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Cedar Creek

Prescribed and controlled burning as a means of maintaining and improving natural forest areas was described and illustrated with slides; and results were examined in the field at the Cedar Creek Natural History Area during the 1981 fall meeting of the Minnesota Academy of Science.

The demonstration was presented as a modern-day replication of the process by which natural forces function in the renewal of forest and prairieland resources. Information presented at the meeting emphasized that changes which follow development of urban rather than rural conditions and more effective fire control have eliminated fire as dynamic ecological factor in many areas of Minnesota.

Questions naturally arise when basic processes of natural cycles are modified, and information distributed to the Academy of Science members attending the meeting offered capsule explanations for some of the most common concerns. In reviewing this information, it is of course essential to realize that the renewal by fire sometimes affects very large areas; while the Cedar Creek demonstrations were both limited in scope for obvious reasons and conducted on sites and schedules planned to enhance research knowledge as well as to improve growing conditions.

The Cedar Creek Natural History area has been a project of the Academy and the University of Minnesota.

Nature's Cycle and Human Interests considered

A frequent question asks the reason for deliberate burning on property that is operated as a "natural" area. Frank D. Irving, professor of forest resources at the university, had a multi-faceted explanation for that, relating to both structured research and nature's processes.

A major goal of Cedar Creek, he has said, is to maintain the oak savanna and tall grass prairie habitats, even if necessarily on a small scale. Since it is obvious that the cycle of nature has been interrupted permanently by modern fire control methods and by extensive urbanization. These conditions practically eliminate fire as an ecological force, but it is acceptable to use fire in research.

Even on the limited acreage of the Cedar Creek facility,

however, experimentation is conducted in a manner that "could continue forever," according to staff scientists.

For those interested professionally in the Cedar Creek's program, it is emphasized that prescribed burning began in 1964. An area of 378 acres was designated for treatment with fire, and it was marked off into 12 compartments to be paired for experimentation. Because compartments have been burned several times over at various intervals, the total "burned over" acreage is much greater than the entire Cedar Creek natural history area.

Research compartments range from 6 to 68 acres, and the burnings are conducted as training exercises for university students registered in forestry and wildlife management.

Danger-avoidance built into the procedure

April and May are the months when burning is scheduled as periods when moisture is likely to be adequate. Other weather conditions are watched closely for favorable or unfavorable indications. High temperatures, high winds, and the sun of high noon are avoided. The calmer air that usually prevails in late afternoon is the preferred time for burning. Additionally, existing road boundaries and cleared areas also expand the fire break zone around test compartments.

Significance of results is the final answer

In the stands of oak, thin-barked species have suffered heavy mortality from burnings. But burr oak has demonstrated strong survival ability. At the lower shrub layer, which is predominantly hazel in the Cedar Creek environment, fire pruning has been accompanied by increases in grasses and associated herbs. The animal populations also have responded to the vegetation changes, Irving's research reports have shown. Animal gains reflect improved feeding situations or better cover.

According to one report, savanna vegetation in the prairie land requires fire at times just as a domestic house lawn of blue grass requires intermittent mowing.