



Community-based monitoring of the **active layer** in the Yukon River watershed

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Outline

- * Introduction: the Yukon River & the YRITWC
 - * Monitoring surface water quality: ION
 - * Monitoring permafrost: ALN
 - * Methodology
 - * Results
 - * Lessons Learned



The Yukon River Watershed



An indigenous grassroots organization dedicated to the protection & preservation of the Yukon River Watershed

Flagship Projects:

The Indigenous Observation Network (ION)

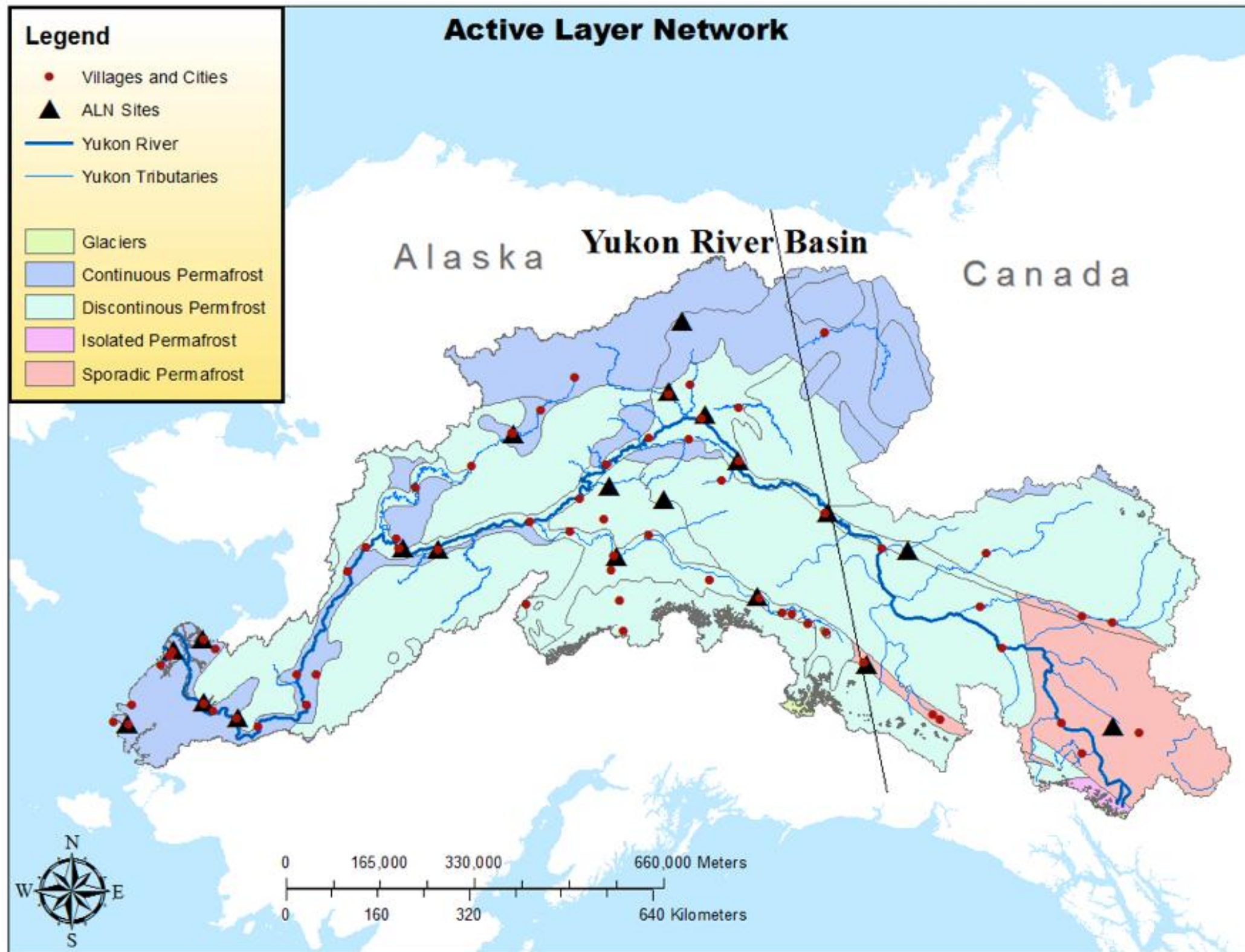
The Active Layer Network (ALN)





Surface water quality monitoring

26 First Nations & Tribes / 57 sites / Well over 1,000 water samples collected



Active layer network [ALN] sites

2009: 12 sites installed; 2010: 8 sites added

Methodology

What do we do at each site?



Conducting manual measurements

5 years / 20 sites w. 50 m x 50 m grids / nearly 10,000 individual measurements recorded



RESEARCHERS: Jody Inster, Brendan Mulligan, Autumn Jules
 SITE: TESLIN ALN 9 YZW DATE: Aug. 28, 2013

NW Lat: N 60.4492641 Long: 133.52225 NE Lat: 60.44934° N Long: 133.52161° W

NORTHING →

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

SW Lat: N 60.44881° Long: W 133.52219° EASTING → SE Lat: N 60.44892° Long: W 133.52145°

Sum: _____ Max: _____ Min: _____
 N: _____ Mean: _____ Std. Dev: _____

GPS coordinates for center of grid/location of Instruments
 Lat: 60.44907° N
 Long: 133.52188° W

Conducting manual measurements

5 years / 20 sites w. 50 m x 50 m grids / nearly 10,000 individual measurements recorded



Downloading data from our sensors

Every 30 mins: air temperature + soil moisture & temperature at 2 depths



Downloading data from our sensors

Every 30 mins: air temperature + soil moisture & temperature at 2 depths



Collecting soil samples

Soil samples collected at 2 depths to calibrate soil moisture sensor data

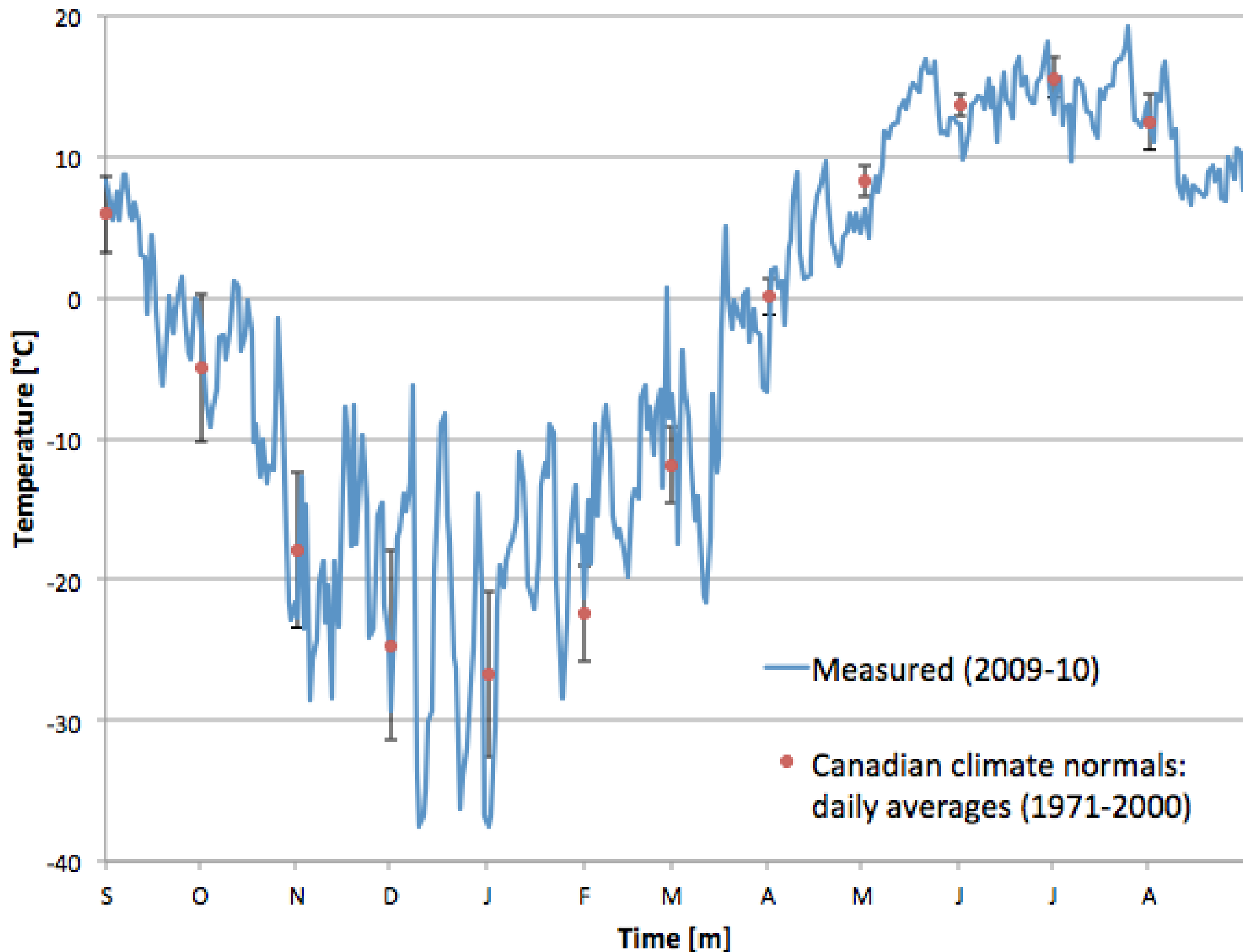


Empowering community members

Dozens of community members trained / Frequent school visits

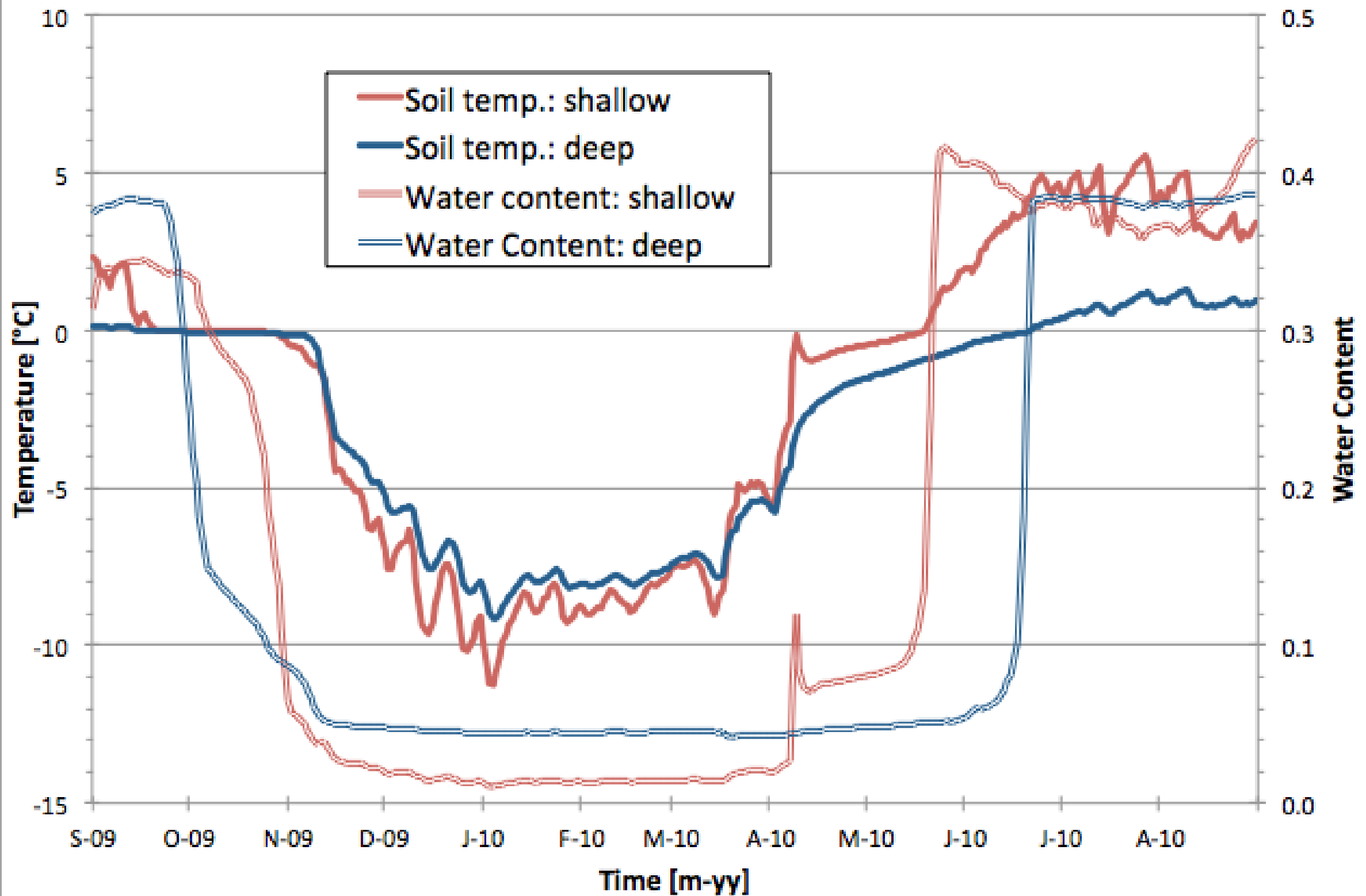
Results

What do our data look like?



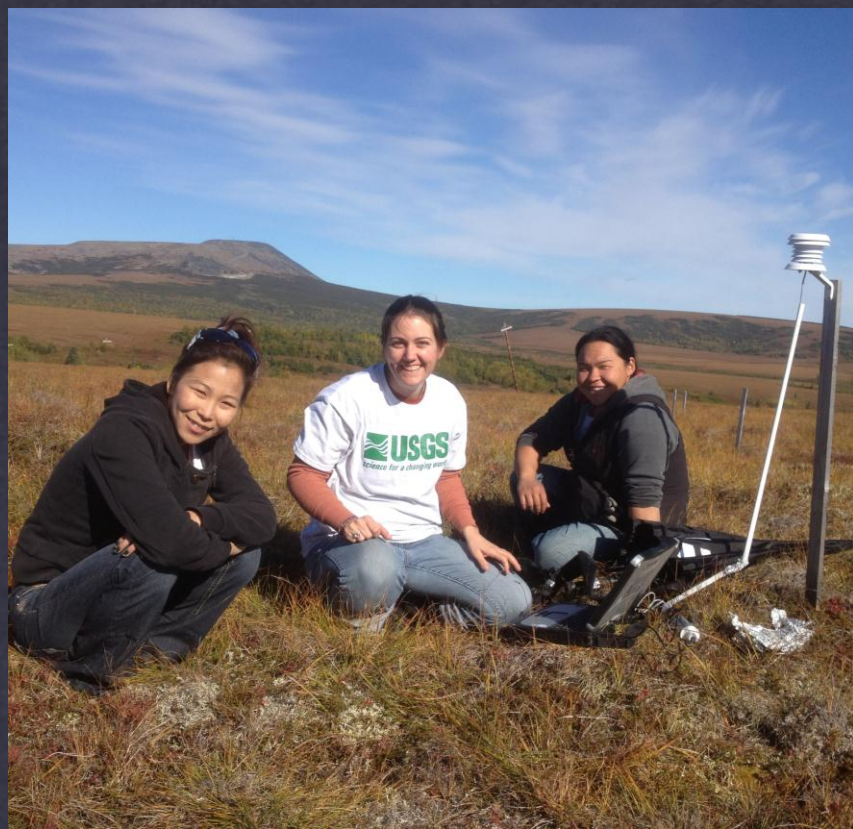
Air temperature @ Dawson, YT Site

2009-2010



Soil moisture & temperature @ Dawson, YT Site

2009-2010



Our greatest result: communities leading the way

Lessons learned

Where do we go from here?

Lessons learned

- * Community-based monitoring WORKS
 - * Various communities want to join the network
 - * Working towards “handing-off” sites to partners
- * We need to disseminate our results...
 - * ...but first, we need to start analyzing and interpreting our data: assistance is welcome!



THANK YOU

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