

The Use of the Iñupiaq Technique of Tundra Sodding to Rehabilitate Wetlands in Northern Alaska

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APPENDIX 1

TABLE S1. Percent cover of vegetation and bare ground on areas treated with tundra sod at four rehabilitation sites in the Prudhoe Bay oil field. Species with trace cover (tr) were present but not hit during sampling.

Life form / Species	Sodding treatment													
	Site A					Site B			Site C			Site D		
	2008	2009	2010	2011	2012	2010	2011	2012	2010	2011	2012	2011	2012	
Total live cover	117	114	97	167	148	89.7	148.6	119.2	130	100	140	55.9	82.7	
Vascular cover	116	107	93	162	143	64.7	116.2	103.0	90	100	140	47.4	77.0	
Evergreen shrubs								1.5	1.5			10.4	10.9	
<i>Dryas integrifolia</i>								1.5	1.5			10.4	10.9	
Deciduous shrubs	9	13	13	6	8	3.0		4.4				1.9	1.6	
<i>Salix arctica</i>	3	5	4	4	4	1.5		2.9				1.6		
<i>Salix lanata</i>							tr	1.5						
<i>Salix ovalifolia</i>	4	7	7	2	1				tr			0.3	0.3	
<i>Salix pulchra</i>	2	1	2		2								1.3	
<i>Salix reticulata</i>	tr	tr			1	1.5								
Sedges	92	80	65	140	113	54.4	111.7	97.1	90	100	140	32.7	58.7	
<i>Carex aquatilis</i>	21	20	18	80	9	33.8	47.1	14.7	70	50	130	3.9	0.3	
<i>Carex bigelowii</i>	2	tr			4							5.2	3.9	
<i>Carex membranacea</i>		tr					19.1					0.8	0.3	
<i>Carex misandra</i>												1.8	0.3	
<i>Carex rotundata</i>												4.4		
<i>Eriophorum angustifolium</i>	60	53	45	55	97	20.6	42.6	82.4	20	50	10	16.6	53.6	
<i>Eriophorum scheuchzeri</i>	9	7	2	5	3		2.9							
<i>Eriophorum vaginatum</i>												tr	0.3	
Grasses	5	5	11	4	13	4.4	1.5						2.1	
<i>Alopecurus alpinus</i>	tr	tr		tr	8								0.5	
<i>Arctagrostis latifolia</i>	tr	tr		tr	1							tr	0.5	
<i>Deschampsia caespitosa</i>													0.3	
<i>Dupontia fischeri</i>				tr	3	4.4	1.5					tr	0.5	
<i>Poa alpigena</i>	5	5	11	4	1									
<i>Puccinellia angustata</i>													0.3	
Forbs	10	9	4	12	9	2.9	1.5					2.4	3.7	
<i>Braya</i> sp.			tr	tr					tr				0.3	
<i>Cardamine hyperborea</i>		tr		1	3							0.3	0.8	
<i>Cerastium beeringianum</i>									tr					
<i>Cochlearia officinalis</i>									tr			0.3		
<i>Equisetum arvense</i>	1		3	5	3									
<i>Equisetum variegatum</i>	9	8	1	1		2.9						0.5	1.5	
<i>Polygonum viviparum</i>	tr	1	tr	1	3		1.5					0.8	0.8	
<i>Saxifraga cernua</i>	tr													
<i>Saxifraga hirculus</i>		tr	tr	1					tr			0.3	0.3	
<i>Saxifraga oppositifolia</i>												0.3		
<i>Stellaria</i> sp.				3										
Nonvascular cover	1	7	4	5	5	25.0	32.4	16.2	40			8.5	5.7	
Mosses	1	7	4	5	5	23.5	23.5	16.2	40			8.0	5.7	
Lichens											0.5			
Liverworts						1.5	8.8							
Bare ground	34	26	33	6	23	33.8	25.0	27.9		30	50	52.6	40.2	
Soil	13	11	2	1		7.4	4.4	2.9				3.9	3.1	
Litter		21	15	31	5	23	25.0	20.6	23.5	30	50	48.7	37.0	
Water						1.5		1.5						

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TABLE S2. Percent cover of vegetation and bare ground in reference tundra at three of four rehabilitation sites in the Prudhoe Bay oil field. Species with trace cover (tr) were present but not hit during sampling.

Life form / Species	Reference tundra								
	Site B			Site C			Site D		
	2010	2011	2012	2010	2011	2012	2011	2012	
Total live cover	111.6	128.2	57.4	116.9	130.8	70.4	121.9	104.4	
Vascular cover	38.2	67.9	37.6	47.6	60.5	50.6	58.8	48.6	
Evergreen shrubs	1.8	1.4	1.0	1.0			0.6	0.6	
<i>Dryas integrifolia</i>	1.8	1.4	1.0	1.0		tr	0.6	0.6	
Deciduous shrubs	6.6	12.3	5.2	5.0	9.9	7.0	8.1	10.4	
<i>Salix arctica</i>	1.2	2.8	1.2	2.0	5.9	2.0	6.4	5.3	
<i>Salix lanata</i>	0.2		0.2	1.0	2.0	1.0		0.3	
<i>Salix ovalifolia</i>	4.8	7.5	3.2	1.0	1.0	3.0	0.0	0.3	
<i>Salix pulchra</i>			0.2					3.1	
<i>Salix reticulata</i>	0.4	2.0	0.4	1.0	1.0	1.0	1.7	1.4	
Sedges	23.8	44.5	27.6	36.6	46.6	41.6	28.4	27.0	
<i>Carex aquatilis</i>	15.5	26.6	11.5	15.8	12.9	11.9	1.9	0.8	
<i>Carex bigelowii</i>		4.2	5.2		3.0	6.9	3.1	1.7	
<i>Carex membranacea</i>								0.6	
<i>Carex misandra</i>					tr	tr			
<i>Carex rotundata</i>						tr			
<i>Eriophorum angustifolium</i>	7.3	13.7	10.9	20.8	27.7	22.8	23.1	23.9	
<i>Eriophorum scheuchzeri</i>	1.0			tr	3.0				
<i>Eriophorum vaginatum</i>							0.3		
Grasses	2.8	7.1	0.4		3.0		18.6	8.9	
<i>Alopecurus alpinus</i>							5.0	1.1	
<i>Arctagrostis latifolia</i>							0.8		
<i>Dupontia fischeri</i>	2.2	7.1	0.2	tr	3.0	tr	12.8	7.8	
<i>Hierochloa pauciflora</i>	0.6								
<i>Poa alpigena</i>			0.2						
Forbs	3.2	2.6	3.4	5.0	1.0	2.0	3.1	1.7	
<i>Braya</i> sp.				1.0		tr			
<i>Cardamine hyperborea</i>							0.3		
<i>Cochlearia officinalis</i>	0.2		0.4				0.3		
<i>Equisetum variegatum</i>	2.2	2.4	2.0	4.0	1.0	1.0	1.9	1.7	
<i>Polygonum viviparum</i>	0.4		0.4	tr		1.0			
<i>Saxifraga cernua</i>	0.2								
<i>Saxifraga hirculus</i>	0.2	0.2	0.4	tr		tr	0.3		
<i>Stellaria</i> sp.			0.2				0.3		
Nonvascular cover	73.4	60.3	19.8	69.3	70.3	19.8	63.1	55.8	
Mosses	73.4	60.3	19.8	69.3	70.3	19.8	63.1	55.8	
Bare ground	15.7	17.5	53.8	13.9	12.9	42.6	15.6	26.4	
Soil	1.8	0.8	2.4	4.0	1.0		0.6	0.6	
Litter	11.9	15.9	50.2	9.9	11.9	41.6	15.0	25.8	
Water	1.8	0.6	0.8			1.0			
Goose scat	0.2	0.2	0.4						