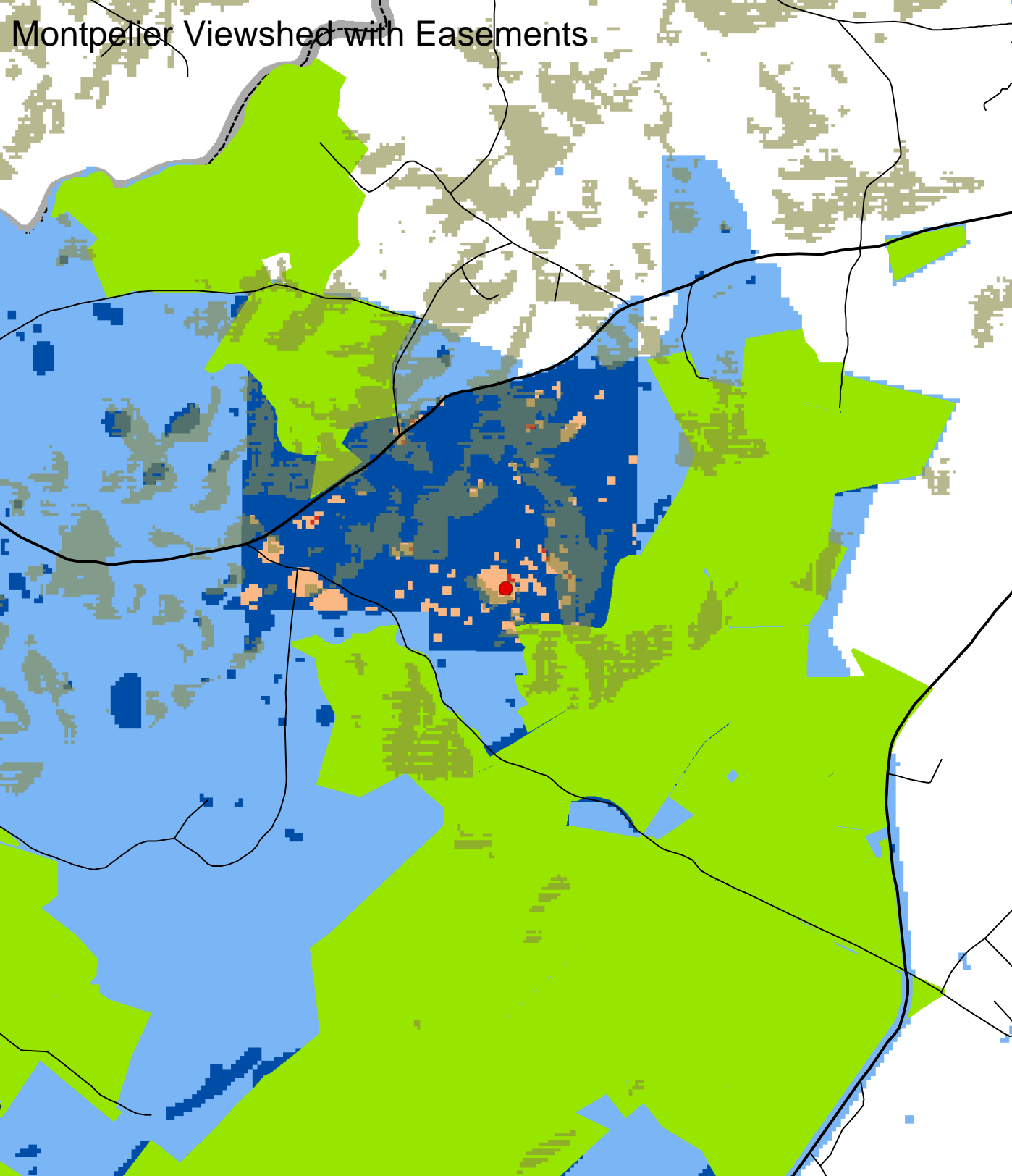
Phase II: Cultural Assets

- VCLNA Cultural Assets Report includes methodology for incorporating new data into the Cultural Assets model

- New data incorporated with Phase II updates
  - Easement data: Parcels under easement that are owned by Virginia Department of Historic Resources, Civil War Trust, etc.
  - National Register of Historic Places point data incorporated
  - Local Parks

- Viewshed Analysis
  - Region-wide based on NRHP data
  - Montpelier
  - Additional locations?

Updated Cultural Assets layer
with easement and conserved
lands overlay

Montpelier Viewshed with Easements

Phase II: Forest Economics

- From the VCLNA Forest Economics Report:

The development of a GIS model to delineate where valuable forest land exists may serve as a guide to local government, consultants, and developers as to the location of valuable forest land in Virginia. The model also serves as part of a larger green infrastructure plan, which aims to model where Virginia's conservation priorities are located to facilitate an integrated approach to planning and development.

Phase II: Forest Economics

- From the Virginia Department of Forestry *Statewide Assessment of Forest Resources 2010*:

  - Critical Issues Facing Virginia's Forests (selected)
    - Promote a larger, connected forest landscape
    - Enhance the role of forests in maintaining water quantity and quality
    - Conserve and restore diminished species
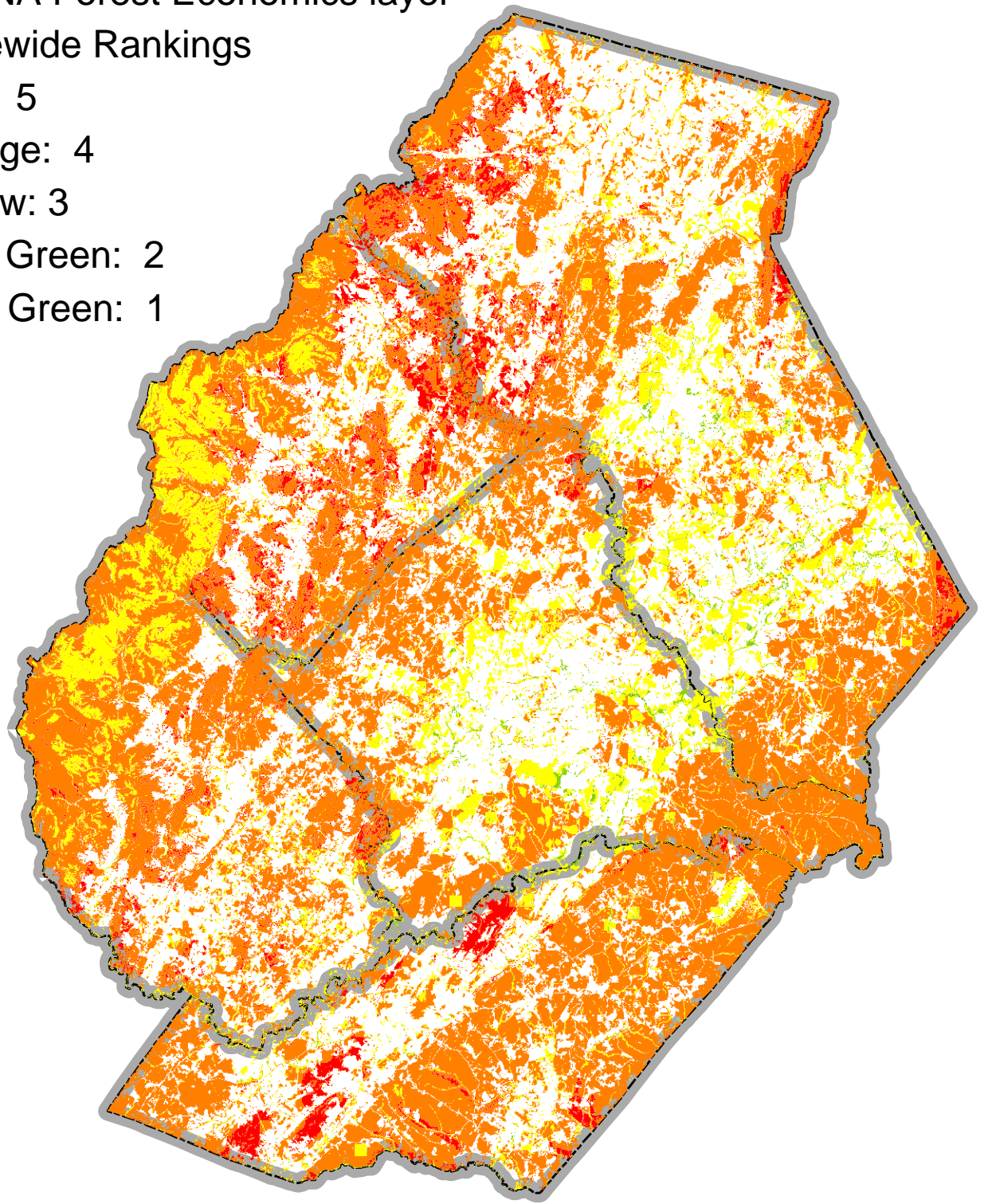   - Protect woodland homes communities from fire

- From the VCLNA Forest Economics Report

  - Ecologically, forests provide important services including:
    - Protection of water quality
    - Aesthetic quality
    - Provision of habitat for many plants and animal species

  - Economically, forests benefit through:
    - Estimated $29.44 billion in benefits (*Virginia's Forests, 2006*)
    - Individual forest landowners
    - Jobs in forest product industries
    - Recreational opportunities

VCLNA Forest Economics layer
Statewide Rankings
Red: 5
Orange: 4
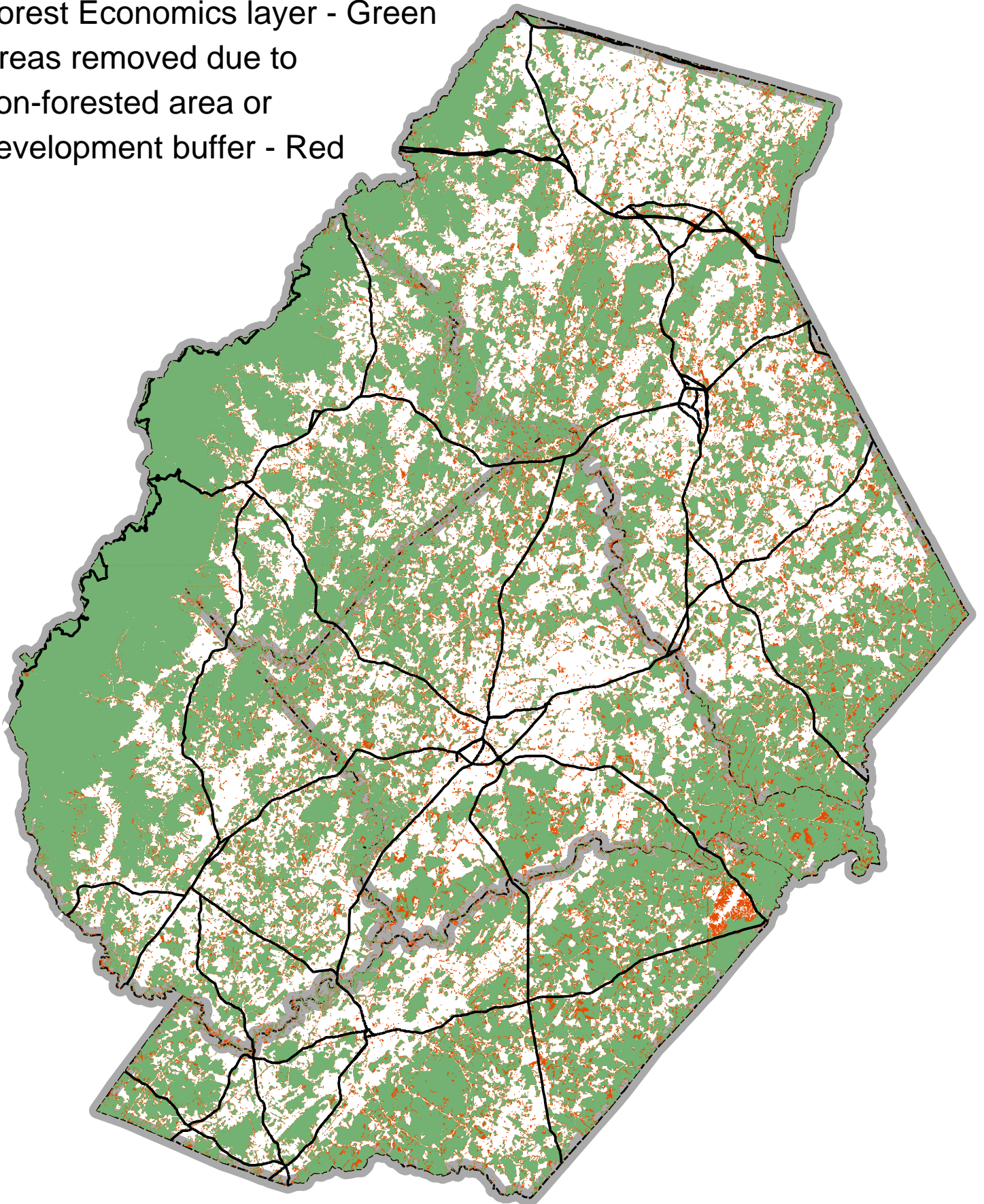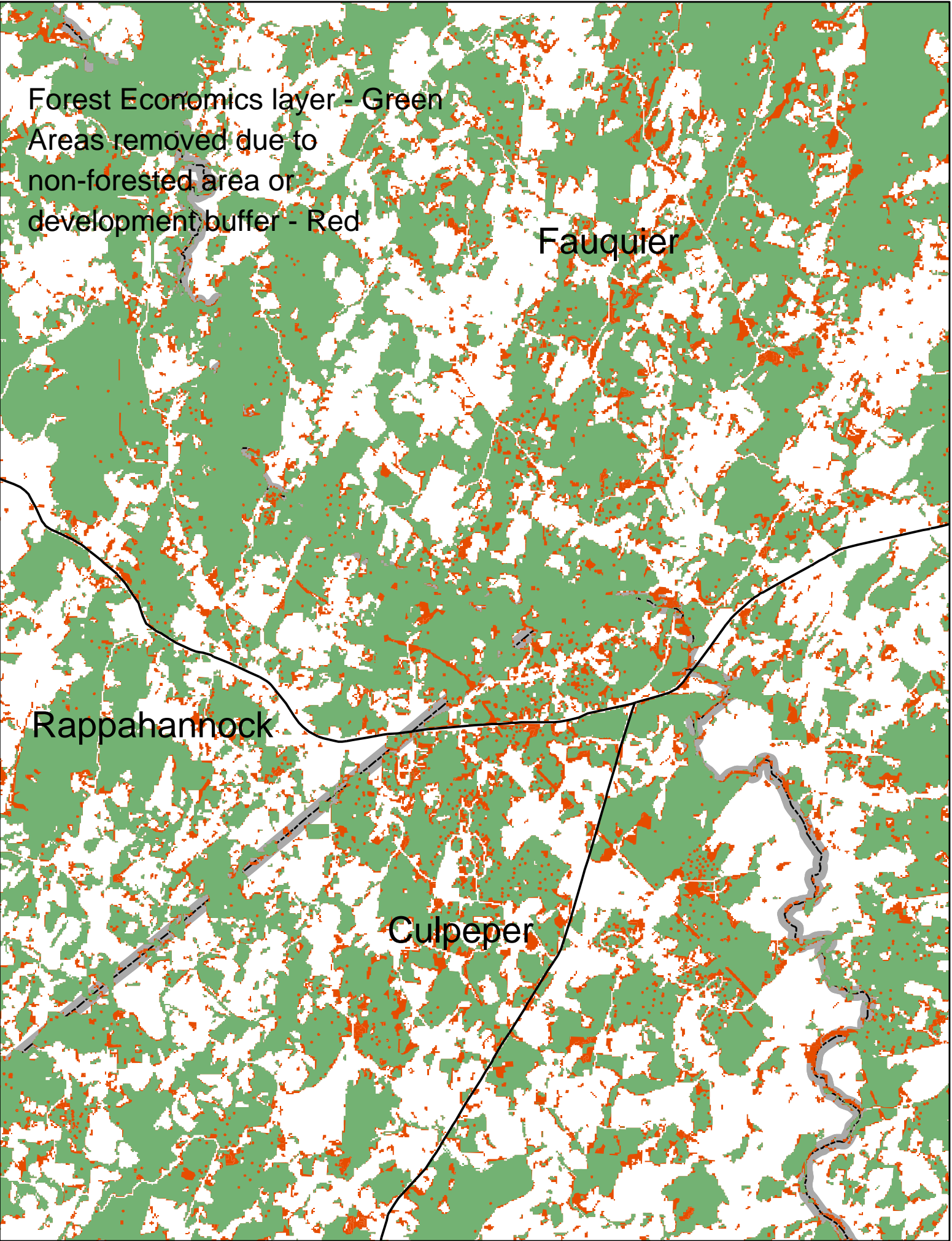Yellow: 3
Dark Green: 2
Light Green: 1

Phase II: Forest Economics

- Forest Economics Layer Update

  - Update layer to reflect changes in land cover/development
    - DOF land cover data – Remove non-forested areas from regional Forest Economics shapefile
    - Developed Areas: Follow similar methodology as with Phase I Ecological core update

  - Results
    - VCLNA Forest Economics: 710,383 acres included
    - After updates: 618,134 acres included
    - Change: -12.9%
    - Mostly (~85%) due to removal of non-forested areas

Forest Economics layer - Green
Areas removed due to
non-forested area or
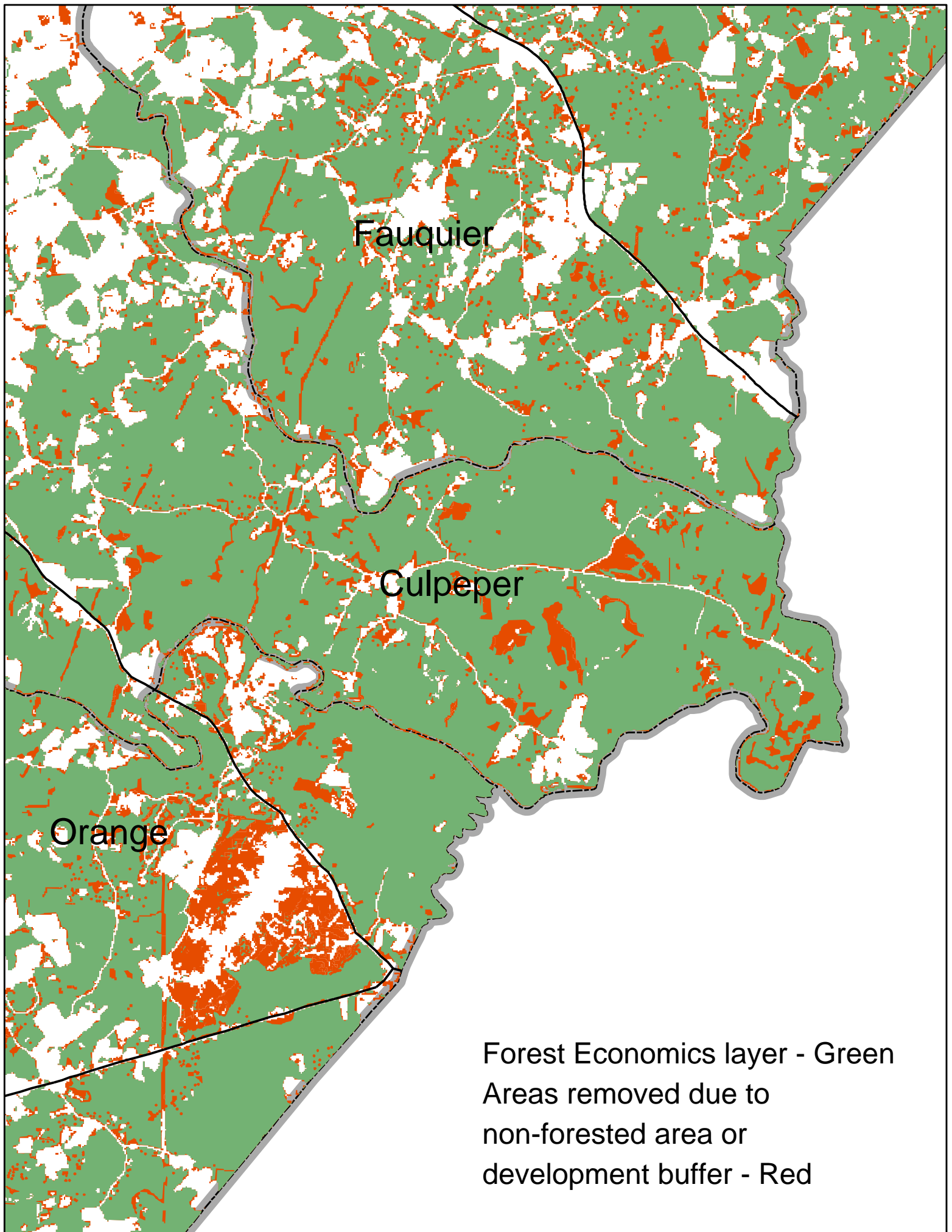development buffer - Red

Forest Economics layer - Green
Areas removed due to
non-forested area or
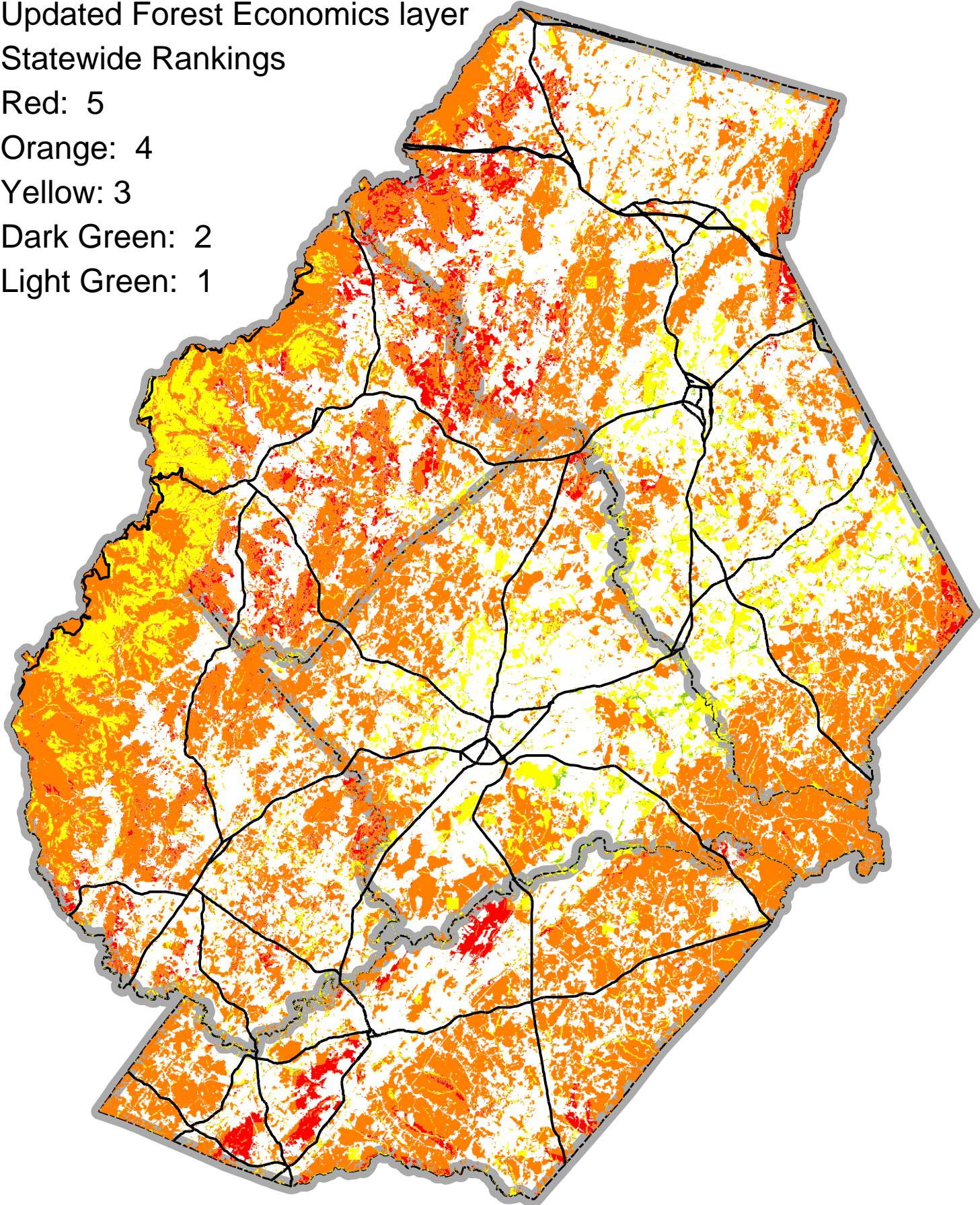development buffer - Red

Fauquier

Rappahannock

Culpeper

Fauquier

Culpeper

Orange

Forest Economics layer - Green
Areas removed due to
non-forested area or
development buffer - Red

Phase II: Forest Economics

- Forest Economics Layer Update

  - Options for regional/local use
    - Use statewide rankings at regional level
      - % of area ranked (highest to lowest):
        - 5: 7.6%
        - 4: 72.9%
        - 3: 18.7%
        - 2: 0.8%
        - 1: 0.01%

    - Combine Forest Economics Area (remove statewide ranking)
      - Filter out areas <5 acres: ~6,440 acres removed
      - Filter out areas <10 acres: ~10,500 acres removed
      - Filter out areas <25 acres ~ 18,500 acres removed
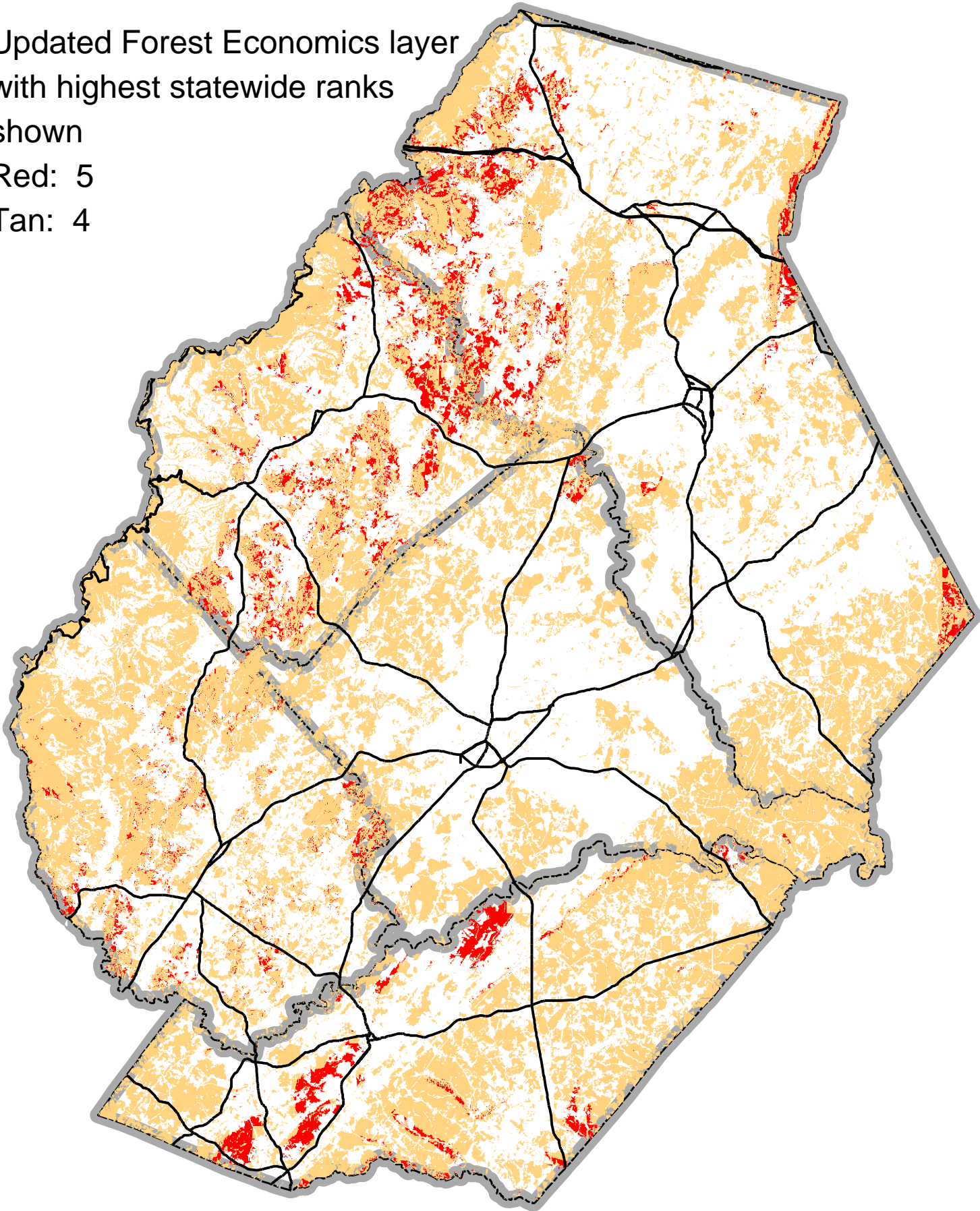   - Filter out areas <100 acres ~ 41,700 acres removed

Updated Forest Economics layer
Statewide Rankings
Red: 5
Orange: 4
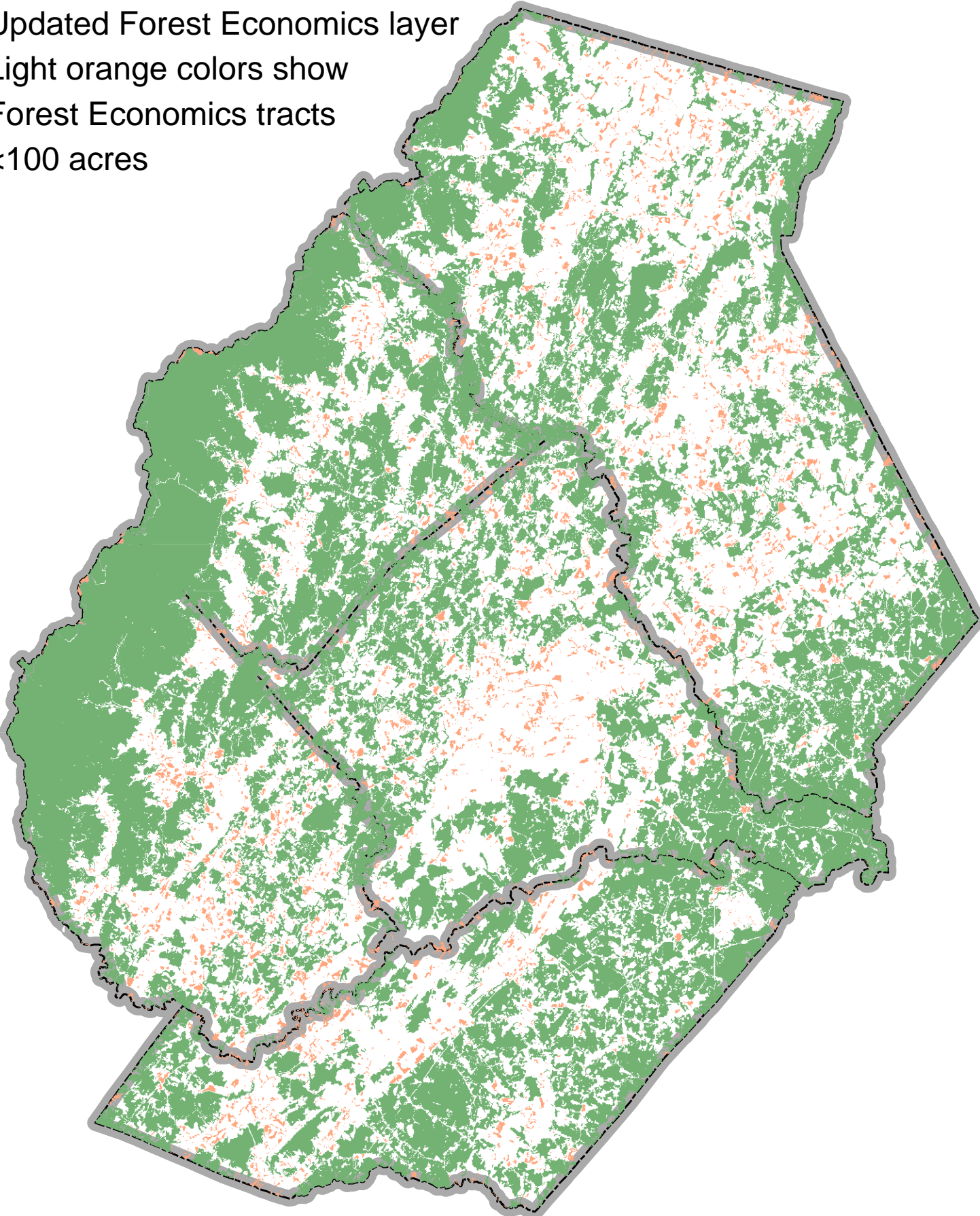Yellow: 3
Dark Green: 2
Light Green: 1

Updated Forest Economics layer
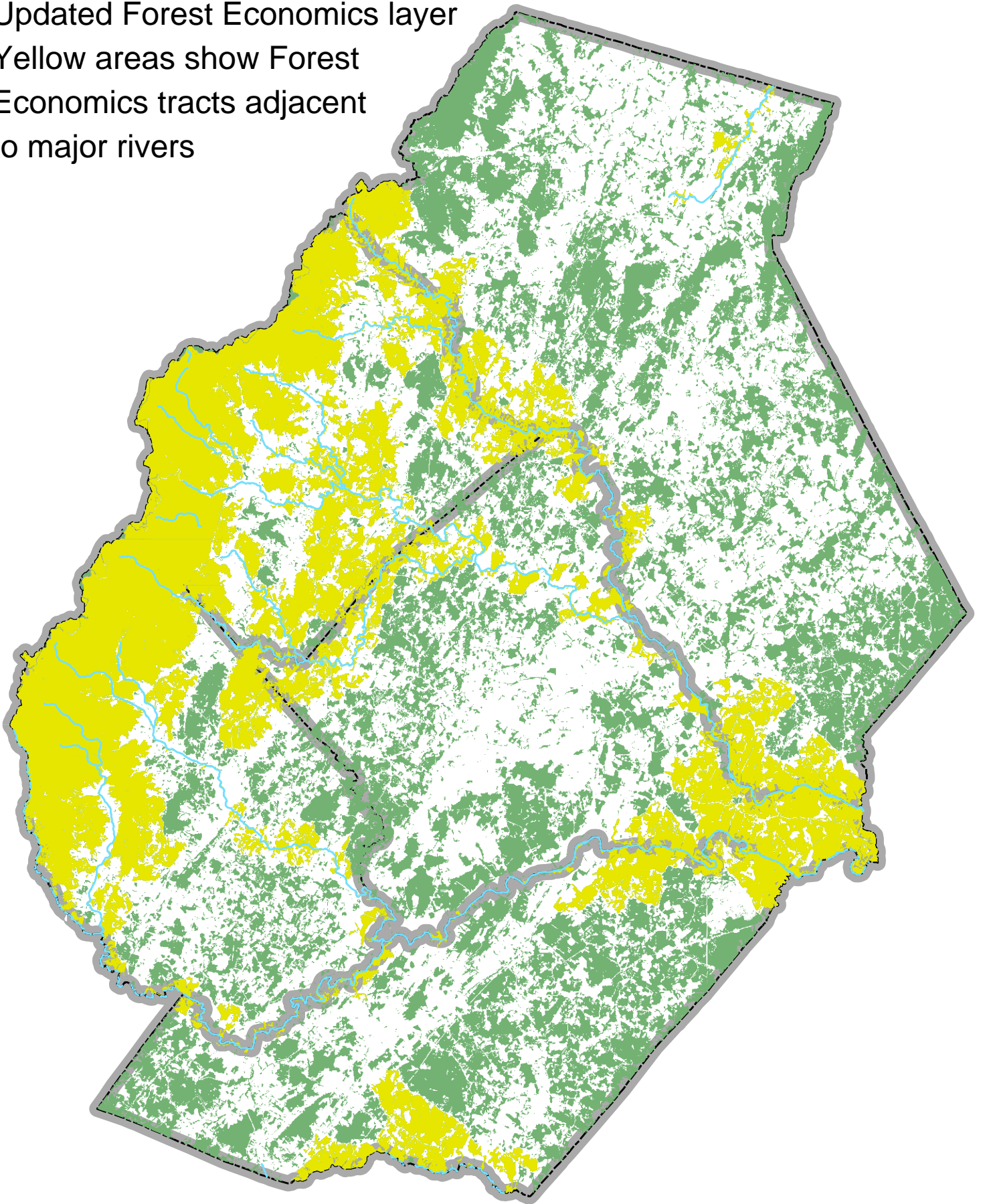with highest statewide ranks
shown
Red: 5
Tan: 4

Updated Forest Economics layer
Light orange colors show
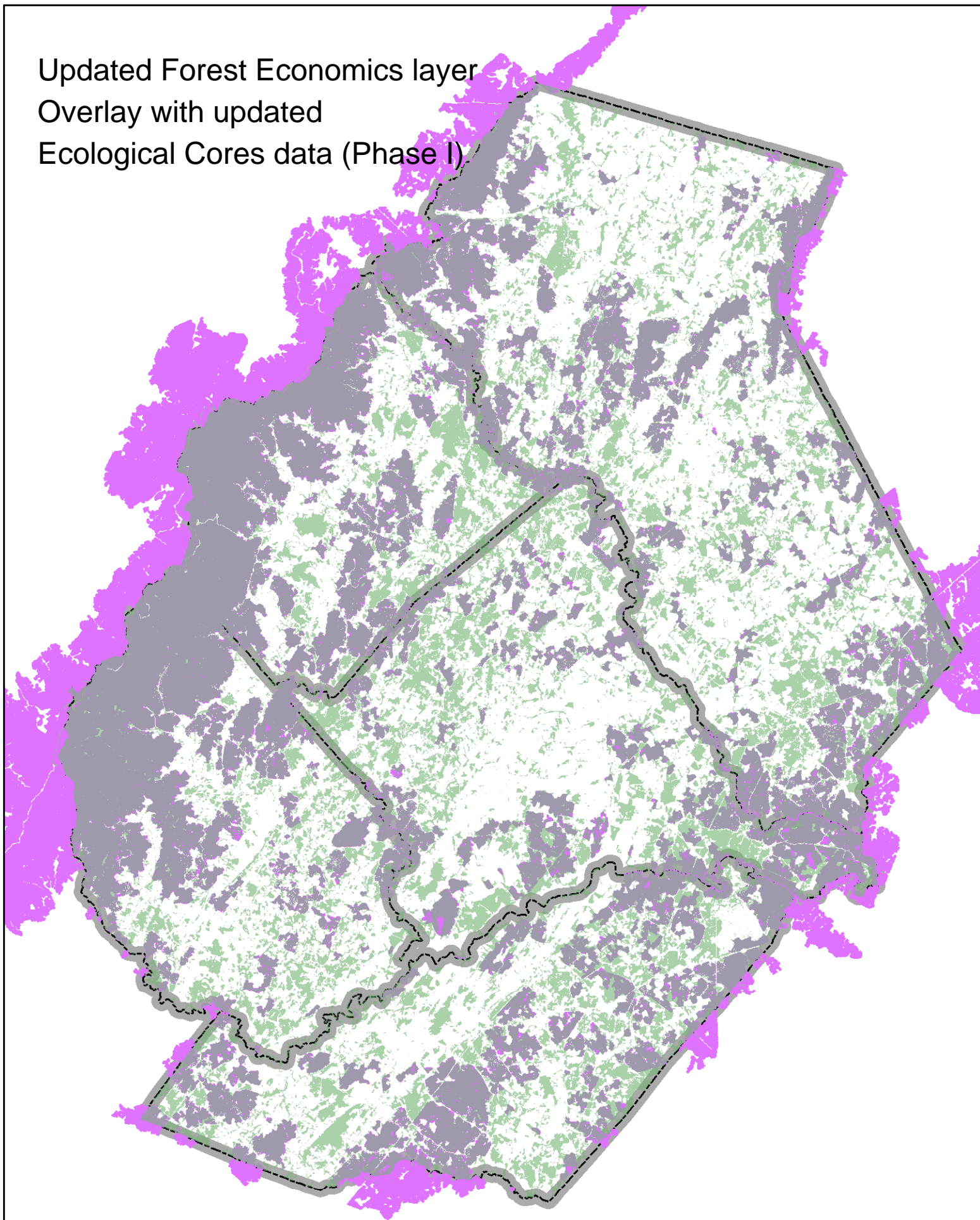Forest Economics tracts
<100 acres

Phase II: Forest Economics

- Forest Economics Layer Update

  - Options for regional/local use
    - Overlay and Intersect Analysis
      - Water Quality: Intersect with Major Rivers/Bodies of Water and/or all streams
      - Aesthetic Quality/Recreation Opportunities: Overlay with updated Cultural Model layer; selected viewshed areas at local level
      - Provision of habitat: Overlay with updated Ecological Cores and Corridors layer

      - Forest Legacy Areas (http://www.dof.virginia.gov/mgt/index-flp.htm)

Updated Forest Economics layer
Yellow areas show Forest
Economics tracts adjacent
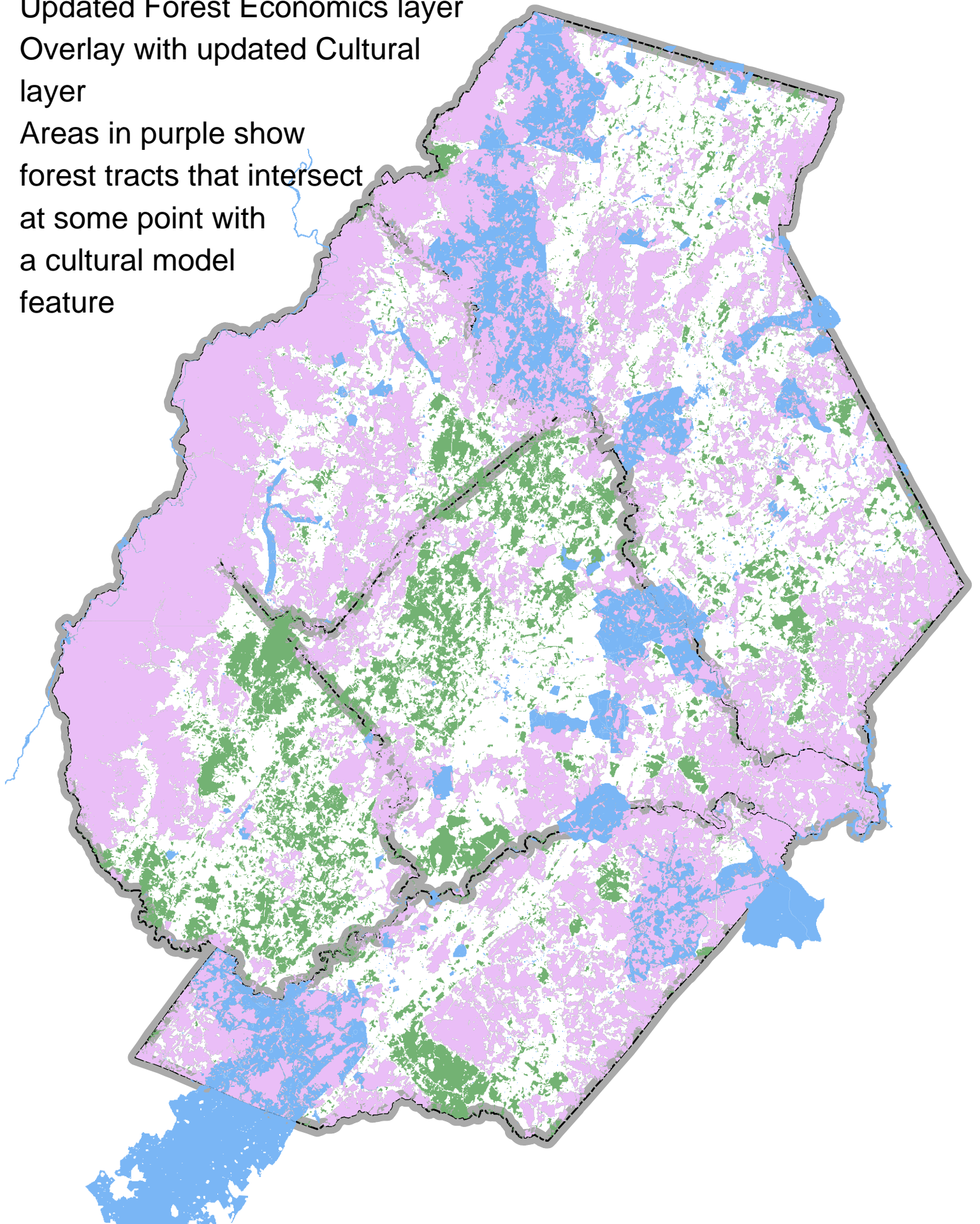to major rivers

Updated Forest Economics layer
Overlay with updated
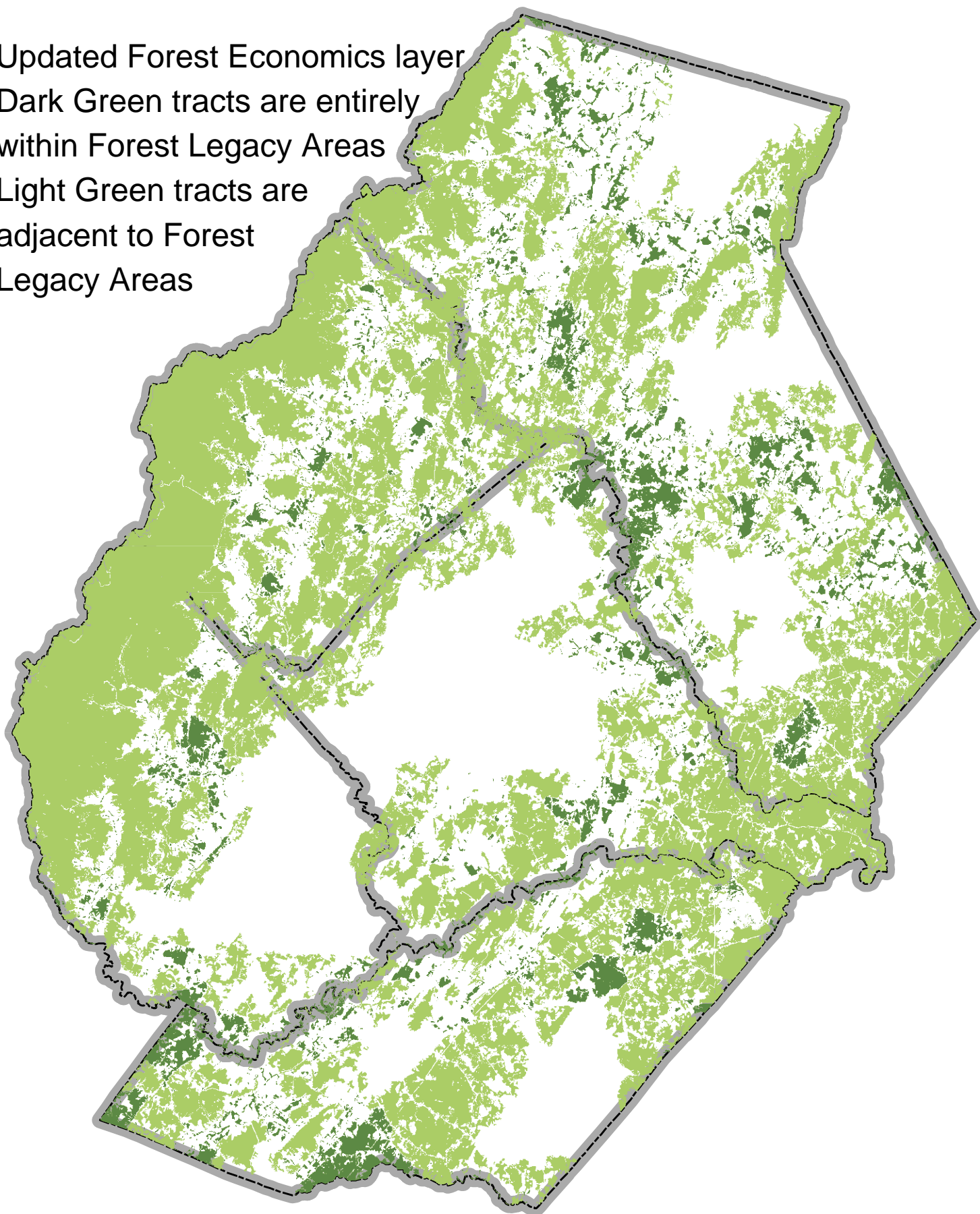Ecological Cores data (Phase I)

Updated Forest Economics layer
Overlay with updated Cultural
layer
Areas in purple show
forest tracts that intersect
at some point with
a cultural model
feature

Updated Forest Economics layer
Dark Green tracts are entirely
within Forest Legacy Areas
Light Green tracts are
adjacent to Forest
Legacy Areas

Contact Information

Rappahannock-Rapidan Regional Commission
Phone: 540.829.7450 Fax 540.829.7452

Michelle Edwards
medwards@rrregion.org

Patrick Mauney
plmauney@rrregion.org