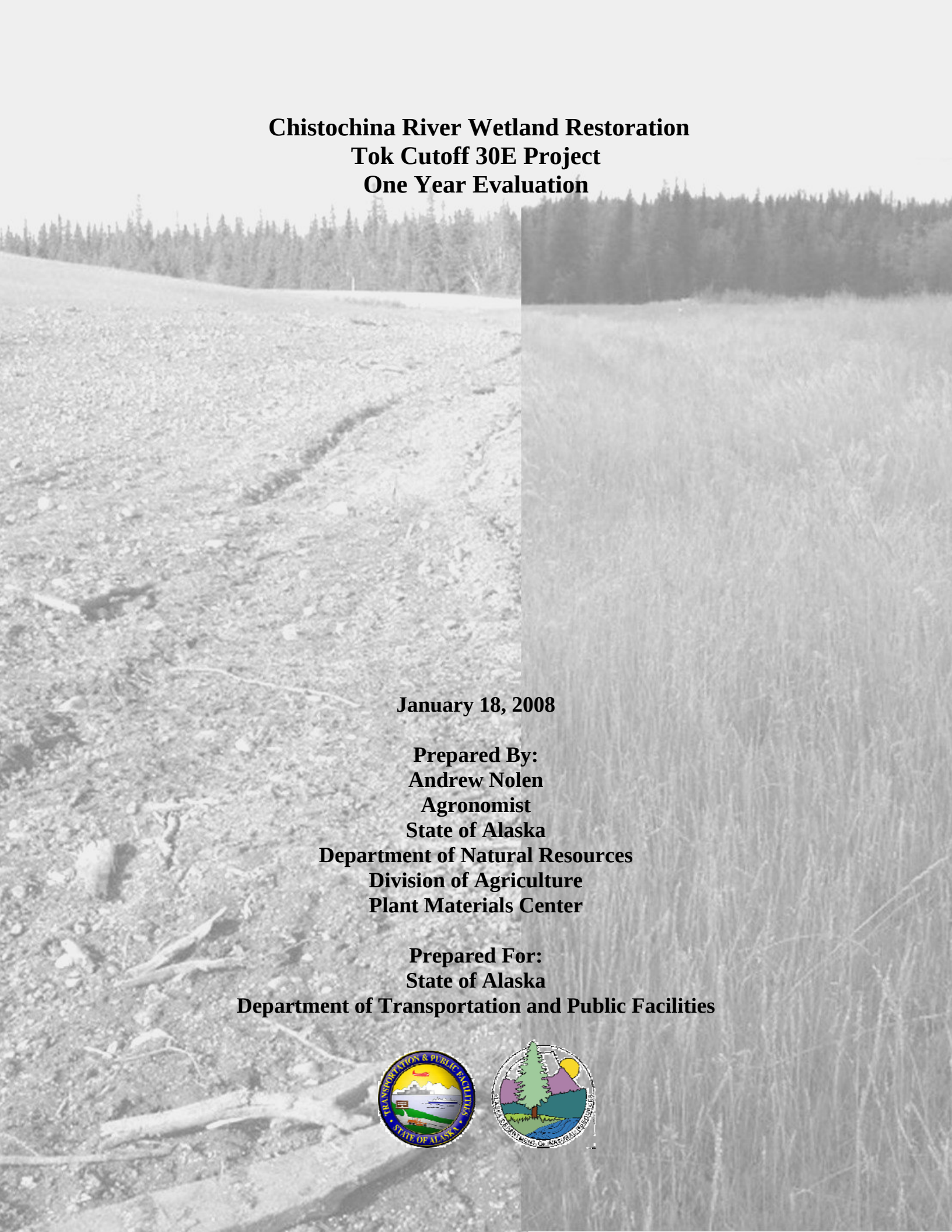
Chistochina River Wetland Restoration
Tok Cutoff 30E Project
One Year Evaluation



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Two agronomists from the Alaska Plant Materials Center (PMC) conducted a site visit on August 20, 2007 to the revegetated wetlands at the Chistochina River near mile 35 of the Tok Cutoff. Photo documentation of established photo points (Figure 1) and installation of a permanent transect were completed as part of the ongoing revegetation monitoring of the treated site.

A permanent transect was installed across a representative area in the northwest wetland to evaluate plant cover and diversity. (Photo 1) The 100 foot long transect documented what was present on 6 inch intervals, thus 200 total hit points were recorded. Table 1 presents the data indicating plant cover at 66.5% of the total area.

Table 1. Transect Data of Species Diversity and Plant Cover

Observation	**Number of Hits**	**Percentage of Cover**
Soil	60	30
Hairgrass	43	21.5
Sloughgrass	20	10
Red Fescue	17	8.5
Litter	17	8.5
Bluejoint	13	6.5
Alpine Bluegrass	11	5.5
Water	7	3.5
Slender Wheatgrass	9	4.5
Feltleaf Willow	3	1.5

Photo 1. Installing Permanent Transect

Species observed to be present within the revegetated areas were as follows:

Calamagrostis canadensis
Beckmannia syzigachne
Festuca rubra
Elymus trachycaulus
Alnus viridis
Salix alaxensis
Poa alpina
Deschampsia caespitosa
Elymus sibiricus
Oxytropis campestris
Hedysarum alpinum
Astragalus alpinus
Potentilla norvegica

Artemisia Tilesii, Betula papyrifera, Carex utriculata, Carex aquatilis and moss. No non-native species were observed.

It is estimated that 80% of the dormant willow cuttings planted on the project have survived. (Photo 2) The only area with low survival was near the top of the rip rap dike of the northwest wetland. This area had compacted, highly porous soils giving the cuttings little access to moisture.

Photo 2. High Survival Rate for Planted Dormant Cuttings

Photo 3. Thriving Sedge Transplant

Most of the planted species were observed to be established and thriving on the site with the exception of the seeded 'Alyeska' polargrass and *Carex pachystachya*. The transplanted *Carex aquatilis* and *Carex utriculata,* and bluejoint (*Calamagrostis canadensis*) were thriving (Photo 3). 'Gruening' alpine bluegrass, 'Nortran' tufted hairgrass, 'Egan' American sloughgrass and 'Wainwright' slender wheatgrass were all observed to have full seed heads and naturally dispersing seed.

Vegetation establishment and vigor appeared to be greatest near the waters edge in all three wetland locations. Available moisture is likely the cause of this observation. Much of the soils on the project are sandy gravel with little moisture holding capacity, especially locations near the top of the grade.

The stakes delineating the two special treatment areas in the northwest wetland were not present on the August 20, 2007 evaluation site visit so the exact layout of the treatments could not be determined. In general, the entire special treatment area appeared to have lower overall plant cover than the other areas of the project that received the standard treatments. (Photo 4) It is expected that vegetation will occupy this area over time. It will be interesting if the species diversity and plant density in the special treatment areas is significantly different five years after implementation of the revegetation efforts.

Photo 4. Approximation of the special treatment areas with less vegetation than adjacent areas.

Figure 1. Photo Point Pictures

Photo Point 1. June 19, 2006 Northwest Wetland

Photo Point 1. July 27, 2006 Northwest Wetland

Photo Point 1. August 20, 2007 Northwest Wetland

Photo Point 2. June 19, 2006 Northwest Wetland

Photo Point 2. July 27, 2006 Northwest Wetland

Photo Point 2. August 20, 2007 Northwest Wetland

Photo Point 3. June 19, 2006 Northwest Wetland

Photo Point 3. July 27, 2006 Northwest Wetland

Photo Point 3. August 20, 2007 Northwest Wetland

Photo Point 4. June 19, 2006 Northwest Wetland

Photo Point 4. July 27, 2006 Northwest Wetland

Photo Point 4. August 20, 2007 Northwest Wetland

Photo Point 5. June 19, 2006 Southwest Wetland

Photo Point 5. Sept. 21, 2006 Southwest Wetland

(Photo by Bill Cole)

Photo Point 5. August 20, 2007 Southwest Wetland

Photo Point 6. June 19, 2006 Southwest Wetland

Photo Point 6. July 27, 2006 Southwest Wetland

Photo Point 6. August 20, 2007 Southwest Wetland

Photo Point 7. June 19, 2006 Northeast Wetland

Photo Point 7. Sept. 21, 2006 Northeast Wetland
(Photo by Bill Cole)

Photo Point 7. August 2007 Northeast Wetland