

Plant Ecological Studies in Grand Teton
National Park: Coniferous Communities
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This summers work was a continuation of a project began during the summer of 1964. The period 14 June 1965 to 10 August 1965 was spent working on the project as well as short periods both earlier and later than the given dates.

Forest communities were defined at the union level from quantitative information obtained by the random-pairs method in the tree stratum, line-intercept method in the tall shrub stratum and by 2 x 5 dm plots in the field layer. The communities recognized are: lodgepole pine/pinegrass; lodgepole pine/lowbush huckleberry; lodgepole pine/highbush huckleberry; lodgepole pine/buffaloberry; Douglas fir/highbush huckleberry and aspen/geranium, with recognition of the changes that are presently occurring in each. An attempt was made to map these communities but only partial success was attained due to small patchy communities and diffuse boundaries or ecotones.

Increment core samples were taken from over 400 trees for the purpose of aging, dating fires, and computation of a growth rate for each tree. Only one fire date was definitely set by this method; some others were estimated. The growth rate varies with species, exposure, competition and edaphic factors. The highest growth rate for lodgepole pine was encountered in the outwash plain where it is sparsely scattered.

Four tentatively permanent plots were laid in various areas where a change in floristics is indicated for the purpose of noting the successional trends over a period of several years. Some of these were placed across the ecotone between two understory unions and some were placed in the ecotone between the forest unit and the sagebrush-grassland unit.

Dial-gauge dendrometer readings were taken on various days throughout the summer from four lodgepole pine trees located at the Research Station. Growth of the trees apparently had commenced some prior to the initial reading on 30 May and continued to about 10 August. This data was correlated with other researches in various parts of the Rocky Mountains and Canada.

Approximately 25 soil-test holes were dug in various parts of the study area to examine the soil profile as to color, textural, structural and consistency differentiation. These characteristics were related to the type of vegetation possessed by the immediate area. Some representative soil samples were collected and are pending a more thorough mechanical analysis.

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