

Biodiversity and Management of the Madrean Archipelago III: Closing Remarks and Notes from the Concluding Session

Dale S. Turner

The Nature Conservancy, Tucson, Arizona

Alejandro Castellanos

Universidad de Sonora, Hermosillo, Sonora, Mexico

During the first week of May 2012, the Third Conference on Biodiversity and Management of the Madrean Archipelago brought together more than 300 people with an interest in this region. It included scientists, land managers, activists, and land owners from both sides of the international border. After three and a half days of presentations, the participants gathered for a moderated discussion of major issues for biodiversity and management. They were also asked to suggest ways in which people could build stronger collaborations. The following is a summary of those discussions, with minor additions to add context.

International Border

We work at an ecotone of ecoregions, policies, and countries where many things change when you cross the international border. The borderlands form a mixing zone, different from both countries. The past decade has brought new challenges to collaboration and management for biodiversity across the border. The barbed-wire fence became a steel wall in many places, blocking the movement of wildlife (Córdova and de la Parra 2007; Flesch and others 2010). New social barriers were created by anti-immigrant legislation in Arizona, migrant and drug-related problems in Sonora and Chihuahua, and tougher regulations for legal trans-boundary movement.

Despite those influences, useful collaborations continue and new opportunities exist. Several good examples were presented at the conference, including riparian restoration on both sides of the border in San Bernardino National Wildlife Refuge and Rancho San Bernardino, and a bi-national conservation planning workshop for the Santa Cruz River. In addition to strong representation at this conference from Mexico and the United States, about 17% of the presentations included authors from both countries. Participants mentioned a large and growing population of biology students in Mexico, creating new opportunities for collaboration. It was also mentioned that private land owners in Mexico are much more open than Americans to having people work on their land, and are more likely to make small management changes if they know that others care.

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Bi-National Coordination and Sharing Information

The Madrean Archipelago conference series has been a useful way to share knowledge between those who attend, and the proceedings from these conferences have been good reference works. However, land managers, decision makers, and the general public often do not read such technical reports and may not be aware of their existence. Conference attendees can make a big difference by sharing the results with others, both within and beyond their organizations. The information could be even more useful if it were summarized for particular audiences, with the major new information put into a regional context.

There is also great potential for putting new information into practice on the ground, by finding ways to demonstrate the results to land owners and land managers. It is not enough to just tell them how to do something; showing them a technical report is not helpful. We need to demonstrate how conservation can work for the land and for people.

For researchers and technical staff, there is a need for consistent data sets across the region. This includes the need for basic GIS data such as vegetation, elevation, and streams. In some cases, the data may be available but not widely known, such as a recent North American mapping of biotic communities (Brown et al. 2007; www.peter.unmack.net/biotic). Several presentations at this conference featured the new regional database of plant and animal records compiled as part of the Madrean Archipelago Biodiversity Assessment (Van Devender and others, *The Madrean Archipelago biodiversity assessment*, this proceedings), valuable information on biological diversity for Sonora (Molina-Freaner and Van Devender 2010), and the ambitious national data sets prepared for Mexico by CONABIO (www.conabio.gob.mx).

The Madrean Archipelago framework provides an excellent opportunity for developing more innovative ways to increase coordination among organizations, researchers and students. Increasing interest and student participation in Mexico can help build stronger ties between research organizations on both sides of the border. Many participants recognized the need for more cross-border meetings, particularly attending meetings held in Mexico. While that might reduce participation from the United States, it would increase Mexican-U.S. collaborative participation. Some suggested that the next Madrean Archipelago conference should be held in Sonora. Others noted the growth of a student-run biology conference held annually at Universidad de Sonora in Hermosillo, and invited U.S. researchers to participate. There was also the first announcement of a conference on biology and management of the Sierra Madre, planned for Durango in 2014. Participants were also hopeful that improvements in video conferencing could make cross-border meetings easier. Beyond that, small

workshops or trainings held more frequently could build relationships and spread knowledge without a lot of work. And the knowledge transfer needs to go both directions, north and south, because there are leaders in research and management on both sides of the border. We consider that an extra effort should be developed in the coming years to provide ways to build stronger links between institutions, in particular among students and colleagues.

Many participants felt that bad news about the border region was exaggerated. They mentioned the challenge getting a positive media story about good collaborative work, and suggested a need to work harder at sharing positive news, which might include sending stories to the media, requesting fair coverage, or independently distributing news through the Internet.

Volunteers

Increasing the use of volunteers in research and monitoring is a trend that needs to continue in this era of tight budgets. Participants mentioned that an aging U.S. population means a growing pool of potential volunteers with extensive knowledge and skills, soon to include many attendees at this conference. Those volunteers can sometimes make a greater impact if they don't just rely on managers to identify volunteer needs, but instead help managers understand what the individual volunteers can provide. Managers can also increase the number and variety of their volunteers, both young and old, by making it easier to get help from someone who has time available. In particular, a web site could be developed to publicize volunteer research opportunities.

Future Conferences

The last Madrean Archipelago conference had a substantial cultural resource component, while this conference included only two papers. Cultural resources provide a tie to the land and can help in the conser-

vation process. Native nations need to be included as well; they also manage lands and have different perspectives to offer. Preparation for future conferences should include reaching out to the cultural resource communities and bringing those voices into the mix.

Conclusions

The challenges of merging science and management in a rapidly changing world cannot be solved in a 4-day conference, but require strong coordination through time between disciplines and across borders. The presentations at this event included results from collaborative projects that began at previous Madrean Archipelago conferences. We look forward to the next conference, and to learning the new discoveries that began with conversations in the hallways at this event.

References

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