Upland sites are characterized as being dry most of the year. Soils at these sites are well drained and may consist of sandy clay, sandy loam, loam or shale. The topsoil layer may be thin and subject to drought. If yours is a sandy site, refer to the Southeastern U.S. Sites Establishment Guide, p. 38.

**Upland examples:** Naturally rocky soil that has been subject to erosion or steep road cuts.

**Meadow examples:** Abandoned farm fields, previous lawns, vacant land or roadsides.

**SITE PREPARATION**

If your site was previously a lawn or crop field to which herbicides were applied, it is important that you allow the appropriate interval for the residues of those herbicides to break down prior to planting your meadow. Some herbicide residues can prevent seedling germination.

Competition from invasive or undesirable vegetation is the most limiting factor in upland meadow preparation. Prior to planting, all such vegetation must be fully controlled. Typical control strategies include repeated tilling, smothering with black plastic or herbicides.

When using the tillage strategy, a site is disc harrowed every two to four weeks for a one to two-month period. The underlying premise of this process is that the root system of perennial species will be worn out to the point of killing the species. In addition, tillage will stimulate germination of dormant weed seed which will be killed by subsequent tillage. Planting should not occur until perennial species are completely killed.

Black plastic may also be used to kill weeds. It may be laid across tilled or untilled soil and anchored down by burying the edges in soil or laying boards or bricks across the surface. This protocol should be utilized during a growing season where the intent is to fall plant in the same year or spring plant the following year.

The application of an approved herbicide, such as glyphosate (Roundup® or Rodeo®), is the most common and least time-intensive protocol for controlling existing vegetation. Herbicides are most effective on actively growing plant tissues; therefore, they are very effective on new growth in the
spring. Spraying should begin when growth is approximately 6” high. One to two weeks later, a follow-up application of spray may be made to address skips or persistent species. If substantial plant tissues remain on the surface following a full kill by herbicides, a close mowing, tillage or burning may be necessary to achieve good seed-to-soil contact.

**HABITAT:** Typically in full sun for at least half the day with good air circulation; generally occupied with UPL, FACU and FAC species.

**FERTILITY:** Natural fertility is usually adequate; fertilizer and lime are not needed (fertilizer often helps weeds and invasives). Check your soil pH and select species adapted to that pH.

**SEEDING METHOD:** Hand seed, broadcast seed, hydroseed or drill seed.

**MAINTENANCE**

For seedings of annual wildflower mixes or annual & perennial wildflower mixes, problem weeds should be hand pulled.

For all other mixes:

**FIRST GROWING SEASON MAINTENANCE**

Whenever canopy (overall vegetation) reaches a height of 18”-24”, use a brush hog mower or string trimmer to trim the meadow to a height of 8” (Note: A lawn mower is not recommended as the mower height will be too low and native seedlings will be killed). This will reduce competition by fast-growing weeds for sunlight, water and nutrients needed by slow-growing perennial natives. Mowing should cease by mid-September.

Problem weeds should be hand pulled or spot sprayed with approved herbicides (such as Roundup® or Rodeo®).
SECOND & SUBSEQUENT GROWING SEASON MAINTENANCE

Prior to new spring growth reaching a height of 2" (e.g., shortly after forsythia or redbud blooms), trim any material standing from the previous year close to the ground (approximately 2''). This will allow the soil to warm more quickly, which will stimulate the emergence and growth of native seedlings and reduce the likelihood of the meadow being invaded by shrubs.

Problem weeds should be hand pulled or spot sprayed with an approved herbicide.

SPECIAL CIRCUMSTANCES - SECOND GROWING SEASON

If you notice a heavy infestation of ragweed or foxtail in the second growing season, trim the meadow to a height of 8". Trimming should cease by mid-September.

The following mixes are used in full sun with well-drained soils and provide food and/or cover for wildlife. Meadow and wildflower mixes provide food for insects, including native pollinators:

- ERNMX-102-1 - Pipeline Mix with Switchgrass
- ERNMX-105 - Northeastern U.S. Roadside Native Mix
- ERNMX-110 - Ernst Native Biomass Mix for Strip Mines & Natural Gas Production Sites
- ERNMX-111 - Ernst Native Habitat for Strip Mines Mix
- ERNMX-115 - Biodiverse Polyculture Mix for Biomass Production & Wildlife Habitat
- ERNMX-117 - Warm Season Grass Mix
- ERNMX-171 PLS - Warm Season Grass Mix
- ERNMX-123 - Native Upland Wildlife Forage & Cover Meadow Mix
- ERNMX-125 - Northeastern U.S. Roadside Native Mix without Grasses
- ERNMX-137 - Showy Northeast Native Wildflower & Grass Mix
- ERNMX-151 - Deer-Resistant Meadow Mix
- ERNMX-156 - Low-Growing Wildflower & Grass Mix
- ERNMX-166 - Plateau-Tolerant Wildflower & Grass Mix
- ERNMX-167-1 - Plateau-Tolerant Wildflower Mix
- ERNMX-167 - Annual Wildflower Mix
- ERNMX-168 - Northeast Annual & Perennial Wildflower Mix
- ERNMX-169 - Southeast Annual & Perennial Wildflower Mix
- ERNMX-170 - Annual & Perennial Wildlife Food Plot Mix
- ERNMX-171 - Multi-Purpose/Multi-Year Wildlife Food & Shelter Mix
- ERNMX-172 - Maryland Upland Mix
- ERNMX-173 - Eastern Native Habitat & CREP Mix
- ERNMX-174 - Virginia Gentleman’s Mix
- ERNMX-177 - Eastern Ecotype Native Grass Mix
- ERNMX-187 - Southeastern U.S. Roadside Native Mix

Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

Ernst Conservation Seeds has developed hundreds of mixes for these types of projects. For additional mixes, including state-specific mixes, please visit www.ernstseed.com.

DISCLAIMER: The information in this review of practices is the result of more than 50 years of experience in seed production. Ernst Conservation Seeds has been supplying seeds and consulting in the reseeding of tens of thousands of acres of roadsides, surfacemined lands, conservation and restoration sites in eastern North America, as well as growing and supplying seed and consulting in the planting of hundreds of thousands of acres of CRP/CREP-related areas for erosion control and wildlife habitat. All of these practices are opinion only and our best advice as a result of these experiences. These recommendations do not cover all of the conditions that will be encountered in the field. All of the information is for individual consideration. Ernst Conservation Seeds is not responsible for conditions that will be encountered in individual situations. The use of brand names does not represent our endorsement of a specific product; rather, it represents our experience only and has not necessarily been replicated in peer-reviewed research. The use of chemical pest control agents is subject to manufacturers’ instructions and labeling, as well as federal, state and local regulations.