

YELLOWSTONE NATIONAL PARK - WETLAND PLANT PROPAGATION

FY2008 Annual Summary Report

Prepared by

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INTRODUCTION - In 2008, the Natural Resources Conservation Service (NRCS), Plant Materials Center (PMC), Aberdeen, Idaho entered into an interagency agreement with the National Park Service (NPS), Yellowstone National Park (YNP) to propagate and deliver approximately 35,000 plants in 10 cubic inch containers. Delivery is to take place over a three year period (approximately 12,000 plants per year) beginning in the fall of 2009. Species to be grown include *Carex aquatilis*, *C. microptera*, *C. rostrata*, *C. utriculata*, *Juncus ensifolius*, and *Deschampsia caespitosa*. Due to limited availability of information regarding the propagation of the desired species, it was determined that the PMC would conduct propagation research studies on available seed during 2008. Seed used for these studies came from YNP collections being stored at the Bridger, Montana, PMC.

ACCOMPLISHMENTS - Propagation studies were conducted on seed from identified species. Two irrigation regimes were tested. The first technique was overhead irrigation with sprinklers programmed to water 2 minutes per hour from 8:00am to 3:00pm, plus a 60 minute weekly deep soak to flush accumulated salts. The second technique was subsurface irrigation by placing the containers in 4'x8'x1' tanks filled with 4 to 8 inches of water.

Juncus species were planted on April 25, 2008. *Deschampsia* was seeded on April 30. *Carex* seed was stratified from May 5 to June 9. *Deschampsia* and *Carex* were seeded with 5 to 20 seeds per cone. Seed of all species was sprinkled on the soil surface and pressed by hand. *Deschampsia* seed was additionally covered with a thin later of soil. Soil used was a 1:1:1 mixture of peat, sand and perlite with the addition of 18g 11-15-11 fertilizer and 16ml Redimil fungicide per cubic foot. Germination counts of cones with established plants were taken on July 28, 2008.

TECHNOLOGY DEVELOPMENT – Initial establishment tests show that the species desired to be propagated are germinable at satisfactory levels using standard propagation protocols. *J. ensifolius* and *D. caespitosa* are easily propagated without stratification. *Carex* species require the removal of the perigynia to germinate and also require a 30 day stratification period. Although no *C. microptera* was tested, it is likely that this species will perform similarly to other *Carex* species examined.

PHOTOS



Unidentified species grown out in 12"x18" flats.



Carex species grown in 10 cubic inch containers under overhead irrigation.



Deschampsia caespitosa seedlings grown with subsurface irrigation (top plant) and with overhead irrigation (bottom plant) after 90 days of growth.