Altar Valley Watershed
Science Agenda
Updated February 2019

WELCOME TO THE ALTAR VALLEY

The Altar Valley watershed forms the western edge of one of the world's biologically diverse "hotspots" known as the Madrean Archipelago, where an abundance of species from the mountains and deserts of the United States blend with tropical species of Mexico. The Madrean Archipelago area includes over 15,000 square miles of Arizona's border region and stretches towards the Sierra Madre in Mexico, where it encompasses an additional 27,000 square miles. The extraordinary richness of plants and animals of the Altar Valley reflect this diverse and globally important eco-region. Economically, the Altar Valley Watershed is a productive contributor to the agricultural economy of present-day Arizona. The existence of an economically viable working ranches within the context of an unfragmented, natural landscape so close to a major metropolitan center make the Altar Valley a vibrant example of how natural and economic systems can coexist and sustain each other. This is a working landscape, and as such, is a model for the new west.

COLLABORATIVE CONSERVATION

Collaborative conservation in the Altar Valley is led by the Altar Valley Conservation Alliance, a 501 (c) 3 not-for-profit collaborative conservation organization of ranchers and other agriculturalists living and working in the Altar Valley. It works through a strongly collaborative, science-based, community driven and integrated approach to:

• CONSERVE healthy and productive working landscapes, including soil and water conservation, wildfire management, habitat conservation and protection of native species, and other environmental initiatives.

• PROMOTE a thriving agricultural economy by encouraging improved ranching and farming practices, diversification and innovation, and by supporting programs and policies that support more effective, long-term economic development.

• SUSTAIN a resilient rural community by retaining and renewing the cultural and historical traditions of the Altar Valley.

The Alliance believes strong science is an essential part of conservation and land management. With this philosophy, we endeavor to support science that incorporates the assessment and utilization of historic practices and knowledge, evaluates the economic feasibility of management practices, and maintains holistic watershed management as a central concept. The Alliance's Science Advisory Board has assembled the attached list of suggested areas of study to focus and guide scientific enquiry.

SCIENCE COORDINATION SERVICES

The AVCA Conservation and Science Coordinator (julia@altarvalleyconservation.org)

The AVCA Conservation and Science Coordinator is available to help organizations and individuals engaged in science in the Altar Valley Watershed coordinate and communicate with the AVCA Science Advisory Board, ranchers and other partners. Services such as the following can be provided:

- Connections to researchers, landowners, and other partners in the Altar Valley
- Information on current and past research
- Review and comment on project concepts
- Letters of support
- Access to site-specific data, publications, and Geographic Information System tools
- Assistance with outreach (social media, email distribution, etc.)
- Coordination of educational activities (meetings, workshops, etc.)

AVCA Science Advisory Board

The AVCA Science Advisory Board (SAB) supports AVCA in making decisions informed by the best available science. It provides resources and information for BOD and staff decisions on science-related topics, as well as guidance for communicating scientific information correctly. In 2019 and 2020, the SAB will support the AVCA BOD and staff in leading collaborative projects, developing and accessing research, and guiding ongoing science projects.

Current Science Advisory Board Members

Leadership
Larry Fisher, University of Arizona - Chair
Kerry Baldwin, WildVision - Vice Chair

Members
Charley Miller, Elkhorn Ranch and AVCA BOD
Tom Sheridan, University of Arizona and AVCA BOD
Walter Lane, Santa Margarita Ranch and AVCA BOD
Brian Powell, Pima County
Karen Simms, Pima County
George Ruyle, University of Arizona
Don Slack, University of Arizona
Chuck Hutchinson, formerly University of Arizona
Dan Robinett, Robinett Rangeland Resources
Peter Warren, formerly The Nature Conservancy
Elise Gornish, University of Arizona
Scott Jones, University of Arizona

AVCA Staff
Mary Miller, Executive Director
Sarah King, Community Outreach and Education Coordinator
Sherie Steele, Program Administrator
Robert Davis, GIS Specialist/Quiet Creek
Julia Sittig, Conservation and Science Coordinator

SCIENCE AGENDA FOR THE ALTAR VALLEY

Updated February 12, 2019

For more information, contact Julia Sittig (julia@altarvalleyconservation.org)

AVCA makes sure that the following are topics the Altar Valley Conservation Alliance prioritizes for activities related to science, research, and information gathering for 2019-2020. The topics are organized according to the collaborative conservation goals in the Altar Valley Watershed Framework.

Increasing Watershed Productivity

Watershed Restoration

- Successful watershed restoration techniques utilized in southern Arizona and the Altar Valley (historically and in the present), particularly techniques that could be applied to the Altar Wash mainstem
- Priority areas for erosion control across the Altar Valley Watershed
- Hydrology of the Altar Valley, especially in the context of restoration efforts
- Factors that contribute to overall health of the Altar Valley watershed

Brush Management

- Best practices for applying brush management techniques, such as burning and mechanical treatment, within the Altar Valley
- Situations in which mesquite clearing is biologically and economically effective in the Altar Valley
- Factors that affect mesquite density in the watershed (including soils, slope, precipitation, etc.)
- Effects of fire on native grass restoration and shrub control

Promoting Biodiversity

Native Grasses

- Halting the loss of native grasses
- Methodology for re-seeding with native grasses (species, timing, soils, etc.)
- Costs and benefits associated with the persistence of various non-native grasses within the Altar Valley

Species-Focused Research

- Effects of fire on Pima Pineapple cactus, and the cost and time effective approaches to surveying for Pima Pineapple cactus
- Antelope population and viability in the Altar Valley
- Viability of the Sonoran Desert Tortoise population in the Altar Valley
- Biological and economic costs and benefits of a program for the re-introduction of bighorn sheep to the Baboquivari Mountains

Engaging the Community

Community Well Being

- Alternative methods of operating a livestock operation in lion country. Topics for research might be management practices, potential use of guard dogs, and the use of hunting and trapping.
- Economic and biological merits of different types of certain classes of livestock in different ranch settings. For example, when does it make sense from feed, water disbursement, steepness of slopes, etc. to run cow/calf, stocker cattle, horses, or other livestock?

Outreach, Education, and History

- Peer-reviewed paper on precipitation and temperature trends, as well as their implications, in the Altar Valley
- Summary of the science already undertaken on the study of mesquite, using the bibliography has already been completed
- Writing and distribution of a history of Altar Valley range management practices and land use, including a literature search, as well as interviews
- Monitoring, documentation, and communication of projects that have been implemented, or are currently occurring