Prairie Restorations: What to Expect and Why

Within the first year of many prairie seeding projects, we receive calls asking "Where's the prairie? All I see are weeds!" First, let's make sure we mean the same thing; a weed in a prairie planting is any non-native unwanted species. Second, make sure what you see are really weeds. For those used to turf grass lawns, a young native prairie plant may look like a weed. Third—and most important—realize that because of the methods of prairie restoration and the growth habit of prairie plants, weeds are almost always present and visible in the initial phase of the prairie planting. Following is what you should expect in the first few years.

Restored prairie

YEAR ONE

Site Preparation

In most cases, agricultural fields, old pastures, and fallow fields are selected for prairie plantings. This is not surprising, since historically these areas were probably once prairie or savanna and were converted to farm fields because of their excellent soils.

Site preparation for a prairie uses the same practices and equipment a farmer uses in farming. Depending on the situation, it may be necessary to apply herbicides to kill weedy vegetation, or it may involve disking, tilling, and re-contouring. Unfortunately, these practices are also extremely conducive to establishment of non-native weeds.

In addition, years of agriculture have allowed thousands (sometimes hundreds of thousands) of weed seeds to build up within the soil. While a farmer can apply selective herbicides to control most weeds resulting from disturbing this *seed bank,* the prairie restorationist can't because the herbicides are also lethal to many prairie plants.

Plant Strategies:

There can be lots of weeds in a new prairie restoration. *But don't panic.* It's only natural…and usually temporary. Most weeds associated with farm fields and prairie plantings are annuals; they germinate, grow, set seed and die in one growing season. Also most annuals tend to grow early, fast and tall.

On the other hand, most native prairie plants are biennials (require two growing seasons to flower) and *perennials* (which continue to grow year after year). Biennials typically form a low-growing rosette the first year and flower the second year. Perennials, since they depend on below-ground structures for so much of their existence, invest large amounts of time and energy in root production and may show very little above the surface in the beginning. A typical native prairie perennial may have ten to thirty times as much root mass as it shows with above ground growth. For example, the Lead plant *(Amorpha canescens)* is 1'–3' tall for most of its life, but often has roots that reach down 15 feet.

So these contrasting plant strategies of rapid growth vs. slow growth result in what many people see as just a field of weeds. Think of it in context of the fable of the tortoise and the hare; we all know who eventually wins that race. Again, don't panic, be patient. The native prairie plants are in there. And now we can use the weeds' strategy against them.

Site Maintenance

During the first growing season, when the vegetation reaches about 18", mow it down to a height of 6–12" inches. Remember that the weeds' strategy is to grow fast and tall, and cutting dramatically affects the weeds and prevents them from producing seeds. However, the perennials are usually too short to be injured by the mowing. Remember to adjust your mowing height low enough to cut off the flowering tops of weeds before they seed, yet high enough to protect low growing perennials.

We also recommend that you refrain from watering or fertilizing because those only benefit weedy species. Native perennials are adapted to the natural conditions and require no additional watering or fertilizer.

YEAR TWO

All the weedy annuals that germinated in year one have died and, if proper maintenance was done, the number of weed seeds in the soil has been greatly reduced. The native biennials and perennials, with their

Native prairie planting in the Spring of the second year.

well-established root systems, now begin to allocate a greater portion of their energy to above-ground plant parts. What you begin to see is called "succession," the process by which one plant community replaces another. In this case, it is the beginning of the perennial prairie species replacing the weed community. Remember, this is not an "all-or-nothing" process, and some weed species can persist for years. Prairie plants—with increased production of above ground structures and superior root systems—will gradually out-compete and replace the weeds. Expect some prairie plants to flower in year two.

Site Maintenance

Since soil disturbance is essential for the weeds to continue to survive, *do not* pull weeds. Even the small area of disturbed soil from pulling a weed can let many more seeds that are still in the soil germinate. Continue mowing as needed.

Fire is an integral part in the maintenance of a healthy native prairie and has been for thousands of years. By investing a large portion of their nutrients into underground roots, prairie plants are well adapted to life with fire. Weedy annuals have no such protection and cannot cope with repeated fires. Again, be patient; one initial fire will not rid your prairie of all weeds. Burning is most effective in early spring or late fall, and if you are not familiar with controlled burning or are dealing with a large area, *please consult a professional.*

YEAR THREE, FOUR AND BEYOND

Burning may be required, if there is sufficient above-ground dried fuel, for several consecutive years. Generally after Year Four, the prairie plants will be well on their way and it may only be necessary to burn every two or three years. Years Three and Four should become increasingly colorful as more and more of the prairie plants reach sufficient health (vigor) to flower.

A professional prescribed burn in action