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## Review of *Rivers of Change: Essays on Early Agriculture in Eastern North America* by Bruce D. Smith

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**Rivers of Change: Essays on Early Agriculture in Eastern North America.**  
Bruce D. Smith. Washington, DC and London: Smithsonian Institution Press,  
1992. x + 302 pp. Maps, photos, and references. \$49.95 cloth.

Between 1970 and 1990 there was a burst of paleoethnobotanical research into prehistoric Native American subsistence practices across North America which has resulted recently in numerous regional syntheses. No synthesis is more salient or cogent than that presented for eastern North America by Bruce D. Smith who has been a key researcher in the area of prehistoric subsistence.

The book is a collection of 12 essays, seven of which are reprinted journal articles or book chapters. The focus of the essays is on the discovery of a premaize agricultural complex that emerged between 3,000 and 4,000 years ago in southeastern North America. This complex involved the domestication of native North American food plants including indigenous squash, goosefoot, sumpweed, and sunflower. The archaeological evidence collected from numerous sites demonstrates that eastern North America was a center of indigenous cultivation comparable with the previously known Andean and Mexican centers of domestication. The essays cover a variety of topics related to this newly recognized center of domestication. First, Smith presents a well developed Floodplain Weed Theory of plant domestication followed by essays documenting the evidence of domestication and summarizing changing views of prehistoric subsistence practices. He then focuses on technical aspects of investigation relating to the methods by which archaeological seeds can be identified as domesticates. Most important are the application of scanning electron microscopy, accelerated radiocarbon dating, molecular biology, and ecological studies. The economic potential of goosefoot and sumpweed are evaluated to demonstrate the nutritional value and harvest potential of the plants. The plants are then put in cultural-ecological perspective by describing the nature and organization of prehistoric Hopewellian farming communities. The agricultural complex is discussed in historical perspective in a treatment of Natchez ethnobotany. Finally, the last two essays present a synthesis of the data that succinctly summarize decades of research and debate.

The scope, depth, and scholarship of the book are impressive. One gains from the essays an appreciation for paleoethnobotanical research. Smith's summary includes consideration of the current ecology of potential domesticates, experimental harvest and processing experiments, detailed examination of microscopic morphology of archaeological seeds compared to modern seeds, the application of osteological stable carbon isotope data to demonstrate dietary change over time, the use of coprolite data to document the contribution of the domesticates to ancient diet, and molecular biological applications to trace domesticate strains. These various lines of research are then interwoven to define the mechanism of domestication in the area. Because the essays are by a single author, the book has a clear focus throughout the various, well integrated essays. However, because some of the essays are reprinted, there is a small amount of redundancy in the presentation of text and figures. Nonetheless, this is an essential acquisition for any anthropologist or botanist interested in the nature of plant domestication, and is also an insightful class text. **Karl J. Reinhard**, *Department of Anthropology, University of Nebraska-Lincoln*.