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Sphagnum decay rate as a functional trait

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The bryophyte genus *Sphagnum* (peat mosses) comprises some 40 species in Sweden, which are differently successful. My main objective is to screen functional characters in these species to evaluate which traits decide the species' differences in habitat, and differential distributions along microtopographic gradients, and whether it is possible to classify the species into functional groups that can be used to predict community composition after changes in environmental conditions. One important character in this genus is the notoriously slow litter decay rate. A number of studies show that there are differences in the individual species' decomposition rates, that rates may correlate negatively to growth, and that there is a resource allocation trade-off in *Sphagnum* between structural and metabolic carbohydrates. The expectation is that hummock-species degrade slower, and hollow species faster, particularly in the early stages of decomposition because the faster growth rate in hollow species implies a larger concentration of easily degradable carbohydrates.

With laboratory experiments using "litterbags" I am measuring decay-resistance in 15 species of *Sphagnum*, ranging different sections within the genus, and different habitats. Shoot sections were cut from two cm below the capitula and incubated in a constant environment with inocula containing microorganisms extracted from peat. The decay-rates will be compared with other attributes, such as phenolic and chlorophyll content.