

Table S1A. NWT LTER Signature Datasets. Signature datasets include core long-term observation datasets that we will rely on to discern long-term trends. Table includes ID (knb-lter-nwt package identifier on EDI); Title/doi, Publ (year most recently updated), Creators, and LTER Core areas (D = Disturbance/Climate; IM = Inorganic nutrient cycling; OM = Organic nutrient cycling; PP = Plant productivity; PS = Population studies). References to datasets (**ID in bold**) used in the top 10 publications can be found below the Title/doi, where applicable.

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ID	Title/doi	Publ.	Creators	Core areas
8.4	Pika demography data for west knoll and Indian Peaks wilderness, 2008 - ongoing doi:10.6073/pasta/0a786c99fe3d4e1dfb8c57424ce79091	2021	Ray, Chris	PS
10.3	Stream and lake water chemistry data for Green Lakes Valley, 1998 - ongoing doi:10.6073/pasta/811e22e67aa850fa6c03148ab621e76e (Loria et al., 2020)	2021	McKnight, Diane M.; Johnson, Pieter T.; Loria, Kelly; Dykema, Stephanie	IM
13.5	Increased temperature, N and snowpack experiment for north of saddle, 2006 - ongoing. doi:10.6073/pasta/7ff039a5d6f3fa5155c0a299a903a00a	2022	Suding, Katharine N.; Smith, Jane G.; Ashton, Isabel W.	D, IM, PP, PS
16.5	Aboveground net primary productivity data for Saddle grid, 1992 - ongoing doi:10.6073/pasta/f400a48e2204b53314d8f31b59c91a84 (Bueno de Mesquita et al., 2021; Wieder et al., 2017)	2020	Walker, Marilyn; Smith, Jane G.; Humphries, Hope	PP
31.18	Snow depth data for Saddle grid, 1992 - ongoing doi:10.6073/pasta/72b308abf520d996593bbbccbf41608 (Wieder et al., 2017)	2021	Walker, Skip; Morse, Jennifer	D
74.7	Streamflow data for Saddle stream, 1999 - ongoing doi:10.6073/pasta/3abf11e44afab0e8605684549f3868a3 (Crawford et al., 2020; Hermes et al., 2020)	2022	Caine, T. Nelson (Nel); Morse, Jennifer F.	D, IM, OM
93.5	Plant species composition data for Saddle grid, 1989 - ongoing doi:10.6073/pasta/baef31847da7352ae88c2f8b2e78b464	2021	Walker, Marilyn; Humphries, Hope	PS
102.17	Streamflow data for Albion camp, 1981 - ongoing doi:10.6073/pasta/81ef15564db3a999ea28c02697550525 (Crawford et al., 2020)	2022	Caine, T. Nelson (Nel); Morse, Jennifer F.	D, IM, OM
103.14	Stream water chemistry data for Albion site, 1982 - ongoing doi:10.6073/pasta/59396e2b8d291badcfb140425e1b3a38 (Crawford et al., 2020)	2021	Caine, T. Nelson (Nel)	IM, OM
105.15	Streamflow for Green Lake 4, 1981 - ongoing doi:10.6073/pasta/ff6f7947279eeeca851baed6cd6f41a (Crawford et al., 2020)	2022	Caine, T. Nelson (Nel); Morse, Jennifer F.	D, IM, OM
106.4	Lake ice clearance and formation data for Green Lakes Valley, 1968 - ongoing doi:10.6073/pasta/e6123085cff2605b9079eab335aeda46 (Bueno de Mesquita et al., 2021; Christianson et al., 2021; Loria et al., 2020)	2022	Caine, T. Nelson (Nel); Morse, Jennifer F.	D
108.12	Stream water chemistry data for Green Lake 4, 1982 - ongoing doi:10.6073/pasta/277121f0334757746d9d52ce2c2e82ab (Crawford et al., 2020)	2021	Caine, T. Nelson (Nel)	IM, OM

Table S1A. NWT LTER Signature Datasets. (continued)

ID	Title/doi	Publ.	Creators	Core areas
111.14	Streamflow for Martinelli basin, 1982 - ongoing doi:10.6073/pasta/76fffe560f896e1e9a04ab34c114b8a5 (Crawford et al., 2020)	2022	Caine, T. Nelson (Nel); Morse, Jennifer F.	D, IM, OM
112.4	Stream water chemistry data for Martinelli basin, 1984 - ongoing doi:10.6073/pasta/5534a25d64cd018f9c96a6a4c2f49315 (Crawford et al., 2020)	2021	Caine, T. Nelson (Nel)	IM, OM
157.7	Water quality data for Green Lakes Valley, 2000 - ongoing doi:10.6073/pasta/c457dc73d5179567879d78cb3a84c4e2 (Loria et al., 2020)	2022	McKnight, Diane M.; Yevak, Samuel; Dykema, Stephanie; Loria, Kelly	IM, OM, PP
160.3	Stream water chemistry data for Saddle Stream site, 1994 - ongoing doi:10.6073/pasta/9173009d00ed4602fcda5a529ee4a603 (Crawford et al., 2020)	2021	Caine, T. Nelson (Nel)	IM, OM
161.3	Zooplankton community composition and trait data for Green Lake 4, 2012 - ongoing doi:10.6073/pasta/e478807aedee6e01334768dbe6a8635a (Loria et al., 2020)	2020	Johnson, Pieter T.; Loria, Kelly A.	PS
199.3	Ice thickness at Green Lake 4, 1984 - ongoing, monthly doi:10.6073/pasta/e94519e35c73843698a1f3094b1aa267 (Christianson et al., 2021)	2022	Caine, T. Nelson (Nel); Morse, Jennifer F.	D
207.5	Permanent forest plot data from Niwot Ridge, Colorado, 1982 - 2019 doi:10.6073/pasta/48fa11a8f5bc6541b0472bc3fd4c0c71 (Andrus et al., 2021)	2021	Veblen, Thomas T.; Andrus, Robert; Chai, Rachel K.	PP, PS
401.7	Climate data for C1 data loggers (CR23X and CR1000), 2000 - ongoing, daily doi:10.6073/pasta/b8ba49ca26f8a8077f2ca0c49ef74f50	2022	Morse, Jennifer F	D
402.5	Climate data for D1 data loggers (CR23X and CR1000), 2000 - ongoing, daily doi:10.6073/pasta/97ed9868c880396b977af42d2f2f321a	2022	Morse, Jennifer F; Losleben, Mark	D
405.6	Climate data for saddle data loggers (CR23X and CR1000), 2000 - ongoing, daily doi:10.6073/pasta/51bcffaccbc73b2b8b3158c9c2c6c41d (Bueno de Mesquita et al., 2021)	2022	Morse, Jennifer F; Losleben, Mark	D
411.14	Air temperature data for C1 chart recorder, 1952 - ongoing doi:10.6073/pasta/edd9e457fd22a703a587cc8608d54bde	2022	Morse, Jennifer F; Losleben, Mark	D
412.12	Air temperature data for D1 chart recorder, 1952 - ongoing doi:10.6073/pasta/1e9f40409e69299b1a41f98ac767bcd7 (Crawford et al., 2020)	2022	Morse, Jennifer F; Losleben, Mark	D
414.13	Precipitation data for C1 chart recorder, 1952 - ongoing doi:10.6073/pasta/15d928e07af8c614a8579620623068d4	2021	Morse, Jennifer F; Losleben, Mark	D
415.15	Precipitation data for D1 chart recorder, 1964 - ongoing doi:10.6073/pasta/5b4b03cbb345cfd6e1c660dc871d3fd (Crawford et al., 2020)	2022	Morse, Jennifer F; Losleben, Mark	D

Table S1A. NWT LTER Signature Datasets. (continued)

ID	Title/doi	Publ.	Creators	Core areas
416.12	Precipitation data for Saddle chart recorder, 1981 - ongoing doi:10.6073/pasta/dc2d4b6db7133dcb651b978340e3b35a (Bueno de Mesquita et al., 2021; Hermes et al., 2020; Wieder et al., 2017)	2022	Morse, Jennifer F; Losleben, Mark	D
US-NR3	US-NR3: Niwot Ridge Alpine (T-Van West) [Ameriflux] doi:10.17190/AMF/1804492 (Knowles et al., 2019; Wieder et al., 2017)	2022	Knowles, John	D, PP
US-NR4	US-NR4: Niwot Ridge Alpine (T-Van East) [Ameriflux] doi:10.17190/AMF/1804491 (Knowles et al., 2019; Wieder et al., 2017)	2022	Knowles, John	D, PP

Note. chl-a data (PP) are included with water quality data; co-located streamflow and stream water chemistry together are used to calculate cycling of both inorganic and organic nutrients. Identifiers for the last two rows reflect identifiers on Ameriflux.