



GLACIER NATIONAL PARK
1999 SUMMARY REPORT

prepared by

Natural Resources Conservation Service
Bridger Plant Materials Center



INTRODUCTION: The Bridger PMC has maintained a cooperative agreement with Glacier National Park (GNP) since FY 1986. This agreement facilitates the collection, increase, and re-establishment of indigenous plant materials, and the development of technologies for the restoration of disturbances resulting from road construction and other projects within Park boundaries. It has been mutually agreed that PMC personnel will spend at least 1 week each year in Glacier Park observing restoration efforts and consulting with the Park science staff.

In 1999, 192 lots of seed were delivered to GNP (including one lot sent to Bitterroot Restoration for commercial containerized production) totaling 368.5 pounds (167.2 kg). The 1999 distribution included 61 grass lots (24 species), 68 forb lots (24 species), and 63 shrub lots (19 species).

ACCOMPLISHMENTS: GNP identifies their seed and plant needs for each project allowing 2 to 3 years of lead time in most cases. Seed collections are made by GNP employees and volunteers, dried, and mailed to the Bridger PMC where they are cleaned, weighed, accessioned, inventoried, and stored until requested. In 1999, 82 collections were made: 15 collections of grasses, sedges, and rushes (17 species); 41 forb collections (31 species); and 26 shrub collections (11 species), resulting in a total of 11.64 lbs. (5.28 kg) of clean seed.

In 1999, 5 new seed fields (3 sp.) were established at the PMC for Logan Pass and Sperry Chalet projects including *Phleum alpinum* (1), *Poa alpina* (3), and *Vahlodea atropurpurea* (1). Two grass species were removed from production. Eighteen seed fields (12 sp.) produced 69.84 lbs. (31.68 kg) of clean seed. Ten grass accessions (6 sp.) produced 61.51 lbs. (27.90 kg) clean seed. Four grass-like species produced 5.62 lbs. (2.55 kg) clean seed. Grass and grass-like production averaged 43.03 lbs./A (48.33 kg/ha). Four accessions of forbs (2 sp.) produced 2.71 lbs. (1.23 kg) clean seed and averaged 9.68 lbs/A (10.88 kg/ha).

Seed germination tests were conducted on 1998 PMC production for 12 accessions (8 sp.), had an overall mean percentage germination of 95.1. Percentage germination of 8 grass lots (6 sp.) ranged from 87 to 99, with a mean percentage germination of 93.6. Percentage germination of the 4 forb seed lots (2 sp.) ranged from 92 to 99, with a mean percentage germination of 94.8.

Seed germination tests were conducted on 1999 PMC production for 18 accessions (12 sp.) with an overall percentage germination of 91.2. Percentage germination of 10 grass accessions (6 species) ranged from 93 to 100, with a mean percentage germination of 97.8. Percentage germination of 4 grass-like species ranged from 12 to 98, with a mean percentage germination of 79.6. Tests were conducted on 8 seed samples harvested on different dates or processed differently: *Carex athrostachya* germinated 77, 96, and 97 percent; *C. douglasii* germinated 70 and 90 percent; *C. hoodii* germinated 12 percent; and a *Carex* species germinated 97 and 99 percent. Percentage germination of 4 forb accessions (2 species) ranged from 89 to 99, with a mean percentage germination of 96.4. Tests were conducted on 2 seed samples of *Aster laevis*, with percentage germination of 89 and 98.

Bareroot or containerized material delivered to GNP in 1999 included *Rosa woodsii* (2260), *Mahonia repens* (305), *Symphoricarpos albus* (567), *Prunus virginiana* (378), and *Rubus parviflorus* (239). No bareroot or containerized stock is currently being carried over at the PMC.

TECHNOLOGY DEVELOPMENT: A cost matrix was developed in 1999 to assist GNP and PMC staff in determining annual work load as a function of the time and cost of various operations.