Land management and evolutionary ecology may seem like disparate fields, but in fact, they can be highly complementary. Quantifying natural selection in the field can be an opportunity to improve the efficiency and success of restoration projects, and management-scale operations present opportunities for measuring the consistency and strength of natural selection at scales that would be difficult for individual researchers to achieve. Focusing on native plant restoration in the Great Basin, US, I will present results of experiments designed to identify the most promising strategies for restoring natural systems affected by fire, invasive species, and changing grazing strategies. By studying local adaptation, my lab has identified a suite of strategies that increase plant survival in invaded and disturbed systems, notable in that these strategies are diametrically opposed to the long-standing views of traits that should be prioritized during restoration of these cold desert systems.