

Prairie Restoration/Management At Homestead: A History

By James Stubbendieck and Gary D. Willson

Homestead National Monument of America (HOME) is located 5 miles west of Beatrice, Neb., on 160 acres first homesteaded by Daniel Freeman in 1862. In 1936, Congress set aside the 100 acres of formerly abused pasture and cropland and 60 acres of woodland as a permanent monument to the homesteading era. Physical features of the site are dominated by Cub Creek, a major tributary to the Big Blue River, and its adjacent bottomlands. The balance of the site is made up of moderately steep glacial till with eroded sandy and gravelly side slopes.

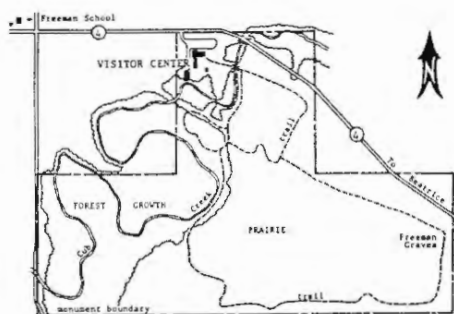
Because of the importance of prairie to the settler, the primary objective of HOME has been restoration of the landscape to approximate the original conditions encountered by Daniel Freeman. This goal has been evident from the first management plan written by Wildlife Technician Adolph Murie circa 1938. Murie described two possible restoration methods; one was transplanting sod from a local prairie, and the second was seeding. He realized the advantages of sodding by stating, "... not only is prairie grass brought into the area, but also native species of prairie herbs." In preparing this first management plan, Murie contacted the eminent prairie ecologist, Dr. J.E. Weaver of the University of Nebraska, who felt that this project, "contained the possibilities of an excellent experiment ..."

When the site was acquired by the National Park Service, severe erosion had occurred on the upland slopes, heavy depositions of silt were on the lower slopes, and the woodlands were cutover and heavily grazed. Management during the early years at HOME

centered around stabilizing the severely abused soil and protecting newly planted native grasses.

At least 40 acres of the site were under cultivation as late as November 1939. Park records indicate that the first seeding took place in 1939 with seed gathered from a prairie located approximately 5 miles to the west. The approximate seed mixture was 45 percent big bluestem; 50 percent little bluestem; and 1 percent each of Kentucky bluegrass, needleandthread, indian-grass, prairie dropseed, and sideoats grama. The first sodding also was carried out in 1939 to control severe sheet, rill, and gully erosion on the coarse-textured south upland slopes. Source of the sod is unknown.

Park map.



Cropped upland and overgrazed woodland at Homestead NM in 1939.



Recent view of restored upland prairie at Homestead NM.

The following is a selected summary from park records of the management history at HOME between 1942-1986.

1942 - Additional seeding and sodding along with the construction of small check dams to slow erosion.

1943 - Weed control; sunflowers were mowed and bindweed was treated with sodium chlorate.

1947 - Sodding in upland gullies; seeding and local prairie hay mulch used in eroding areas.

1948 - Additional spot seeding; sod added to the uplands; selective grazing suggested as a means of reducing fire hazard.

1949 - First use of a herbicide other than sodium chlorate (2,4-D).

1951 - 40 acres moved.

1952 - Upland hayed.

1953 - Bottomland hayed.

1954 - Seeds harvested.

1955 - Smooth brome grass infestation noted.

1963 - 2,4-D used for weed control.

1964 - Lowlands heavily infested with weeds. Dalapon used for smooth brome control and 2,4-D for broadleaf weeds.

1965 - Thatch buildup leads to complete mowing.

1968 - Smooth brome mowed.

1969 - 7-11 acres of lowland seeded.

1970 - First prescribed burn; 2,4-D applied.

1976 - Four acres of lowland reseeded.

1979 - Woody plants sprayed with ammonium sulfate; routine 2,4-D spraying program stopped.

1980 - 17-acre wildfire occurred.

1982 - Quantitative vegetative sampling begun; prescribed burn in April (8 acres); manual removal of musk thistles and common mullein.

1983 - Entire prairie burned; 4 acres of weedy lowland mowed.

1984 - Weedy lowland mowed; fall burn of small overgrown sumac; herbarium assembled.

1986 - Lowland area sodded and planted with approximately 3,000 greenhouse grown seedlings from locally collected prairie seed.

This chronological summary shows clear changes in management emphasis as prairie restoration at HOME evolved. The first priority of soil stabilization gave way to an interest in more natural management of vegetation. For example, prescribed burning replaced mowing and the general use of herbicides. A logical, progressive understanding that management procedures can be integrated and selected to obtain certain results has occurred. Interest has also moved from native grasses in the early stabilizing years of HOME management in the 1930s and 1940s, to an interest in legumes in the 1950s, and on to a more recent and complex understanding of the role of forbs. Quantitative sampling of the vegetation was initiated in 1982 and a herbarium was assembled in 1983 and 1984. A recent concern has emerged over the use of local gene pool sources for future introduction of plants, which indicates a further evolution of the park's understanding of the prairie ecosystem.

HOME is one of the oldest ongoing prairie restorations on a man-altered landscape. The only other nearly contemporaneous example is restoration of the Curtis Prairie in Madison, Wis., in the 1930s. The Curtis Prairie started with a less disturbed site and benefited from the intensive labor of CCC crews and close association with Dr. John Curtis and University of Wisconsin graduate students.

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