MACROFUNGI COLLECTED IN THE BLACK HILLS OF SOUTH DAKOTA AND BEAR LODGE MOUNTAINS OF WYOMING FROM 1998-2003

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ABSTRACT

The survey has documented 290 species of macrofungi collected from 110 sites in the Black Hills of South Dakota and Bear Lodge Mountains of Wyoming from 1998-2003. Two-hundred and sixty-nine are new reports for the region. Two-hundred and forty-four species were identified from seven selected permanent sites, each of which was visited four times each year it was in the survey. Five of these seven sites were in the survey six years, one site five years and one site four years. Six of the sites were selected on the basis of favorable predicted fungal diversity and one drier site was selected for comparison purposes. Areas for permanent sites ranged from 0.5 to 10.8 hectares and canopy cover was estimated from 30-82%. Botany Bay, a narrow, moist canyon with dense vegetation dominated by *Picea glauca, Ostrya virginiana, Betula papyrifera* and *Pinus ponderosa* had the highest fungal species diversity/ha/yr (30.67) and Alabaugh Canyon, a dry, open woodland dominated by *Pinus ponderosa* and *Juniperus scopulorum* had the lowest fungal species diversity (0.54). Statistical analysis showed a significant correlation between species diversity and canopy cover ($r = 0.80; p = 0.03$). Twenty-one percent of genera collected from the seven permanent sites are primarily mycorrhizal, 36% are soil/litter/dung saprobes and 52% wood saprobes. Numbers of newly collected species from five of the seven sites that were in the study for six years decreased each year, but 29 of the total 196 species were collected in 2003.