

**NATIONAL PARK SERVICE
WETLAND ESTABLISHMENT RESEARCH STUDY**

**FY2008 Annual Summary Report
Prepared by**

**NATURAL RESOURCES CONSERVATION SERVICE
PLANT MATERIALS CENTER
ABERDEEN, IDAHO**

INTRODUCTION - In 2003 the Aberdeen Plant Materials Center entered into an agreement with the National Park Service to evaluate the efficacy of different methods of direct seeding wetland plant species. Currently, wetland restoration is best accomplished using greenhouse grown or wildland collected plugs. An effective means of direct seeding is highly desirable for ease in planting and potential cost savings.

ACCOMPLISHMENTS - This project was designed in incremental steps for ease of evaluation and development of seeding rates. Trial 1 compared seedling establishment in the greenhouse from four hydroseed mulches and four dry, inert carriers was conducted in 2006. The second trial occurred in 2007 with the most promising treatments from trial 1 and compared each treatment with Submerseed™ pellets, a promising treatment from an earlier trial, in a controlled outdoor seeding in 4' X 8' tanks. In 2008, field testing the best methods of direct seeding into the PMC wetland ponds occurred.

TECHNOLOGY DEVELOPMENT – The wetland pond is approximately 50' X 60' and is lined with a plastic liner. The soil was lightly cultivated and watered to field capacity prior to seeding. Plots were 8' x 10' arranged in a randomized complete block design with four replications.

The trial was planted on July 31, 2008 using Sterling Selection Baltic Rush (*Juncus balticus*). Hydroseed treatments were mixed and applied by Frank McClure of Mountain West Hydroseeding. Hydroseed component rates followed the industry standards with the exception of the straw mulch which was applied at one-half the normal rate. This was done based on results shown in 2007 that indicated the industry straw mulch rate was possibly too thick for wetland applications involving *Juncus*. Seed was applied at a target rate of 100 PLS/ft².

Amounts	/ft ²	/plot	/treatment	/ac
Submerseed	20 pellets	3.75lb	15lb	2000lb
Fertil Fibers	20.8g	3.7lb	14.6lb	2000lb
Tackifier	0.03g	2.5g	10.0g	3lb
Rice hulls	1.35g	0.25lb	1lb	130lb
Seed (100PLS/ft)	0.002g	0.17g	0.68g	0.19lb
Water	2gal	160gal	640gal	87120gal
Straw mulch	10.4g	1.85lb	7.3lb	1000lb

Evaluations conducted on September 5, 2008 found no seedlings of *Juncus*. The trial will be

evaluated again in the spring of 2009.



Hydroseed application of Fertil Fibers treatment.



Hydroseed application of Fertil Fibers and straw mulch treatment.



Pressing the rice hull and seed broadcast mix with a lawn roller.



Rice hulls and seed pressed into soil with roller.



Submerseed pellets partially submerged at time of flooding.



Perforated irrigation pipe watering the pond.