Integrated Tools for Natural Resources Inventories in the 21st Century

Proceedings held at
Boise Centre on the Grove
Boise, Idaho

August 16-20, 1998

Edited by
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INTEGRATED TOOLS
FOR NATURAL RESOURCES
INVENTORIES IN THE 21st CENTURY

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PREFACE

Inventory has always been and continues to be central to forest management at all levels of practice. Designing, planning, and implementing inventories draws upon the expertise of many individuals within a forestry organization. For these reasons it is not surprising that our 1998 conference drew a contingent of over 325 forestry and related professionals from multiple organizational levels. There was also a distinct international flavor to the conference with over 30 foreign countries represented—again, evidence of the importance and pervasiveness of inventory in forestry practice.

By all accounts the gathering was a complete success: good attendance, a rich variety of papers, well-done presentations, fine hospitality and weather from the good folks of Boise, Idaho, and ample good food around which discussions could be continued and acquaintances made or reestablished. All this was made possible by the hard work of many people involved in organizing the conference and, of course, the enthusiastic participation of attendees.

Consideration of the papers presented at the conference points to several trends in inventory practice. The new "annual inventory" systems being developed were the subject of several papers, as well as a special session. Increased pressure on forest management has called for a corresponding increase in the need for timely data for which the annual inventory systems provide one approach. Concern over possible forest decline in many areas across the globe has spurred efforts in more effective forest health monitoring. These efforts continue to be improved in terms of statistical rigor and are now being seen as an integral component of a comprehensive inventory system. Growth modeling efforts and inventory have always been closely linked, but the use of models in the design of repeated inventories has grown considerably. Use of inventory data for model calibration and evaluation, as opposed to research plots, is receiving increased attention.

Remote sensing techniques continue to be evaluated for generating useful auxiliary data in forest inventories. Much has been learned with current efforts better matching imagery capability with data needs. Still greater gains will be needed as managers and decisionmakers call for more frequent inventories with broader applicability. Finally, a healthy call for simplicity in design was heard from many at the conference. Inventory data are being used to address an increasingly diverse set of questions by an increasingly diverse set of users. Optimality has little meaning under such circumstances, and statistical efficiency may not be conducive to broad application.

In addition to the conference paper and poster sessions, vendors shared the latest in technologies useful in inventories throughout the conference, and five half-day workshops presented the latest inventory tools. The conference ended with six field trips demonstrating a variety of current inventory techniques and implementations.

The papers that follow are generally "as provided" by the author. All authors were asked to obtain peer review of their manuscript, and we assume that was uniformly the case. Reviewers are identified in the acknowledgments of each paper. We have organized the papers into seven topical areas to give some sense of meeting themes.

Again, thanks to all those involved in organization and execution of this successful conference, especially to the members of the conference planning commitee—people who all put in lots of hard work and had great ideas—and to our sponsors who provided financial and other logistical assistance. We would also like to thank Lucy Burde and Mary Peterson for the hard work they did in editing and putting together these proceedings.

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