

Quarterly Progress Report – 1st Quarter FY 2009
Interagency Agreement between NRCS Plant Materials Program
and National Park Service – Apostle Islands National Lakeshore

Background:

The Apostle Islands National Lakeshore (National Park Service) entered into an interagency agreement with the Natural Resources Conservation Service to propagate plants of beachgrass (*Ammophila breviligulata*), Pennsylvania sedge (*Carex pennsylvanica*), bearberry (*Arctostaphylos uva-ursi*), crinkled hairgrass (*Deschampsia flexuosa*) and poverty oatgrass (*Danthonia spicata*). During the summer and autumn of 2008 Park Service staff collected seeds and/or vegetative materials from each of the species and sent them to the Rose Lake Plant Materials Center. The PMC is to develop propagation protocols, propagate each species and deliver those plants to the Park Service as agreed upon in the Interagency Agreement.

Propagation Techniques – Beachgrass:

Accessions – 2 Sources - Long Island, Rocky Island

Propagation Treatments – 4 treatments, 3 replicates per treatment, 100 seeds per rep
Each accession handled separately.

1. 30 days cold stratification (4° C)
2. 60 days cold stratification (4° C)
3. 90 days cold stratification (4° C)
4. No stratification

Stratification in progress, seeds will be planted when stratification is complete.

Vegetative collections of beachgrass were separated and potted into cone-tainers.

Propagation Techniques – Pennsylvania Sedge:

Accessions – 1 Source – Long Island

Propagation Treatments – 4 treatments, 3 replicates per treatment, 100 seeds per rep

1. 30 days cold stratification (4° C)
2. 60 days cold stratification (4° C)
3. 90 days cold stratification (4° C)
4. No stratification

Stratification in progress, seeds will be planted when stratification is complete.

Propagation Techniques – Bearberry:

Accessions – 1 Source – Rocky Island

Propagation Treatments – 11 treatments, 3 replicates per treatment.

Seed Types – Entire = entire coalesced stone consisting of 4 – 10 seeds, 20 stones per rep

Single = individual seeds, 100 seeds per rep

Partial = after acid treatment some “entire” seeds became partially broken up into some “single” and some smaller coalesced groups of seed, 20 stones per rep

Scarification/Stratification schemes –

Treatment	Scarification	Warm (30° C) Stratification	Cold (4° C) Stratification	Seed Type
1	3 hr H ₂ SO ₄	90 days	120 days	Single
2	4 hr H ₂ SO ₄	90 days	120 days	Single
3	1 hr H ₂ SO ₄ 48 hr hot H ₂ O	60 days	90 days	Single
4	4 hr H ₂ SO ₄	90 days	120 days	Entire
5	5 hr H ₂ SO ₄	90 days	120 days	Entire
6	6 hr H ₂ SO ₄	90 days	120 days	Entire
7	7 hr H ₂ SO ₄	90 days	120 days	Entire
8	24 hr hot H ₂ O	90 days	90 days	Single
9	4 hr H ₂ SO ₄	90 days	120 days	Partial
10	5 hr H ₂ SO ₄	90 days	120 days	Partial
11	Fire	Outdoor	Outdoor	Entire

H₂SO₄ = Sulfuric Acid

Fire treatment – seeds placed in aluminum trays, covered with potting mix, dry pine needles placed on trays and burned. Stratification will continue until Spring, 2009

Stratification in progress. Seeds will be planted when stratification is complete.

Rooted cuttings of Bearberry were potted into cone-tainers. Un-rooted cuttings were treated with rooting hormone and potted into cone-tainers.

Propagation Techniques – Crinkled Hairgrass:

Accessions – 3 Sources – Long Island, Rocky Island, Oak Island

Propagation Treatments – 4 treatments, 3 replicates per treatment, 100 seeds per rep
Accessions from Long Island and Oak Island used for this test. Accessions handled separately.

1. No stratification
2. 30 days cold stratification (4° C)
3. 60 days cold stratification (4° C)
4. 90 days cold stratification (4° C)

After 30 days stratification many seeds had germinated in the stratification containers so treatments 2, 3, and 4 were discontinued and seeds were planted into cone-tainers.

Based on the results of the first experiment a second test was conducted to evaluate shorter stratification intervals.

Propagation Treatments – 4 treatments, 3 replicates per treatment, 100 seeds per rep
Accession from Rocky Island used for this test

1. 10 days cold stratification (4° C)
2. 20 days cold stratification (4° C)
3. 30 days cold stratification (4° C)
4. No stratification

Stratification in progress. Seeds will be planted when stratification is complete.

Vegetative collections of hairgrass were separated and potted into cone-tainers.

Propagation Techniques – Poverty Oatgrass:

Accessions – 1 Source – Oak Island

Propagation Treatments – 3 treatments, 2 or 3 replicates per treatment, 100 seeds per rep.

1. No stratification
2. 30 days cold stratification (4° C)
3. 60 days cold stratification (4° C)

Stratification in progress. Seeds will be planted when stratification is complete.