**List of datasets for Wilson et al. (2022) STOTEN** (https://doi.org/10.1016/j.scitotenv.2021.152757)

**FTIRNorm.csv:** Area-normalized FT-IR absorbances for the peat and plant species across the three dominant habitat types. Erio1\_5 is peat from the Fen collected from 1-5cm deep, Sph1\_5 is the bog peat from 1-5cm and Palsa1\_5 is the palsa peat from 1-5cm.

**PlantICR\_LOGlessSingles.csv:** Log transformed ICR intensities for plant samples. First column gives the observed mass/charge ratio followed by #C, #H, #O, #N, #13C, #S, #P, and #Na atoms in the assigned formula. El\_Comp indicates the elemental composition with regard to heteroatom content. Class indicates the assigned chemical class of the assigned formula. Neutral mass adds the mass of a hydrogen to the observed mass/charge ratio. Error indicates the mass error in ppm from the assigned formula. Candidate indicates how many potential formula were identified from which the assigned formula was chosen. The following columns give the data for each sample.

**PlantTissueProportions:** Biomass coverage of plant species across the habitat types, as fractions of the mass and C contributed by specific tissue types of each species to the total mass and C present for that tissue type for all plants in the habitat. SiteType = habitat type; PFT = plant functional type; Propmass = mass fraction (biomass of tissue type for species / total biomass of tissue type across all species in the habitat); SEmass = standard error of Propmass; PropC = carbon fraction (C in tissue type for species / total C in tissue type across all species in the habitat); SEC = standard error of PropC.

**solidandporewaterICR.csv:**  Log transformed FTICR-MS intensities for the dissolved organic matter and the extracts of the solid peat. First column gives the observed mass/charge ratio followed by #C, #H, #O, #N, #13C, #S, #P, and #Na atoms in the assigned formula. The following columns give the data for each sample.

**DOC\_DON\_data.xlsx:** Dissolved organic carbon (DOC) and dissolved organic nitrogen (DON) in the porewater from the Fen (E) and Bog (S) sites.