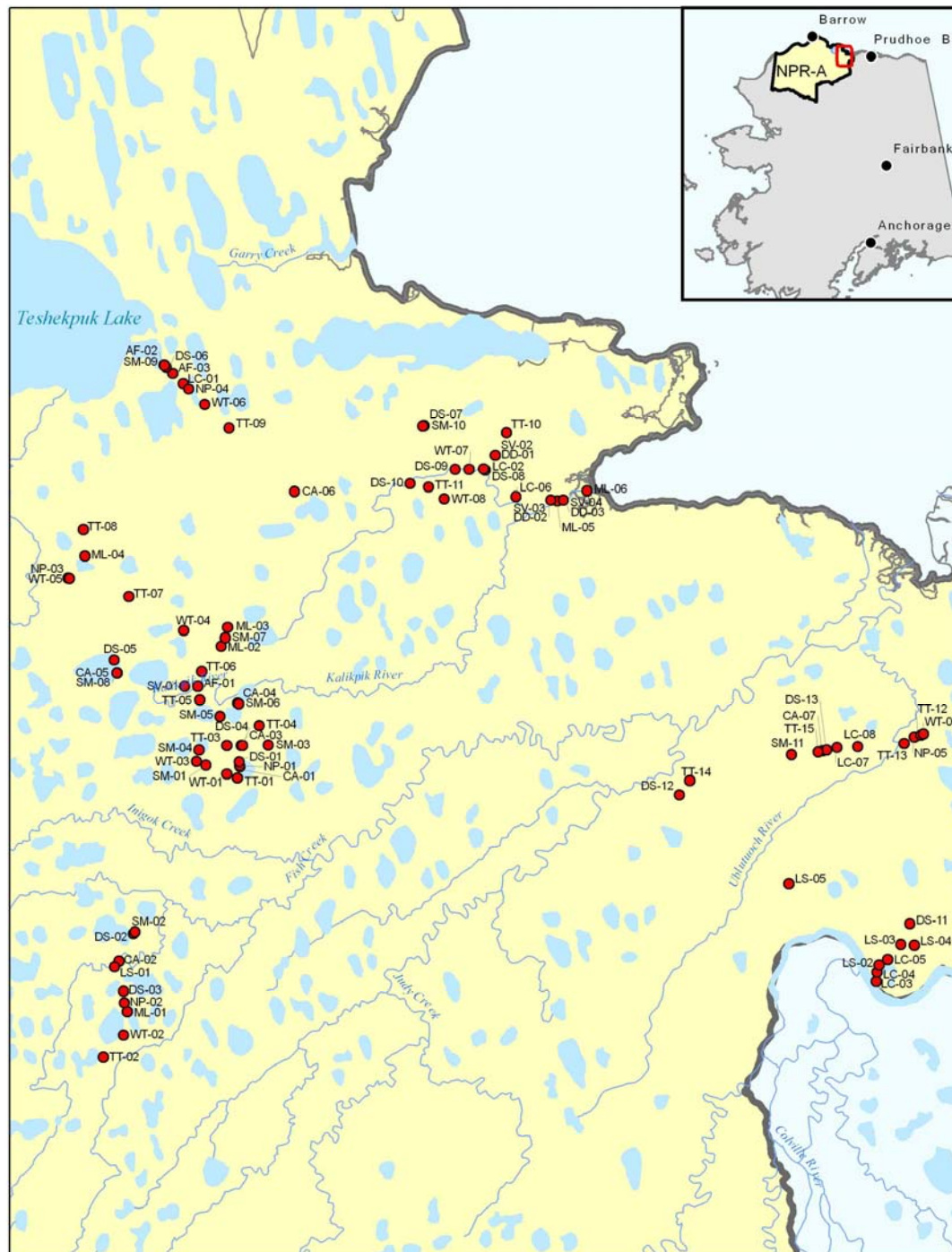


Recovery of Tundra Vegetation from Impacts of Seismic Trails, Camp-Move Trails and Ice Roads in the Northeast NPR-A



Arctic Ice and Snow Roads 2010 Conference:
Advancements and Future Needs
Anchorage, Alaska; March 30, 2010
Dave Yokel, BLM Arctic Field Office



Distribution of Study Plots

- ◆ Seismic Survey Trails – 47
- ◆ Seismic Camp-Move Trails – 30
- ◆ Ice Roads (1 Ice Drill Pad) – 12

- ◆ Vegetation Classes
 - Aquatic (*Arctophila fulva* [3], *Carex aquatilis* [7])
 - Flooded Tundra (Low-centered polygon [8], non-patterned [5])
 - Wet Tundra [9]
 - Moist Tundra (Sedge meadow [11], Tussock tundra [15], Moss/Lichen [6])
 - Shrubs (Dwarf shrub [13], Low Shrub [5])
 - Barren Ground (Sparsely vegetated [4], Dunes/dry sand [3])



Overall Disturbance Scores

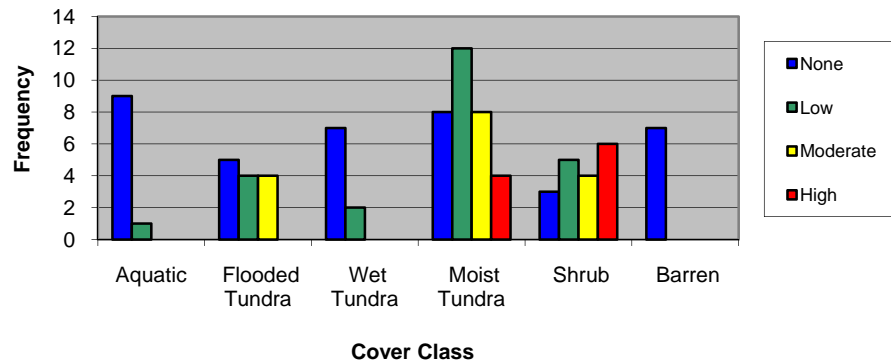
- ◆ Negligible (none to slight)
- ◆ Low
- ◆ Moderate
- ◆ High

Overall disturbance scores are based on a composite of several individual scores, which are visual estimates of impact relative to undisturbed reference plots:

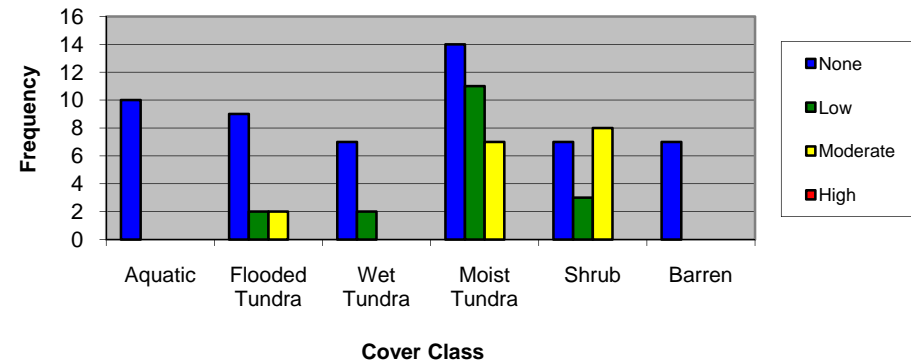
- Percent decrease in total plant cover
- Percent decrease in shrub canopy
- Percent increase in exposed soil
- Structural damage to tussocks or hummocks
- Compression of standing litter or moss mat



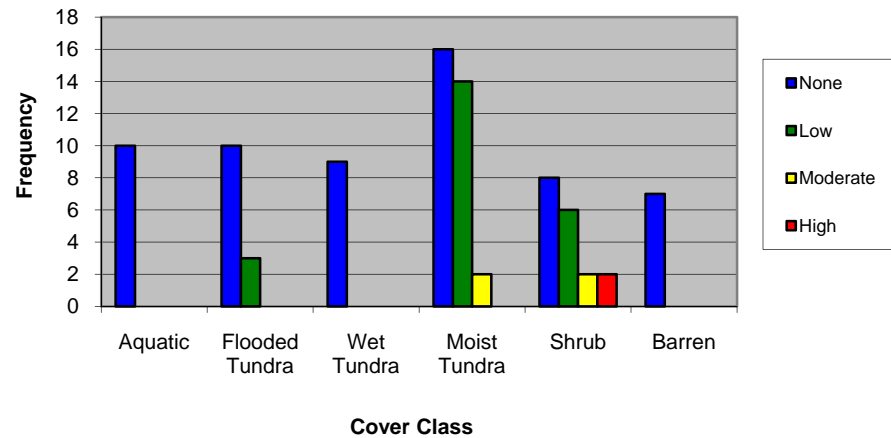
Initial (1999/2000) Disturbance Level by Major Cover Class



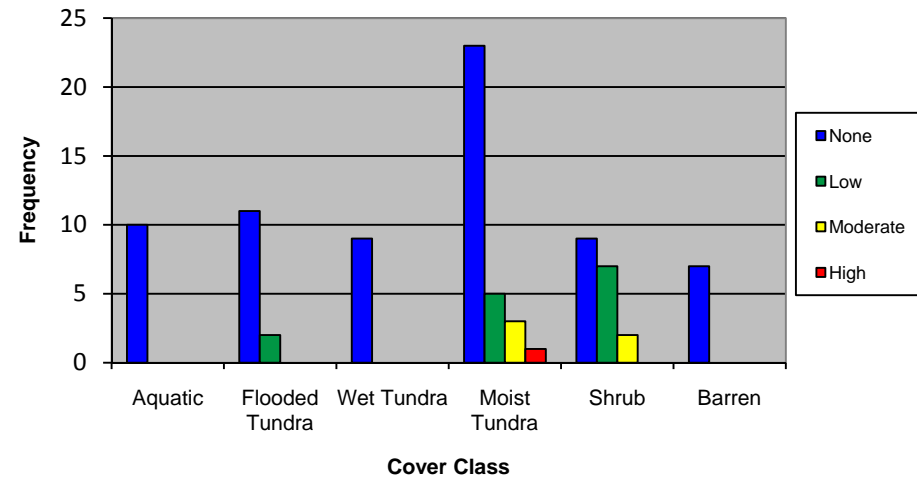
2002 Disturbance Level by Major Cover Class



2005 Disturbance Level by Major Cover Class

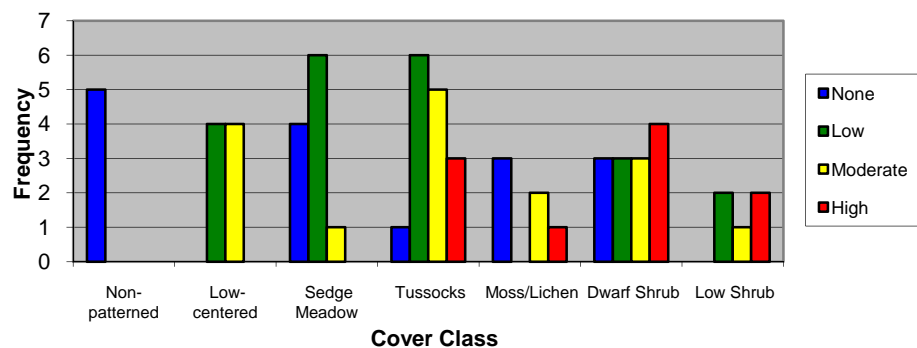


2008 Disturbance Level by Major Cover Class

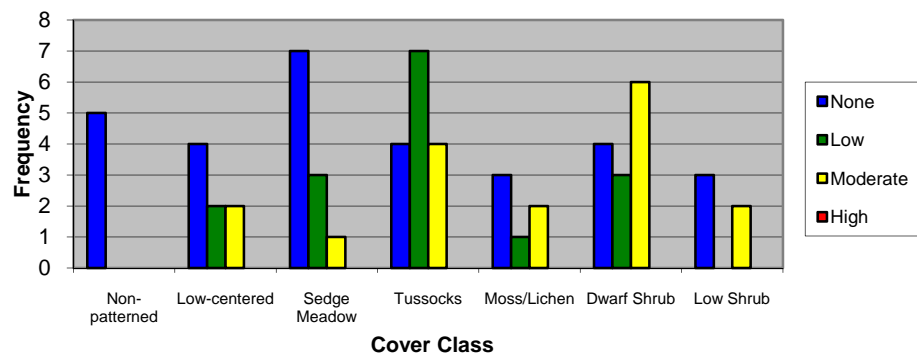




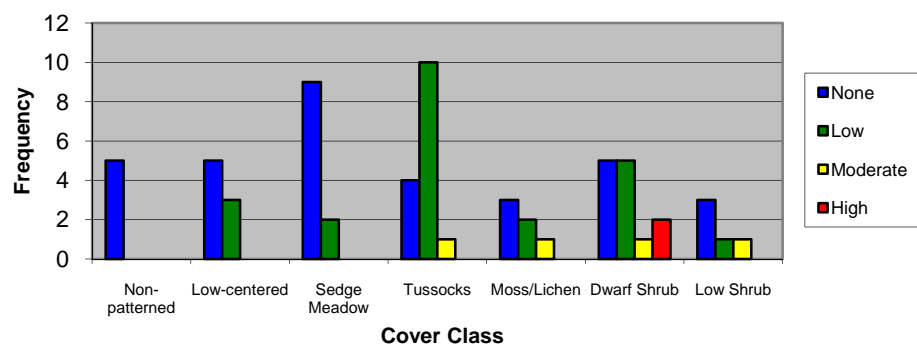
Initial (1999/2000) Disturbance Level by Minor Cover Class



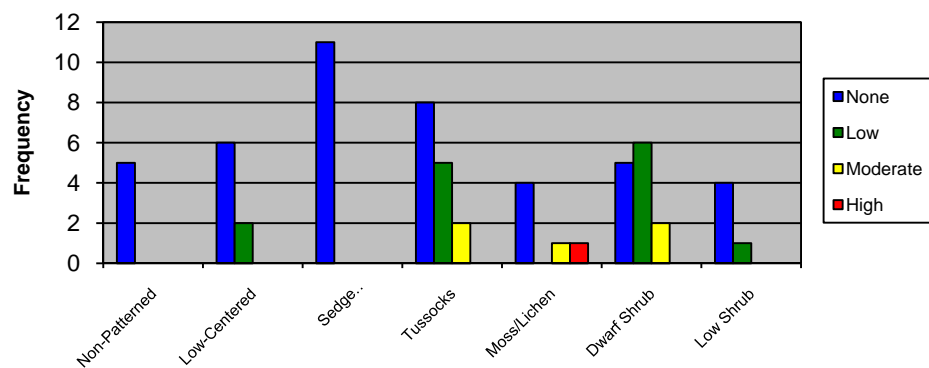
2002 Disturbance Level by Minor Cover Class



2005 Disturbance Level by Minor Cover Class

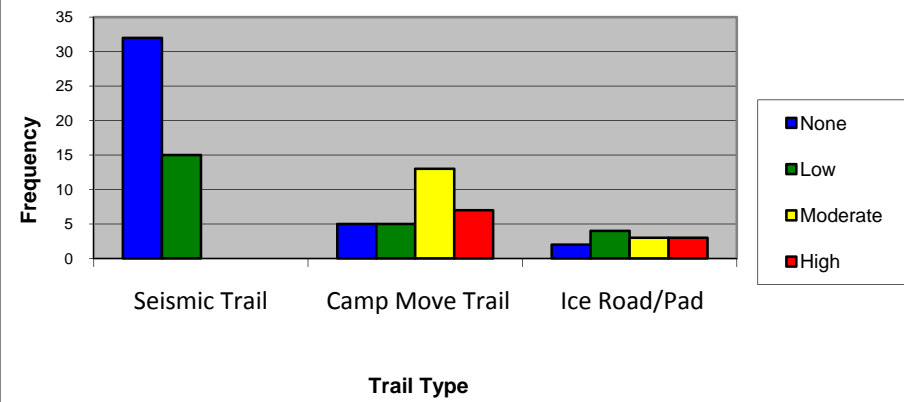


2008 Disturbance Level by Minor Cover Class

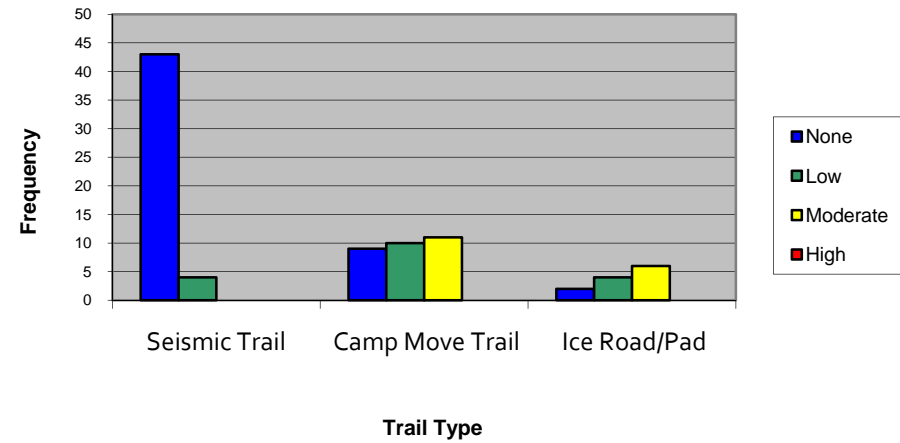




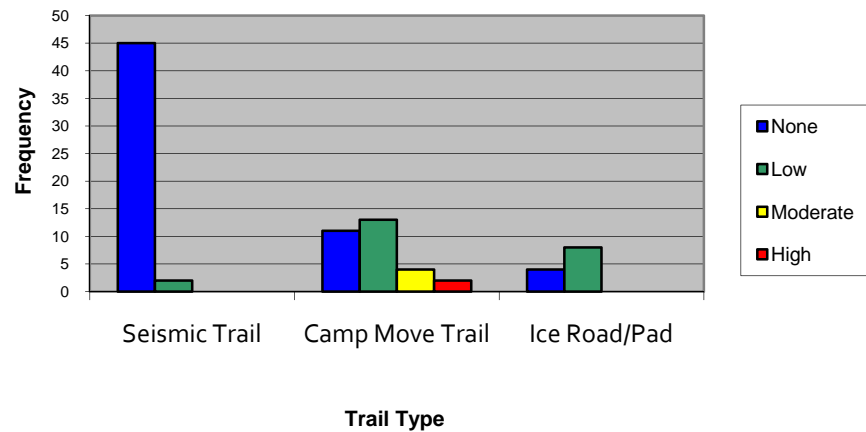
Initial Disturbance Level by Trail Type



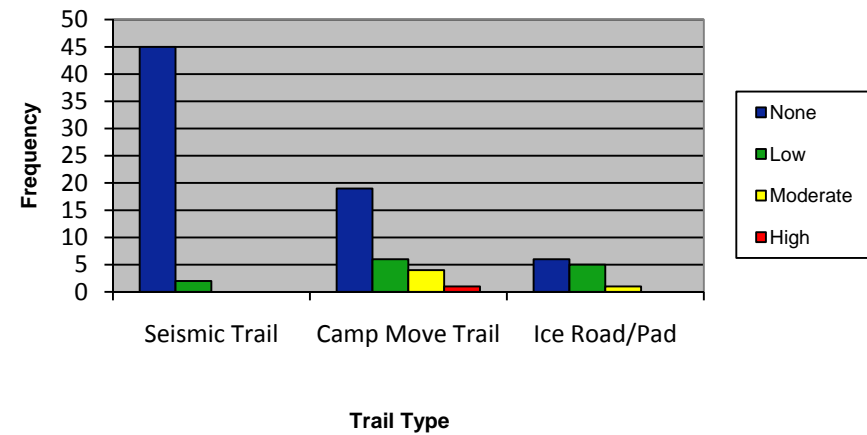
2002 Disturbance Level by Trail Type



2005 Disturbance Level by Trail Type

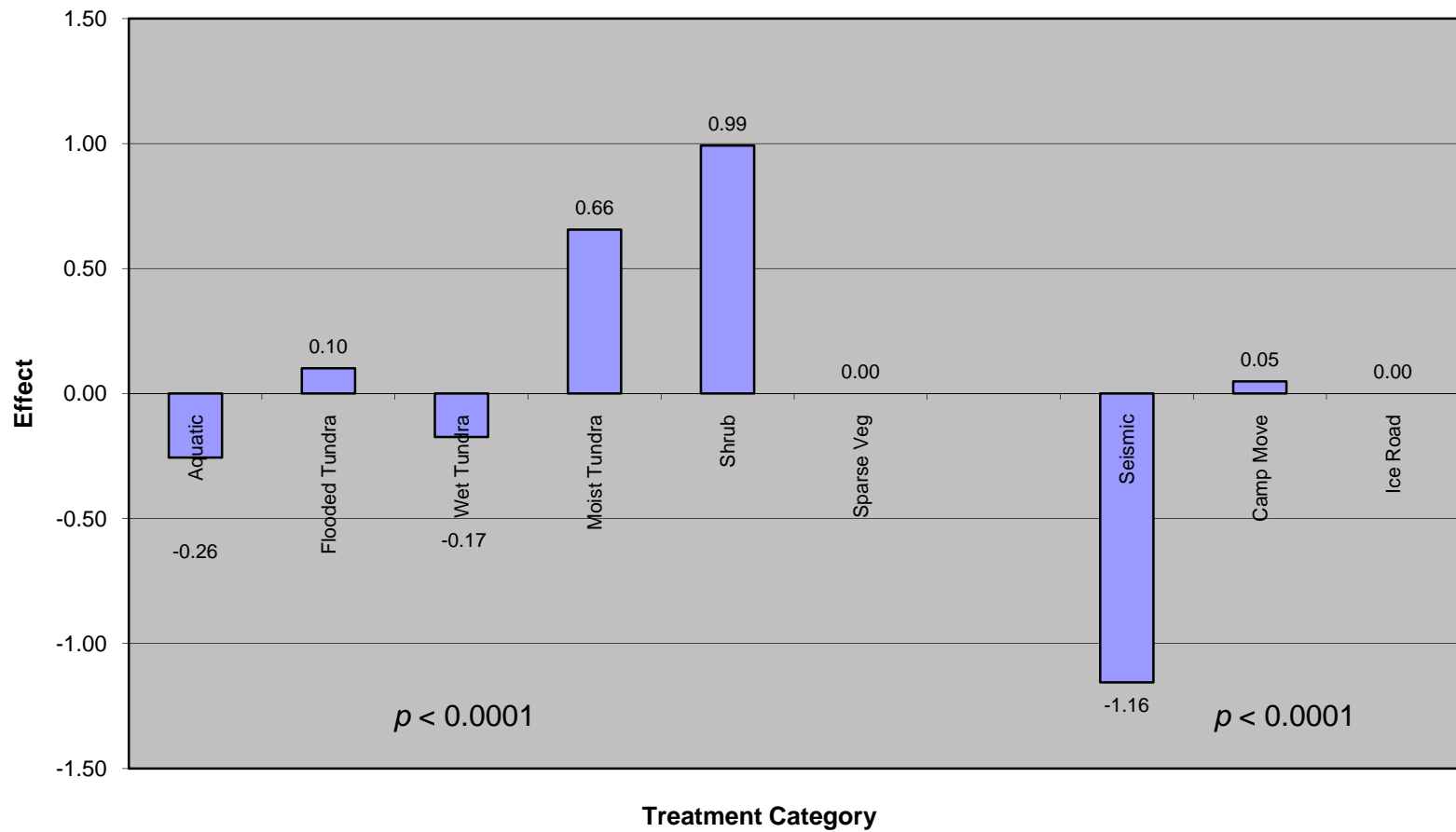


2008 Disturbance Level by Trail Type





Effect of Major Vegetation Cover Class and Disturbance Type (Trail Type) on Initial Disturbance Level (1999/2000)



Multi-factor ANOVA



7/17/1999



7/17/1999



7/25/2002



8/1/2005



7/19/1999



8/1/2008





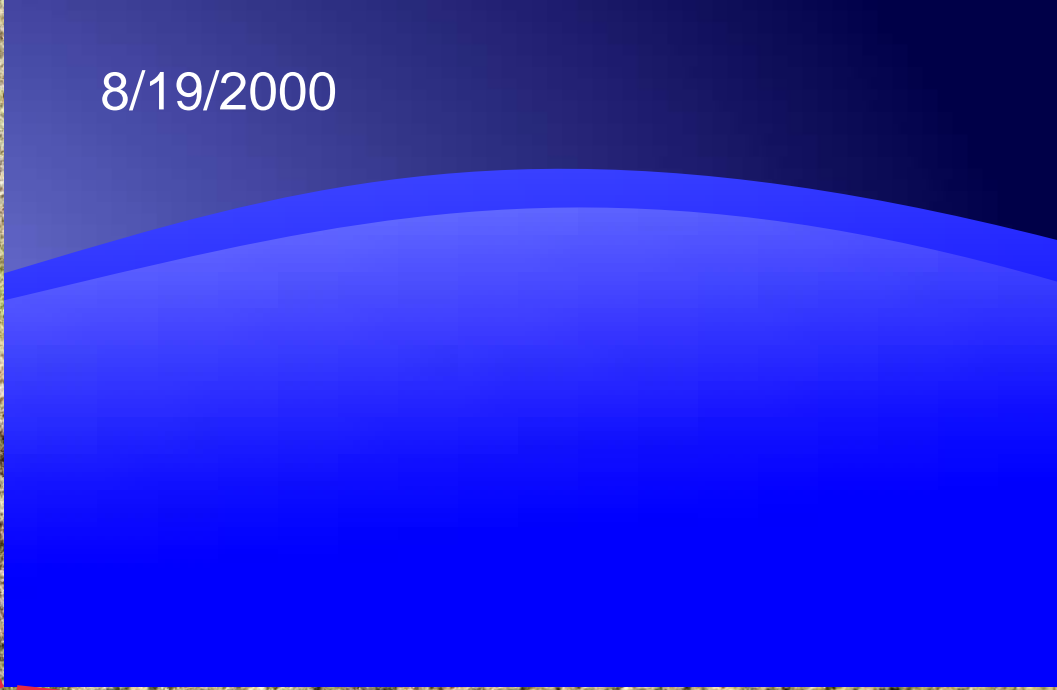
7/16/1999



7/28/2008



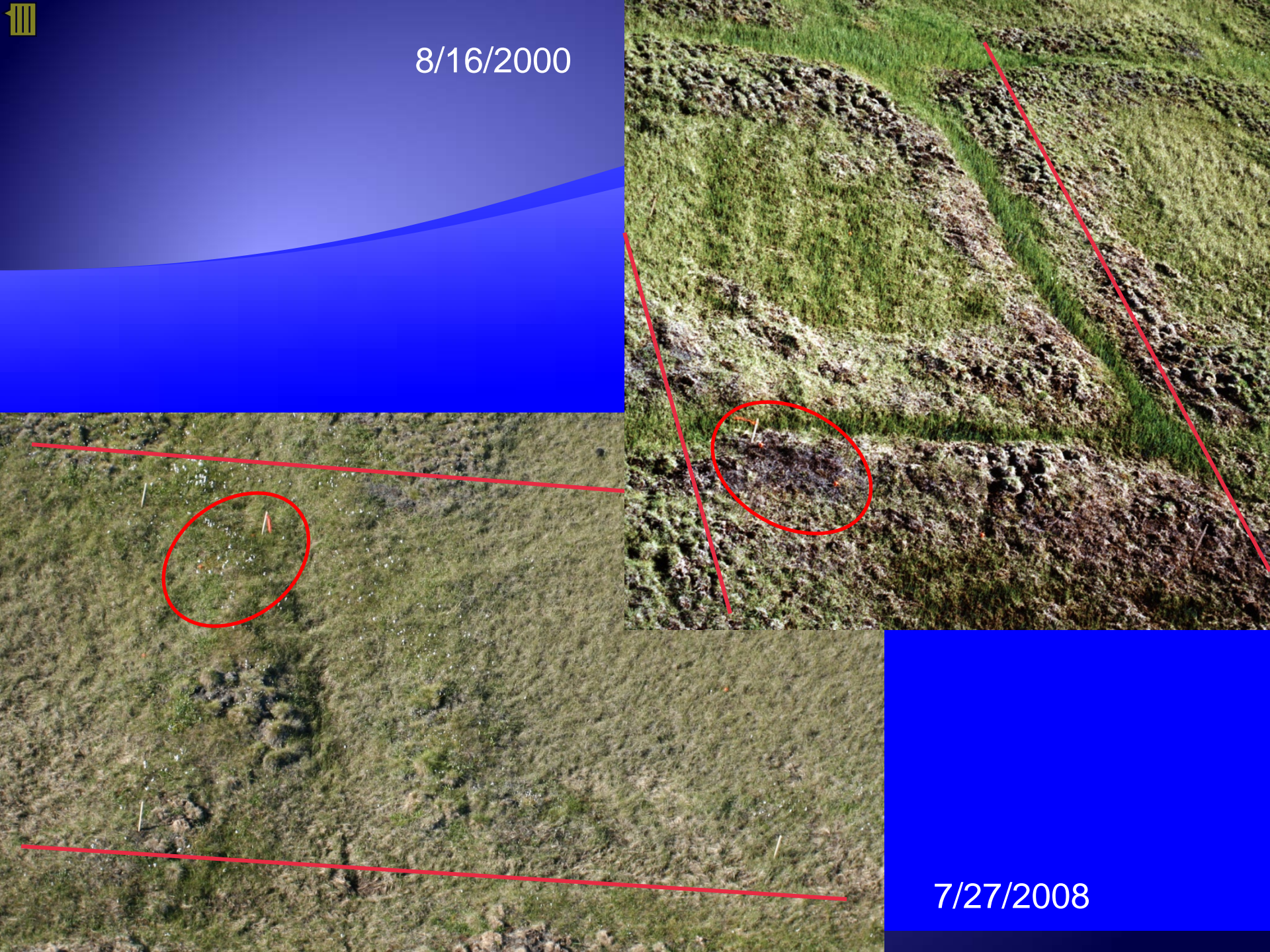
8/19/2000



7/27/2008



8/16/2000



7/27/2008



8/19/2000



7/28/2008





NOT THE END!