

**Report on Floristic Inventories of
Lafferty Gulch and Starling Basin,
Mount Rushmore National Memorial, South Dakota**

Hollis Marriott and Cheryl Mayer

December 31, 2005

Introduction

Mount Rushmore National Memorial, located in the central Black Hills of western South Dakota, has seen only limited floristic inventory in spite of its popularity as a tourist destination. In 2005 a small inventory project was carried out as a step towards documenting the flora of the Memorial. Systematic floristic surveys were done in two areas with well-developed riparian vegetation: Lafferty Gulch and Starling Basin.

Lafferty Gulch is a north-trending drainage with a small creek, located in the northeast part of the Memorial. Vegetation in the drainage bottom is dominated by paper birch (*Betula papyrifera*) and beaked hazel (*Corylus cornuta*). Ponderosa pine (*Pinus ponderosa*) becomes dominant moving upslope.

Starling Basin lies in the drainage west and south of US Highway 244 in the southwest corner of the Memorial. Vegetation in the drainage bottom includes stands of paper birch and beaked hazel, and a few small meadows (probably old beaver ponds). Ponderosa pine is dominant moving upslope. In the upper part of the basin, creek flow is intermittent during the summer, and there are small pools. Just north of the south park boundary is a system of small ponds and well-developed wetlands.

The goal of the 2005 inventory was to expand the list of documented species for the Memorial by collecting voucher specimens. Vegetation projects of various kinds had been done prior our work, but collection of vouchers was limited. Voucher specimens are mandatory for reporting a species with confidence for several reasons, including:

- 1) *No one* is immune to making mistakes in identification, especially in difficult groups such as the grasses, sedges and asters. Specimens are needed to verify reports.
- 2) Taxonomy and nomenclature may change in the future; in fact with the new molecular research tools now available, we currently are in the midst of “taxonomic revolutions” for some groups. Specimens are needed in case of revision.
- 3) Plant species vary geographically, and perhaps for some species, Black Hills individuals are sufficiently distinct to warrant recognition. Specimens are needed for study of geographic variability.

Methods

We collected material for species that we knew were not represented in the Memorial’s herbarium, as well as for all species not identifiable in the field. When possible, sufficient material was collected for two herbarium specimens, duplicates being deposited on loan at the Rocky Mountain Herbarium at the University of Wyoming in Laramie. Only in a few cases were there too few individuals to collect duplicate material.

Plants were collected in identifiable condition, requiring that flowers and/or fruits be present in most cases. Thus it was necessary to make multiple visits through the growing season. Surveys were done June 11 and 12, July 20 and 23, and August 19 and 20.

Standard collecting techniques were used. Plant material was collected into plastic bags in the field, and later pressed and dried. Collection data included location, habitat description, associated species, elevation and any other information of interest. Topographic maps (USGS 7.5 minute) were used to pinpoint collection locations, supplemented by GPS (Global Positioning System) units when reception was adequate.

Plants were identified after the field season was over. All determinations were verified by Marriott at the Rocky Mountain Herbarium. Taxonomy and nomenclature were verified using the Integrated Taxonomic Information System (ITIS) Tools webpage: <http://www.itis.usda.gov/tools.html>

Data were entered into a spreadsheet, which accompanies this report (both were sent electronically). It can be used by Memorial staff to generate herbarium labels in conformance with standards of the National Park Service. Plant specimens are provided in labeled newspaper folders; the collection was mailed to the Memorial.

A *Target Plant Species Form*, developed by Black Hills National Forest, was completed for species of local or regional concern found during surveys. Hard copies of these forms are included with the collection of specimens sent to the Memorial.

Results

During the project, 207 collections were made, representing 158 species. Of these, 117 species are newly-documented records for the Memorial. Particularly well-represented are wetland and emergent species, especially the genus *Carex* (15 species newly-reported). Six occurrences of species of concern were documented: *Carex leptalea* (two occurrences), *Cynoglossum virginianum* var. *boreale* (two occurrences), *Cypripedium parviflorum*, and *Sorbus scopulina*. These are tracked by Black Hills National Forest, but only *Cypripedium parviflorum* is on the USDA Forest Service Region 2 Sensitive list. None of these species are listed as Threatened or Endangered.

Discussion

The results of our small project clearly demonstrate the need for floristic work at Mount Rushmore National Memorial. In spite of its immense popularity as a tourist destination, the area has seen surprisingly little floristic inventory. Additional work is needed, not just in riparian areas but in all habitats found in the park. The park is not large, and for a small investment, a thorough inventory could be completed in a rigorous manner.

The Authors; Acknowledgements

Hollis Marriott has worked as a field botanist in South Dakota and Wyoming since 1982, and has done many projects in the Black Hills. She has an MS in Botany from the University of Wyoming; her thesis topic was a floristic inventory of the Wyoming portion of the Black Hills. Cheryl Mayer has worked as a botanist and wilderness ranger on Black Hills National Forest for eight years. Her specialties include sedges (*Carex*), and plant monitoring.

The authors would like to thank Marcia Wilson of Mount Rushmore National Memorial for her help with this project.