Photography and the Revolutionary Mapping and Documenting of the Three-Dimensional Environment

by Dr. Mark Fonstad

An Associate Professor in the Department of Geography at the University of Oregon, Dr. Fonstad has been involved with using various types of geo-spatial tools such as simple cameras to develop high resolution environmental data sets. His recent work has specifically focused on how to use simple as well complex tools to develop high resolution data models. The nature of such work appeals to a broad audience interested in geo-spatial field as well as environmental studies with an emphasis on water. He is currently an editor of the environment section of the Annals of the Association of American Geographers (AAG). In 2005, he received the AAG’s 2005 G.K. Gilbert Award for excellence in research. In 2004, he received the Golden Apple Award for excellence in Scholarly/Creative Activities.

The use of photography as a geographic tool and method has waxed and waned over the past century. In the first decade of the 21st century, geographic photography has undergone a dramatic revolution, made possible by inexpensive digital cameras, the rise of remote sensing training, and the development of advanced and automated analytical techniques.

Using photographic approaches in geomorphology and hydrology as major examples, this presentation will highlight the re-enchantment of photography as a mapping medium. Examples include such advances as spectral analysis of geomorphic materials and bathymetry, textural and feature-based analysis of sediment landscapes, user-friendly photogrammetric mapping of three-dimensional environments, motion-based imaging of geomorphic processes in action, and a wealth of change-detection methods. Broader discussion in geography is needed to evaluate photography in geographic education, and to determine the viability of photographic approaches for various geographic efforts.