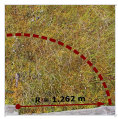

Apr 13, 2019

Working

Sampling macrofungi using fixed-sized plots

Gregory M. Mueller[1], John Paul Schmit[2], Sabine M. Huhndorf[1], Leif Ryvarden[3], Thomas E. O'Dell[4], D. Jean Lodge[5], Patrick R. Leacock[1], Milagro Mata[6], Loengrin Umana[7], Qiuxin (Florence) Wu[8], and Daniel L. Czederpilz[9], Daniel L. Czederpiltz[5]

[1]Field Museum of Natural History, Department of Botany, [2]University of Illinois at Champaign-Urbana, Department of Plant Biology, [3]University of Oslo, Botany Department, Biological Institute, [4]Grand Staircase - Escalante National Monument, National Park Service, [5]Center for Forest Mycology Research, Forest Product Laboratory, [6]Cost Rica National Institute of Biodiversity, [7]National Institute of Biodiversity, [8]AEMTEK, Inc., [9]Radford University

dx.doi.org/10.17504/protocols.io.z2xf8fn

Nina Filippova

ABSTRACT

The protocol for sampling conspicuous macrofungi using fixed-size plots.

THIS PROTOCOL ACCOMPANIES THE FOLLOWING PUBLICATION

Lodge D.J., Ammirati J.F., O'Dell T.E., Mueller G.M., Huhndorf S.M., Wang C.J., Stokland J.N., Schmit J.P., Ryvarden L., Leacock P.R., Mata M.I. 2004. Terrestrial and lignicolous macrofungi. In: Biodiversity of fungi. Inventory and monitoring methods. Mueller G.M. et al. (eds.) Amsterdam, Boston: Elsevier Academic Press. P. 127-172.

GUIDELINES

We recommend using an integrated set of sampling protocols for macrofungi, including opportunistic sampling, sampling of fixed-sized plots, and sampling of a fixed number of downed logs. That practice will optimize the number of macrofungal species recorded at a site by including all the conspicuous fungi while also providing quantitative data that are comparable with data from other sites. Repeated sampling of relatively small fixed-size plots and large trunks ensures that inconspicuous fungi and fungi on relatively scarce substrata are included in the study. These protocols are being used in the Costa Rican National Fungal Inventory (Mueller and Mata 2000).

MATERIALS TEXT

Flags or stakes for marking the plots, a permanent marker for flags numbering, a hummer for flags installation, a rope 1.262 m long to circumscribe 5-m^2 circular subplots, labels for collected specimens, bags or containers for specimens, a notebook and a pensil to write.

1 The investigator selects an area within the site for the permanent plot. The area should be representative of an important forest or grassland type at the site and should be chosen to optimize the diversity of habitat types sampled by the entire study (i.e., if the study covers grasslands, open woodlands, and dense forest, at least one plot should be set up in each habitat type). The plot should be established in as homogenous an area as possible and as easily accessible fro the road or trail as possible, without being susceptible to "edge effects" because it will be visited repitedly.

2 Each plot consists of 10 transects that are 100 m long. Typically, transects are laid out parallel to one another at 10-m intervals. If the shape of the area to be sampled does not allow that, however, some transects can be laid out end to end. Transects are marked every 5 m with a flag or stake. Each transect is assigned a unique letter, and each flag should be numbered sequentially within a transect (i.e. A1-A20; B1-B20; ...; J1-J20).

3 Each person sampling carries a plastic pipe or wooden pole and a rope that is 1.262 m long; the rope is used to circumascibe 5-m^2 sictular subplots around each flag in a transect, giving rise to 20 5-m^2 subplots per transect, for a total of 200 subplots, or a sampling area of 1000 m^2 (0.1 ha) per plot. Care should be used to not walk in or unnecessarily disturb the subplots.

4 All macrofungi occurring in a subplot are collected, labeled with the transect letter and subplot number, and placed in an appropriate bag or container. At the end of the collecting day, specimens are transported back to the field station for sorting, describing, photographing, and

drying. The substratum (soil, leaf litter, wood) is noted for each specimen.