

Communicating Climate Information for Integrated Decision Support at the County and Regional Level

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Comprehensive climate data exists within many federal, regional, and state agencies. There is now more climate information available than ever before, which can potentially improve decision making at multiple levels and across multiple sectors. However, much of the climate information is not in formats that are easily interpreted by the non-scientific community, decision makers, or the general public. Through the support of a multi-disciplinary collaboration involving the University of North Carolina at Asheville (UNCA), the Renaissance Computing Institute (RENCI) at UNCA, the National Climatic Data Center (NCDC), and other local organizations, the issue of making climate data more meaningful to such local decision making groups as city and county councils, natural resource managers, and community planners is being addressed through on-going applied research, education, and outreach.

Decision makers require a wealth of information to make informed decisions. The focus of this research is to ingest climate data from multiple sources and integrate the data with a variety of other datasets, including economic, cadastral, infrastructure, and physical data. Data integration occurs at county and regional scales in order to facilitate local decision-making addressing issues that affect these areas directly, such as weather-related hazards, climate change/climate variability, drought and flood mitigation, and land-use planning. Geospatial Visualization techniques, including geographic information systems (GIS), Google Earth, and other online and interactive applications are used to create a variety of *integrated climate data products* (e.g., graphics, posters, animations, on-line viewers). Many of these are 3D in nature in an effort to simulate "virtual" experiences of the data and locations that the data and climate information relate to. Communication occurs through data portals and "decision theaters" which support collaborative environments for decision makers to become better informed about climate information and other data.

A particular case-study examined the Swannanoa River Watershed in Western North Carolina, and a working prototype of integrated climate data products for this specific local area is presented. Dissemination of the products through education and outreach has included numerous presentations to various decision making groups utilizing multiple platforms (e.g., VizWall, Immersive GeoDome, Internet). Initial feedback and results collected from these groups suggests that Geospatial Visualization techniques, communicated appropriately, could be excellent tools for this type of data integration, distribution, and education/outreach. It appears that local decision makers and the general public can better relate to integrated climate data products than to raw climate data.

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