

The Rare Plant Monitoring Steward Program 2008 Report

Prepared by the Colorado Natural Areas Program and Denver Botanic Gardens

Introduction

There are over 500 rare or sensitive plant species found in the state of Colorado, many of which are under immediate threat due to a variety of anthropogenic and environmental pressures such as oil and gas drilling and residential development. Demographic monitoring of rare plant species has been shown to provide valuable input for land management in many cases. With current funding and resource limitations, agencies and organizations are monitoring only a small fraction of these species. To ensure the future survival of rare plants, close monitoring and protection is a must. However, detailed monitoring requires many hours of observations in the field. Due to limited staff resources, volunteers play an invaluable role in the collection of these data, and as such, the Rare Plant Monitoring (RPM) Steward program was established in 2007 as a collaborative effort between Denver Botanic Gardens (DBG) and the Colorado Natural Areas Program (CNAP).

This program directly trains citizens to monitor and protect the rarest and most threatened plants in Colorado, with the expectation that many will become trainers of other citizens concerned with biodiversity conservation. Our goal is to create a self-perpetuating corps of citizen scientists who will be aware of rare plant conservation issues and will actively participate in monitoring and conservation efforts. Our program is modeled after the highly successful New England Wildflower Society Plant Conservation Volunteers, and the Chicago Botanic Garden Plants of Concern programs.

The data collected through the RPM Steward program directly aids land managers. The information adds depth to the limited data currently available to agencies for making management and conservation decisions. Having data on hand which relates life-history characteristics and demographic trends to land managers' concerns aids in the evaluation of current practices. With the many threats facing sensitive species in Colorado (i.e., oil and gas exploration, development, climate change), the ability to increase our data collection will provide exponential benefits to land managers who serve several interests.

Goals of the RPM Steward program

- 1) To preserve the biodiversity of Colorado's native landscapes in the face of threats from consumptive industries such as oil and gas extraction and real estate development.
- 2) To create a self-perpetuating corps of highly trained and motivated citizen scientists who will be aware of rare plant conservation issues and will actively participate in monitoring and conservation efforts.
- 3) To empower citizens whose communities are affected by the aforementioned threats to play a more active role in environmental protection.
- 4) To develop a citizen scientist program that will serve as a template for biodiversity conservation efforts throughout the U.S. and abroad.

Program Organization

Volunteers are recruited from throughout Colorado who are willing to make a minimum three-year commitment to the program and who would serve as instructors of future citizen scientists. Volunteers are recruited through Denver Botanic Gardens, CNAP, and other collaborative agencies. In their first year in the program, volunteers participate in a two-day training. In the second year they visit field sites with DBG and/or CNAP staff. In their third year, Stewards have the opportunity to participate in three capacities. Stewards are welcome to participate in as many capacities as they would like, as long as they commit to at least one field trip per year.

SWAT Team: The SWAT team supports DBG and CNAP staff and Trip Leaders on monitoring of rare plants and survey trips. All Stewards begin on the SWAT team and will visit sites with trained leaders.

Trip Leader: Trip Leaders return to the same rare plant population(s) every year to monitor permanent plots. They first visit the sites with DBG and/or CNAP staff, and may become independent after multiple years. Trip Leaders receive support from DBG and CNAP staff as well as the SWAT team and take a leadership role in directing field work and answering questions.

Surveyors: Surveyors will typically be asked to locate and survey remote plant populations and to work independently after adequate training. Surveyors determine flowering and fruiting times to inform seed collection by DBG staff, and/or to update records of plant presence.

In 2007 and 2008, two two-day volunteer training sessions were offered, one on the Front Range (East slope) and one in far western Colorado (West slope). Beginning in 2009, one training will be offered per year and will alternate between the East slope and West slope. Day 1 of training occurs in the classroom and covers such topics as rare plant conservation in Colorado, monitoring methods and data analysis, GPS, and field trip safety and leadership. Day 2 of training occurs in the field, where volunteers experience rare plant monitoring first-hand. Annual Data Analysis workshops are held in the Spring to further train volunteers on monitoring methods.

Starting in 2008, an annual RPM Steward Field Season Wrap-Up event to be held in the fall was organized to which all RPM Stewards would be invited to digest the last field season, provide feedback on the program, and prepare for the next field season. Starting in 2009, Stewards will be invited to the Colorado Native Plant Society's annual social event in September.

Program Update

In 2007, thirteen Stewards were trained as Rare Plant Monitoring Stewards. They participated in trainings monitoring *Physaria bellii* and *Lesquerella congesta*.

In 2008, eight new Stewards were trained, bringing the total number of Rare Plant Monitoring Stewards to twenty. Stewards monitored eight species on over ten sites and volunteered for a total of 347 hours.

Species	Site(s)
<i>Astragalus microcymbus</i>	South Beaver Creek
<i>Eriogonum brandegeei</i>	Droney Gulch, Garden Park
<i>Lesquerella congesta</i>	Duck Creek, Droney Gulch
<i>Oenothera acutissima</i>	various sites
<i>Penstemon debilis</i>	Mount Callahan
<i>Penstemon harringtonii</i>	Above Eagle, Dry Creek
<i>Physaria bellii</i>	Park Creek Hogback
<i>Physaria obcordata</i>	Ryan Gulch
<i>Sclerocactus glaucus</i>	various sites

Future work

In 2008, CNAP and DBG staff met to discuss the successful completion of the first two years of the program and to brainstorm on future directions. Some results of that meeting were:

- Clarification on the various roles that RPM Stewards can play as part of the program.
- The establishment of courses through Denver Botanic Gardens Education Department that will enhance Steward training. These courses will be taught by DBG and CNAP staff and cover subjects such as plant identification and GPS. Course fees will apply.
- An updated volunteer application.
- The establishment of an annual Wrap-Up meeting to be held in the fall.