

**NATIONAL PARK SERVICE
WETLAND ESTABLISHMENT RESEARCH STUDY**

**FY2007 Annual Summary Report
Prepared by**

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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. The first experiment (trial 1) was conducted in the PMC greenhouse during the summer of 2006. Trial 1 compared seedling establishment from four hydroseed mulches and four dry, inert carriers. The second trial occurred in 2007 with the most promising treatments from trial 1 and compare each treatment with Submerseed™ pellets, a promising treatment from an earlier trial (Tilley and Hoag 2006), in a controlled outdoor seeding in 4' X 8' tanks. These studies are the precursors to field testing the best methods of direct seeding into the PMC wetland ponds. Due to volunteer wetland seed contamination, the ponds were chemically treated in 2006 and 2007 to ensure a clean, weed-free seed bed for use in seeding evaluations that will take place in 2008.

TECHNOLOGY DEVELOPMENT – Four treatments were planted in a replicated trial in five 4' X 8' wetland tanks placed outside at the PMC farm: Fertil Fibers, Broadcast with rice hulls, tackifier alone, and Submerseed pellets. Fertil Fibers had significantly better emergence than tackifier alone and Submerseed at the seeded rate ($p=0.001$). At the adjusted seeding rate of 100 PLS/ft, Fertil Fibers had significantly better establishment than the Submerseed treatment ($p=0.027$).

Table 3. Establishment in 2007 outdoor trial.

	Plants/ft ² @ seeded rate	Plants/ft ² adjusted for 100 PLS/ft ²	2006 GH means adjusted for 100 PLS/ft ²
Fertil Fibers	42 a	18 a	60
Broadcast (rice hulls)	25 ab	10 ab	14
Tackifier alone	21 bc	9 ab	41
Submerseed	6 c	6 b	66 (Tilley & Hoag 2006)
Critical value (0.05)	18	10	na

DIGITAL PHOTOS



Wetland tank divided into 2X4' plots for treatments.



Establishment in 2007 outdoor trial.