

Supplementary file for: Barrett R.T. & Hollister R.D. 2016. Arctic plants are capable of sustained responses to long-term warming. *Polar Research* 35. Correspondence: Robert T. Barrett, West Michigan Academy of Environmental Science, 4463 Leonard Street, Walker, MI 49534, USA. E-mail: robertbarrett@choiceschools.com

**Supplementary Table S1.** Values of each plant trait (inflorescence height, leaf length, reproductive effort and reproductive phenology) for each species arranged by site (Atqasuk Dry, Atqasuk Wet, Barrow Dry and Barrow Wet) and growth form (deciduous shrub, evergreen shrub, graminoid and forb). Shown are the average (Avg), standard deviation (SD) and number of plots for which data were collected (N) for each species at each site and year under ambient conditions (Control) and experimentally warmed conditions (Warmed). For further details see Methods.

Species by site & growth form	Year	Control			Warmed		
		Avg	SD	N	Avg	SD	N
<b>Inflorescence height (cm)</b>							
<b>Atqasuk Dry</b>							
<b>Evergreen shrub</b>							
<i>Diapensia lapponica</i>	1997	2.69	0.46	24	2.76	0.47	21
	1998	2.91	0.40	24	2.85	0.64	21
	1999	3.03	0.42	24	3.02	0.56	22
	2000	2.92	0.39	24	3.12	0.39	21
	2001	2.99	0.39	23	3.23	0.28	22
	2007	3.33	0.44	23	3.59	0.45	22
	2008	3.24	0.41	22	3.46	0.50	20
	2010	3.64	0.40	22	3.71	0.74	21
	2011	3.25	0.59	23	3.15	0.55	22
	2012	4.26	0.95	21	3.98	0.87	20
<b>Forbs</b>							
<i>Polygonum bistorta</i>	1998	10.33	5.27	7	13.33	2.10	5
	1999	14.38	5.68	6	13.73	2.61	5
	2000	6.06	3.03	6	9.52	2.14	8
	2001	10.50	3.06	6	15.47	2.63	6
	2007	12.60	2.98	8	12.65	4.22	9
	2008	10.18	3.37	9	13.37	3.06	7
	2010	9.32	2.15	7	10.28	5.78	6
	2012	13.09	2.22	8	14.01	2.28	6
<b>Graminoids</b>							
<i>Hierochloe alpina</i>	1997	24.05	2.70	11	26.58	3.81	14
	1998	26.53	1.63	14	31.97	2.94	13
	1999	26.76	3.00	16	30.98	3.78	14
	2000	23.28	4.62	19	29.43	5.44	15
	2001	24.29	3.72	14	28.92	3.43	12
	2007	28.31	2.85	17	31.23	4.43	14
	2008	27.70	3.09	18	30.20	3.76	16
	2010	26.71	3.87	16	29.61	3.63	16
	2011	24.26	5.25	16	26.12	4.31	14
	2012	24.69	6.65	18	26.99	5.32	15

<i>Luzula arctica</i>	1998	13.24	3.11	6	11.53	5.44	7
	1999	11.36	1.77	5	11.10	4.74	9
	2000	10.00	2.71	6	8.25	3.87	8
	2001	11.50	3.62	6	12.03	2.14	9
	2008	9.53	4.44	6	12.29	2.33	9
<i>Luzula confusa</i>	1997	17.53	3.45	14	15.78	3.37	20
	1998	19.40	2.58	22	19.26	3.59	22
	1999	18.78	3.18	21	16.10	2.80	21
	2000	16.69	3.58	23	17.02	4.24	21
	2001	17.46	4.75	20	15.80	3.17	22
	2007	19.63	3.00	21	19.82	3.30	24
	2008	19.42	3.19	22	18.73	3.10	23
	2010	13.55	4.62	9	18.13	3.24	16
	2011	16.10	4.34	15	18.17	4.85	17
	2012	19.61	2.53	18	19.06	4.20	20
<b>Atqasuk Wet</b>							
<b>Graminoids</b>							
<i>Carex aquatilis</i>	1998	27.40	3.96	24	30.24	3.87	19
	1999	26.47	4.10	21	26.51	4.17	13
	2000	25.90	5.71	22	29.16	5.60	22
	2001	22.29	3.53	24	25.77	3.72	22
	2007	25.90	6.41	21	27.16	4.22	17
	2008	25.15	6.26	22	26.42	2.97	19
	2010	21.92	2.76	21	24.91	3.29	22
	2011	25.99	4.38	14	31.15	4.00	12
	2012	24.99	4.97	17	27.57	4.44	15
<i>Eriophorum angustifolium</i>	1998	20.15	3.99	10	20.97	4.72	6
	1999	16.76	5.05	9	22.74	5.83	16
	2000	13.02	7.00	6	24.56	4.14	10
	2001	22.52	6.58	14	25.23	3.51	10
	2007	23.66	4.36	13	23.49	4.57	10
	2008	22.48	4.67	15	24.86	4.30	14
	2010	18.28	3.99	15	21.09	3.62	14
	2011	21.39	4.93	15	24.38	4.65	14
	2012	18.51	3.30	16	20.68	4.97	17
<i>Eriophorum russeolum</i>	1998	18.16	2.65	13	20.36	2.46	12
	1999	17.88	5.26	8	21.25	1.74	9
	2000	13.45	4.57	5	21.48	3.51	8
	2001	17.53	3.49	16	20.62	3.75	16
	2008	17.24	3.65	10	20.52	2.53	5
<b>Barrow Dry</b>							
<b>Forbs</b>							
<i>Papaver hultenii</i>	1997	10.79	2.49	9	16.06	6.62	12
	1998	14.57	3.54	7	17.76	2.53	8
	2000	12.16	5.72	8	19.70	4.59	9
	2001	12.29	3.15	7	18.45	3.31	9
	2007	16.46	4.85	7	18.89	5.65	10
	2008	15.41	3.70	7	16.38	3.33	10
	2010	15.79	6.02	5	18.77	4.59	7
<i>Potentilla hyparctica</i>	1997	6.57	1.94	23	10.35	2.66	22
	1998	8.18	2.59	21	11.47	3.61	22
	1999	8.54	2.71	23	14.57	3.42	22

	2000	5.97	2.33	24	10.05	3.19	22
	2001	6.07	2.32	23	11.61	2.72	21
	2007	11.33	3.31	24	17.25	3.91	20
	2008	8.00	2.03	23	14.23	3.61	20
	2010	9.81	2.32	23	14.94	3.83	20
	2011	7.67	2.45	20	14.04	3.73	18
	2012	10.12	2.63	21	14.56	4.10	19
<i>Saxifraga punctata</i>	1997	7.69	1.82	16	12.46	2.58	18
	1998	9.98	2.69	11	16.57	3.99	15
	1999	11.83	2.68	19	13.74	4.05	17
	2000	6.62	1.81	20	10.79	3.46	19
	2001	6.72	1.51	19	10.07	2.72	17
	2007	15.51	3.91	21	15.73	4.83	17
	2008	12.01	2.40	18	15.78	4.30	15
	2010	15.27	3.31	19	17.13	3.81	15
	2011	13.59	4.08	19	14.04	4.66	16
	2012	11.06	3.60	19	14.87	4.74	16
<i>Senecio atropurpureus</i>	1997	6.88	1.60	15	8.10	2.34	10
	1999	8.73	2.11	11	8.95	2.92	7
	2000	6.97	2.21	7	8.42	1.73	7
	2007	7.78	2.62	7	8.61	2.17	5
	2008	7.06	1.72	10	8.86	2.21	9
<b>Graminoids</b>							
<i>Arctagrostis latifolia</i>	1998	17.59	3.23	9	25.77	7.10	10
	1999	20.39	4.26	13	28.11	6.94	12
	2000	14.76	4.07	9	20.37	5.18	12
	2001	12.72	2.81	6	16.08	4.19	10
	2007	16.62	5.95	8	28.20	7.98	8
	2008	15.43	4.26	11	19.76	9.04	11
	2010	17.88	6.33	5	24.20	5.86	8
	2011	13.67	4.09	6	20.38	2.89	7
<i>Luzula arctica</i>	1997	6.19	2.09	16	9.79	2.92	15
	1998	6.97	2.35	13	9.28	3.79	13
	1999	9.72	2.33	16	11.48	3.19	16
	2000	5.78	1.73	16	9.65	3.38	18
	2001	5.82	1.97	12	9.72	2.74	15
	2007	8.66	2.16	17	10.39	2.54	15
	2008	7.70	3.03	13	10.48	3.07	12
	2010	7.15	2.16	8	11.11	3.23	5
	2011	6.88	3.15	12	8.48	2.12	6
	2012	8.03	1.90	8	10.04	1.74	6
<i>Luzula confusa</i>	1997	8.34	2.38	17	11.94	4.52	13
	1998	11.73	2.34	21	14.72	3.79	16
	1999	12.22	2.51	24	15.52	2.74	19
	2000	10.36	2.48	23	12.94	2.21	20
	2001	9.76	1.91	22	12.64	2.36	20
	2007	13.28	3.10	24	15.84	3.24	20
	2008	11.21	2.78	24	14.43	3.07	19
	2010	11.29	4.21	17	13.48	3.91	18
	2011	11.96	2.80	21	14.72	2.29	16
	2012	11.92	2.54	21	15.46	4.58	14
<i>Poa arctica</i>	1997	9.97	1.88	11	13.58	1.93	11
	1998	13.97	5.35	10	17.42	3.68	17
	1999	16.84	3.65	20	19.31	3.60	22

	2000	11.98	2.00	17	14.65	1.66	23
	2001	10.63	1.51	17	14.37	2.62	21
	2007	16.47	2.84	22	20.32	4.71	22
	2008	12.98	3.05	24	17.97	3.25	23
	2010	15.05	2.54	23	21.12	4.04	23
	2011	15.65	2.48	22	19.62	3.85	23
	2012	15.98	2.66	20	21.21	3.20	19
<b>Barrow Wet</b>							
<b>Forbs</b>							
<i>Cardamine pratensis</i>	1998	7.69	1.56	9	14.67	3.37	10
	1999	8.76	1.57	11	13.55	2.46	16
	2008	6.58	2.03	12	11.38	2.63	20
	2010	10.48	2.19	15	15.63	2.86	21
	2011	10.23	3.23	6	14.42	2.70	8
	2012	10.06	2.77	8	15.18	4.16	10
<i>Draba lactea</i>	1997	5.56	1.25	17	6.68	1.85	11
	1998	6.66	0.95	10	8.47	1.70	5
	1999	5.36	1.09	7	8.39	1.60	6
	2000	5.33	0.94	9	7.13	2.06	6
	2007	7.06	0.68	11	8.22	0.87	8
	2008	5.45	0.69	7	7.54	0.64	9
	2010	5.59	0.90	7	6.71	0.88	9
	2011	5.88	0.67	7	7.95	1.76	9
<i>Saxifraga cernua</i>	1997	9.76	2.10	22	14.42	2.07	23
	1999	7.58	2.54	8	10.27	2.38	6
	2007	9.41	1.66	18	12.25	2.66	16
	2008	8.84	1.74	18	12.57	2.57	19
	2010	11.13	2.07	19	13.71	3.69	22
	2011	10.86	1.15	19	13.22	2.91	21
	2012	12.53	2.34	22	12.70	3.01	20
<i>Saxifraga foliolosa</i>	1997	10.15	2.81	23	13.31	3.14	21
	1998	9.20	3.33	13	14.17	3.51	10
	1999	9.89	2.05	17	13.21	4.88	16
	2000	8.45	2.46	17	8.75	2.85	13
	2007	11.07	2.23	12	13.91	2.37	8
	2008	9.61	1.71	14	14.12	3.17	13
	2010	10.91	2.76	18	13.45	3.04	13
	2011	12.35	2.13	14	12.88	4.01	9
	2012	11.80	1.98	16	13.59	1.98	6
<i>Saxifraga hieracifolia</i>	1997	18.48	2.75	17	21.67	4.17	15
	1998	17.01	5.29	16	21.33	6.74	15
	1999	16.38	5.36	7	16.40	8.33	11
	2000	13.76	5.39	12	17.73	6.39	10
	2007	17.66	3.97	8	19.87	6.39	5
	2008	13.88	3.00	11	19.00	3.86	8
	2010	18.15	3.99	15	20.39	3.43	12
	2011	15.84	3.69	15	18.74	4.29	12
	2012	17.57	3.22	11	16.82	5.95	9
<b>Graminoids</b>							
<i>Carex stans</i>	1998	16.90	4.83	10	21.67	5.69	20
	1999	15.64	3.64	22	22.60	4.36	23
	2000	14.65	3.71	24	19.04	4.32	23
	2007	12.83	2.99	21	18.01	4.50	23

	2008	12.22	2.14	21	18.70	3.48	23
	2010	12.89	3.44	21	17.00	4.72	21
	2011	16.42	4.01	22	19.15	4.18	22
	2012	16.85	2.90	21	18.69	4.88	20
<i>Dupontia fisheri</i>	1997	17.88	2.60	22	19.12	1.77	23
	1998	21.28	2.59	18	25.19	2.96	14
	1999	17.79	3.28	23	21.64	3.75	21
	2000	17.74	4.28	23	19.42	4.82	22
	2001	12.53	3.79	23	17.89	4.00	18
	2007	19.18	2.81	24	20.21	3.65	23
	2008	15.10	2.49	23	19.82	3.93	21
	2010	17.86	3.10	22	19.91	4.34	19
	2011	19.09	3.12	23	21.58	3.13	20
	2012	16.84	2.72	22	21.07	3.44	16
<i>Eriophorum triste</i>	1997	8.43	1.62	12	11.24	2.93	12
	1999	12.40	2.99	18	16.45	4.65	16
	2000	12.37	4.26	21	16.65	4.94	18
	2001	9.08	2.43	15	11.48	3.35	11
	2007	9.34	1.98	12	11.32	3.42	14
	2008	8.90	1.75	10	12.12	2.48	13
	2011	9.78	1.74	8	12.29	3.44	8
<i>Hierochloe pauciflora</i>	1997	12.83	2.43	18	12.58	3.37	19
	1999	13.54	2.46	17	15.36	2.96	16
	2000	11.75	2.58	16	13.05	3.78	12
	2001	9.20	1.88	11	14.05	3.20	5
	2007	13.05	3.53	19	11.60	1.56	14
	2008	10.66	3.07	18	11.33	2.47	11
	2010	10.88	4.16	12	12.06	2.20	10
	2011	12.39	2.40	18	13.02	2.73	9
<i>Juncus biglumis</i>	1997	8.89	1.41	16	10.20	2.49	14
	1998	11.84	1.19	9	13.30	3.65	9
	1999	8.24	2.50	10	9.33	1.94	9
	2000	10.09	2.38	10	10.10	1.38	8
	2007	10.37	2.04	7	11.41	1.58	5
	2010	8.59	1.04	8	8.22	1.49	5
<i>Luzula arctica</i>	1997	9.29	3.88	16	11.34	2.85	13
	1998	11.76	3.57	9	15.08	2.98	7
	1999	7.51	3.02	7	10.60	4.62	6
	2000	8.63	2.04	8	10.53	2.00	8
	2007	10.88	4.23	9	11.95	3.76	6
	2008	9.95	3.33	8	10.53	3.71	7
	2010	9.12	3.44	11	13.02	3.63	10
	2011	12.09	2.22	15	14.55	3.38	6
	2012	12.33	3.61	10	14.34	4.44	6
<i>Luzula confusa</i>	1997	12.89	2.27	13	14.69	2.37	12
	1998	12.91	2.36	9	15.15	3.38	5
	1999	9.48	1.82	8	12.08	2.65	7
	2000	10.27	2.27	9	12.47	3.05	7
	2008	10.11	1.11	7	13.55	2.45	5
	2010	14.21	2.24	9	13.24	5.68	7
	2011	13.18	1.79	10	13.89	2.43	8
	2012	12.58	2.23	9	17.23	2.82	7
<i>Poa arctica</i>	1997	12.97	3.36	7	17.18	3.48	5

1999	13.60	1.89	6	22.02	4.10	6
2000	9.69	1.90	6	13.64	2.82	5
2007	12.13	2.16	8	15.11	4.53	7
2008	10.67	2.45	12	15.79	3.49	9
2010	13.25	2.71	16	19.08	3.30	10
2011	15.44	3.62	16	18.99	2.74	10
2012	18.25	1.97	15	21.49	2.97	9

### Leaf Length (cm)

#### Atqasuk Dry

##### Evergreen shrub

##### *Cassiope tetragona*

1998	0.55	0.07	22	0.53	0.12	23
1999	0.52	0.11	21	0.49	0.10	23
2000	0.52	0.17	22	0.48	0.13	21
2001	0.45	0.19	21	0.43	0.08	22
2007	0.72	0.15	24	0.73	0.15	24
2008	0.30	0.06	7	0.32	0.04	12
2010	1.23	0.44	17	1.36	0.53	20

##### *Diapensia lapponica*

1998	0.84	0.12	11	0.88	0.11	20
1999	1.02	0.12	15	1.06	0.09	18
2000	0.98	0.11	17	1.05	0.14	19
2001	0.96	0.11	13	1.01	0.17	14
2007	0.44	0.10	16	0.49	0.07	17
2008	0.39	0.18	13	0.41	0.16	16
2010	0.37	0.20	17	0.34	0.06	19
2011	0.49	0.10	20	0.48	0.10	19
2012	0.50	0.08	20	0.54	0.13	20

##### *Ledum palustre*

1997	0.98	0.15	14	1.15	0.25	19
1998	0.99	0.20	20	1.13	0.14	23
1999	1.04	0.14	23	1.14	0.15	23
2000	0.99	0.23	24	1.06	0.16	23
2001	0.99	0.16	24	1.05	0.19	23
2007	1.08	0.23	23	1.09	0.18	23
2008	0.95	0.31	13	1.08	0.25	9
2010	1.14	0.54	23	1.17	0.47	22
2011	0.88	0.19	24	0.99	0.17	22
2012	4.10	1.08	21	3.96	0.97	23

##### *Vaccinium vitis-idaea*

1998	0.60	0.09	24	0.60	0.09	24
1999	0.66	0.09	24	0.64	0.11	24
2000	0.61	0.09	24	0.63	0.11	24
2001	0.57	0.08	24	0.60	0.11	24
2007	0.61	0.10	24	0.62	0.14	24
2008	0.57	0.13	20	0.51	0.12	21
2010	0.52	0.15	23	0.57	0.16	24
2011	0.57	0.09	24	0.55	0.09	24
2012	2.68	0.86	24	2.63	0.72	24

#### Forbs

##### *Polygonum bistorta*

1997	5.25	1.32	9	5.19	1.40	10
1998	5.91	1.75	9	6.86	1.53	10
1999	6.18	1.50	9	7.34	2.13	8
2000	5.04	0.86	9	5.93	1.30	11
2001	5.22	0.75	9	6.72	1.87	11
2007	5.49	1.46	8	5.39	1.16	8

	2008	4.74	1.68	7	4.20	1.03	10
	2010	5.53	1.84	9	4.72	1.20	10
	2011	4.71	1.23	10	5.18	0.84	9
	2012	5.69	1.45	9	5.54	1.27	10
<b>Graminoids</b>							
<i>Carex bigelowii</i>	1998	12.64	2.38	7	11.82	3.03	5
	1999	11.49	3.30	8	12.95	3.28	5
	2000	11.69	2.58	6	11.87	2.24	5
	2001	11.47	2.97	8	10.78	1.71	5
	2007	11.90	2.30	8	12.11	3.95	5
	2008	10.04	2.52	7	10.68	2.82	5
	2010	9.28	2.38	8	8.72	2.48	5
	2011	10.22	2.18	7	9.68	2.42	5
	2012	11.72	3.07	8	10.02	3.35	5
<i>Hierochloe alpina</i>	1997	10.33	2.70	18	12.34	3.54	10
	1998	11.22	1.82	17	12.75	1.83	13
	1999	12.67	2.10	15	13.49	4.00	10
	2000	9.70	1.84	16	10.57	2.83	14
	2001	11.30	2.27	16	11.84	3.15	15
	2007	11.99	2.07	17	13.79	3.56	12
	2008	10.20	1.82	10	11.37	2.96	10
	2010	11.50	2.97	15	12.98	3.83	13
	2011	11.67	2.20	17	13.34	2.20	17
	2012	10.95	2.02	17	11.69	3.55	15
<i>Luzula arctica</i>	1997	2.05	0.26	6	2.04	0.50	12
	1998	2.44	0.50	8	2.44	0.64	12
	1999	2.62	0.52	10	2.48	0.64	12
	2000	2.13	0.72	10	2.32	0.58	13
	2001	2.05	0.72	10	2.35	0.48	14
	2007	2.22	0.49	11	2.47	0.62	9
	2008	2.46	0.75	13	2.90	0.54	8
	2010	2.01	0.76	10	2.35	0.60	14
	2011	2.21	0.74	9	2.45	0.96	10
	2012	2.16	0.51	9	2.08	0.69	9
<i>Luzula confusa</i>	1997	6.07	1.60	24	7.14	1.94	18
	1998	8.71	2.18	22	8.63	2.12	23
	1999	8.27	1.89	21	8.28	1.63	22
	2000	7.11	1.68	24	7.36	1.92	24
	2001	7.27	1.75	23	8.08	1.84	23
	2007	8.40	1.49	23	9.09	1.51	22
	2008	7.78	2.07	21	8.69	1.85	19
	2010	6.85	1.59	24	7.51	1.55	24
	2011	7.52	1.34	24	8.18	2.03	24
	2012	7.22	1.58	24	8.13	1.99	24
<i>Trisetum spicatum</i>	1997	13.75	1.90	7	15.59	1.30	5
	1999	15.55	1.82	15	15.67	2.83	14
	2000	12.94	2.05	15	13.46	1.60	12
	2001	15.12	2.44	14	17.22	2.31	13
	2007	17.76	3.12	16	18.86	3.00	14
	2008	16.74	2.61	16	18.95	2.41	14
	2010	14.30	1.93	16	18.64	3.68	14
	2011	15.29	2.82	16	18.96	3.26	14
	2012	16.85	2.83	17	20.22	3.62	14

**Atqasuk Wet  
Forbs**

<i>Pedicularis sudetica</i>	1997	5.46	1.71	18	5.64	2.10	13
	1998	6.93	2.73	16	7.11	1.48	12
	1999	6.08	2.26	17	7.48	2.23	14
	2000	5.27	1.81	15	7.38	2.62	13
	2001	4.24	1.97	13	4.83	1.56	11
	2007	4.18	1.28	9	4.74	2.61	7
	2008	6.18	3.56	10	5.28	2.35	8
	2010	4.37	0.78	6	5.35	1.72	9
	2011	6.59	1.87	9	6.91	2.91	6
	2012	2.90	1.08	12	2.96	0.82	7

**Graminoids**

<i>Carex aquatilis</i>	1998	22.54	3.69	24	24.33	3.93	24
	1999	22.70	3.85	24	24.63	3.74	24
	2000	21.48	4.15	23	24.27	3.57	24
	2001	21.24	3.49	24	23.73	3.21	24
	2007	23.78	4.01	24	25.71	2.90	24
	2008	23.20	3.70	24	25.65	2.71	24
	2010	19.95	2.54	24	22.45	2.57	24
	2011	44.95	116.62	24	23.43	3.27	24
	2012	18.37	3.99	24	20.75	3.47	24

<i>Dupontia psilosantha</i>	1997	7.29	1.66	11	9.23	2.84	15
	1998	11.36	4.00	13	13.54	3.02	15
	1999	11.52	4.02	10	14.40	4.38	13
	2000	10.81	3.55	15	11.68	3.32	15
	2001	12.10	3.04	12	13.42	4.36	11
	2007	12.72	3.16	17	15.49	3.67	15
	2008	12.29	2.63	16	14.23	4.33	16
	2010	12.16	3.16	19	13.90	1.80	16
	2012	11.25	2.42	14	10.64	3.99	14

<i>Eriophorum angustifolium</i>	1997	20.94	4.25	20	21.36	3.73	17
	1998	23.65	3.35	21	25.20	3.98	19
	1999	23.63	5.45	19	25.87	3.08	18
	2000	21.90	3.10	18	25.05	3.88	18
	2001	22.00	4.06	21	24.60	4.78	18
	2007	22.11	3.54	21	27.60	3.61	18
	2008	21.04	3.31	22	23.57	3.76	19
	2010	16.95	4.03	23	18.55	3.53	20
	2011	21.83	4.07	21	22.27	3.71	20
	2012	18.37	5.33	21	19.18	5.56	22

<i>Eriophorum russeolum</i>	1997	13.09	2.97	17	14.46	2.98	18
	1998	15.06	3.36	19	16.24	3.05	20
	1999	14.68	3.51	21	16.22	2.94	19
	2000	12.86	2.65	20	15.94	3.28	19
	2001	15.39	4.69	21	16.73	3.98	20
	2007	16.09	3.76	21	16.96	2.94	20
	2008	16.28	2.45	20	16.54	2.31	20
	2010	12.52	1.70	21	13.13	1.85	21
	2011	14.36	3.95	21	15.45	3.90	19
	2012	11.46	4.86	21	12.99	4.58	19

**Barrow Dry**

**Deciduous shrub**

<i>Salix rotundifolia (F)</i>	1999	0.89	0.25	11	1.10	0.34	14
	2000	0.95	0.15	8	1.01	0.10	12
	2001	0.68	0.11	5	0.73	0.20	9

	2010	0.85	0.29	15	0.81	0.17	21
	2011	1.00	0.22	18	1.06	0.27	20
	2012	0.94	0.23	21	1.06	0.24	22
<i>Salix rotundifolia (M)</i>	1999	1.01	0.24	10	0.95	0.28	15
	2000	0.98	0.16	8	1.13	0.14	15
	2001	0.83	0.26	10	0.75	0.25	14
	2007	0.75	0.10	14	0.84	0.23	19
	2010	0.80	0.15	22	0.83	0.20	20
	2011	1.02	0.41	22	1.08	0.28	23
	2012	0.97	0.24	22	1.07	0.28	22
<b>Evergreen shrub</b>							
<i>Cassiope tetragona</i>	1999	0.43	0.11	15	0.47	0.16	17
	2000	0.32	0.08	24	0.29	0.06	21
	2001	0.38	0.10	24	0.33	0.08	24
	2007	0.61	0.17	24	0.58	0.12	24
	2008	0.44	0.05	24	0.44	0.04	24
	2010	0.47	0.09	24	0.47	0.11	24
<b>Forbs</b>							
<i>Pedicularis kanei</i>	2000	3.49	0.68	6	4.27	0.45	5
	2007	4.78	1.48	6	4.54	0.58	7
	2008	4.84	1.21	5	4.73	1.28	7
	2011	4.04	0.78	6	4.96	1.77	5
	2012	4.19	1.32	7	4.25	1.36	6
<i>Potentilla hyparctica</i>	2000	1.32	0.31	11	1.53	0.40	8
	2001	2.44	0.55	20	2.89	0.93	15
	2007	0.96	0.27	21	1.12	0.45	10
	2008	1.53	0.63	11	1.58	0.79	10
	2010	1.12	0.44	16	1.26	0.29	8
	2011	2.74	0.94	18	3.17	0.88	15
	2012	2.86	1.03	20	2.84	1.49	13
<i>Saxifraga punctata</i>	1997	1.43	0.31	13	1.59	0.47	12
	1998	1.59	0.30	13	1.90	0.56	17
	1999	2.76	0.81	14	3.32	0.91	17
	2000	1.76	0.53	13	2.26	0.54	14
	2001	1.73	0.37	18	2.08	0.43	13
	2007	1.90	0.51	13	1.90	0.41	14
	2008	1.73	0.49	16	1.73	0.20	12
	2010	1.87	0.26	15	2.11	0.26	16
	2011	3.06	0.60	16	3.52	1.09	19
	2012	1.88	0.40	16	2.31	0.47	17
<i>Senecio atropurpureus</i>	1997	1.28	0.40	12	1.28	0.48	7
	1998	1.24	0.39	15	1.28	0.30	9
	1999	1.61	0.40	13	1.50	0.46	8
	2000	1.21	0.24	15	1.27	0.45	9
	2001	1.72	0.58	13	1.56	0.46	10
	2007	1.05	0.17	12	1.08	0.27	12
	2008	1.18	0.46	9	1.22	0.45	11
	2010	1.18	0.25	9	1.30	0.36	6
	2011	2.55	0.66	10	2.57	0.72	7
	2012	1.72	0.43	6	1.30	0.33	7
<i>Stellaria laeta</i>	1999	0.66	0.17	23	0.55	0.15	23
	2000	0.63	0.18	22	0.66	0.25	21
	2001	0.57	0.15	24	0.53	0.13	18
	2007	0.48	0.13	19	0.57	0.18	15

	2008	0.37	0.20	19	0.37	0.21	19
	2010	0.56	0.21	16	0.57	0.28	14
	2011	3.07	0.64	18	3.34	1.24	18
	2012	0.63	0.46	20	1.28	2.12	18
<b>Graminoids</b>							
<i>Arctagrostis latifolia</i>	1998	11.39	2.84	13	12.62	3.83	13
	1999	8.40	1.76	15	10.04	1.68	16
	2000	10.69	2.23	16	12.83	1.95	16
	2001	8.97	1.79	17	11.16	2.61	16
	2007	11.53	1.58	17	12.96	2.26	17
	2008	10.74	1.77	16	11.60	2.60	17
	2010	9.45	1.74	15	10.57	2.67	16
	2011	9.83	1.97	17	12.39	6.59	16
	2012	9.47	1.82	17	9.93	1.84	16
<i>Luzula arctica</i>	1997	2.09	0.40	8	2.22	0.65	16
	1998	3.08	0.64	10	3.03	0.63	12
	1999	2.81	0.39	12	3.00	0.66	16
	2000	3.09	0.57	13	3.19	0.94	14
	2001	2.43	0.43	14	2.39	0.68	16
	2007	2.63	0.53	14	2.98	0.61	17
	2008	2.79	0.86	15	3.29	0.86	20
	2010	2.34	0.47	17	2.76	0.57	21
	2011	2.71	0.58	16	2.90	0.42	21
	2012	2.61	0.52	16	2.98	0.49	21
<i>Luzula confusa</i>	1997	4.53	0.61	20	5.49	1.07	19
	1998	5.73	1.05	17	7.53	1.49	18
	1999	5.73	1.31	20	6.56	1.49	21
	2000	6.27	1.21	24	7.38	1.31	22
	2001	5.22	1.42	23	6.42	1.73	20
	2007	6.61	1.44	24	7.68	1.19	18
	2008	5.96	1.30	24	7.78	1.71	21
	2010	5.70	1.22	24	6.77	1.38	20
	2011	5.86	1.46	24	7.51	1.17	21
	2012	6.36	1.48	24	7.95	1.54	21
<i>Poa arctica</i>	1997	3.78	0.74	23	4.33	1.11	24
	1998	4.12	1.20	23	4.84	1.73	23
	1999	3.87	1.02	23	4.92	0.97	24
	2000	4.10	0.68	23	4.75	1.15	24
	2001	3.98	0.72	23	4.75	1.16	24
	2007	5.34	1.43	23	6.36	1.22	24
	2008	4.91	1.05	24	6.24	1.30	23
	2010	5.32	0.83	24	6.62	1.75	24
	2011	5.20	1.33	24	6.18	1.46	24
	2012	5.31	1.01	24	6.81	1.47	24
<b>Barrow Wet</b>							
<b>Forbs</b>							
<i>Cardamine pratensis</i>	1998	4.40	1.05	24	4.96	1.06	24
	1999	3.21	1.02	14	3.80	1.66	16
	2007	3.34	0.69	23	3.94	0.93	24
	2008	3.12	0.81	23	3.72	0.91	24
	2010	4.30	1.11	17	4.29	0.62	21
	2011	0.63	0.22	21	0.75	0.24	23
	2012	0.56	0.22	18	0.70	0.45	22
<i>Cerastium beeringianum</i>	2000	0.39	0.07	12	0.38	0.12	8
	2007	0.58	0.04	12	0.51	0.13	8

	2008	0.41	0.10	12	0.37	0.20	7
	2011	6.00	1.99	10	5.86	1.26	6
	2012	0.51	0.16	9	0.32	0.13	5
<i>Saxifraga cernua</i>	1997	0.74	0.21	22	0.86	0.20	24
	1999	0.90	0.25	16	0.76	0.20	20
	2000	0.69	0.18	17	0.61	0.17	21
	2007	0.91	0.21	16	0.84	0.18	22
	2008	0.74	0.18	17	0.81	0.26	17
	2010	0.86	0.18	17	0.87	0.23	22
	2011	3.03	0.93	18	3.50	1.11	22
	2012	2.88	1.18	18	3.27	0.64	22
<i>Saxifraga foliolosa</i>	1997	1.02	0.30	13	1.03	0.36	14
	1998	0.93	0.37	13	1.21	0.37	16
	1999	1.04	0.30	11	1.31	0.64	12
	2000	1.11	0.44	16	0.92	0.31	16
	2008	0.53	0.17	11	0.53	0.14	8
	2010	0.45	0.23	6	0.81	0.41	7
	2011	0.89	0.50	8	1.03	0.37	11
	2012	0.81	0.30	11	0.84	0.46	9
<i>Saxifraga hieracifolia</i>	1997	4.29	1.08	7	4.27	1.16	7
	1999	4.97	1.19	9	4.56	1.70	7
	2000	4.61	1.54	5	4.26	1.42	7
	2007	3.92	1.08	7	3.32	1.18	13
	2008	3.32	1.15	13	2.72	0.94	12
	2010	3.52	1.35	11	4.37	1.37	13
	2011	4.28	1.34	11	5.01	1.14	11
	2012	4.19	1.27	13	5.33	1.43	15
<i>Stellaria laeta</i>	2000	0.47	0.13	19	0.50	0.21	20
	2007	0.63	0.12	19	0.69	0.14	19
	2008	0.56	0.19	17	0.63	0.17	21
	2010	0.46	0.13	19	0.53	0.15	18
	2011	4.47	1.13	19	5.98	1.60	18
	2012	0.54	0.16	19	0.59	0.15	17
<b>Graminoids</b>							
<i>Carex stans</i>	1998	15.78	2.90	23	18.17	3.22	22
	1999	11.37	2.35	18	13.91	1.89	22
	2000	12.78	2.77	23	14.76	2.39	24
	2007	12.60	1.92	24	14.45	2.11	22
	2008	12.17	2.08	24	15.23	1.99	23
	2010	13.54	2.15	22	16.30	2.50	24
	2011	14.20	1.87	24	17.27	2.66	24
	2012	14.65	2.46	24	17.67	2.57	24
<i>Dupontia fisheri</i>	1997	8.25	1.99	23	8.87	1.36	24
	1998	13.32	2.30	23	14.95	2.38	24
	1999	10.65	1.46	21	11.13	2.29	23
	2000	9.68	1.67	23	10.26	1.72	24
	2007	11.91	1.38	21	12.90	1.92	23
	2008	11.18	1.65	23	13.21	1.68	24
	2010	9.97	1.79	24	11.17	3.05	21
	2011	12.82	2.07	24	15.55	2.38	21
	2012	13.00	1.80	23	14.87	2.18	24
<i>Eriophorum triste</i>	1997	8.59	1.79	22	9.36	1.53	19
	1998	12.13	2.17	22	13.39	2.47	19

	1999	11.91	2.65	21	13.18	3.36	19
	2000	8.90	1.61	21	9.51	2.01	18
	2007	10.01	1.10	22	10.23	1.99	17
	2008	9.75	1.19	22	11.03	2.12	19
	2010	10.65	2.15	21	11.34	3.18	18
	2011	11.54	1.45	22	11.54	2.37	19
	2012	11.76	1.98	20	13.49	2.14	19
<i>Eriophorum russeolum</i>	1997	6.08	1.25	22	6.81	1.28	18
	1998	9.79	1.99	22	11.21	1.86	18
	1999	8.20	2.52	21	9.58	1.90	17
	2000	8.07	2.36	22	8.75	2.24	18
	2007	8.12	1.34	23	8.61	1.46	17
	2008	7.60	1.59	23	8.48	1.45	19
	2010	7.45	1.82	23	7.35	1.64	18
	2011	10.05	2.36	21	10.57	1.59	18
	2012	10.58	1.72	22	10.55	2.37	18
<i>Hierochloe pauciflora</i>	1997	3.24	0.89	14	4.04	1.12	8
	1998	6.84	1.25	18	7.80	1.97	18
	1999	4.24	1.05	16	5.34	1.44	17
	2000	4.10	0.28	19	4.03	0.33	20
	2008	5.52	1.21	19	7.12	1.18	11
	2010	4.54	1.20	17	5.00	1.68	12
	2011	5.63	1.46	12	7.12	0.92	10
	2012	6.99	0.69	17	7.73	1.05	11
<i>Luzula arctica</i>	1997	2.21	0.71	13	2.24	0.61	8
	1998	2.87	1.03	8	3.33	0.84	8
	2000	3.36	0.46	8	4.06	0.92	7
	2008	2.61	0.85	7	3.13	0.77	7
	2012	3.71	0.45	10	3.57	1.20	8
<i>Poa arctica</i>	1997	3.95	1.05	6	4.96	1.88	6
	1998	6.23	3.37	5	7.07	1.30	6
	1999	4.37	1.66	6	5.79	1.59	6
	2000	5.96	0.12	5	5.83	1.41	5
	2008	7.78	1.60	8	7.46	2.09	8
	2011	8.01	2.16	6	9.36	2.01	7
	2012	8.97	1.54	7	10.24	3.61	8

### Reproductive effort (number of flowers or inflorescences)

#### Atqasuk Dry

#### Evergreen shrub

<i>Cassiope tetragona</i>	1998	23.24	25.16	21	9.29	8.23	17
	1999	53.04	36.83	24	12.59	11.44	22
	2000	5.11	5.48	18	23.14	29.32	22
	2001	19.96	14.35	24	13.25	14.06	20
	2007	55.96	47.71	24	36.62	32.54	21
	2008	79.58	54.79	24	49.18	46.08	22
	2010	33.43	38.04	23	16.95	18.78	20
	2011	34.29	29.77	24	25.96	32.49	23
	2012	56.76	48.61	17	45.92	42.76	13
<i>Diapensia lapponica</i>	1997	20.67	17.27	24	9.14	5.17	22
	1998	21.33	18.11	24	8.73	7.59	22
	1999	26.88	19.89	24	13.82	10.44	22
	2000	36.00	33.49	24	25.62	19.50	21

	2001	33.55	31.53	22	23.45	16.09	22
	2007	51.70	38.67	23	45.14	41.96	22
	2008	33.43	26.60	23	27.05	28.06	21
	2010	21.32	18.85	22	15.09	11.57	22
	2011	13.83	14.91	23	15.71	13.33	21
	2012	23.33	20.79	21	20.05	14.37	20
<i>Ledum palustre</i>	1998	10.29	8.34	24	5.95	3.80	20
	1999	9.17	7.26	23	6.38	4.46	21
	2000	6.90	5.90	20	5.71	3.98	21
	2001	9.52	7.61	21	8.05	5.10	21
	2007	19.92	16.84	24	17.96	9.17	23
	2008	23.63	15.73	24	30.17	15.95	23
	2010	6.52	5.58	23	6.86	5.42	22
	2011	10.55	8.67	22	15.18	11.59	22
	2012	12.70	7.27	23	18.26	11.62	23
<i>Vaccinium vitis-idaea</i>	1998	10.17	7.43	23	3.32	2.38	19
	1999	14.29	9.98	24	6.45	6.37	22
	2000	4.10	1.94	20	2.59	1.97	17
	2001	4.71	4.14	14	2.22	1.20	9
	2007	15.00	14.42	24	6.57	4.03	23
	2008	15.00	11.53	24	9.43	4.59	23
	2010	13.11	11.36	18	10.44	9.56	16
	2011	7.70	8.04	23	4.52	5.17	21
	2012	11.68	12.21	22	5.25	5.13	16
<b>Forbs</b>							
<i>Polygonum bistorta</i>	1998	2.14	1.21	7	3.00	3.39	5
	1999	2.00	1.00	7	5.00	4.05	6
	2000	1.83	0.75	6	3.00	2.62	8
	2001	10.33	18.04	6	14.83	19.93	6
	2007	4.44	4.25	9	4.40	3.63	10
	2008	11.38	21.30	8	5.25	3.96	8
	2010	3.00	1.83	7	3.00	1.10	6
	2011	1.20	0.45	5	2.60	1.52	5
	2012	2.63	2.67	8	2.17	1.83	6
<b>Graminoids</b>							
<i>Hierochloe alpina</i>	1997	1.36	0.50	11	4.21	2.67	14
	1998	3.79	2.01	14	7.92	7.44	13
	1999	6.63	6.31	16	11.79	7.60	14
	2000	6.74	4.15	19	12.07	9.73	15
	2001	3.57	2.44	14	5.58	4.81	12
	2007	9.67	15.57	18	11.40	8.55	15
	2008	21.50	24.44	18	23.69	18.10	16
	2010	10.13	15.95	15	6.47	4.94	15
	2011	8.59	11.13	17	4.80	3.93	15
	2012	8.89	8.67	18	7.18	7.99	17
<i>Luzula arctica</i>	1998	2.67	1.86	6	2.57	2.30	7
	1999	6.67	6.59	6	2.00	1.94	9
	2000	3.83	5.53	6	2.75	2.25	8
	2001	2.17	1.94	6	1.75	1.75	8
	2007	2.00	1.41	5	3.11	3.59	9
	2008	1.60	0.89	5	3.11	3.48	9
<i>Luzula confusa</i>	1997	2.33	1.15	12	4.60	3.53	20
	1998	7.68	8.88	22	7.77	7.10	22
	1999	11.29	16.52	21	7.05	6.08	22
	2000	13.00	24.69	23	7.00	8.30	21

	2001	7.25	8.80	20	5.30	6.40	23
	2007	12.57	12.53	23	10.58	10.00	24
	2008	10.09	7.56	23	8.43	5.55	23
	2010	2.00	1.30	14	3.12	2.89	17
	2011	3.12	2.32	17	4.53	4.59	19
	2012	6.17	3.93	18	6.67	8.28	18
<b>Atqasuk Wet</b>							
<b>Graminoids</b>							
<i>Carex aquatilis</i>	1998	6.25	4.11	24	3.89	2.42	19
	1999	2.29	1.49	21	1.69	0.75	13
	2000	4.04	2.70	23	4.77	2.22	22
	2001	3.54	2.11	24	3.45	2.34	22
	2007	8.41	6.14	22	10.24	7.58	17
	2008	2.70	1.66	20	3.26	2.40	19
	2010	3.57	2.13	21	3.23	1.90	22
	2011	1.93	1.28	15	1.73	1.49	11
	2012	3.59	1.87	17	3.27	2.58	15
<i>Eriophorum angustifolium</i>	1998	2.90	1.52	10	1.58	1.24	12
	1999	3.32	2.60	19	1.94	1.57	16
	2000	2.07	1.16	15	1.80	1.03	10
	2001	2.67	1.72	15	1.92	0.95	13
	2007	6.71	4.16	14	10.09	14.36	11
	2008	4.27	2.79	15	4.86	4.50	14
	2010	2.28	1.23	18	2.73	1.44	15
	2011	2.29	1.45	17	1.69	0.75	13
	2012	2.69	1.66	16	2.75	2.27	16
<i>Eriophorum russeolum</i>	1998	6.77	5.72	13	8.92	11.23	12
	1999	3.31	2.90	13	5.67	3.77	9
	2000	1.55	0.82	11	8.13	9.01	8
	2001	9.81	8.29	16	11.75	11.39	16
	2007	1.29	0.76	7	2.60	2.51	5
	2008	3.45	3.67	11	6.43	8.38	7
	2010	1.17	0.41	6	2.40	2.61	5
<b>Barrow Dry</b>							
<b>Deciduous shrubs</b>							
<i>Salix rotundifolia (F)</i>	1999	78.79	70.42	24	51.08	46.14	24
	2000	132.29	105.50	24	81.92	65.71	24
	2001	171.92	138.05	24	122.75	104.18	24
	2007	84.09	67.59	23	57.04	42.68	24
	2008	153.04	114.75	24	82.46	66.88	24
	2010	41.13	31.91	24	51.50	37.15	24
	2011	83.13	52.49	23	59.19	60.36	21
	2012	54.43	44.58	23	34.32	30.79	22
<b>Evergreen shrub</b>							
<i>Cassiope tetragona</i>	1998	38.18	41.99	22	154.96	113.14	24
	1999	193.96	101.91	24	214.38	122.00	24
	2000	88.96	76.03	23	198.08	138.56	24
	2001	22.39	44.43	18	159.22	123.56	23
	2007	72.42	57.45	24	257.25	187.49	24
	2008	347.04	178.03	24	379.38	211.64	24
	2010	43.46	48.97	24	118.71	105.91	24
<b>Forbs</b>							

<i>Papaver hultenii</i>	1997	1.56	0.73	9	2.25	1.42	12
	1999	4.88	4.39	8	8.09	8.37	11
	2000	7.00	4.93	8	10.33	7.75	9
	2001	7.86	5.87	7	13.00	9.68	9
	2007	7.43	5.38	7	7.40	5.46	10
	2008	8.71	6.55	7	4.00	4.18	9
	2010	6.00	4.56	6	6.00	3.56	7
<i>Potentilla hyparctica</i>	1997	6.69	3.77	13	5.74	3.57	19
	1998	8.20	9.09	5	8.13	6.79	8
	1999	21.08	18.79	24	19.64	15.88	22
	2000	23.39	22.05	23	20.14	17.05	22
	2001	11.18	10.86	22	15.38	12.45	21
	2007	17.00	16.74	24	24.35	20.39	20
	2008	30.32	29.95	22	26.05	24.38	21
	2010	17.87	20.48	23	28.30	20.36	20
	2011	19.68	23.03	19	27.72	21.05	18
	2012	14.55	17.82	22	26.47	21.11	19
<i>Saxifraga punctata</i>	1997	4.13	3.11	15	4.39	2.93	18
	1999	7.32	5.28	19	5.39	4.54	18
	2000	7.30	4.74	20	6.11	4.54	19
	2001	7.53	8.63	19	7.71	8.02	17
	2007	11.00	10.53	21	7.59	6.83	17
	2008	5.40	4.25	20	6.20	4.18	15
	2010	8.37	6.88	19	6.81	5.60	16
	2012	7.68	7.15	19	5.53	6.62	15
<i>Stellaria laeta</i>	1997	5.95	6.10	21	13.70	20.55	20
	1998	13.53	11.97	15	32.67	35.04	15
	1999	12.57	11.48	23	38.00	40.81	21
	2000	4.00	2.70	15	20.53	22.88	19
	2001	2.86	1.77	7	15.71	25.61	17
	2007	19.04	14.36	24	56.80	59.53	20
	2008	21.33	23.55	24	53.52	57.87	21
	2010	12.36	9.47	22	20.83	24.63	23
	2011	9.27	5.76	15	21.07	31.16	14
	2012	11.43	8.51	21	21.82	24.38	22
	<b>Graminoids</b>						
<i>Arctagrostis latifolia</i>	1998	5.22	4.66	9	4.75	3.73	8
	1999	8.77	8.40	13	7.85	5.71	13
	2000	3.11	2.32	9	5.17	5.39	12
	2001	3.00	1.10	6	3.60	3.20	10
	2007	2.89	1.83	9	3.25	1.91	8
	2008	5.09	3.48	11	3.30	2.83	10
	2010	2.67	1.03	6	4.13	2.42	8
	2011	3.80	2.77	5	2.75	1.58	8
<i>Luzula arctica</i>	1997	5.27	4.15	15	6.27	4.83	15
	1998	3.43	2.99	7	3.17	2.04	6
	1999	5.94	4.11	16	6.63	5.15	16
	2000	6.19	5.09	16	8.33	8.18	18
	2001	4.42	2.91	12	4.44	4.47	16
	2007	5.53	5.06	17	6.33	6.72	15
	2008	3.47	2.45	17	3.82	3.21	17
	2010	1.78	1.30	9	2.00	1.41	5
	2011	1.82	1.78	11	1.83	1.60	6
	2012	3.00	1.51	8	2.50	1.22	6

<i>Luzula confusa</i>	1997	4.95	3.21	19	6.07	4.88	15
	1998	9.08	6.41	13	6.63	7.03	8
	1999	9.88	6.54	24	6.19	6.13	21
	2000	6.83	4.23	23	6.32	5.02	19
	2001	7.87	5.30	23	8.25	5.89	20
	2007	12.09	7.67	23	12.50	7.69	20
	2008	8.92	6.11	24	9.58	6.56	19
	2010	3.41	3.28	17	3.89	2.99	18
	2011	4.70	3.70	20	4.25	2.91	16
	2012	5.00	5.88	20	6.27	5.11	15
	<i>Poa arctica</i>	1997	3.27	2.72	11	3.91	2.70
1998		3.15	4.34	13	4.89	2.67	9
1999		8.65	9.49	20	7.95	5.69	22
2000		5.00	3.12	17	6.33	3.87	24
2001		3.06	3.03	17	4.52	4.31	21
2007		5.68	4.41	22	14.41	14.08	22
2008		19.71	18.96	24	20.21	15.00	24
2010		9.65	10.63	23	13.83	15.22	23
2011		4.24	2.81	21	8.18	8.39	22
2012		6.05	5.32	21	10.95	8.13	20
<b>Barrow Wet Forbs</b>							
<i>Cardamine pratensis</i>	1998	1.80	0.94	15	3.76	2.61	17
	1999	1.77	0.83	13	3.06	1.64	17
	2000	1.14	0.38	7	1.38	0.74	8
	2008	2.08	1.19	13	3.55	2.26	20
	2010	3.47	3.70	15	5.00	4.25	21
	2011	1.40	0.55	5	1.50	0.84	6
	2012	1.75	1.16	8	1.42	0.51	12
<i>Draba lactea</i>	1997	9.12	8.22	17	10.90	19.19	10
	1999	10.17	7.05	6	7.50	7.56	6
	2000	9.33	12.00	9	8.17	14.32	6
	2001	4.33	4.74	9	5.83	6.37	6
	2007	17.20	21.86	10	8.75	6.63	8
	2008	26.29	26.55	7	18.00	19.18	7
	2010	26.00	33.54	7	11.22	11.13	9
	2011	6.14	3.80	7	5.83	2.79	6
<i>Saxifraga cernua</i>	1997	10.95	8.56	22	12.21	6.39	24
	1998	7.10	6.17	20	6.68	6.08	22
	1999	8.82	6.32	17	9.29	6.07	17
	2000	8.72	11.54	18	6.69	5.64	16
	2001	7.67	6.49	15	5.92	4.99	13
	2007	5.94	4.87	18	6.28	7.58	18
	2008	10.42	8.52	19	12.15	12.68	20
	2010	19.42	14.96	19	10.59	9.40	22
	2011	9.00	6.14	18	5.21	4.72	19
	2012	12.00	8.07	21	6.45	3.79	20
<i>Saxifraga foliolosa</i>	1997	8.43	4.64	23	8.71	7.50	21
	1998	4.95	3.89	19	5.94	6.94	18
	1999	5.28	3.41	18	7.44	8.01	18
	2000	3.76	3.09	17	3.38	2.99	13
	2001	3.00	2.41	12	4.10	5.92	10
	2007	3.93	3.71	14	4.25	4.33	8
	2008	3.14	2.51	14	5.57	6.37	14

	2010	6.28	6.71	18	6.92	6.64	13
	2011	5.85	5.24	13	4.38	3.78	8
	2012	5.50	6.04	14	6.17	3.37	6
<i>Saxifraga hieracifolia</i>	1997	3.24	3.53	17	3.43	2.68	14
	1998	3.88	4.57	16	4.53	4.02	15
	1999	2.88	2.80	8	2.67	2.42	12
	2000	2.33	1.56	12	2.42	1.38	12
	2001	3.30	2.45	10	2.89	1.96	9
	2007	2.88	2.17	8	2.83	2.64	6
	2008	2.64	1.63	11	3.00	1.94	9
	2010	2.81	1.97	16	2.67	3.31	12
	2011	3.42	2.07	12	3.50	2.27	8
	2012	2.30	1.34	10	2.29	1.70	7
<i>Saxifraga hirculus</i>	1997	64.14	62.03	14	83.50	85.11	6
	1998	47.85	52.29	13	30.33	25.67	6
	1999	46.83	36.09	12	52.80	68.00	5
	2000	33.91	32.90	11	31.20	50.87	5
	2007	26.18	39.45	11	45.20	70.89	5
	2008	42.00	40.07	11	69.40	97.39	5
	2010	46.93	56.80	14	61.80	76.52	5
	2011	32.42	49.70	12	36.00	40.17	5
	2012	38.31	48.88	13	35.17	45.95	6
<i>Stellaria laeta</i>	1998	5.00	6.54	6	4.60	3.89	10
	1999	2.14	1.68	7	3.86	3.24	7
	2010	2.38	1.92	8	2.92	2.81	12
	2011	2.75	1.58	8	2.67	2.81	12
	2012	3.40	2.12	10	3.36	2.42	11
<b>Graminoids</b>							
<i>Carex stans</i>	1998	4.80	4.41	20	5.77	4.36	22
	1999	13.64	9.01	22	12.83	7.73	23
	2000	6.96	6.03	24	8.43	6.80	23
	2001	3.06	1.06	16	3.67	2.77	18
	2007	4.00	2.57	21	10.30	9.70	23
	2008	6.18	4.68	22	10.92	9.44	24
	2010	5.32	6.21	22	5.26	4.65	23
	2011	6.27	4.70	22	5.38	6.33	21
	2012	5.14	2.71	21	4.74	3.18	19
<i>Dupontia fisheri</i>	1997	18.86	13.61	22	10.30	8.97	23
	1998	17.36	14.15	22	8.09	7.89	22
	1999	10.25	8.26	24	9.68	8.45	22
	2000	15.43	16.90	23	8.23	8.15	22
	2001	8.35	8.29	23	8.06	7.29	18
	2007	23.25	19.12	24	13.91	13.03	23
	2008	11.00	9.14	24	10.33	6.27	21
	2010	13.50	11.06	22	7.95	6.87	20
	2011	18.39	20.74	23	7.80	11.27	20
	2012	13.59	14.37	22	7.63	12.46	16
<i>Eriophorum triste</i>	1997	2.25	1.71	12	4.17	3.86	12
	1999	9.79	13.12	19	12.31	9.65	16
	2000	31.52	43.84	21	37.39	37.38	18
	2001	4.44	3.46	16	4.00	2.89	12
	2007	5.50	6.47	12	8.79	11.33	14
	2008	2.58	3.75	12	5.87	5.66	15
	2011	1.71	1.11	7	3.13	3.04	8

<i>Hierochloe pauciflora</i>	1997	39.68	39.75	19	33.06	49.87	18
	1998	9.33	7.06	18	4.36	3.83	11
	1999	24.53	30.47	17	14.88	31.88	17
	2000	12.94	14.45	17	6.23	7.55	13
	2001	3.36	2.69	11	7.20	13.31	5
	2007	14.47	15.21	17	4.71	5.98	14
	2008	11.35	15.35	17	5.55	3.67	11
	2010	4.85	4.39	13	3.00	1.89	10
	2011	5.65	8.18	17	2.67	1.37	6
	<i>Juncus biglumis</i>	1997	11.44	11.45	16	7.21	5.07
1999		5.60	5.42	10	3.11	2.71	9
2000		4.36	3.85	11	4.13	2.47	8
2001		2.43	1.62	7	2.00	1.41	5
2007		3.43	2.88	7	5.20	4.09	5
2010		2.13	1.25	8	4.83	7.00	6
<i>Luzula arctica</i>	1997	4.25	5.31	16	5.00	3.74	13
	1998	4.42	4.52	12	4.20	1.64	5
	1999	4.43	3.74	7	4.11	2.37	9
	2000	3.88	2.47	8	3.63	2.20	8
	2001	2.14	0.90	7	2.67	1.51	6
	2007	2.44	2.79	9	2.29	2.14	7
	2008	2.88	3.44	8	3.57	3.78	7
	2010	3.64	3.72	11	4.60	5.21	10
	2011	5.93	3.95	15	6.00	5.90	6
	2012	4.75	6.32	8	6.17	6.91	6
<i>Luzula confusa</i>	1997	5.62	5.11	13	4.67	4.87	12
	1998	3.50	3.24	10	3.60	2.46	10
	1999	3.00	2.50	9	4.00	3.46	7
	2000	3.20	2.15	10	4.71	5.22	7
	2001	3.17	1.47	6	3.33	1.97	6
	2008	2.33	1.03	6	3.60	4.22	5
	2010	2.33	1.41	9	2.13	1.36	8
	2011	4.63	2.77	8	3.20	1.10	5
	2012	2.33	2.16	6	1.80	1.30	5
	<i>Poa arctica</i>	1997	6.14	5.01	7	9.60	8.59
1998		5.20	3.11	5	4.80	3.42	5
1999		11.83	11.67	6	7.29	4.79	7
2000		8.50	8.22	6	3.83	1.72	6
2007		7.00	7.35	8	9.00	8.83	7
2008		13.09	16.15	11	16.00	13.85	8
2010		14.44	14.92	16	16.50	11.01	10
2011		13.00	15.87	12	10.17	10.15	6
2012		28.42	29.99	12	23.44	18.73	9

### Reproductive phenology (day of year)

#### Atqasuk Dry

#### Evergreen shrub

#### *Cassiope tetragona*

1998	172.80	1.88	20	172.90	1.41	20
1999	178.83	1.03	12	179.33	2.06	15
2001	179.20	0.45	5	179.20	0.45	5
2007	170.78	1.57	23	171.71	3.41	21
2008	172.83	2.88	24	173.23	2.99	22
2010	180.64	2.97	22	180.70	3.11	20

	2011	175.83	2.82	23	175.57	2.69	23
	2012	172.50	2.28	22	172.45	1.77	22
<i>Diapensia lapponica</i>	1998	173.23	0.43	22	173.45	2.58	22
	1999	179.24	2.28	21	178.56	2.23	18
	2000	174.73	1.58	22	173.81	1.72	16
	2001	179.20	0.45	5	181.80	6.26	5
	2007	170.70	1.69	23	170.73	2.88	22
	2008	173.17	2.85	23	172.27	3.43	22
	2010	180.27	1.28	22	179.86	2.71	21
	2011	175.26	2.51	19	176.55	4.05	20
	2012	172.05	1.50	20	171.79	2.15	19
<i>Ledum palustre</i>	1998	178.67	2.68	24	177.90	2.49	20
	1999	184.35	3.18	20	183.33	3.04	21
	2000	181.25	3.64	20	181.39	3.66	18
	2007	178.67	4.18	24	177.48	3.50	23
	2008	178.88	4.55	17	176.94	3.30	16
	2010	188.35	5.03	23	184.77	5.48	22
	2011	181.65	4.79	23	181.96	3.80	23
	2012	180.87	3.24	23	178.86	3.48	21
<i>Vaccinium vitis-idaea</i>	1998	186.25	2.84	20	187.94	4.31	17
	1999	190.43	1.16	21	190.57	1.86	21
	2000	195.06	3.70	18	195.81	5.36	16
	2007	185.29	1.71	24	186.48	3.01	23
	2008	179.52	6.00	23	177.96	5.45	23
	2010	198.70	5.84	20	195.44	5.84	16
	2011	191.13	4.22	23	194.24	7.77	21
	2012	186.53	3.34	19	188.11	5.15	19
<b>Forbs</b>							
<i>Polygonum bistorta</i>	1998	183.43	2.44	7	183.80	2.86	5
	1999	190.67	1.97	6	189.00	0.00	6
	2007	189.00	4.17	8	188.56	3.71	9
	2008	188.00	0.00	7	190.17	5.31	6
	2010	199.17	6.21	6	195.33	3.27	6
	2011	189.33	7.81	6	185.40	4.93	5
	2012	187.50	4.59	6	185.00	0.00	5
<b>Graminoids</b>							
<i>Hierochloe alpina</i>	1998	168.43	6.16	14	163.83	3.90	12
	1999	175.54	2.50	13	174.17	1.75	12
	2000	168.56	3.33	18	166.69	2.21	13
	2007	169.82	0.73	17	170.21	2.01	14
	2008	168.56	0.51	18	169.06	1.65	16
	2010	182.40	4.95	15	181.53	4.12	15
	2011	172.88	3.26	16	173.57	3.69	14
	2012	168.44	3.78	16	167.38	1.39	13
<i>Luzula confusa</i>	1998	171.15	4.64	20	167.77	4.77	22
	1999	177.11	2.78	18	176.88	2.89	17
	2000	174.20	3.11	20	173.22	2.05	18
	2007	170.91	2.60	22	172.21	4.11	24
	2008	169.64	2.26	22	169.70	2.18	23
	2010	184.00	4.58	9	182.86	2.57	14
	2011	174.86	2.27	7	174.00	0.00	13
	2012	171.18	2.82	11	171.73	2.66	15

**Atqasuk Wet  
Graminoids**

<i>Carex aquatilis</i>	1998	176.48	2.11	21	176.12	2.47	17
	1999	182.90	3.91	20	184.77	3.30	13
	2000	185.90	7.62	10	181.15	4.34	13
	2001	193.00	0.00	5	193.00	0.00	5
	2007	181.30	6.60	23	178.50	6.63	18
	2008	186.33	7.36	18	182.40	5.95	10
	2011	179.25	4.65	8	174.00	6.57	6
	2012	176.29	3.68	7	178.00	2.74	5

<i>Eriophorum angustifolium</i>	1998	163.44	2.74	9	165.00	4.55	10
	2007	169.36	0.74	14	171.08	4.23	13
	2008	169.46	1.76	13	169.69	2.43	13
	2010	172.33	3.16	9	171.00	3.10	6
	2011	171.33	2.97	15	172.45	2.66	11
	2012	170.31	2.63	13	170.91	2.81	11

**Barrow Dry  
Deciduous shrubs**

<i>Salix rotundifolia (F)</i>	1994	188.04	2.18	24	183.00	2.78	24
	1995	180.00	4.69	19	177.00	4.16	18
	1996	167.06	1.59	18	168.85	1.77	13
	1997	176.91	6.09	23	175.87	5.83	23
	1998	173.70	3.15	23	171.67	4.42	24
	1999	183.46	3.37	24	180.48	3.12	23
	2000	179.55	3.04	22	177.45	3.65	22
	2001	183.00	0.00	5	183.00	0.00	5
	2007	174.25	2.27	24	173.33	0.70	24
	2008	175.38	2.30	24	174.82	3.46	22
	2010	188.70	3.13	23	186.33	3.52	24
	2011	170.58	1.41	24	169.96	2.07	24
	2012	174.96	3.83	24	173.14	5.05	21

<i>Salix rotundifolia (M)</i>	1994	190.32	1.64	22	184.77	2.78	22
	1995	185.50	4.37	20	180.35	4.23	17
	1996	166.82	2.70	17	169.89	1.84	18
	1997	179.40	5.36	20	176.89	4.83	19
	1998	175.04	3.56	23	171.25	3.95	24
	2000	178.26	3.68	19	176.74	3.48	19
	2007	173.85	1.23	20	173.23	0.69	22
	2008	177.14	2.80	14	175.94	3.73	18
	2010	187.18	2.50	22	185.54	3.79	24
	2011	170.18	2.06	22	170.70	2.01	23
	2012	177.61	3.94	18	175.67	4.54	18

**Evergreen Shrubs**

<i>Cassiope tetragona</i>	1994	204.06	4.84	17	195.25	4.93	24
	1996	181.50	4.78	14	175.52	1.68	23
	1997	192.29	5.67	21	184.71	5.41	24
	1998	180.78	5.82	18	176.11	4.66	18
	2000	194.88	3.50	17	185.71	4.16	14
	2001	200.00	4.12	5	185.80	3.83	5
	2007	186.63	3.47	24	180.21	4.96	24
	2008	181.96	3.33	24	179.42	3.27	24
	2010	197.17	6.21	23	189.21	4.25	24
	2011	179.09	6.99	23	180.06	6.77	18
	2012	180.95	5.05	19	178.00	3.28	24

<i>Papaver hultenii</i>	1994	208.33	1.63	6	198.10	5.57	10
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	1995	199.33	7.31	9	197.09	8.90	11
	1996	186.56	5.43	9	176.80	4.96	10
	1998	188.88	3.91	8	183.89	7.20	9
	1999	196.83	5.67	6	191.29	7.54	7
	2000	199.33	6.12	6	192.25	4.62	8
	2007	191.43	4.72	7	189.00	6.48	9
	2008	194.29	7.41	7	192.44	8.46	9
	2010	210.80	4.02	5	205.00	4.38	6
	2011	199.00	11.76	6	190.50	9.87	6
	2012	191.60	6.50	5	188.20	10.40	5
<i>Potentilla hyparctica</i>	1994	199.05	4.34	22	191.86	3.80	21
	1995	191.63	4.36	24	185.41	5.06	22
	1996	181.91	7.51	22	171.95	5.59	21
	1997	189.33	5.51	21	180.55	6.12	22
	1998	182.04	4.55	23	176.50	5.26	20
	1999	188.00	2.99	22	183.50	5.35	18
	2000	189.35	7.67	23	183.38	6.18	21
	2001	197.00	4.95	5	183.00	0.00	5
	2007	186.55	5.06	20	179.25	5.32	20
	2008	184.17	4.45	23	178.75	3.97	20
	2010	200.65	8.31	17	187.21	5.87	19
	2011	179.89	8.12	18	175.78	7.17	18
	2012	185.17	4.54	18	179.44	6.44	18
<i>Saxifraga punctata</i>	1999	181.57	6.54	14	180.45	4.91	11
	2000	181.88	4.85	17	180.44	3.90	16
	2007	180.33	7.53	9	176.92	4.97	13
	2008	180.60	5.37	15	179.79	5.89	14
	2010	198.87	5.42	15	194.08	6.13	13
	2011	180.47	6.82	19	182.10	5.80	10
	2012	179.50	5.84	18	177.67	5.22	15
<i>Senecio atropurpureus</i>	1994	215.71	4.64	7	211.20	6.46	5
	1997	191.36	8.62	11	194.14	5.67	7
	1998	195.42	2.84	12	191.57	3.60	7
	1999	209.50	5.70	10	203.00	6.71	7
	2000	217.33	1.97	6	213.86	4.22	7
	2008	215.50	6.30	8	213.88	6.73	8
<i>Stellaria laeta</i>	1994	217.50	6.92	16	211.83	7.09	18
	1995	224.13	8.68	8	216.30	17.81	10
	1996	200.96	6.76	23	191.05	11.91	22
	1997	204.88	11.70	8	201.27	9.95	15
	1998	197.00	10.05	14	192.21	6.63	19
	1999	201.45	7.43	20	195.71	6.56	17
	2000	211.63	3.65	16	205.44	7.66	18
	2007	194.78	5.81	23	192.65	7.23	20
	2008	200.17	10.10	24	193.90	11.49	20
	2010	215.27	7.84	22	211.36	10.73	22
	2011	209.94	9.38	17	202.67	13.45	18
	2012	200.25	7.35	20	198.50	8.97	20
<b>Graminoids</b>							
<i>Arctagrostis latifolia</i>	1998	187.20	4.18	10	185.08	5.96	12
	1999	194.38	6.38	13	190.67	4.14	12
	2000	204.00	8.94	9	197.92	8.44	12
	2007	193.00	10.47	8	193.38	5.34	8
	2008	192.36	6.17	11	190.82	5.23	11
	2011	197.20	10.69	5	191.00	6.38	10

<i>Luzula arctica</i>	1995	177.00	3.26	11	174.75	2.18	12
	1996	162.67	1.97	6	164.38	3.89	8
	1997	168.27	4.32	15	168.43	3.74	14
	1998	164.00	5.26	13	164.41	5.10	17
	1999	173.07	5.24	14	170.55	6.82	11
	2000	172.63	3.36	16	172.00	2.09	17
	2007	176.43	4.96	14	172.89	4.65	9
	2008	171.75	3.55	12	172.00	4.18	12
	2010	183.56	5.96	9	186.00	17.89	5
	2011	170.67	4.00	9	173.50	8.80	6
	<i>Luzula confusa</i>	1994	194.44	4.23	16	190.45	4.23
1995		182.37	5.06	19	182.11	4.33	19
1996		170.20	2.82	10	166.50	3.34	10
1997		179.50	7.21	18	176.81	6.47	16
1998		173.20	5.59	20	171.76	4.63	17
1999		184.74	3.98	19	181.94	4.98	18
2000		176.91	3.31	22	175.28	3.36	18
2001		187.20	3.83	5	184.40	3.13	5
2007		179.86	5.04	22	175.72	3.86	18
2008		177.65	3.68	23	178.53	3.69	17
2010		192.92	11.25	12	186.36	5.85	14
2011		179.64	9.14	14	177.50	6.95	10
2012		176.94	3.73	17	177.11	3.41	9
<i>Poa arctica</i>	1995	204.80	3.63	5	201.83	9.53	12
	1996	199.40	7.86	5	187.40	4.34	5
	1998	184.29	6.65	7	183.53	6.52	15
	1999	197.42	7.13	19	195.35	6.34	20
	2000	201.38	6.16	16	199.39	6.85	23
	2007	192.14	4.85	22	189.14	3.12	22
	2008	187.17	3.88	23	185.95	4.42	22
	2010	208.25	7.98	16	210.33	8.81	18
	2011	194.75	3.61	24	194.95	10.10	21
	2012	192.88	7.56	16	191.42	7.38	19
	<b>Barrow Wet</b>						
<b>Forbs</b>							
<i>Cardamine pratensis</i>	1997	197.13	3.44	8	196.80	2.60	15
	1998	195.40	9.61	5	191.30	1.77	10
	1999	197.50	5.65	12	194.00	5.61	16
	2000	202.83	5.81	6	205.13	9.06	8
	2008	194.00	6.86	14	189.65	2.08	20
	2010	202.00	13.51	15	202.16	9.51	19
	2012	195.00	11.61	6	191.09	5.47	11
<i>Saxifraga cernua</i>	1995	191.25	4.25	16	189.13	3.03	16
	1996	180.18	8.73	17	181.76	9.01	21
	1998	190.35	8.17	17	188.65	8.74	20
	1999	194.86	5.68	14	196.71	6.87	14
	2000	190.78	8.98	18	192.94	10.55	16
	2001	204.80	5.31	5	204.60	7.50	5
	2007	188.94	8.95	18	189.12	7.84	17
	2008	189.32	1.77	19	189.45	2.35	20
	2010	197.61	6.89	18	196.95	7.48	20
	2011	194.71	7.62	14	197.85	9.67	20
2012	188.85	4.02	20	190.37	4.68	19	
<i>Saxifraga foliolosa</i>	1995	185.64	3.95	22	186.50	4.26	16
	1996	174.00	3.89	17	172.64	3.20	14

	1997	185.71	5.32	21	185.00	3.91	17
	1998	183.81	9.28	16	183.15	6.22	13
	1999	190.80	9.32	15	188.54	8.29	13
	2000	188.88	10.93	17	191.00	8.20	13
	2007	183.57	8.12	14	186.00	6.48	8
	2008	191.57	6.00	14	187.93	8.07	14
	2010	195.27	9.04	15	197.23	15.01	13
	2011	191.15	14.90	13	191.56	9.59	9
	2012	188.77	5.17	13	188.88	7.43	8
<i>Saxifraga hieracifolia</i>	1995	185.69	3.34	16	185.25	2.93	16
	1996	170.80	3.78	15	168.00	3.19	12
	1998	175.40	2.90	15	176.08	4.23	13
	1999	184.71	2.98	7	185.50	6.74	12
	2000	188.50	6.32	12	190.27	7.17	11
	2007	177.25	2.31	8	179.33	4.08	6
	2008	185.82	6.81	11	187.13	4.97	8
	2010	197.80	4.06	15	200.00	5.58	10
	2011	191.94	11.57	16	189.50	7.83	12
	2012	187.08	4.12	12	186.10	2.33	10
<i>Saxifraga hirculus</i>	1995	220.70	6.99	10	217.80	6.14	5
	1996	196.42	8.32	12	190.00	6.16	6
	1997	211.57	5.88	14	200.50	6.16	6
	1998	205.46	7.56	13	200.00	5.06	6
	2000	216.73	7.04	11	211.80	6.22	5
	2007	203.00	4.47	11	200.20	4.38	5
	2008	210.91	7.62	11	203.40	6.77	5
	2010	216.89	3.33	9	214.67	5.16	6
	2011	209.45	8.94	11	204.20	5.31	5
	2012	204.15	3.36	13	201.40	4.93	5
<i>Stellaria laeta</i>	1996	212.00	3.71	10	212.20	8.06	15
	1998	219.50	9.93	6	215.00	4.95	9
	1999	226.29	3.15	7	223.50	9.93	6
	2007	223.80	7.26	5	212.22	3.87	9
	2010	228.14	9.14	7	228.56	6.06	9
	2011	226.29	5.35	7	219.30	7.32	10
<b>Graminoids</b>							
<i>Carex stans</i>	1995	195.20	3.77	5	199.33	8.98	6
	1996	187.50	5.85	18	181.08	7.29	24
	1997	195.18	5.09	22	192.09	4.36	23
	1998	188.78	5.29	18	186.76	3.79	21
	1999	191.67	3.79	21	191.89	2.69	19
	2000	195.52	6.79	23	195.14	8.92	21
	2007	193.18	4.76	22	186.74	5.69	23
	2008	190.50	4.33	22	186.48	4.26	23
	2010	205.85	4.70	20	202.08	7.45	13
	2011	196.61	5.68	18	194.06	10.03	17
	2012	187.84	4.36	19	185.41	3.34	17
<i>Dupontia fisheri</i>	1995	200.40	2.51	5	200.13	5.03	8
	1996	188.36	3.91	22	187.06	3.84	18
	1997	204.14	4.48	22	202.09	2.88	22
	1998	195.10	6.71	20	197.16	6.12	19
	1999	202.30	7.16	23	200.95	4.95	22
	2000	203.00	6.83	23	202.65	4.92	20
	2007	191.63	5.25	24	190.43	3.81	23
	2008	195.46	6.95	24	193.15	3.79	20

	2010	208.10	2.57	21	211.33	7.20	15
	2011	198.39	4.62	23	200.71	2.52	17
	2012	193.14	4.43	22	197.15	0.55	13
<i>Eriophorum triste</i>	1995	196.10	4.20	10	194.80	5.26	5
	1997	196.67	4.21	9	194.17	4.78	12
	1999	196.25	8.16	12	190.75	3.42	16
	2000	191.70	10.02	20	187.50	6.19	18
	2007	194.92	5.82	12	188.46	5.70	13
	2008	194.00	6.02	10	189.40	9.31	10
<i>Hierochloe pauciflora</i>	1995	201.13	6.31	8	198.22	2.91	9
	1996	187.73	6.82	15	181.36	2.84	11
	1997	198.25	2.24	16	197.29	2.05	14
	1998	193.53	3.81	15	191.13	3.04	8
	1999	198.40	4.95	15	198.33	4.67	15
	2000	197.13	4.96	16	196.17	4.97	12
	2007	189.53	5.08	19	188.08	3.25	13
	2008	191.83	4.20	18	190.22	1.39	9
<i>Juncus biglumis</i>	1995	196.57	2.99	7	197.50	1.97	6
	1996	188.00	4.10	11	185.00	4.82	12
	1997	203.38	4.31	13	202.00	3.67	9
	1999	206.50	11.75	10	210.17	8.01	6
	2000	199.89	5.42	9	206.75	6.11	8
<i>Luzula arctica</i>	1995	188.33	5.81	9	183.25	1.75	8
	1996	174.90	6.74	10	168.60	2.01	10
	1997	182.20	2.21	15	182.18	3.28	11
	1998	178.30	2.11	10	173.71	2.50	7
	1999	186.71	4.96	7	183.38	4.47	8
	2000	180.57	1.13	7	181.50	3.25	8
	2007	183.56	3.91	9	179.71	4.39	7
	2010	194.11	8.27	9	192.00	8.25	7
	2011	182.08	4.06	12	184.50	9.33	6
	2012	180.90	3.96	10	181.14	5.37	7
<i>Luzula confusa</i>	1996	188.83	4.45	6	177.86	4.30	7
	1997	197.25	5.57	8	193.90	4.25	10
	1998	192.60	7.49	10	189.67	5.57	6
	1999	198.88	11.03	8	196.00	7.55	7
	2000	191.71	4.50	7	190.17	6.94	6
<i>Poa arctica</i>	1999	202.20	6.06	5	208.43	10.58	7
	2000	208.50	3.02	6	210.00	4.42	5
	2007	199.13	7.70	8	196.75	4.40	8
	2008	199.33	6.50	9	197.50	6.00	8
	2010	211.33	4.92	12	210.89	5.49	9
	2011	199.88	3.83	8	199.83	2.86	6
	2012	200.38	10.13	13	198.22	6.70	9

**Supplementary Table S2.** Average snowmelt and daily summer temperature ( $^{\circ}\text{C}$ ) for years 1994-2012 at each study site. Temperatures were recorded at screen height (S, 2 m) and canopy height (10-15 cm) over control (C) and experimentally warmed (W) plots. Temperature differences between control and warmed plots at canopy height are also shown (W – C). Readings for screen height were made on one sensor only, canopy height readings were based on one to 12 plots that had sensors (when more than one plot was measured we calculated the average value to create one continuous record of hourly readings for the summer; from the one continuous reading we present the average value below).

Site	Year	Snowmelt	Dry heath				Wet meadow				
			S	C	W	W-C	Snowmelt	S	C	W	W-C
<b>Atqasuk</b>											
	1996	May 22	9.0	9.3	11.1	1.8	May 29	9.0	9.2	10.2	1.0
	1997	Jun 09	8.4	9.9	11.6	1.7	Jun 16	8.4	10.0	10.9	0.9
	1998	Jun 02	8.5	9.9	11.5	1.6	Jun 09	8.7	10.2	11.1	0.9
	1999	Jun 09	9.3	10.0	11.6	1.6	Jun 10	9.3	10.0	11.1	1.1
	2000	Jun 06	7.1	7.7	9.2	1.5	Jun 11	7.4	8.2	8.8	0.6
	2001	Jun 04	6.4	7.1	8.1	1.0	Jun 10	7.2	7.6	8.4	0.8
	2002	May 20	5.7	6.7	8.2	1.5	May 23	5.7	7.0	8.0	1.1
	2003	June 05	6.3	7.4	8.3	0.9	June 07	6.3	7.1	8.4	1.3
	2004	May 23	8.4	8.9	9.8	0.9	June 5	9.7	10.6	11.6	1.0
	2005	June 08	7.4	7.8	8.9	1.1	June 12	7.7	8.5	9.0	0.5
	2006	May 25	6.0	6.5	7.6	1.1	June 05	6.8	7.6	8.1	0.5
	2007	June 02	9.4	10.1	11.5	1.5	June 03	9.4	10.3	11.2	0.9
	2008	May 24	6.4	7.1	8.3	1.2	June 03	7.0	8.3	8.7	0.4
	2009	May 20	7.1	7.7	8.8	1.1	May 26	7.4	8.6	9.0	0.4
	2010	June 05	7.8	8.3	9.4	1.1	June 11	8.0	8.7	9.5	0.9
	2011	May 22	7.1	7.3	8.3	1.0	May 30	7.6	7.8	8.5	0.6
	2012	May 26	8.7	9.0	10.2	1.3	June 05	9.6	10.1	11.1	1.1
	Average	May 30	7.6	8.3	9.6	1.3	June 05	8.0	8.8	9.6	0.8
<b>Barrow</b>											
	1994	Jun 15	4.2	6.1	8.0	1.9	.	.	.	.	.
	1995	Jun 14	3.1	3.1	4.9	1.8	Jun 19	3.5	3.4	5.4	2.0
	1996	May 30	3.7	4.3	6.1	1.8	Jun 10	3.8	4.8	6.2	1.4
	1997	Jun 08	3.2	4.0	5.9	1.9	Jun 25	4.1	5.1	7.3	2.2
	1998	Jun 03	3.9	5.2	6.9	1.7	Jun 20	4.8	6.3	7.8	1.5
	1999	Jun 16	4.1	4.9	6.9	2.0	Jun 27	4.7	5.5	7.4	1.9
	2000	Jun 12	3.3	4.2	5.3	1.1	Jun 18	3.6	4.4	5.7	1.3
	2001	Jun 12	2.5	3.2	4.7	1.5	Jun 21	2.7	3.5	5.4	1.9
	2002	May 23	1.7	2.7	3.5	0.8	Jun 08	3.9	4.7	6.5	1.8
	2003	June 08	2.6	3.3	4.8	1.5	June 23	3.2	4.1	5.5	1.3
	2004	June 11	6.1	5.8	7.3	1.5	June 17	6.4	6.3	7.8	1.5
	2005	June 10	4.0	4.1	5.5	1.4	June 24	4.7	4.8	6.9	2.1
	2006	June 08	3.5	3.7	5.6	1.9	June 17	3.7	3.8	5.5	1.7
	2007	June 07	5.7	5.9	8.0	2.1	June 15	6.1	6.3	8.8	2.5
	2008	May 29	3.3	3.4	5.3	1.8	June 15	3.8	3.9	5.6	1.7

2009	May 29	4.1	4.1	5.4	1.3	June 14	4.7	4.8	6.2	1.4
2010	June 18	5.4	5.3	6.8	1.5	June 30	6.1	5.9	7.3	1.4
2011	May 27	4.1	4.1	5.5	1.4	June 18	5.2	5.2	7.0	1.8
2012	June 07	6.3	6.2	8.0	1.8	June 17	6.8	6.7	9.0	2.2
Average	June 07	3.9	4.4	6.0	1.6	June 18	4.5	5.0	6.7	1.8

**Supplementary Table S3.** Effects of warming treatment on plant traits by site, growth form (GF), and species. The effect size from meta-analysis (Hedges' d) is reported when significant. Values in boldface are the mean effect size for all species within a given growth form or site.

Site	GF	Species	Inflorescence height	Reproductive phenology	Leaf length	Reproductive effort
All Sites	All		<b>0.81</b>	<b>-2.12</b>	<b>0.39</b>	<b>ns<sup>a</sup></b>
Atqasuk Dry Site						
All	All		<b>0.33</b>	<b>-0.47</b>	<b>0.26</b>	<b>-0.18</b>
Forb	All		<b>0.57</b>	<b>ns</b>	<b>ns</b>	<b>ns</b>
		<i>Polygonum bistorta</i>	0.57	ns	ns	ns
Gram. <sup>b</sup>	All		<b>0.34</b>	<b>ns</b>	<b>0.39</b>	<b>ns</b>
		<i>Carex bigelowii</i>	- <sup>c</sup>	-	ns	.
		<i>Hierachloë alpina</i>	0.90	ns	0.48	ns
		<i>Luzula arctica</i>	ns	-	ns	ns
		<i>Luzula confusa</i>	ns	ns	0.33	ns
		<i>Trisetum spicatum</i>	-	-	0.74	.
E. shrub <sup>d</sup>	All		<b>ns</b>	<b>ns</b>	<b>0.14</b>	<b>-0.38</b>
		<i>Cassiope tetragona</i>	-	ns	ns	-0.43
		<i>Diapensia lapponica</i>	ns	ns	ns	-0.41
		<i>Ledum palustre</i>	-	ns	0.37	ns
		<i>Vaccinium vitis-idaea</i>	-	ns	ns	-0.70
Atqasuk Wet Site						
All	All		<b>0.64</b>	<b>ns</b>	<b>0.46</b>	<b>ns</b>
Gram.	All		<b>0.64</b>	<b>ns</b>	<b>0.48</b>	<b>ns</b>
		<i>Carex aquatilis</i>	0.58	ns	0.55	ns
		<i>Dupontia psilosantha</i>	-	-	0.49	-
		<i>Eriophorum angustifolium</i>	0.59	ns	0.50	ns
		<i>Eriophorum russeolum</i>	0.95	-	0.38	0.50
Forb	All		-	-	<b>ns</b>	-
		<i>Pedicularis sudetica</i>	-	-	ns	-
Barrow Dry Site						
All	All		<b>1.13</b>	<b>-3.57</b>	<b>0.43</b>	<b>0.18</b>
Forb	All		<b>1.14</b>	<b>-5.18</b>	<b>0.24</b>	<b>0.24</b>
		<i>Papaver hultenii</i>	0.87	-5.62	-	ns
		<i>Pedicularis kanei</i>	-	-	ns	-
		<i>Potentilla hyparctica</i>	1.65	-7.55	ns	ns

		<i>Senecio atropurpureus</i>	ns	ns	ns	-
		<i>Stellaria laeta</i>	-	-5.42	ns	0.67
		<i>Saxifraga punctata</i>	0.91	ns	0.58	ns
Gram.	All		<b>1.13</b>	<b>-1.91</b>	<b>0.72</b>	<b>0.14</b>
		<i>Arctagrostis latifolia</i>	1.15	-3.21	0.61	ns
		<i>Luzula arctica</i>	1.00	ns	0.39	ns
		<i>Luzula confusa</i>	1.00	-2.39	0.95	ns
		<i>Poa arctica</i>	1.33	-2.32	0.81	0.37
D. shrub <sup>e</sup>	All		-	<b>-1.71</b>	<b>0.26</b>	<b>-0.40</b>
		<i>Salix rotundifolia</i> ♀	-	ns	ns	-0.40
		<i>Salix rotundifolia</i> ♂	-	ns	ns	.
E. shrub		<i>Cassiope tetragona</i>	-	-6.30	ns	0.84
Barrow Wet Site						
All	All		<b>0.92</b>	<b>-1.56</b>	<b>0.44</b>	<b>ns</b>
Forb	All		<b>1.09</b>	<b>-1.51</b>	<b>0.21</b>	<b>ns</b>
		<i>Cardamine pratensis</i>	1.87	ns	0.48	0.53
		<i>Cerastium beeringianum</i>	-	-	ns	.
		<i>Draba lactea</i>	1.39	-	-	ns
		<i>Saxifraga cernua</i>	1.10	ns	ns	ns
		<i>Saxifraga foliolosa</i>	0.88	ns	ns	ns
		<i>Saxifraga hieracifolia</i>	0.59	ns	ns	ns
		<i>Saxifraga hirculus</i>	-	-5.13	.	ns
		<i>Stellaria laeta</i>	-	-4.21	0.46	ns
Gram.	All		<b>0.83</b>	<b>-1.60</b>	<b>0.59</b>	<b>ns</b>
		<i>Carex stans</i>	1.12	-2.43	1.08	ns
		<i>Dupontia fisheri</i>	0.88	ns	0.65	-0.44
		<i>Eriophorum russeolum</i>	-	-	0.36	-
		<i>Eriophorum triste</i>	0.97	-4.09	0.41	ns
		<i>Hierachloë pauciflora</i>	ns	ns	0.62	-0.42
		<i>Juncus biglumis</i>	ns	ns	-	ns
		<i>Luzula arctica</i>	0.67	-2.17	ns	ns
		<i>Luzula confusa</i>	0.79	-4.34	-	ns
		<i>Poa arctica</i>	1.42	ns	ns	ns

<sup>a</sup> Not statistically significant. <sup>b</sup> Graminoid. <sup>c</sup> Insufficient data for analysis. <sup>d</sup> Evergreen shrub.  
<sup>e</sup> Deciduous shrub.