

Figure S1.1. Seasonal variation in 2m air temperature along the elevational gradient for the

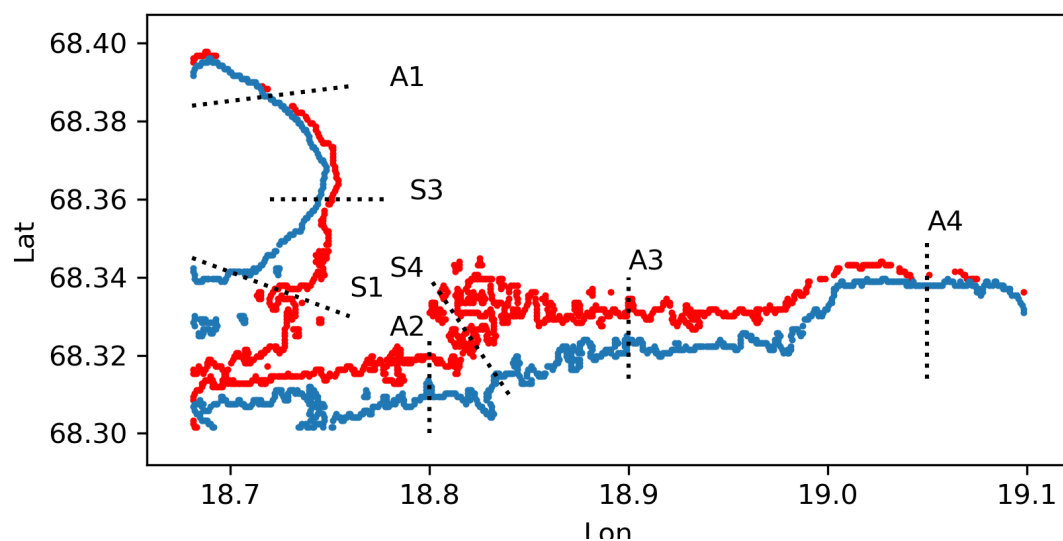


Figure S1.2. Treeline position in year 1915 (red) and 2010 (blue) along with placement of local transects. The latter were used to assess the heterogeneity of treeline migration within the landscape. Transects starting with S were also used by van Bogart et al

Table 1 - Treeline migration in local transects. See Figure S1.3 above.

Transect	Elevation shift (m)	Migration rate (m yr ⁻¹)	Reported (van Bogart et al. 2011)
A1	57	0,6	
A2	90	0,95	
A3	112	1,18	
A4	75	0,79	
S1	119	1,25	40 +- 15
S3	78	0,82	60+-15
S4	94	0,99	145+-10

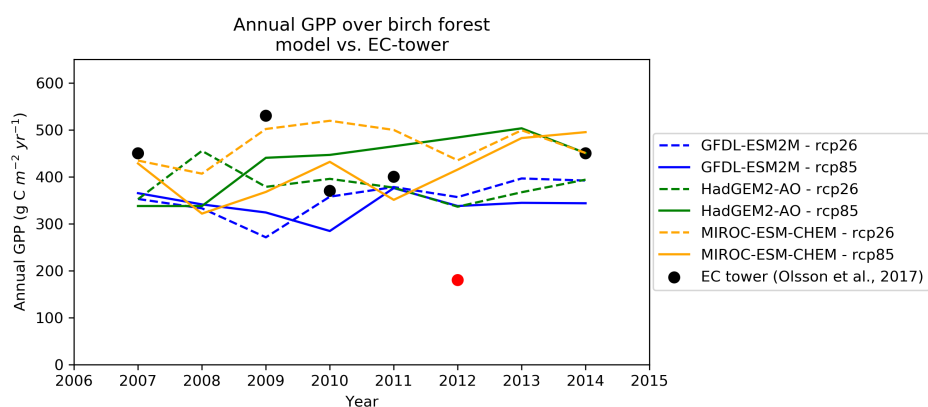


Figure S1.3. Annual GPP in the lower (warmer) section of the birch forest vs. Eddy covariance (EC) data obtained from Olsson et al (2017). Year 2012 (red marker) had a severe moth outbreak during the growing season and thus lower GPP.

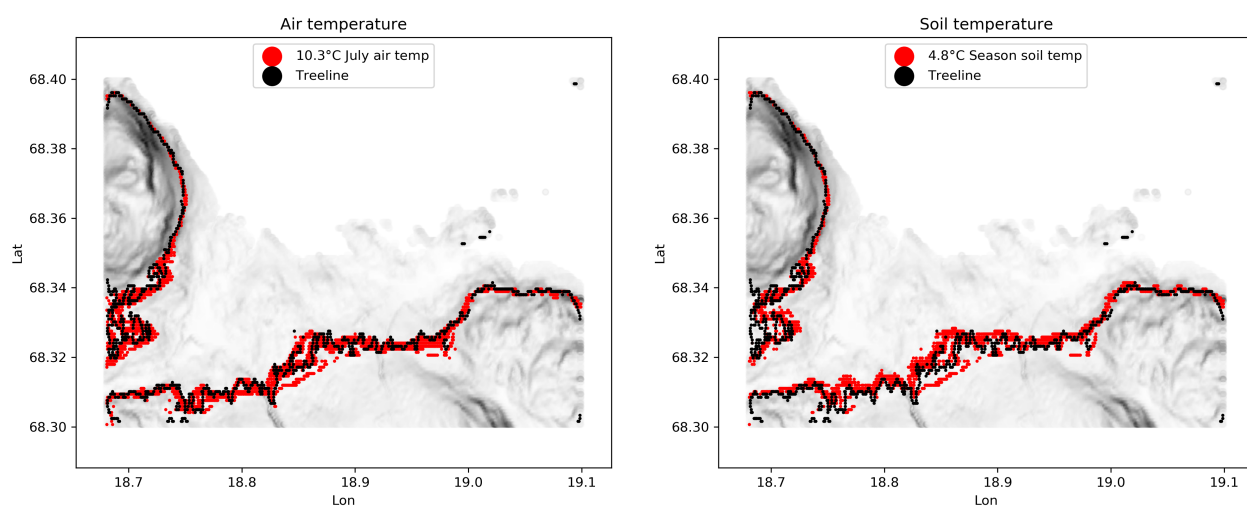


Figure S1.4. Correlation of historic (1990-2000) treeline with average growing season soil temperature and July air temperature.

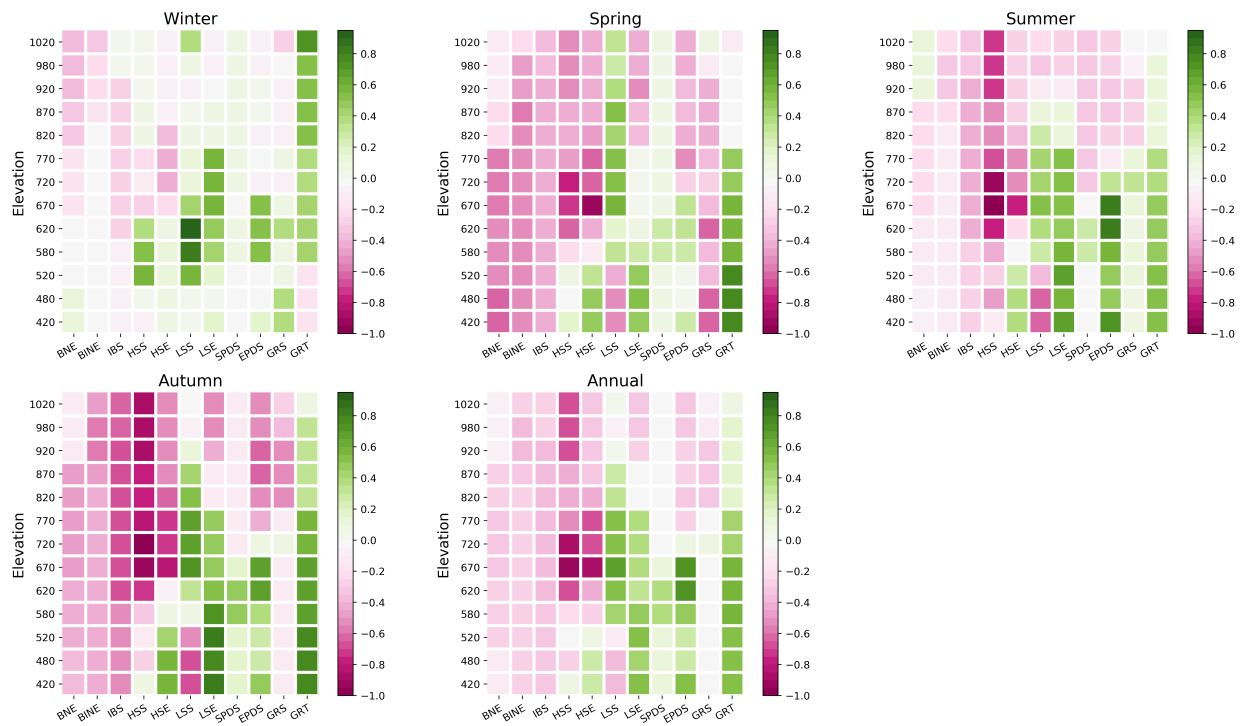


Figure S1.5. Spearman rank correlation between annual GPP for each PFT and a-d) seasonal and e) annual precipitation in the forest tundra ecotone.

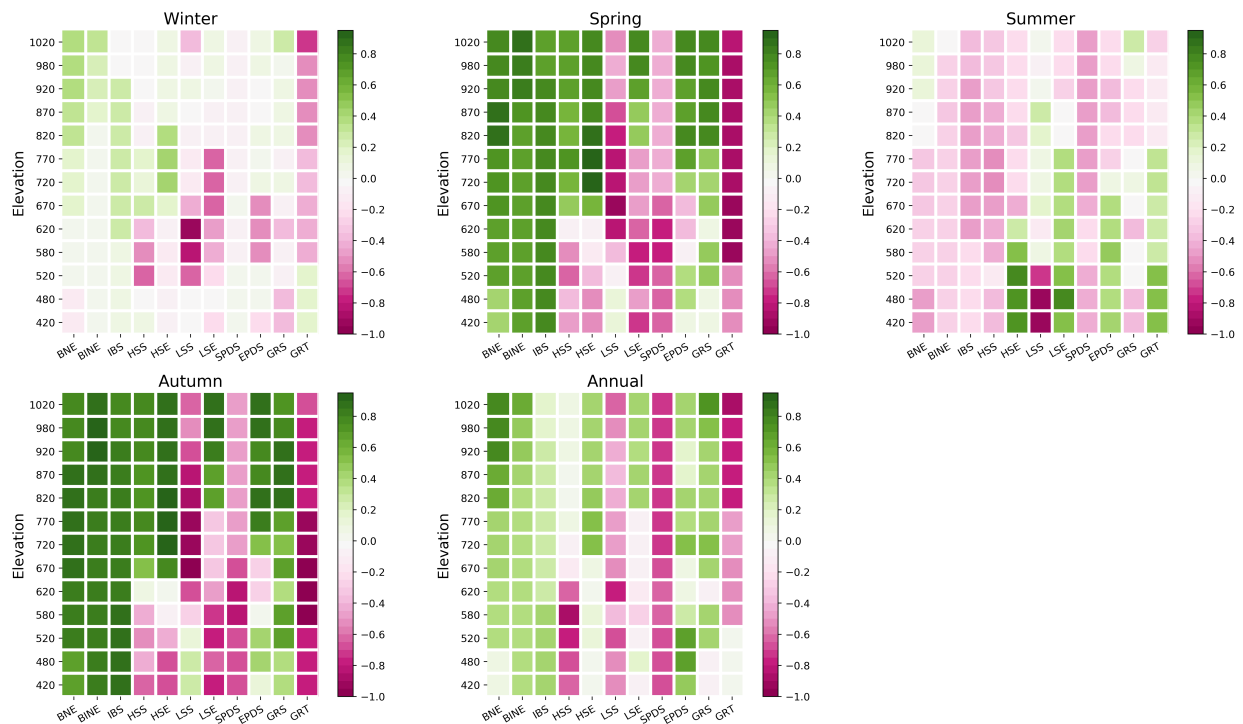


Figure S1.6 Spearman rank correlation between annual GPP for each PFT and a-d) seasonal and e) annual net shortwave radiation in the forest-tundra ecotone.