PRAIRIE STUDIES AT CATERPILLAR TRACTOR CO. PEORIA PROVING GROUND

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Abstract. This slide presentation will discuss Caterpillar Tractor Company's use of native plants for both landscaping and erosion control. Prairie remnants found on Company property will also be included in the presentation.

Introduction

Caterpillar Proving Ground is a 2550-acre facility located several miles north of East Peoria, Illinois. This site is used to test and evaluate earth moving equipment before, during and even after machines have been put into production. Many tests simulate and supplement construction applications. However, the majority of tests involve moving vast amounts of earth. This type disturbance creates many severe erosion problems. These problems were left unchecked until the late 1960's when a conservation program was started. A very important part of this program is the recycling of test areas. This accomplishes 2 things. First, better test data are obtained because soil parameters are closely controlled; this provides more consistent and uniform tests. Second, the amount of land designated for test fields, slopes, and roads was reduced to approximately 300 acres in the center of the Proving Ground allowing the remaining "Buffer Zone" to be made as ecologically sound as possible.

Prairie Restoration and Maintenance

Once bare areas are now green. Gullies or washes were filled, slopes seeded, and culverts installed to carry runoff water to the bottom of ravines. Ditches were check-dammed and the side slopes sodded.

All of the initial seeding was with smooth brome, perennial rye, tall fescue, and sometimes crown vetch. Later, as an interest in prairie developed in the area, most of the seeding was converted to a seed mixture of prairie grasses. Partially responsible for this interest is a 20-acre remnant located on the property. Thirty-eight native plants have been identified, and the list is incomplete. Many visitors, students, science clubs, academy of science have toured this prairie — some collecting seeds for other projects in the Peoria area.

The first attempt at establishing a prairie at the Proving Ground was on a 5-acre fill that once was a badly eroded gulley. Because of limited knowledge and experience only grass seed was sown. This was a 6-species mixture consisting of big bluestem, little bluestem, Indian grass, switch grass, side-oats gramma, and wheat grass. This mixture was applied with a hydro-seeder and, because of the bare sub soil condition, fertilizer at the rate of 400 lbs/acre was applied. In the first 2 or 3 years, switch grass was the only grass visible (without very close inspection) but after 5 years all 6 species could be found, and in more abundance each succeeding year.

The same 6-species mixture was used on several more areas with similar results. The slopes around the main retention lake were seeded and caused concern because nothing seemed to appear the first year! Worry was premature because soon prairie was coming on strong, this time with side-oats taking the lead with more and more little bluestem subsequently appearing.

As indicated earlier, most prairie planting at the Proving Ground is for erosion control but after observing some prairie landscape at other company facilities, 10 acres along the Proving Ground entrance road, previously mowed, were sown. This time a mixture of forbs was added to the grass seed. Black-eyed susan and Indian grass were the predominant species in this area in the first 3 years.

The first burn at the Proving Ground was conducted in spring of 1979. The older prairie

burned vigorously while the more recently developed areas had lighter, more sparse fire. In a few days, however, all looked plush!

It will be a continuing practice to use prairie planting in erosion work, and to increase the prairie landscape for aesthetic beauty and reduction of maintenance costs.

Finally, it should be mentioned that because of the conservation program, 2 impressive things are occurring: much more wildlife is being attracted to the area, and prairie is reestablishing itself in small patches, often in unlikely places.