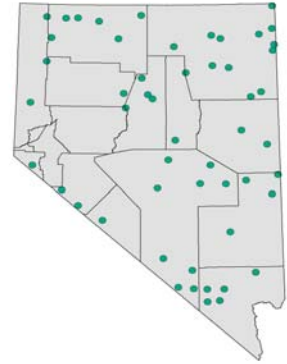

Aquatic Gastropods

A number of species in the following genera are included in the 2012 WAP due to their localized populations and susceptibility to a number of threats including water issues, exotic species invasion, development, trampling by livestock and wild horses, and climate change. These genera include Eremopyrgus, Fluminicola, Juga, Pyrgulopsis, and Tryonia.



Agency Status	
NV Natural Heritage	
USFWS	No Status

TREND: Trend varies depending on the conditions at each location.

DISTRIBUTION: Highly localized across the state.

GENERAL HABITAT AND LIFE HISTORY:

Pyrgs are a remarkable remnant of episodes in the Great Basin's history when extensive waterways covered the area. During the past two million years, these high water stands occurred at roughly 100,000-year intervals, with the lakes and rivers rising for the last time about 13,000 years ago. Each time the region dried up, pyrgs and other aquatic species were stranded in isolated colonies, surviving only within the sharply defined boundaries of the small springs, seeps, and wetlands. When large lakes and rivers disappeared, the salts and minerals of the local soils, and the geochemistry and geothermal aspects of the surviving aquifers, concentrated their influence on the small, residual ecosystems. As the isolated springsnail populations adapted to the conditions of each inhabitable water source, an inevitable process of evolution created the multiple species being discovered continually today. (Doherty 2002). Very little is known about the life history of NV's pyrgs.

CONSERVATION CHALLENGES:

Pyrgs are highly susceptible to extinction because the entire population of any single species is usually tied to a single spring. Such sites may be no more than a few square meters and easily destroyed by water diversion, capping, groundwater pumping, invasive or exotic species, development, or trampling by livestock.

NEEDS:

Research Needs: Additional spring surveys are needed to assess the presence or absence of pyrgs and to fully describe the taxonomy and biogeographical features of these genera. Little is known about the life history of each species, and much basic biology remains to be done.

Monitoring and Existing Plans: Approximately 300 springs were visited in 2008 and 2009 to determine their current condition and if sensitive aquatic gastropods were present. The results of these surveys, a partnership between The Nature Conservancy, Desert Research Institute, and Nevada Natural Heritage Program, are included in the Nevada Springs Conservation Plan (Abele 2011).

Approach: In 1998, six federal land management and resource agencies, along with the Smithsonian Institution and The Nature Conservancy, signed a Memorandum of Understanding to work to conserve the nearly 100 species of pyrgs in habitats on federal and Nature Conservancy lands in the Great Basin. The agencies and involved scientists are working to identify threatened habitats and raise the awareness of a broad range of springs stakeholders throughout the West. (Doherty 2002). An effort needs to be made to develop productive working relationships with private landowners and to help these landowners meet their needs while managing springs to the maximum benefit of these species.

WAP HABITAT LINKS: Springs and Springbrooks