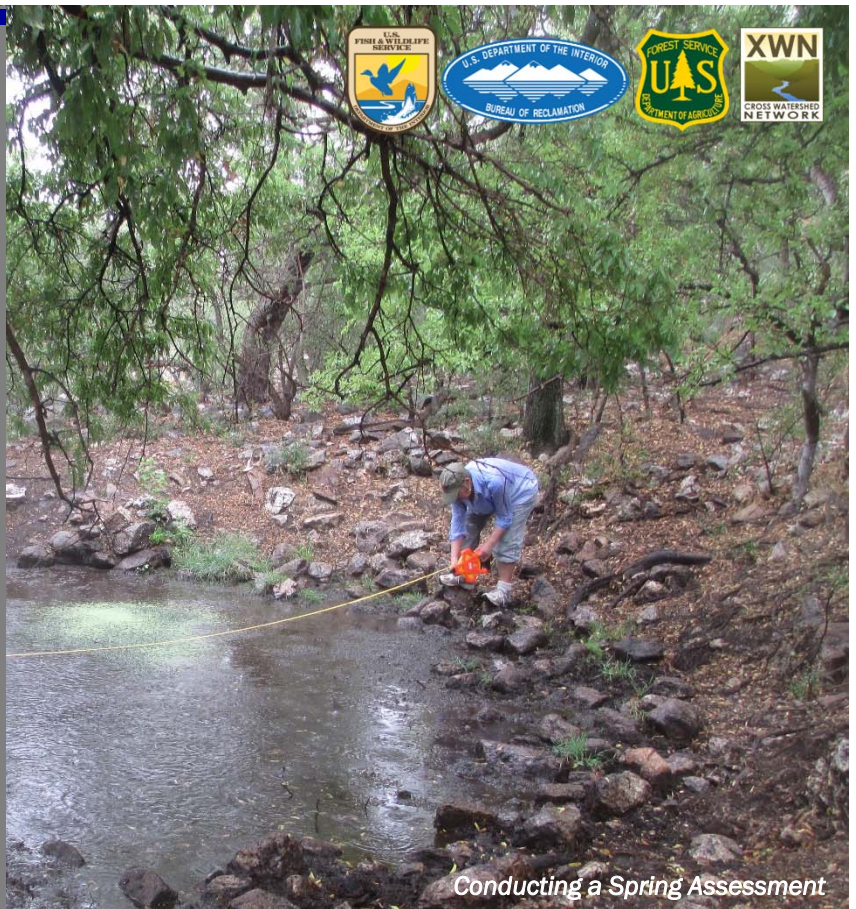
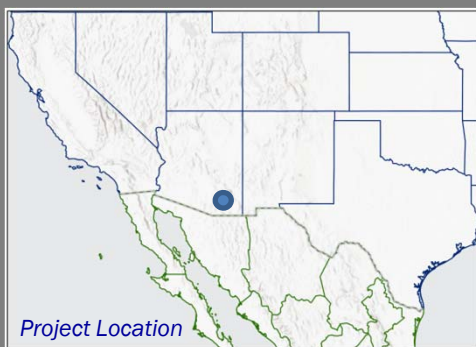


ACTIONABLE SCIENCE

Springs Inventory, Assessment, and Management Planning in the Sky Islands



The Sky Island region of Southeast Arizona hosts an exceptional abundance of springs, many of which are biodiversity hotspots, as well as keystone ecosystems that affect the surrounding landscape. In general, springs and their attributes are poorly documented despite their cultural, economic, and ecological significance. Beginning in 2012, Sky Island Alliance, and partner organizations began an inventory, assessment and management planning project to address critical gaps in information about these unique and important ecosystems.



KEY ISSUES ADDRESSED

To protect resources we must know where there are and what state they are in. Information about spring locations, ecology, hydrogeology, and management status is limited. This limits the ability of land managers to integrate spring stewardship into management activities and to focus protection and restoration efforts at the highest priority sites. A long history of ongoing human alterations, combined with increasing climate stressors, has led springs to be among the most threatened ecosystems, particularly in the Sky Islands. Springs may serve as climate refugia for plants and animals, and as sources of persistent water in this warming and drying region. This project promotes informed management of springs by providing baseline information in an online format accessible across jurisdictions.

PROJECT GOALS

- Collect baseline ecological and management status information on springs
- Identify priority spring sites for restoration and/or protection
- Increase understanding of springs among land management agencies and the public
- Make information about springs available regionally and internationally

SPRINGS AS REFUGIA

Springs provide islands of habitat in arid regions and serve as refugia for species that depend on their water and mesic vegetation.



Surveying for Spring Snails

PROJECT HIGHLIGHTS

Springs Inventory Database: An online data portal is used to share springs monitoring data internationally.

Promoting Climate Resilience: As the regional climate tends towards warmer and drier conditions, healthy springs will be essential in providing refugia for many species. The information gathered during these assessments will help local land managers make informed decisions about where to implement conservation or restore springs.

Addressing Limited Agency Resources: This project engaged a cadre of hundreds of volunteer citizen scientists, providing a model for using limited resources to accomplish broad-scope goals.

Partnering across Management Boundaries: Spring inventory and assessment occurred across jurisdictional boundaries, and produced a wealth of new information that can be directly incorporated into land management planning throughout agencies and organizations.

Building a Long-Term Vision: By increasing regional understanding of these ecosystems, this project has helped integrate spring stewardship into long-term adaptive management planning programs such as prescribed fire.

Collaborators

See online for full list of collaborators

Funding Partners

- Nina Mason Pulliam Charitable Trust
- The Kresge Foundation
- USFWS Wildlife Without Borders Program
- Desert Landscape Conservation Cooperative

Case study support provided by US Fish and Wildlife Service, US Bureau of Reclamation, US Forest Service, and Cross Watershed Network. Updated August 2018.
Photos courtesy of Sky Island Alliance

LESSONS LEARNED

Engagement of land managers to understand their management questions, constraints and conservation and restoration options was key to development of the project. This effort has led to an increased focus on studying and managing springs by regional managers and consideration of springs in planning processes and restoration plans.

Volunteers were an invaluable component of this project. Initial training is critical, but with this upfront investment, volunteers can greatly increase the number of areas monitored, keep costs low, and engage “citizen scientists” that become natural resource stewards.

Volunteers with strong plant identification skills are needed. This need could be met by working more closely with the Arizona Native Plant Society and partner agencies to provide more plant ID expertise and training to volunteers.

NEXT STEPS

- Expand “Adopt-a-Spring” program with citizen scientist volunteers to continue monitoring priority springs
- Update Springs Restoration Handbook to include climate-smart restoration components
- Expand spring surveys to the Mexico portion of the Sky Island region and translate protocols into Spanish

PROJECT RESOURCES

For more information on this project, contact Louise Misztal: louise@skyislandalliance.org

For additional project resources and case studies, visit the Collaborative Conservation and Adaptation Strategy Toolbox: WWW.DESERTLCC.ORG/RESOURCE/CCAST



Blue-eyed Grass Growing at a Spring Site