Effects of Invasive Plant Control Efforts and Mountain Goat Introductions on Plant Recruitment & Arthropod Communities in Southern Utah

Tamarisk leaf beetles (*Diorhabda carinulata*) were first introduced in Grand County, Utah in 2004 to help control tamarisk (*Tamarix* spp.). By fall 2008, repeated defoliation by the beetles was widespread in Grand County, and branch and trunk mortality (as evidenced by loss of bark) was observed. In 2009, Dr. Tim Graham, retired USGS Ecologist, and colleagues initiated surveys at 15 beetle monitoring sites to document recruitment and establishment of plants under defoliated tamarisk canopies. Dr. Graham is looking for a student interested in assisting with data analysis (Spring 2016).

Dr. Graham also seeks a student to help collect baseline arthropod community data in the La Sal Mountains. Mountain goats will be introduced to the area. An interested student could help collect field data (Spring 2016) and analyze data. The U.S. Forest Service is conducting complementary vegetation surveys, so the student may be able to correlate differences in arthropod communities between sites to differences in vegetation structure and diversity. This study may continue after goats have been introduced to assess the effect of their introduction.

Dr. Graham is starting a baseline invertebrate study in a riparian area of Seven Mile Canyon, along UT-313 (road up to Dead Horse State Park and the Island in the Sky District of Canyonlands). Arthropods will be collected via pitfall traps this Fall and next Spring to document community structure and diversity prior to removal of the mostly dead tamarisk (*Tamarix* spp.) and non-native Russian olive (*Elaeagnus angustifolia*) growing amongst stands of native cottonwood (*Populus* spp.), willow (*Salix* spp.) and box elder (*Acer negundo*). Plant species abundance and diversity also will be measured. Dr. Graham is looking for a student interested in assisting with fieldwork and data analysis (Spring 2016).

Student(s) interested in these projects would work closely with Dr. Graham, but also be supervised by Dr. Zach Lundeen (Rio Mesa Center/Geography) from the University of Utah.