From 2011 through 2014, we quantified net N mineralization in each plot using the in situ buried polyethylene bag technique (Robertson et al. 1999; Bayley et al. 2005). In the last week of June of each year, we collected peat cores (6.5 cm diam., 10 cm deep), halved them longitudinally with a serrated bread knife, and placed them into separate polyethylene Whirl Pak® bags (initial N core and final N core), removing any live aboveground vascular vegetation from each peat core prior to placement into Whirl Pak® bags. Immediately after collection from the field, we extracted initial N cores (60 min per extraction) with 0.2 M KCl to displace NH4+-N and NO3--N (modified from Verhoeven et al. 1990). We buried final N cores in the peat profile from the same location from which they were removed and incubated in the peat matrix for approximately 30 days. Following the field incubation period, we extracted final N cores with 0.2 M KCl.

For 2011-2012 samples, we measured extractable NH4+-N and NO3--N concentrations on a Seal AA3 Autoanalyzer using phenate and hydrazine reduction methods, respectively; for 2013-2014 samples, we measured extractable NH4+-N and NO3--N concentrations on an OI Analytical Flow Solution IV instrument using the alkaline phenol and cadmium reduction methods, respectively.  We calculated net ammonification from the difference between final and initial extractable NH4+-N contents, net nitrification from the difference between final and initial extractable NO3--N contents, and net N mineralization from the difference between final and initial extractable NH4+-N plus NO3--N contents.