

iButton Temperature Data from 40 Aquatic Plots

Emily Watson-Cook, Jana Peirce

July 19 - Aug 23, 2021

Thermocron iButton data loggers were installed on July 19, 2021, in 30 thaw ponds in the NIRPO and Jorgenson Field Sites, Prudhoe Bay, Alaska, and programmed to record temperature in degrees Celsius every hour. They were retrieved on August 23, 2021.

Sensors were installed in the following locations in each pond:

- Water surface
- Above the moss layer
- At the sediment surface.

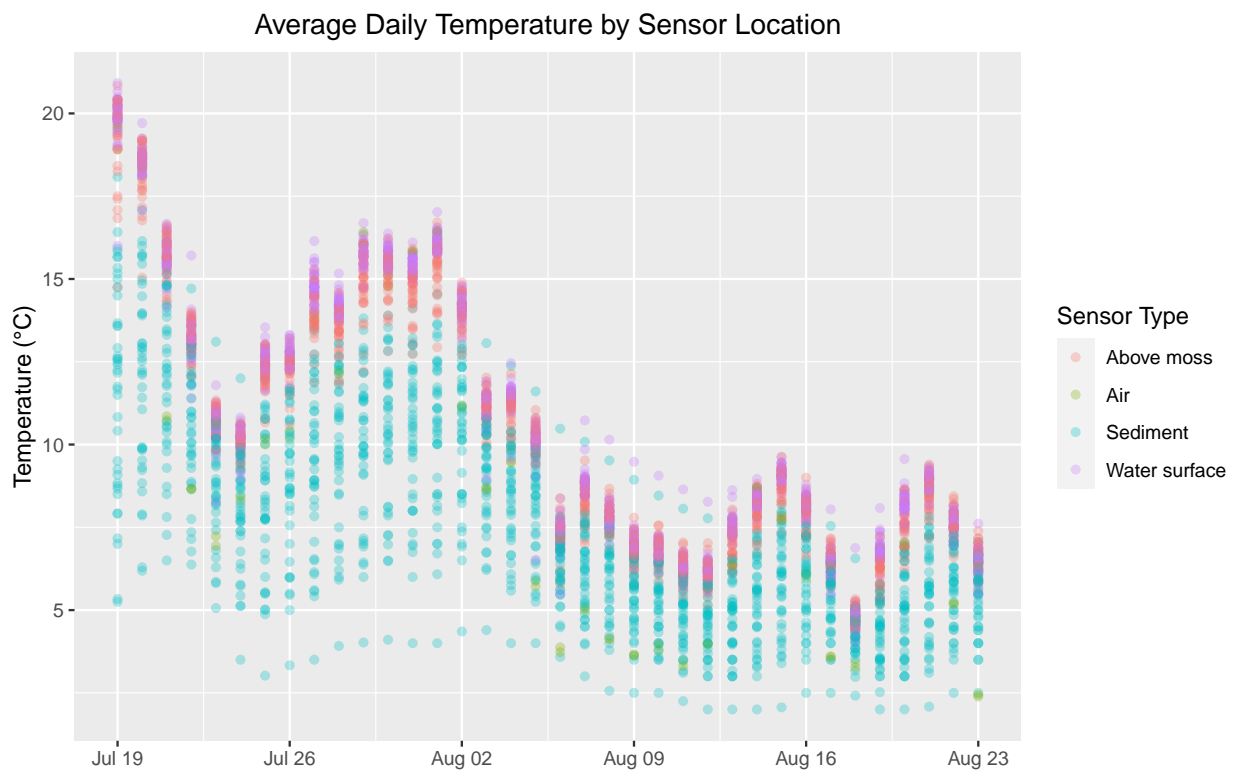
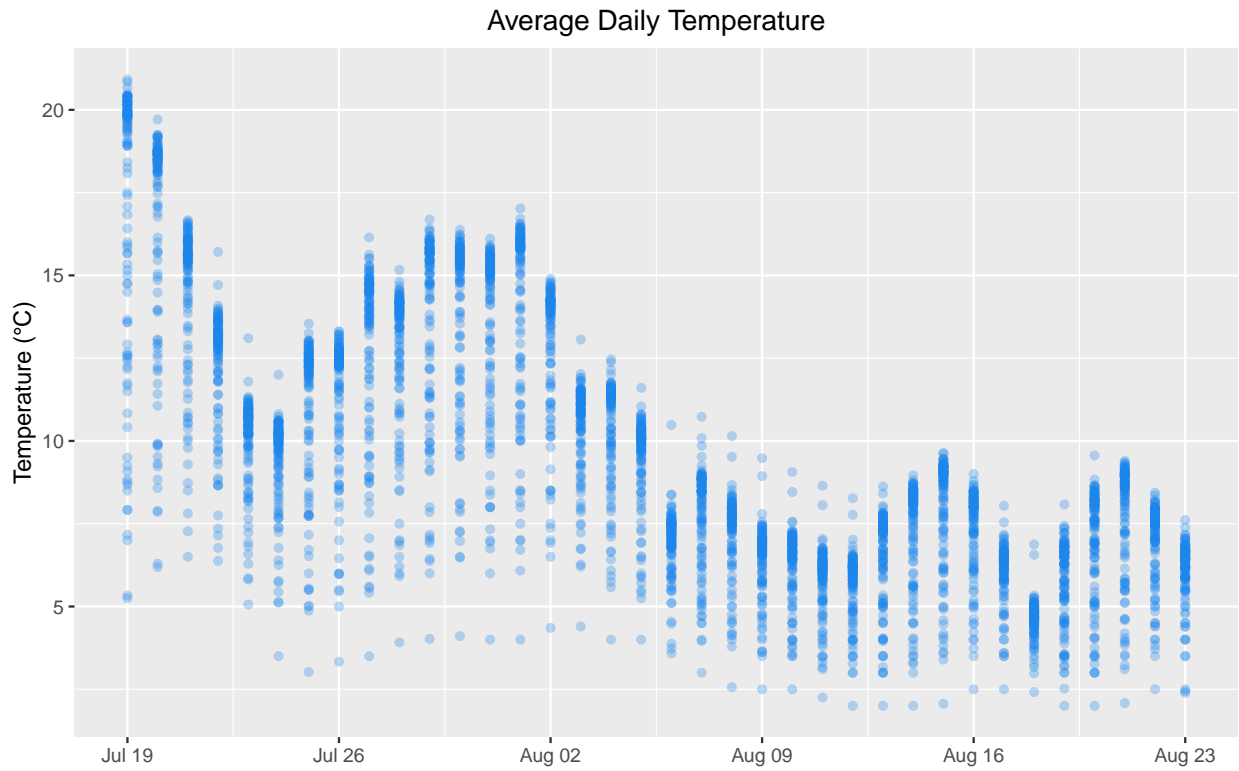
Two additional sensors were installed to record air temperature at each site (NIRPO and Jorgenson), and one sensor was installed at the water surface in a lake at the Jorgenson site.

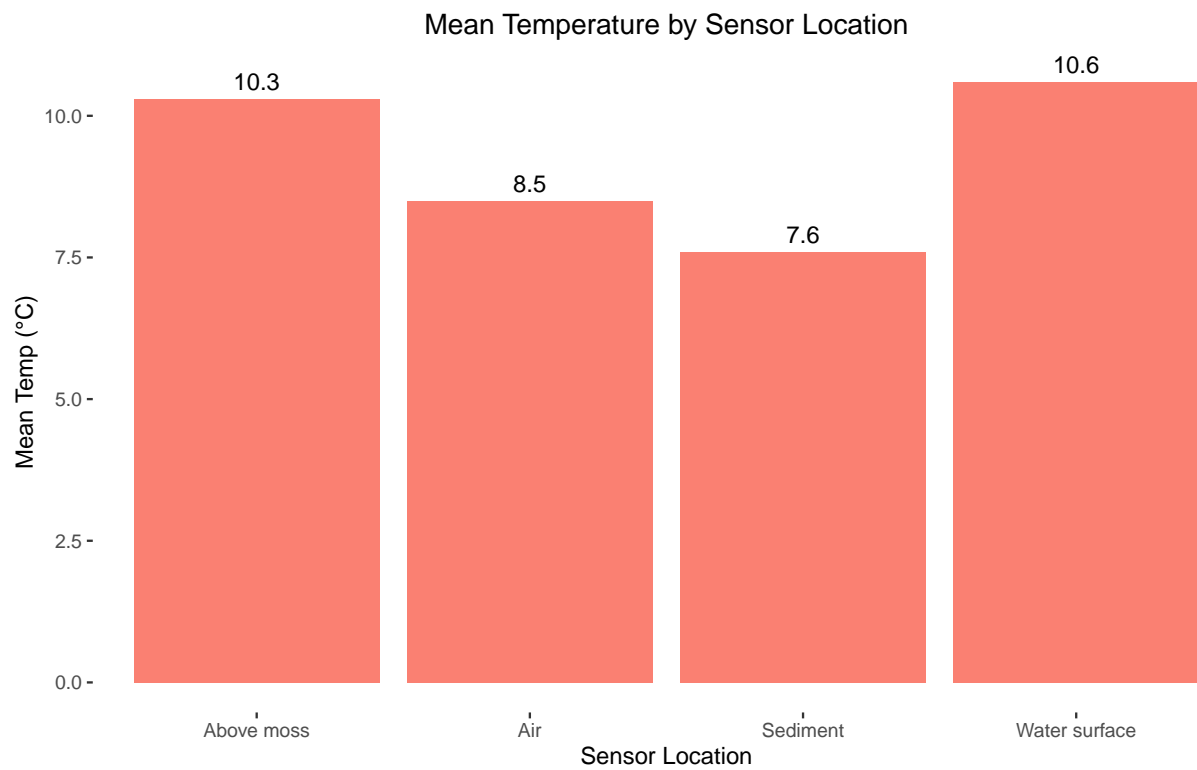
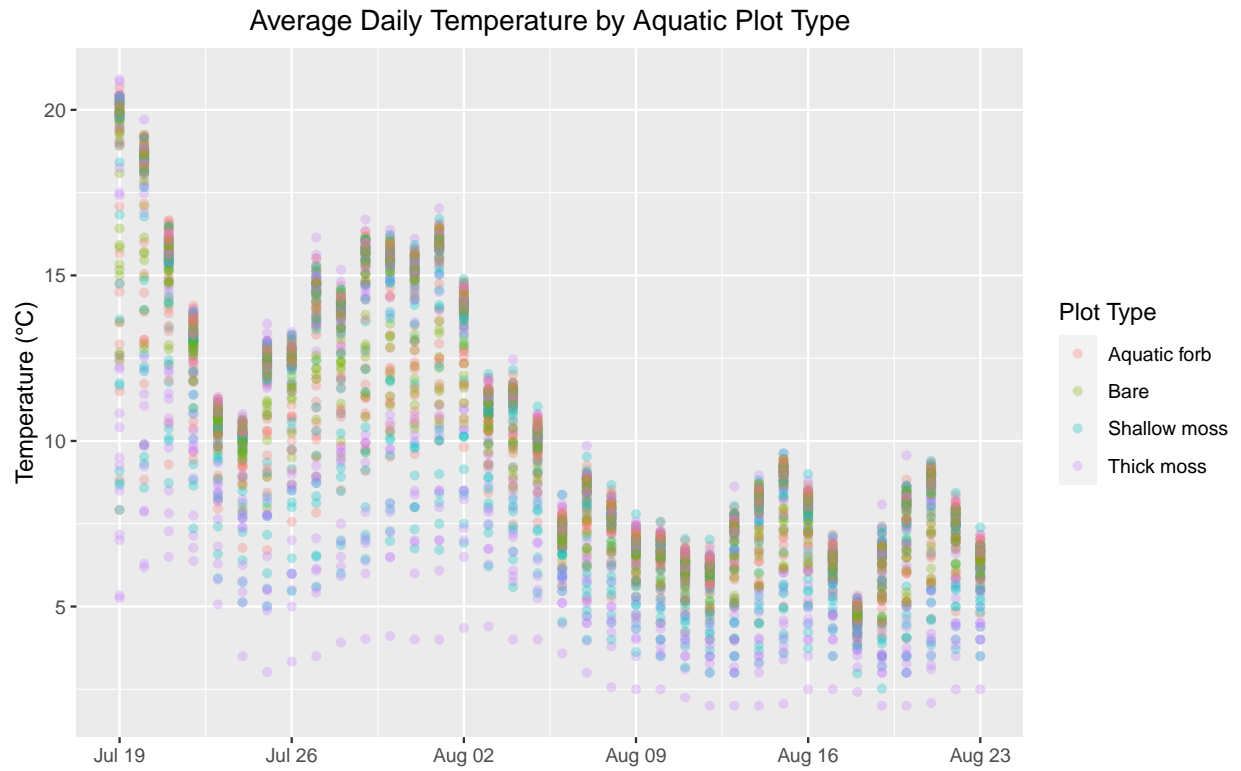
Raw Data (99,720 rows)

Date	Time	iBtn ID	Temp (°C)	Plot ID	Sensor Type	Plot Type
2021-07-19	6:00:00 PM	1	20.5	21A-01	Aquatic forb	Water surface
2021-07-19	6:00:00 PM	2	20.5	21A-01	Aquatic forb	Above moss
2021-07-19	6:00:00 PM	4	13.0	21A-01	Aquatic forb	Sediment
2021-07-19	6:00:00 PM	5	21.5	21A-02	Thick moss	Water surface
2021-07-19	6:00:00 PM	6	21.5	21A-02	Thick moss	Above moss
2021-07-19	6:00:00 PM	9	8.5	21A-02	Thick moss	Sediment

Average Daily Temperature (4320 rows)

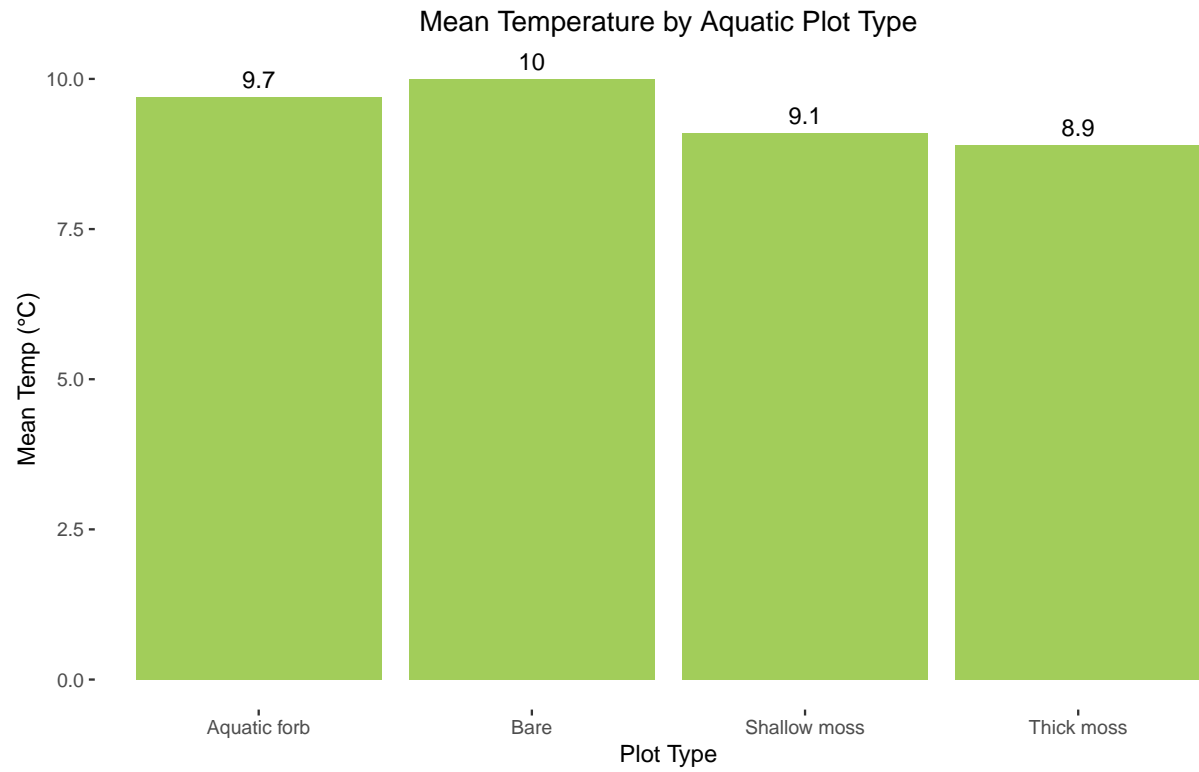
Date	iBtn ID	Plot ID	Sensor Type	Plot Type	Avg Daily Temp (°C)
2021-07-19	1	21A-01	Water surface	Aquatic forb	20.083333
2021-07-19	10	21A-03	Sediment	Aquatic forb	8.833333
2021-07-19	101	21A-20	Sediment	Lake	15.666667
2021-07-19	103	21A-21	Water surface	Thick moss	20.500000
2021-07-19	105	21A-21	Above moss	Thick moss	20.833333
2021-07-19	108	21A-21	Sediment	Thick moss	7.166667





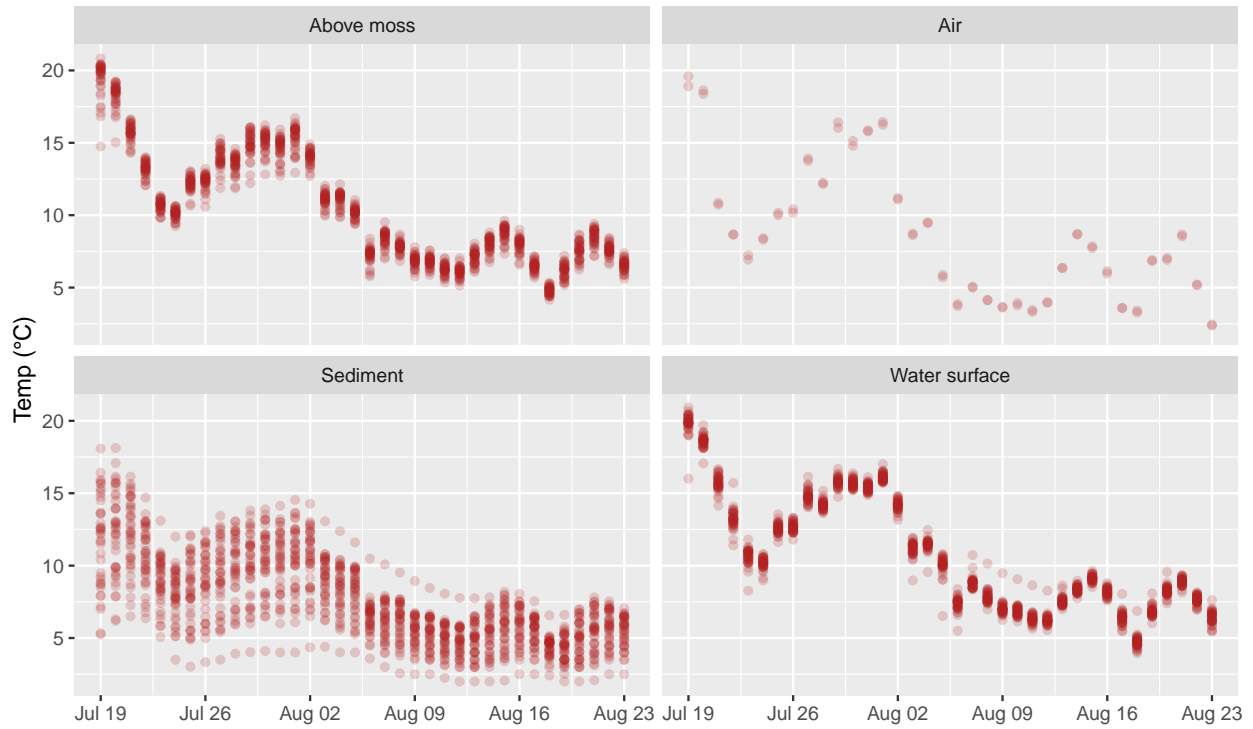
Sensor Type	Mean Temp (°C)
Above moss	10.3
Air	8.5

Sensor Type	Mean Temp (°C)
Sediment	7.6
Water surface	10.6

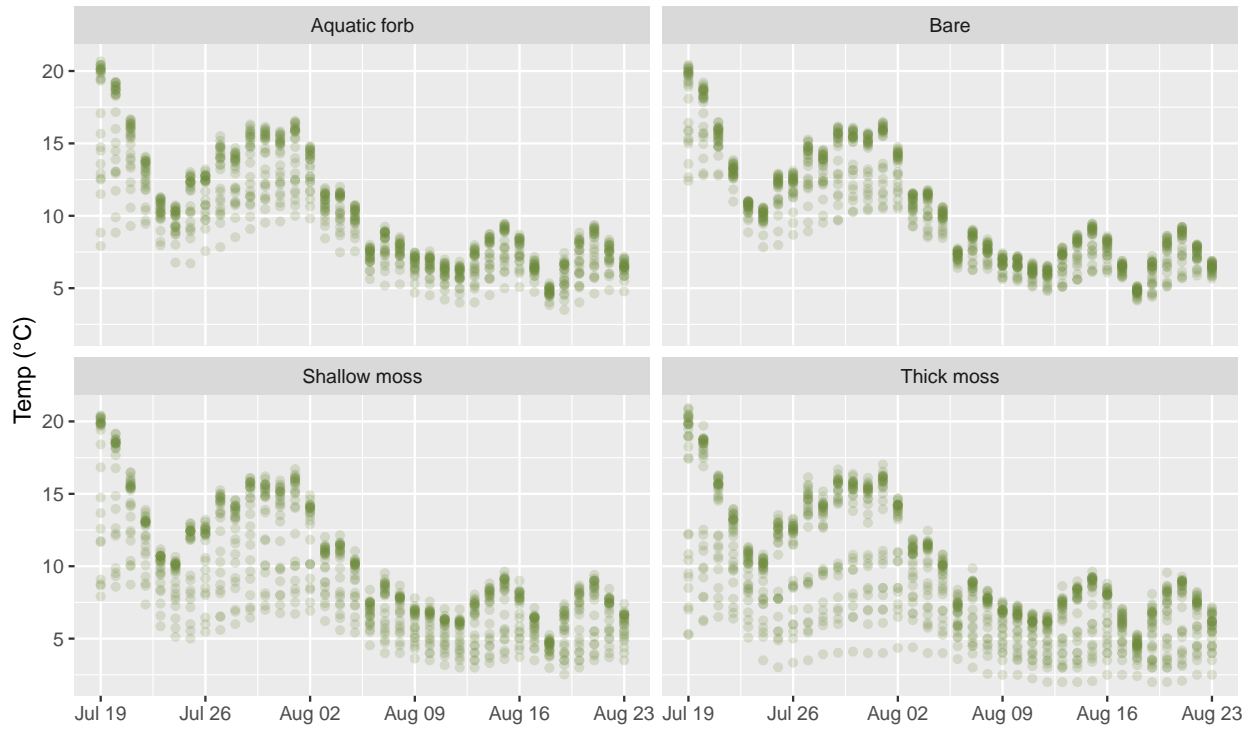


Plot Type	Mean Temp (°C)
Aquatic forb	9.7
Bare	10.0
Shallow moss	9.1
Thick moss	8.9

Average Daily Temperature by Sensor Location



Average Daily Temperature by Plot Type



Avg. Daily Temp at Sediment Layer in Thick Moss Plots

