



YELLOWSTONE NATIONAL PARK
1999 Summary Report
prepared by
Natural Resources Conservation Service
Bridger Montana Plant Materials Center



INTRODUCTION: The Bridger PMC has maintained a cooperative agreement with Yellowstone National Park (YNP) since FY 1986. This agreement facilitates the collection, increase, and reestablishment of indigenous plant material for restoration of disturbances resulting from road construction projects within Park boundaries.

In 1999, 354 lots of seed were delivered to YNP or the PMC totaling 888.63 pounds (403.37 kg). This included 184 grass lots (30 species), 147 forb lots (48 species), and 23 shrub lots (17 species). Distribution to the PMC for planting seed increase included 13 grass lots (8 species) and 5 forb lots (3 species). There were a total of 33 containers of one woody species distributed to YNP.

ACCOMPLISHMENTS: Yellowstone National Park has identified future road projects allowing collection and production efforts to begin at least 3 years in advance of each project.

Collections are made by Yellowstone National Park crews, dried, and either mailed to the Bridger PMC, or picked up by PMC personnel. In 1999, 219 collections were made: 130 grasses (32 species) at 89.373 pounds (40.539 kg); 87 forbs (42 species) at 13.433 pounds (6.093 kg); and 2 shrubs (2 species) at 0.084 pounds (0.038 kg) resulting in a total of 102.890 pounds (46.670 kg) of clean seed.

Records are maintained by the PMC of person-hours to collect each seed lot, from which the approximate cost of collecting native seed can be estimated. In 1999, more than 629 hours were spent by YNP personnel in the activity of seed collection. There were approximately 446 hours (average 4.02 hours per recorded collection) dedicated to collecting grass seed, 158 hours (average 2.43 hours per recorded collection) for forbs, and 25 hours (24 hours for one of the two recorded collections) for woody species. Person-hours were not recorded for 41 collections (18.7%) of 19 grass and 22 forb lots.

There were 15 additional seed increase blocks established for road projects. Four grass accessions and one forb accession were removed from production. One mountain brome produced inflorescences heavily contaminated by smut, resulting in no seed harvested. Currently there are 23 accessions of 11 species of grasses (4.43 acres/1.793 hectares) and three accessions of two forb species (0.35 acres/0.142 hectares) planted in seed increase blocks at the Bridger PMC.

During the 1999 growing season, 12 different accessions were harvested, producing 312.470 pounds (141.734 kilograms) of clean seed. Seed production averaged 144.66 pounds-per-acre (162.167 kg-per-hectare).

Seed germination tests were conducted on 1998 PMC production for 15 accessions with a mean percentage germination of 93.93. Percentage germination of 14 grass seed lots (7 species) ranged from 86 to 100, with a mean percentage germination of 95.79. The single forb seed lot percentage germination was 68.

Seed germination tests were conducted on 1999 PMC production for 11 grass accessions. Percentage germination of the 6 grass species ranged from 37 to 100, with a mean percentage germination of 88.

TECHNOLOGY DEVELOPMENT: All plant material collections are assigned accession numbers and inventoried in a database. The lot identification numbers have been upgraded to include identification by individual construction projects. A growth chamber is now in operation allowing seed germination testing of all PMC-produced material.