

## Trends in Vegetation in Teton County, Wyoming

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After the field season of 1967 some twenty years of work in the area had been accomplished. During recent years emphasis has been placed on the aspen community because this community is that most altered by continuing heavy grazing pressure resulting from winter feeding of large elk populations.

Aspen occupies more than one situation in Jackson Hole. The commonest and most characteristic of these niches may be categorized as follows:

- (a) spring areas on south slopes
- (b) snowbank areas on north slopes
- (c) forest margins
- (d) swamp margins.

Aspen does not compete well inside a mature forest whether limber pine, narrowleaf cottonwood, lodgepole pine, or spruce. In either developmental forests or their mature stages, aspen is found at the margin. Although the stand enlarges aspen may persist temporarily within.

Mature aspen groves in their proper niches are dominant and exclusive, not developmental. However, aspen stands in which the environment has been altered by game are susceptible to the stages of disclimax and secondary succession. As a result lodgepole pine may invade.

Under natural and favorable conditions a single aspen seed may find a place to germinate and grow. The sapling will be formed in five to ten years, the tree will be mature in ten more years, and may be approaching senility in another ten. Competition may delay sapling formation and excessively favorable growth conditions may hasten old age. Suckers and saplings are intimately connected to the mature tree. In developing stands these are produced only at the margins. Stands of trees of even size with sufficient canopy coverage are frequently devoid of new tillers.

Often when a stand has developed uniformly so that the oldest trees are central and younger trees occur toward the margins the old trees may die (partly from old age and partly from competition) resulting in the formation of a fairy ring. At times these fairy rings enlarge leaving an open center dominated by herbaceous vegetation. Formation of fairy rings in aspen seems to be most characteristic of youthful areas such as Teton County, Wyoming where primary succession is a common sequence of events--in such cases the area available for occupancy by aspen is large and the available niches numerous.

In thinned stands of aspen, stands which are opened by game through winter grazing, and where a few trees have died from disease, girdling, or old age, the exposed trunks find themselves increasingly vulnerable to wind. As the top-heavy trees are whipped by the wind they snap off from 10 to 20 feet from the ground. These broken trunks which are left do not, as a general rule, stump sprout.

Assisted by Mat Terry

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