

Guest Editorial Preface

Geospatial Appalachia: Multidisciplinary Explorations of a Region

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Geographers have long sought to illuminate the distinctive characters of regions through the examination of an area of the Earth's surface via different human and natural science perspectives. While today's academic geographers do less of this, in favor of more focused study using more specialized methodological approaches, the regional tradition still has the power to create evocative portraits of place. In this special issue, one of our goals was to publish a body of work that would do that for the region we both call home: Appalachia. The four papers in this volume do paint a certain picture of Appalachia, which, if not as holistic as the traditional regional geographies, together tell a certain story. The bare bones of that story are that there are mountains (and related physical processes), that landscapes change in measurable ways due to a variety of forces, that the extraction of natural resources is an important such force, and that the region's human inhabitants exhibit agency in dealing with that. Students of Appalachia would, we think, recognize this story.

Our other objective in proposing this special issue was to showcase the wide variety of ways that geospatial technologies can be used to study places and regions. These four papers embody a range of approaches from quantitative to qualitative, from modeling to meticulous measurement, and from extraction's signatures on the land to anti-extraction activism. Given the enormous range of geospatial technologies and their continuing expansion, a spectacular number of additional geospatial methods could, and might one day, be included in a collection such as this on Appalachia.

Appalachia has long been considered a distinctive part of the United States on a number of fronts. Of course the most obvious point is the physical terrain, the Appalachia Mountain chain, the highest part of eastern North America. Small though these mountains are compared to the Rockies or the Andes or the Alps, their rounder forms, lushly forested slopes, and rank upon rank of green foliage, blue haze and white fog make them the favored mountains of many. In one of the several confounding complexities of the region, however, these are the very things often destroyed by the extractive industries that operate here.

Another of these complexities is the idea of Appalachia as isolated and backward. In some senses, it has never really been either of these. Occupied by millennia before Europeans approached them, Appalachian landscapes were managed and loved and cultivated by Indigenous groups, notably but certainly not limited to the Cherokees. Trade and other social interactions occurred by means of a well-developed network of trails. Europeans tapped into this network, first for trade and later for

migration and occupation. The extent of connectivity and cultural exchange tied to the trail network can be illustrated by Appalachian musical traditions. A key element of these traditions is the banjo, which can be traced to West African origins and was carried to the region by Africans in the trade network. The fiddle was brought by migrants from the British Isles, while the dulcimer was adapted by German migrants from a German instrument. Black, white, and Indian residents of the region have all participated in the synthesis and practice of Appalachian music. Cherokees added their own embellishments and adapted the music to their own culture, such that, for example, it is possible today to listen to recordings of English hymns sung in Cherokee language accompanied by banjo music.

The supposed backwardness of Appalachia's peoples is related as much to "development" as to access. In Southern and Central Appalachia, the principal industrial activities have been in the primary sector, including agriculture, mining, and logging. Primary activities, especially when run by corporate interests, tend to keep the local people impoverished and undereducated, and local communities suffering disinvestment. Indeed, the main reason we chose to exclude Northern Appalachia from this special issue is because, though certainly also subject to extractive industries, the northern area was tied into the country's development processes much earlier through the canals and rail lines that connected northeastern cities with midwestern ones, which were in turn connected to the vast resources of the west. Northern Appalachia was thus on a different trajectory from those of Central and Southern Appalachia respectively, during the 19th and early 20th centuries, with outcomes still strongly influencing the character of these areas.

During the middle third of the 20th century the U.S. federal government undertook to invest in major projects that would, it was hoped, help the impoverished portions of Appalachia develop and be more aligned with other parts of the country. Projects included the Tennessee Valley Authority, major national parks, the Blue Ridge Parkway, and the Appalachian Development Highway System (ADHS). The latter was based on the sound geographic idea that good infrastructure for connectivity is essential to human interaction, innovation, and economic growth. On the other hand, also at work was the tendency of transportation advancements to leave behind smaller places in favor of greater access to larger places. And so in yet another paradox, some places in Appalachia have become more isolated, while others have acquired the sense of generic placelessness common along America's large highways. A startlingly wonderful exception to this is the New River Gorge Bridge within the ADHS, a marvel in both its engineering and its beauty—although, as with much of Appalachia, one has to get off the highway to appreciate it.

Today significant lands within Appalachia are owned by federal and state governments. In some cases the lands are managed for preservation of nature and people's enjoyment of its beauty, while in others the management goals include facilitating resource extraction by corporations. This is yet another paradox of the region. On both sides of this government-owned coin some kinds of development are constrained to an extent not seen elsewhere in the eastern U.S.

The conditions explored above form the backdrop for the four papers of this special issue. Das et al (this volume) focus their research in a segment of one of the major national parks. They compare two different GIS approaches for prediction of debris-slide locations. White and Resler (this volume) also utilized government land ownership for access to field sites, where they took extensive measurements for analysis. Their rigorous approach is rooted in ecological science, and yet in the study of Appalachian sites long subjected to human interventions, they leave us with the question of which species or ecosystem is natural and which an encroachment.

The remaining two papers are both focused on coal mining in Central Appalachia. Marston and Kolivras (this volume) employ geospatial technologies to delineate the extent and location of disruptive coal extraction processes over time. Massey (this volume) turns to more theoretical and social aspects of geospatial technologies, tying them to activism against mountaintop removal mining methods. In addition, his paper embodies the sense of confounding complexities found in so many aspects of this region.

We stated in the beginning that we wanted this volume to help illuminate the character of our region of focus. These four papers make an excellent start on exploring the character of Appalachia, while also showcasing some of the ways geospatial technologies can do this.

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