SKY ISLAND ALLIANCE

Protecting our Mountain Islands and Desert Seas

Spring Assessment and Management Planning Project

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Sky Island Alliance is currently conducting a two year project funded under a Desert LCC Applied Science Grant to inventory and assess spring resources in the Sky Island region, develop an online regional database, the Spring Inventory Database, to house historic and newly collected data, and develop methodologies for a citizen science volunteer effort to inventory, assess, and monitor these waters. We have worked collaboratively with land and resource managers to identify priority hydrogeologic areas in which to conduct spring and seep assessments and to collect historic data on the location and other attributes of springs; worked with the Spring Stewardship Institute (SSI) to develop inventory and assessment methodologies that capture information most important to managers while being accessible to trained volunteers; and, are currently collecting new data on priority springs in the region. Interest in the project from natural resource management partners, conservation partners, and private landowners is rapidly growing and there is a high level of demand for the information we are currently gathering.

Isolated springs in arid lands may be tremendously productive and may provide the only water and habitat in the landscape for many plant and animal species. These waters are crucial resources for wildlife and plants including a variety of sensitive, threatened and endangered riparian and aquatic species, and for traditional human uses of the land. It is known that springs in arid ecosystems occupy a small fraction of the landscape and yet support disproportionately high levels of productivity, endemism and biodiversity. At the landscape scale, they play a key role in providing refugia for migratory birds, reptiles and amphibians. Aquatic, semi-aquatic and riparian habitats occupy less than 1% of the state of Arizona's land base and 2% of the arid southwest while 60-75% percent of resident wildlife species depend on these habitats to sustain their populations.

Spring Inventories and Assessments

Project activities include conducting spring ecological assessments at 50 spring sites using trained volunteers, professional staff and partner personnel. These assessments are being conducted using the same protocols developed by the Spring Stewardship Institute that were modified to be accessible to trained volunteers. We collect the following data at spring sites:

- General information: This includes spring locality information, spring classification, and careful georeferencing.
- Site Map: A scaled map is hand drawn at each site to provide data on the geomorphology of springs, area measurements, and show the diversity of spring microhabitats.
- Photographs: Images provide an important record of spring conditions.
- Solar Radiation: Knowing the amount of light that reaches a spring is critical for understanding the diversity of organisms it can support as well as its ability to have perennial water.
- Flora and Fauna: Lists of plant and animal species are generated with careful attention to the presence of sensitive as well as invasive organisms.
- Flow: Understanding how much water a spring produces is essential for management decisions.
- Water Quality: Measurements are taken on pH, conductivity, dissolved oxygen, and temperature. At select springs we will collect water samples to test for pollutants.