

## THE EFFECT OF FIRE ON FUNGAL AND MICROARTHROPOD POPULATIONS OF BLACKTAIL BUTTES

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Because of the failure to burn Blacktail Butte in 1973 (the area that we sampled intensively that summer), our strategy during the summer of 1974 was to arrange our field work so that even if areas in the Park were not burned, some interesting information could still be obtained from a summer's field work. To accomplish this end we included in our sampling two communities on Forest Service land that were scheduled to be burned, aspen and sage on Burro Hill. We also expanded our sampling to include a large segment of the above ground insect community.

Burro Hill was the only prescribed burn in 1974 and here we will be able to accomplish the outlined objectives. However, in the other areas, we have done enough sampling of above and below ground insects to make some useful comparisons between communities. The samples are currently being processed and we anticipate 2 or 3 manuscripts to be ready by May, 1974.

The following is a brief summary of the field work done between June and October of 1974:

1. Soil and litter samples were collected in six habitats (aspen, sage and lodgepole, control and burn) during mid-summer and late summer. The samples were returned to University of Wyoming for processing. In addition, microhabitat information was collected on litter depth, soil profiles and soil temperatures.
2. Natural litter was collected from pine and sage, defaunated, and returned to the field. Recolonization was measured in this litter for 30 days. The object was to measure the recolonization rate of litter as a function of habitat type.
3. The study was expanded to include some of the above ground insect community. One hundred and fifty insect sweep samples were made weekly in the aspen, sage and lodgepole for 9 weeks. Eight hundred sweeps were also collected in the sage, aspen, lodgepole and Douglas fir to determine species/area curves for each habitat and to compare the results with comparable sweep sampling from other areas in the state.

4. We also noticed that significant numbers of aspen were being attacked by leaf mining lepidoptera. Aspen stands were sampled from Teton Village north to GTNP's northern border. The percentage of leaves affected and the percent damage/leaf was determined.
5. At the end of July soil and litter samples were collected in the prescribed burn areas on Blacktail Butte and its control so we could ascertain the degree of change in the community structure since our previous sampling in 1973.
6. Soil and litter were sampled in burned and unburned areas of the Waterfall Canyon fire. Preburn litter depth was measured. Tree cores were taken and DBH measured of fire damaged trees.
7. In September, sterile litter was placed in the burned sage on Burro Hill to measure recolonization by soil organisms. Two weeks later one half of the samples were collected. The remaining will be collected in the spring of 1975.

Hopefully, the projected burns will be carried out in 1975 and we seek a continuation of funding to continue our studies.