

STUDY FACT SHEET

Hydrology in the eastern Mojave and the Cadiz Groundwater Project

- There are dozens of **springs and seeps across the Mojave Trails National Monument and Mojave National Preserve**. These scarce water sources support pockets of vegetation and rare plants, migrating birds, and provide water for dozens of other migrating and resident animal species like bighorn sheep.
- **Many of these springs are very small**, and fed by the scant runoff from the mountains above them. Other springs are a great deal larger, and are likely fed from groundwater. Over the last five years, a variety of government agencies, non-profit organizations, and research facilities have been working to describe and catalogue these springs.
- **Bonanza Spring is the largest wetland of its kind for 1,000 square miles**. It has been flowing consistently for more than 100 years despite multi-year wet periods and longer periods of drought.
- **Bonanza Spring** is the largest spring in the southeastern Mojave Desert. It is a fifth to sixth magnitude spring (Kresic, 2010), with its surface flow, not inclusive of evapotranspiration, varying around 10 gallons per minute.
- Bonanza Spring is **located within the Clipper Mountains** in San Bernardino County, California. The Clipper Mountains are within the Mojave Desert geomorphic province (California Geological Survey, 2002). Bonanza Spring is located at an elevation of 2,105 feet above mean sea level.
- **Cadiz Inc wants to extract 16.3 billion gallons of water**, or 50,000 acre-feet, from the Mojave Desert every year for fifty years for use in coastal California cities.
- **Cadiz claims pumping will not impact nearby springs like Bonanza. There are factual omissions in the environmental impact science supporting Cadiz's groundwater pumping project**. Past studies of waters in Fenner Valley and the Mojave National Preserve e.g. Davisson (2000) show that a reduction in groundwater level could result in a potentially substantial decrease in free-flowing water from the spring source.
- In the Bonanza Spring area, **groundwater underflow moves** southward from the New York and Providence Mountains southward toward Fenner Valley then southwest to Cadiz Valley. The New York and Providence Mountains as a source of recharge to the Fenner Valley and beyond was described by Davisson and Rose (2000). Precipitation and periodic snowmelt runoff from the higher surrounding mountains recharges basin alluvium.