

Results of the Fall 2007 Spring Snapshot Survey

How much water is in Mojave National Preserve springs? The answer varies depending on the time of year and also varies from year to year. Because spring water recharge comes from local rain, late fall through late spring is normally the wettest time of year. Late spring through early summer usually has the least rainfall and flow at natural springs steadily decreases during this time. Late summer monsoons occasionally create wet conditions, but the unpredictability of monsoonal rains can mean that late summer through mid fall is the time of year with the least available surface water at Mojave springs. If a summer without a monsoon is followed by a winter drought, a whole year can go by without any measurable rainfall and ephemeral springs may begin to dry up.

In order to identify how much surface water is available during the driest time of the year Mojave National Preserve performs annual surveys of the springs, set to occur each fall. The goal of this project is to form a “snapshot” of the water supply during what is normally the time of year with the least available surface water. Ultimately, we’d like to correlate autumn surface water availability with rainfall received during the preceding years, but presently we don’t have enough data to do that.

Most springs in the 1.6 million-acre Mojave National Preserve are scattered among the many mountain ranges but the exact number is somewhat elusive. An inventory to locate and gps “all” preserve springs took place from 2002 to 2004. To date, over 200 sites associated with naturally occurring water have been identified but more are occasionally still found. In some years, 2005 for example, there is so much rain it seems like water is everywhere, many times seeping from places not generally associated with water. In other years, these sites are barely recognized as ever having been associated with surface water.

The annual spring surveys were begun in fall 2005. The ample rain that fell that year yielded a high percentage of wet springs; 83% of known sites had available surface water. In 2006 the number of wet springs was lower, approximately 74%.

Late-summer monsoons in the preserve provide patchy rainfall coverage at best, but are most dependable along the spine of mountain chains from the Castle Peaks in the northeast to the Granites in the southwest. 2007 was no exception; parts of the Mid Hills received over 6” rain during August and September. Overall, however, 2007 was a slightly below average rainfall year.

Methods

The reporting criterion is limited to one simple question we call “The Wet Hand Test”: if you put your hand down in the wettest place, will your hand actually get wet or will it merely touch damp soil? Many animals are known to paw or stomp into wet ground in order to create a depression that fills with water from which they drink. Thus, even a small amount of surface water (enough to wet a hand) on soft ground can provide drinking water for wildlife.

A checklist of questions filled out at each spring provides information about the status of that spring. The observations include critical updates not only about available water, but also about the presence of tamarisk, burros, and the amount of green forage grass.

The annual survey is timed to coincide with what is usually the driest time of year: the fall. Site visits begin in mid-to-late September and can continue until the winter rains begin. In 2007 a good rainstorm hit during the third week of November, ending the annual survey.

Results

Twenty-four people, both staff and volunteers, participated in the 2007 survey. We were most fortunate to have a volunteer dedicated full-time to this project, enabling a much higher percentage of spring visits than in previous years. A total of 168 spring sites were surveyed from mid-September through mid-November, corresponding to 91% of the sites in our springs database at that time. Of these sites, 143 were reported wet (85%) and 25 were reported dry (15%). Sixteen sites in our database were not visited before the rainstorm and went unreported.

2007 Spring Snapshot Survey Results:

Total number of database spring sites included in the 2007 fall survey	184; 100%
Number of springs visited; percentage of database total	168; 91%
Number of wet sites out of the 168 visited sites; percentage wet of total visited	143; 85%
Number of dry sites out of the 168 visited sites; percentage dry of total visited	25; 15%

Summary

A total of 168 sites were surveyed in fall 2007 and 85% of them had available water for wildlife. Visiting so many isolated springs in the span of eight weeks is a monumental task that could not be accomplished without the help of many hard-working people. We are very grateful for the assistance of all the volunteers and staff who donated their time and resources to participate in this effort and look forward to the Spring Snapshot Survey of 2008.