

## Supplemental Figures and Tables

### **Holocene thermokarst lake dynamics in northern Interior Alaska: the interplay of climate, fire, and subsurface hydrology**

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Figure 1: Greenpepper Lake cloud-free image acquisitions 1952-2017

Figure 2: Greenpepper Lake core A,B, and C sequence imagery and core A unit details

Figure 3: Greenpepper Lake core A Bayesian age-depth model constructed with the age-depth modeling software Bacon v2.2 (Blaauw and Christen, 2011). Transparent blue symbols show calibrated radiocarbon dates with error range and age-depth models are gray scale, with darker gray indicating more likely calendar ages. Stippled lines show 95% confidence intervals and the dashed curve shows the best model fit based on the weighted mean age for each depth. Upper panels depict the Markov Chain Monte Carlo (MCMC) iterations (right panel) and prior (green) and posterior (gray) histogram distributions for the accumulation rate (middle) and memory (right panel).

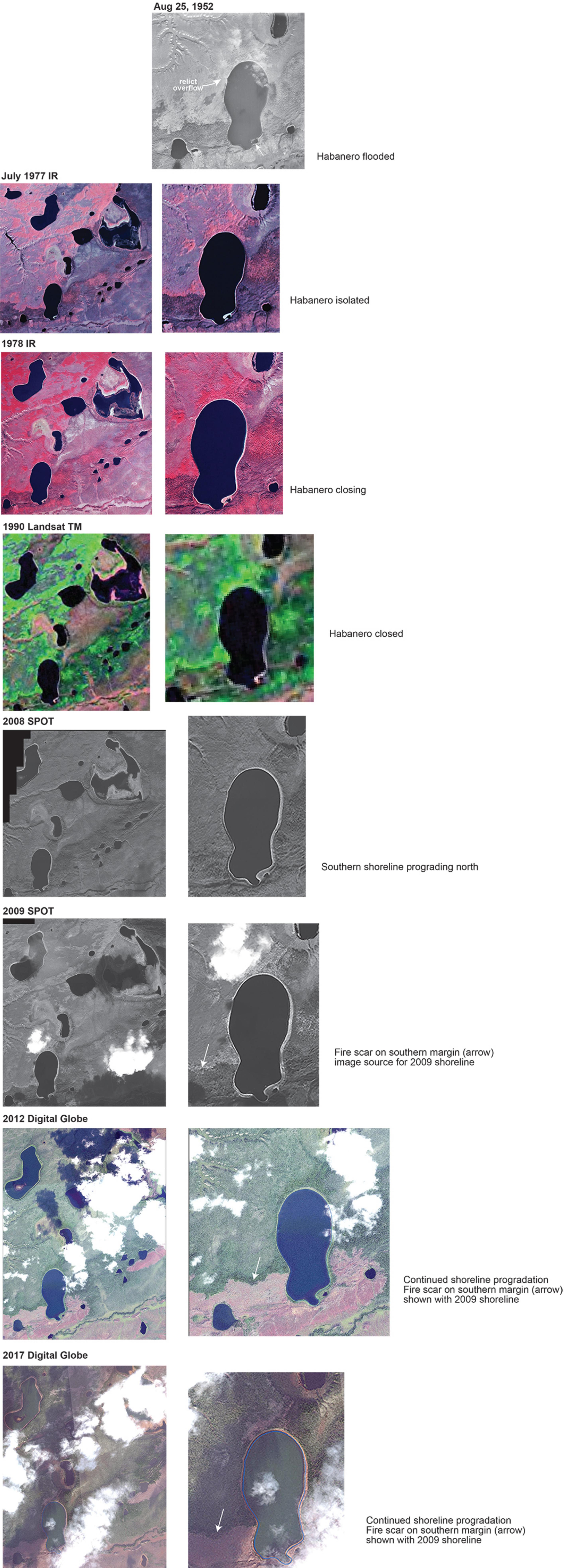
Table 1: Greenpepper Lake core A scanned pollen counts for basal silt samples at 195, 197, 202, and 204 cm core depths with taxa percent in italics.

**All other data is available at USGS ScienceBase:**

**Anderson, Lesleigh, Edwards, Mary, E., Shapley, Mark, D., Finney, Bruce, P., and Langdon, Catherine, 2019, Data Release for "Holocene thermokarst lake dynamics in northern Interior Alaska: the interplay of climate, fire, and subsurface hydrology": U.S. Geological Survey, <https://doi.org/10.5066/P9O7255D>**



Supplemental Figure 1: Greenpepper Lake cloud-free image acquisitions 1952-2017



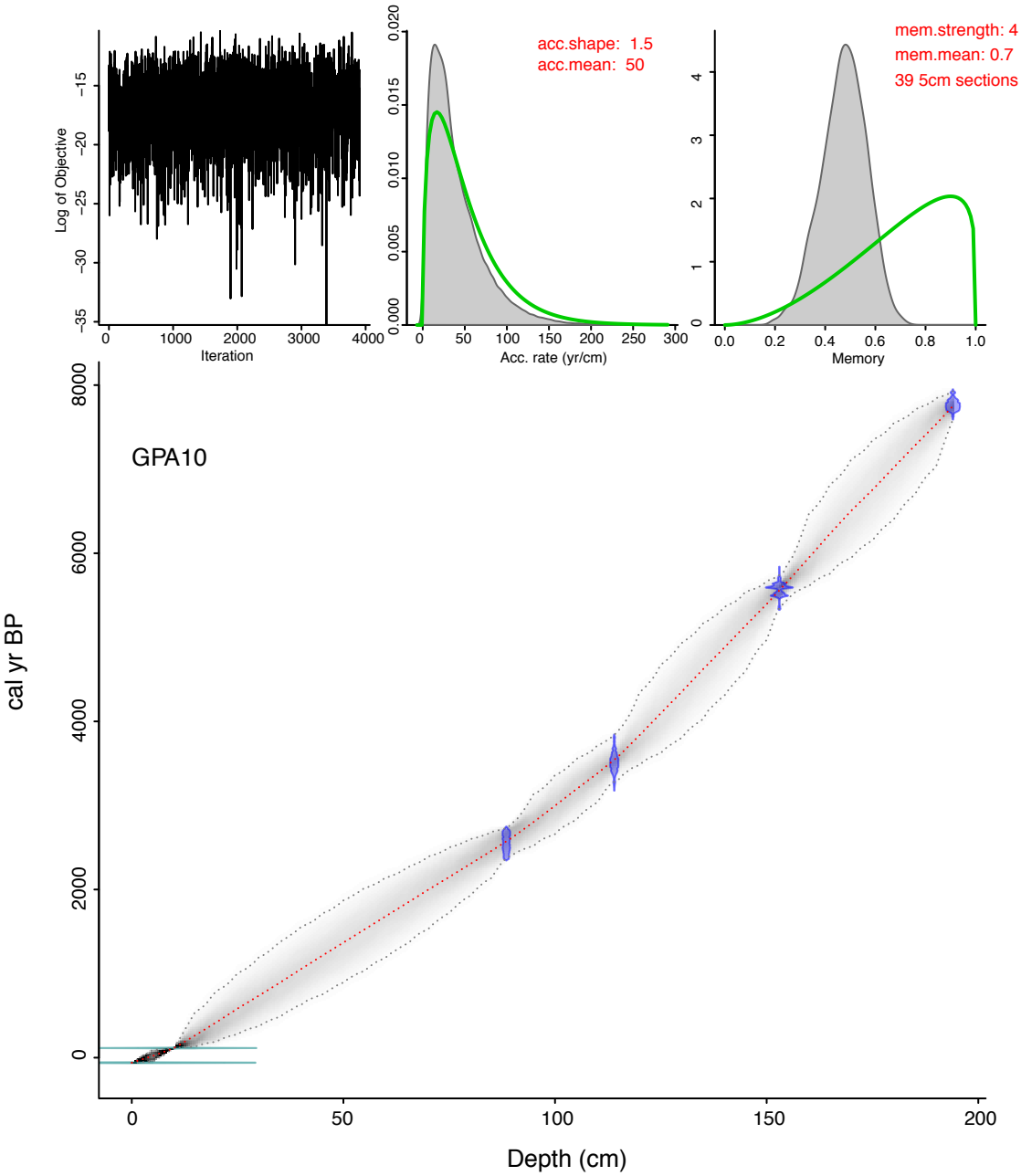


Supplemental Figure 2: Greenpepper Lake core A, B, and C sequence imagery and core A unit details





Supplemental Figure 3: Greenpepper Lake core A Bacon age model output  
(see Table 3 for age data)



Supplemental Table 1

Greenpepper Lake, core A pollen counts (*percent in italics*)

Depth (cm)	<i>Picea</i>	<i>Betula</i>	<i>c.f. Populus</i>	<i>Alnus</i>	<i>Salix</i>	<i>Ericales</i>	<i>Poaceae</i>	<i>Cyperaceae</i>	<i>Artemisa</i>	<i>c.f. Rumex</i>	<i>Myriophyllum</i>	<i>Pediastrum</i>	<i>Sphagnum</i>	<i>Exotic</i>	<i>Reworked</i>	Charcoal	hyphae	total pollen
195	26	86	0	1	1	1	0	0	1	0	1	0	0	4	0	present		117
197	9	130	2	1	6	0	2	0	1	0	0	1	0	1	2	present		151
202	38	82	1	2	1	0	1	0	4	0	0	0	3	6	1	present		129
204	8	90	1	0	3	0	1	1	1	1	0	0	0	4	1	present	present	106

	<i>Picea</i>	<i>Betula</i>	<i>c.f. Populus</i>	<i>Alnus</i>	<i>Salix</i>	<i>Ericales</i>	<i>Poaceae</i>	<i>Cyperaceae</i>	<i>Artemisa</i>	<i>c.f. Rumex</i>
195	22	74	0	1	1	1	0	0	1	0
197	6	86	1	1	4	0	1	0	1	0
202	29	64	1	2	1	0	1	0	3	0
204	8	94	1	0	3	0	1	1	1	1