

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Excavate and Research Fossil Plants from the Antero Formation

Discipline: Natural

Type of Project: Research

Funding Agency: National Park Service

Other Partners/Cooperators: University of Colorado at Boulder

Effective Dates: 5/15/2007 - 3/31/2010

Funding Amount: \$10,000

Investigators and Agency Representative:

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Project Abstract: The objective of this project is to make new collections from the Eocene-Oligocene Antero Formation from South Park, Colorado, and to analyze them to determine the taxonomic composition of this fossil flora and make inferences about paleoclimate. Very little previous work has been done on this fossil flora, although preliminary evidence suggests the Antero fossil flora is slightly younger than Florissant, and if true, then a comparison of Antero and Florissant could provide important information about the effects in the southern Rocky Mountains of the major global climate change during the Eocene-Oligocene transition. Data from this study will contribute new information about the dynamics of plant community evolution in the Rocky Mountains during the Eocene-Oligocene climate change, as well as data about the magnitude and timing of the climate change. Such information relates directly to the Florissant Fossil Beds National Monument's identified research needs related to understanding of the climate during the period of the Florissant Formation.

During the summer of 2007, NPS and CU-Boulder researchers will complete excavations at one or two localities in the Antero Formation. The collections will be prepared and cataloged into the collections at Florissant Fossil Beds National Monument and/or the University of Colorado Museum. Besides the megafossil specimens, samples will be prepared for pollen analysis. Research on the collections will involve 1) taxonomic identifications of leaves and fruits, 2) pollen analysis to provide a broader understanding of the taxonomic composition, 3) paleoclimate analysis using established methodologies such as plant physiognomy and nearest living relatives, and 4) reconstruction of the ancient forest community, including plant-insect interactions as evident in the fossil leaves.

Outcomes with Completion Dates: Due by January 31, 2010: 1) Fossil specimens cataloged into NPS collections and ANCS database, 2) Preliminary taxonomic lists of plant macrofossils and/or pollen, 3) Paleoclimatic and paleoecologic analysis of data, 4) Final Report, graduate dissertation, and/or peer-review manuscript for publication

Keywords: taxonomy, paleoclimate, fossils, plant communities, Florissant Formation, Antero Formation, Florissant Fossil Beds National Monument, University of Colorado at Boulder

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Date Annual Report Received:

Date Final Report Received:

Publications, etc. on file: