

A Changing Mountain Landscape

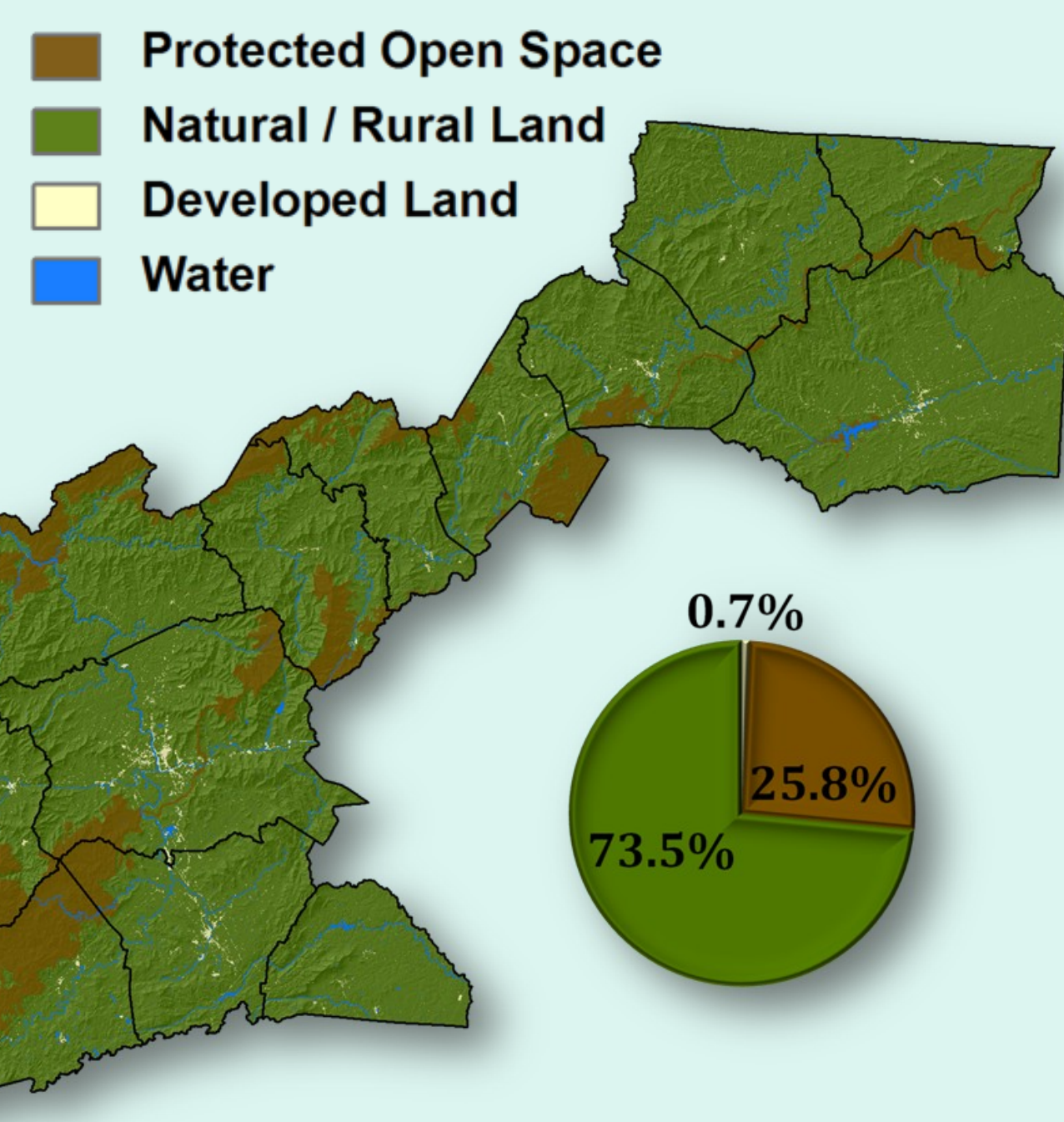
Applied Research and Regional Engagement

RENCI at UNC Charlotte's Urban Growth Mapping and Forecasting: Western North Carolina, 1976-2030

Using satellite imagery, researchers map the extent of developed land from 1976-2006, then forecast development through 2030 using population-development projections and drivers of growth.

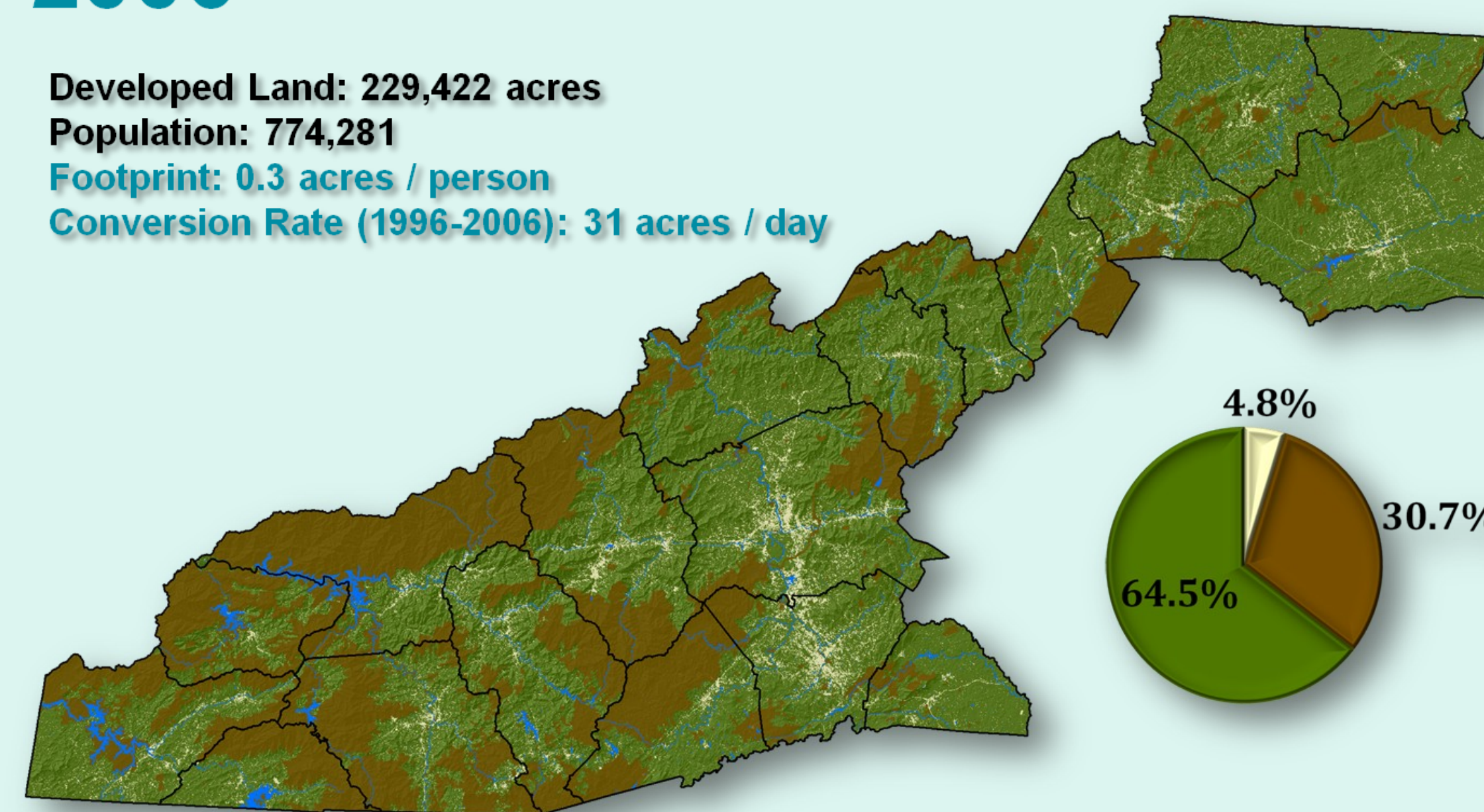
1976

Developed Land: 34,348 acres
Population: 545,100
Footprint: 0.06 acres / person



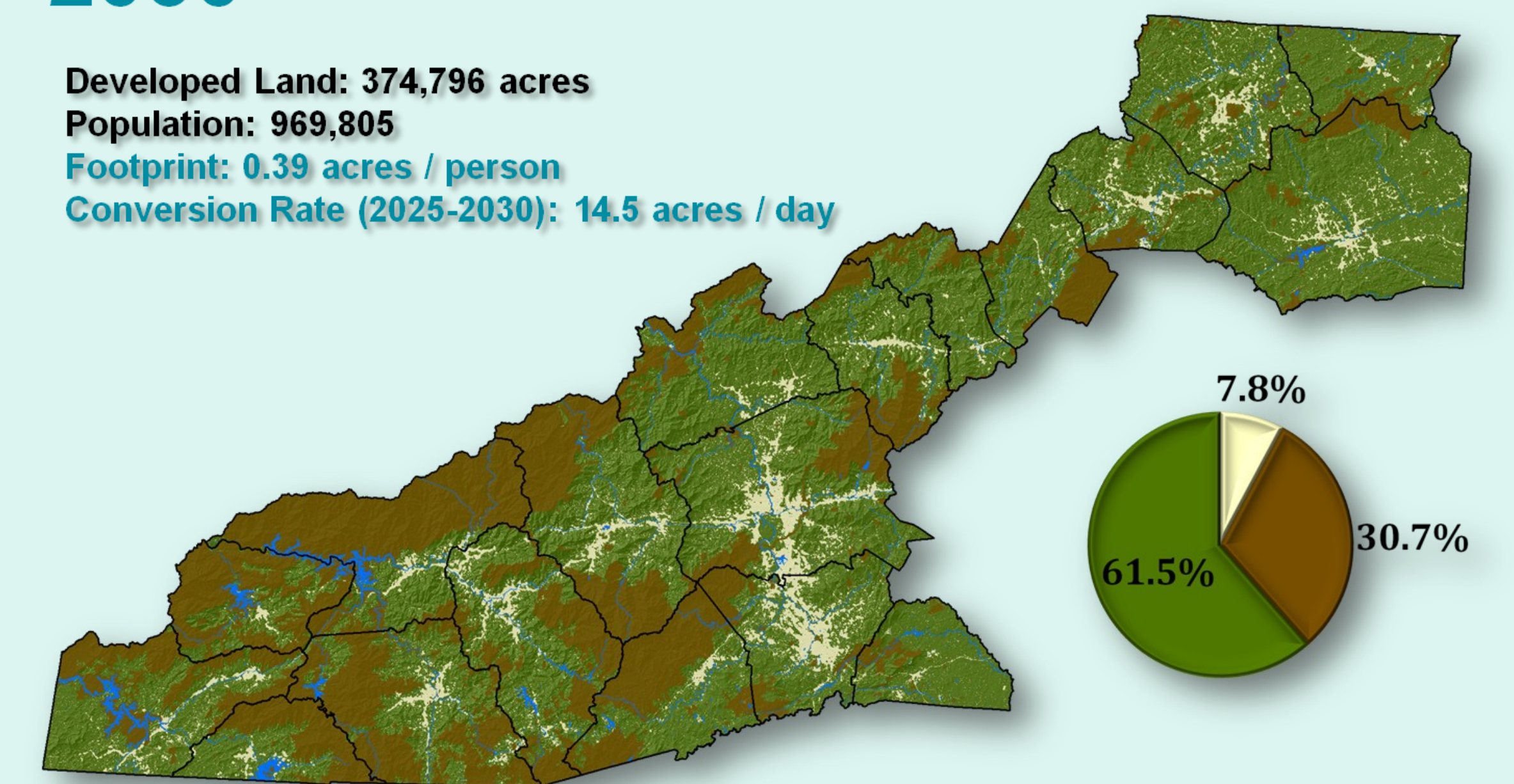
2006

Developed Land: 229,422 acres
Population: 774,281
Footprint: 0.3 acres / person
Conversion Rate (1996-2006): 31 acres / day



2030

Developed Land: 374,796 acres
Population: 969,805
Footprint: 0.39 acres / person
Conversion Rate (2025-2030): 14.5 acres / day



Exploring Growth and Development in the Land-of-Sky

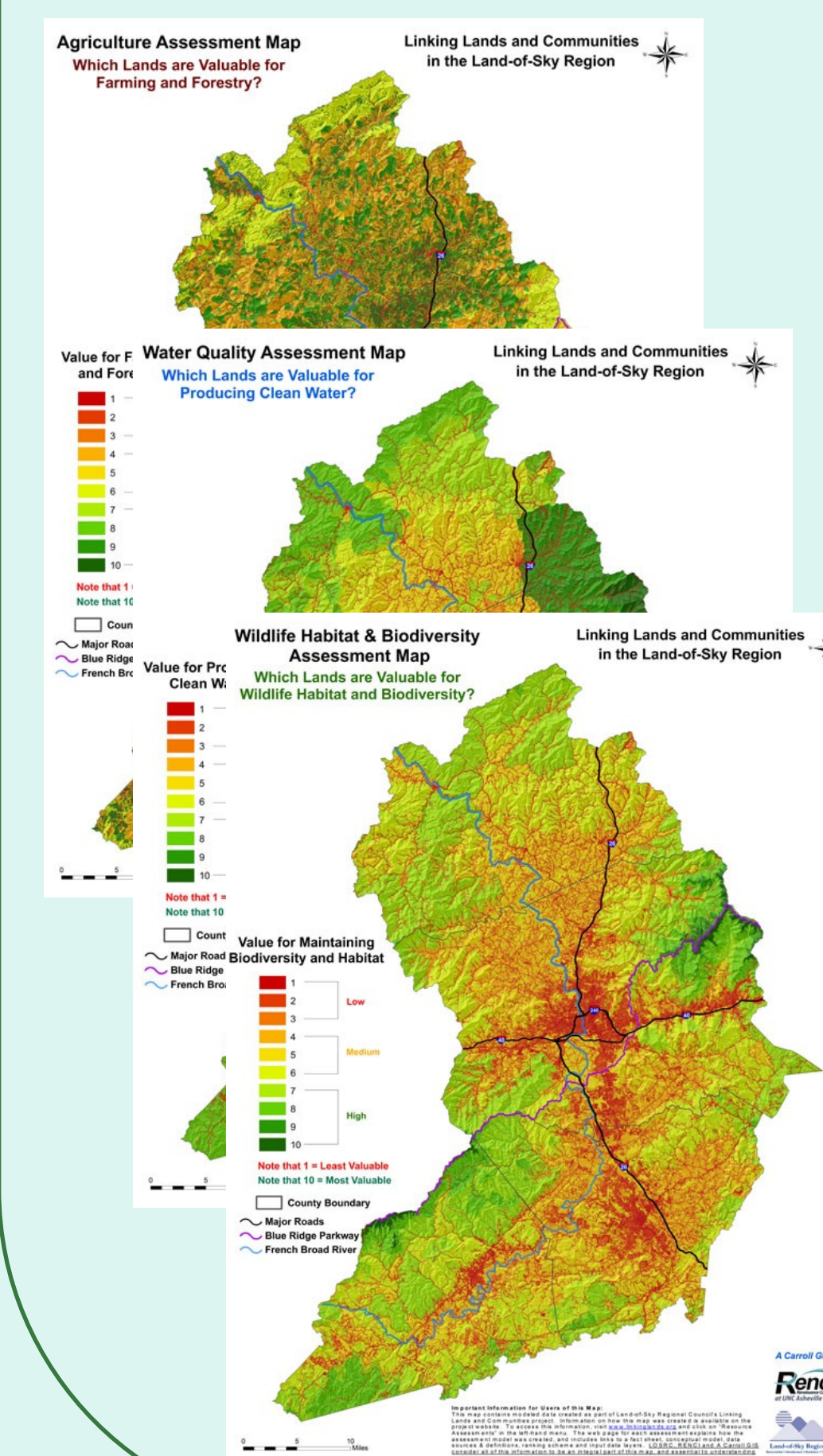
9/22 Public Forum at Land-of-Sky Regional Council, Asheville
Hosted by RENCI at UNC Charlotte and RENCI at UNC Asheville

- The western NC urban growth mapping and forecasting results were presented, followed by a discussion of how the results are being used by Land-of-Sky and RENCI at UNCA. An open dialogue session was facilitated with event attendees to discuss uses of the results
- Over 40 individuals attended the event, representing local government planners, state and federal environmental and natural resource agency professionals, developers, private consulting firms, and non-profit organizations



Integrating Research with Regional Initiatives

Land-of-Sky Regional Council
The Linking Lands and Communities Project



- Utilizing a four-county sub-region of the growth model's study area, Land-of-Sky has taken a big-picture look at the regional landscape to better understand where valuable natural resources are and how they can be preserved in the face of development forecasted by RENCI researchers. The primary resources examined are:
 - Water Quality
 - Wildlife Habitat and Biodiversity
 - Agriculture (farming and forestry lands)
- Land-of-Sky's maps have been developed to assist local and regional decision-makers in understanding trade-offs between development and natural lands, and careful planning is encouraged for both future development and natural and farmland preservation



Renaissance Computing Institute (RENCI)
RENCI was founded in 2004 as a joint venture of UNC Chapel Hill, Duke, and NC State to apply leading edge technologies and technical expertise to campus research and critical state issues. In addition to the Triangle area facilities, regional engagement sites have been established at East Carolina, UNC Asheville and UNC Char-

lotte. RENCI's mission is to "leverage the expertise, resources and capabilities from each region of North Carolina to address issues and problems that affect the entire state." The RENCI at UNC Charlotte engagement site's vision is one of a comprehensive program of cross-disciplinary applied research focused on sustainable met-

ropolitan growth. The RENCI at UNC Asheville engagement site's focus is on disaster research, mitigation, and preparedness, taking advantage of western North Carolina's expertise in weather and climate modeling, visualization, and public outreach.

www.renci.uncc.edu; www.nemac.unca.edu

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