Foreword

Amelia M. Budge, Guest Editor

I am pleased to serve as guest editor for this issue of *PE&RS*. This year's GIS/LIS "special issue" departs from earlier years in that it focuses on two areas of interest for the Society. The major focus is still GIS; but to this we have added a second focus on data preservation and archiving. Most of us talk about preserving data, but few of us, apart from trained archivists, have any real understanding of the technical, social, and economic considerations driving today's standards and best practices. Archivists have long grappled with the best methods for preserving records and have debated which records should be preserved, whether these are documents or other forms containing information important to the historical record. With the acquisition of aerial photography in the late 1920s, new issues emerged as to how photos should be preserved and archived for use by future generations. As the technology migrated to digital satellite imagery, and later to electronic databases using GIS, these questions have become more complicated, requiring more sophisticated methodologies and standards for preservation. The paper by Drs. Christopher Stohr and Donald Luman offers one solution to digitally preserving a collection of rapidly deteriorating aerial photography. Images that are preserved in digital formats can be readily integrated into GIS. However, digital images can also present problems because file sizes can be quite large. The paper by Dr. Fayez Shahin presents a methodology for working with large digital image files.

Six papers are presented for GIS technology and applications. Three contributions address the important topics of error modeling techniques. Dr. A-Xing Zhu examines types of uncertainty in categorical maps and provides means to measure spatial distribution of these types of uncertainty. Huang Youcai and Liu Wenbao describe how an estimation model is used for estimating the digitizing error after creating the digitized data. The paper by Denis J. Deans, Kenneth R. Wilson, and Curtis H. Flather discusses spatial error analysis of species richness for Oregon's Gap Analysis database. Drs. Xueqiao Huang and John R. Jensen present their work on building knowledge bases for image analysis expert systems incorporating GIS data. Finally, there are two applied GIS papers. Jeffrey Hepinstall and Dr. Steven Sader describe application of a Bayesian modeling technique for predicting probability of occurence for specific bird species in Maine. Ross Lunetta, Brian Cosentino, David Montgomery, Eric Beamer, and Timothy Beechie co-authored a paper on their work applying GIS-based analytical techniques for characterizing and prioritizing salmon habitats for restoration strategies.

On behalf of the Society, I am grateful for the Highlight article by Dr. Bruce Ambacher of the National Archives and Records Administration. He has set the stage for the preservation papers in this issue and for guiding future ASPRS Data Preservation and Archiving Committee dialog. I am especially thankful, also, to Dr. James Merchant for assisting as Associate Editor for the GIS papers; and to the suite of reviewers who provided their time and expertise to review these contributions.

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