

Leaving pastures to manage themselves often leads to weed infestations, reduced yields, and poor quality stands. Nova Scotia pasture management presents many challenges including soils with low pH, a variable growing season, invasive weeds, and a small grazing window. However, pastures can be improved quickly by implementing solid management practices.

Natural pastures in Nova Scotia are generally made up of bluegrass, bentgrass, white clover, quackgrass, and creeping red fescue. Some higher quality grasses and legumes such as timothy, orchardgrass, meadow fescue, tall fescue, Kentucky bluegrass, red clover, white clover, and birdsfoot trefoil are common in tame pastures (*Figure 1*).



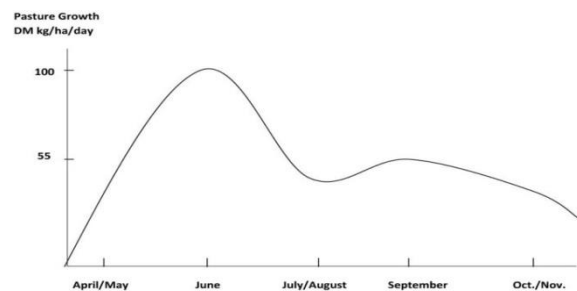
*Figure 1. Tame Nova Scotia pasture.*

Establishing and maintaining tame pastures is complex due to the nature of the pasture, which is to take stress from grazing livestock and continue to provide for the season. Building better pastures requires consideration of the stresses that the stand will endure and offering that stand the best defenses available, ideally, with the least economic input.

Grazing stresses stands. Plants rely on their leaf areas to store sugars and complete photosynthesis. When plants are defoliated by grazing, their ability for regrowth is limited.

Cattle and sheep are selective grazers and will graze higher quality plants first. If stocking densities are low (i.e. animals aren't forced to graze lower quality plants), lower quality grasses will dominate because they have not been compromised by grazing pressures.

The variable growing season presents another challenge in the Maritimes. A variety of grasses and legumes, with varying optimal conditions, need to be established to provide feed throughout the entire season. *Figure 2* shows how dry (DM) accumulates. Cool season grasses tend to do well in the beginning of the growing season, drop through the hotter months and then peak again in the fall. Legumes tend to remain relatively stable until the fall and can fill the gap presented by grasses in mid-summer.



*Figure 2. Seasonal pattern of DM accumulation over the growing season. Adapted from the Maritime Pasture Manual.*

It is also important to consider the forage growth curve in planning pastures. Optimal quality generally peaks early in the plant's life cycle, while yield is much greater at maturity. The best time to graze should maximize quality and yield, just prior to maturity. Ideally, grazing should be followed by a rest period to permit regrowth. This can be accomplished by implementing strip or rotational grazing systems.

Grazing should commence when stand height averages between 5-9 inches. Animals should be moved to a new strip or plot when the stand

averages approximately 2 inches. Fields can be sampled by walking a W pattern across the field and measuring intermittently or with the boot method (Figure 3).



Figure 3. Boot method of sward height assessment for rotational or strip grazing.

Pasture quality can be assessed by:

- **Soil health**
- **Diversity of Plant species**
- **Weeds**

Make necessary adjustments to these indicators by following industry recommendations on soil amendments (usually adding lime and balancing nutrients from manure and fertilizers), adding legumes to the stand (commonly red clover or trefoils), and controlling weeds (mowing or spraying).

Pastures may need to be completely renovated by tilling and re-seeding with a new pasture mix. Table 1 shows the recommended pasture mixes for imperfectly drained soils in the Maritime Provinces.

Completely re-seeding a pasture does have advantages; lime and manure can be well incorporated, establishment of legumes is usually greater, and there is an opportunity to work in a break crop (to break a weed cycle). However, this method can be expensive. If there are specific areas of the pasture (flooded spots, weedy areas) that need to be renovated, efforts can be concentrated there.

Other renovation options include:

- **Frost-seeding** in early spring with an aggressive species such as clovers and meadow fescue. Early morning is a good

time to frost seed as the seed will be worked into the soil with freeze-thaws throughout the day.

- **No-till seeders** are available to Nova Scotia producers (contact Perennia's Bible Hill office at 902-896-0277) and offer another economical option for encouraging better quality species to establish on pasture. No-till seeding limits stress on soils and can be very successful if pastures are grazed or mowed after seeding to reduce competitive plants, allowing better establishment.
- **Livestock seeding** or bale feeding on pastures over the winter are slower processes but are effective and economical.

Table 1. Recommended pasture mixes for imperfectly drained soils. Adapted from Maritime Pasture Manual.

Continuously grazed	Rotationally grazed
Timothy (30%) Kentucky bluegrass (30%) Trefoil (30%) White clover (10%)	Timothy (25%) Reed canary (20%) Kentucky bluegrass (20%) Trefoil (25%) White clover (10%)
Tall fescue (35%) Kentucky bluegrass (30%) Trefoil (25%) White clover (10%)	Tall fescue (30%) Kentucky bluegrass (20%) Timothy (20%) Trefoil (20%) White clover (10%)
	Timothy (30%) Kentucky bluegrass (30%) Trefoil (30%) White clover (10%)
	Timothy (30%) Reed canary (30%) Trefoil (30%) White clover (10%)

The Maritime Pasture Manual is available at: <http://www.perennia.ca/portfolio-items/forages/>

For more information contact the EFP Team or visit the factsheet section of our website at <https://www.nsfa-fane.ca/efp/resources/factsheets/>



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