

Preface

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The Madrean Archipelago, or Sky Island region, of the Southwestern United States and Northern Mexico lies between the Sierra Madre Occidental and the Rocky Mountain Biogeographical Regions. The mountains, deserts, and grasslands of the region are known for their unique biodiversity and natural beauty. In 1994, Leonard DeBano and his associates organized the first conference to determine the state-of-knowledge and to focus management and scientific efforts on sustaining the Madrean Archipelago's ecosystems. The first conference was successful; however, research and management options are not static, and the 2004 conference has provided an opportunity to disseminate new information. The future health of the region was a concern in 1994, and concerns have grown as we enter the 21st century in spite of progress since the first conference. The 2004 conference combines two separate efforts (the "5th Conference on Research and Resource Management in the Southwestern Deserts" and "Biodiversity and Management of the Madrean Archipelago II") for ecosystems that are adjacent and often interconnected physically and philosophically and are under similar pressures from natural forces and human activities.

The Sky Island and Southwestern desert regions are the dubious beneficiary of too much love. More than 300,000 people have moved into the Sky Island region during the past 10 years. Rooftops have replaced open landscapes in some of our most remote valleys and hillsides. New and recent inhabitants view our public lands as their personal playgrounds, and the land often suffers because of overuse and public ignorance. However, people need to see themselves as an integral part of the ecosystem and attempt to understand the complexities in order to truly value biodiversity. Outreach to the general public should be an important component of our efforts. Humans are not the only problem; nature has not been kind to the region in recent years. Extended drought, wildfires, insects, diseases, non-native invasive species, and climate change are impacting, either alone or in combination, all of our major ecosystems from the low-elevation deserts to the mixed conifer and spruce-fir forests on the mountain tops. How can we protect the land while still availing ourselves of its numerous natural and esthetic resources? What must be done to make our ecosystems healthier and more sustainable?

In spite of these alarming changes, there is much hope for the Madrean Archipelago's future. The Forest Service, National Park Service, and other governmental agencies are working with private conservation groups to protect the region. Collaboration among groups will multiply the ability to protect and improve the land and its resources. Private organizations can mobilize their memberships and financial resources for conservation projects. Private land owners, such as members of the Malpai Borderlands Group and the Sonoita Valley Planning Partnership, have joined forces with State and Federal agencies, universities, and non-governmental organizations to protect their own lands with innovative strategies and successful models. An increasingly collaborative approach is needed as we attempt to tackle the region's problems and provide for the future.

Managers need science and particularly current science to accomplish their missions as stewards of the lands. Maintaining the viability of ecosystems and the connectivity among landforms requires sharing science and creative management among all groups.

Science cannot be truly useful if conducted in a vacuum. The 2004 conference, with more than 350 participants and almost 160 oral and poster presentations, was designed to increase communications and collaboration to achieve a common purpose and direction for the Madrean Archipelago and Southwestern deserts. Conferences such as this one provide a forum for the interchange of information, ideas, and views. The full articles and additional abstracts in these proceedings document the diverse research and management activities in the region. Each manuscript (except the abstracts listed at the end of the book) was reviewed for technical merit by at least two peers. Although this increased the time it took to publish the proceedings, it increased the quality of the content. The publication will also be available at http://www.fs.fed.us/rm/main/pubs/electronic/rmrs_proc.html.

Clear evidence of the spirit of cooperation and collaboration to achieve a common goal for the Madrean Archipelago is apparent by the members of the conference organizing committee and the diverse mix of agencies and private organizations that they represent:

- **Gerald Gottfried, Co-chair, USDA Forest Service, Rocky Mountain Research Station**
- **David Hodges, Co-chair, Sky Island Alliance**
- **Dale Turner, Program Chair, The Nature Conservancy**
- **Acasia Berry, Logistics Chair, Sky Island Alliance**
- **Brooke Gebow, Program Editor, University of Arizona, School of Natural Resources**
- **Alejandro Castellanos, Universidad de Sonora, Hermosillo**
- **Nina Chambers, Sonoran Institute**
- **Doug Duncan, U.S. Fish and Wildlife Service**
- **Peter Ffolliott, University of Arizona, School of Natural Resources**
- **Bill Halvorson, U.S. Geological Survey, Sonoran Desert Research Station**
- **Andy Hubbard, USDI National Park Service, Southern Desert Network**
- **Sue Kozacek, USDA Forest Service, Coronado National Forest**
- **Larry Laing, USDI National Park Service, Southern Arizona Office**
- **Dean Martens, USDA Agricultural Research Service, Southwest Watershed Research Center**
- **Joan Scott, Arizona Game and Fish Department**
- **Frank Toupal, USDA Natural Resources Conservation Service**
- **Tom Van Devender, Arizona-Sonora Desert Museum.**

Among this group of dedicated individuals we recognize the truly exceptional efforts of the committee chairs: Dale Turner, Acasia Berry, and Brooke Gebow (now with The Nature Conservancy) whose contributions to the success of the conference were far more than can be adequately described. We also acknowledge the assistance of Peter Ffolliott who was influential in the 1994 conference and who aided us with his active participation and insights and Tom Van Devender who accepted numerous extra duties. The activities of Nina Chambers and Andy Hubbard who organized the special ecosystem monitoring program are appreciated.

Three field trips to the deserts and mountains of the southern Arizona put the finishing touches on the conference, and we thank the leaders for organizing and leading the tours. The efforts of the session moderators, numerous student volunteers, art show coordinators, and the team that translated abstracts into Spanish are greatly appreciated. The conference would not have been successful without their efforts. The Rocky Mountain Research Station, Sonoran Institute, International Arid Lands Consortium of Tucson, the School of Natural Resources, University of Arizona, and the Sky Island Alliance provided additional support for the conference. We would like to thank Connie Lemos of the Rocky Mountain Research Station for her expert preparation of these proceedings for publication and Lillie Thomas of RMRS for her editorial assistance.

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Gerald J. Gottfried of US Forest Service, Washington, D.C. (FS) | Read 60 publications, and contact Gerald J. Gottfried on ResearchGate, the professional network for scientists. A study supported by the Joint Fire Science Program is comparing the effects of mastication, thinning, and no treatment on resources of pinyon-juniper stands in southwestern Colorado. by Gerald J Gottfried 2 editions - first published in 1977. Snowpack-runoff relationships for mid-elevation snowpacks on the Workman Creek watersheds of central Arizona. by Gerald J Gottfried 2 editions - first published in 2002. Five-year growth and development in a virgin Arizona mixed conifer stand. by Gerald J Gottfried 1 edition - first published in 1978. Subjects. Conifers, Dwarf mistletoes, Forest management, Runoff. Gottfried, Gerald J. 1991. Moderate timber harvesting increases water yields from an Arizona mixed conifer watershed. *Water Resources Bulletin* 27:537-547. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 24 pp. Thompson, J. R.; Knipe, O. D.; Johnson, P. M. 1976. Windbreaks may increase water yield from the grassland islands in Arizona's mixed conifer forests. *Hydrology and Water Resources in Arizona and the Southwest*.