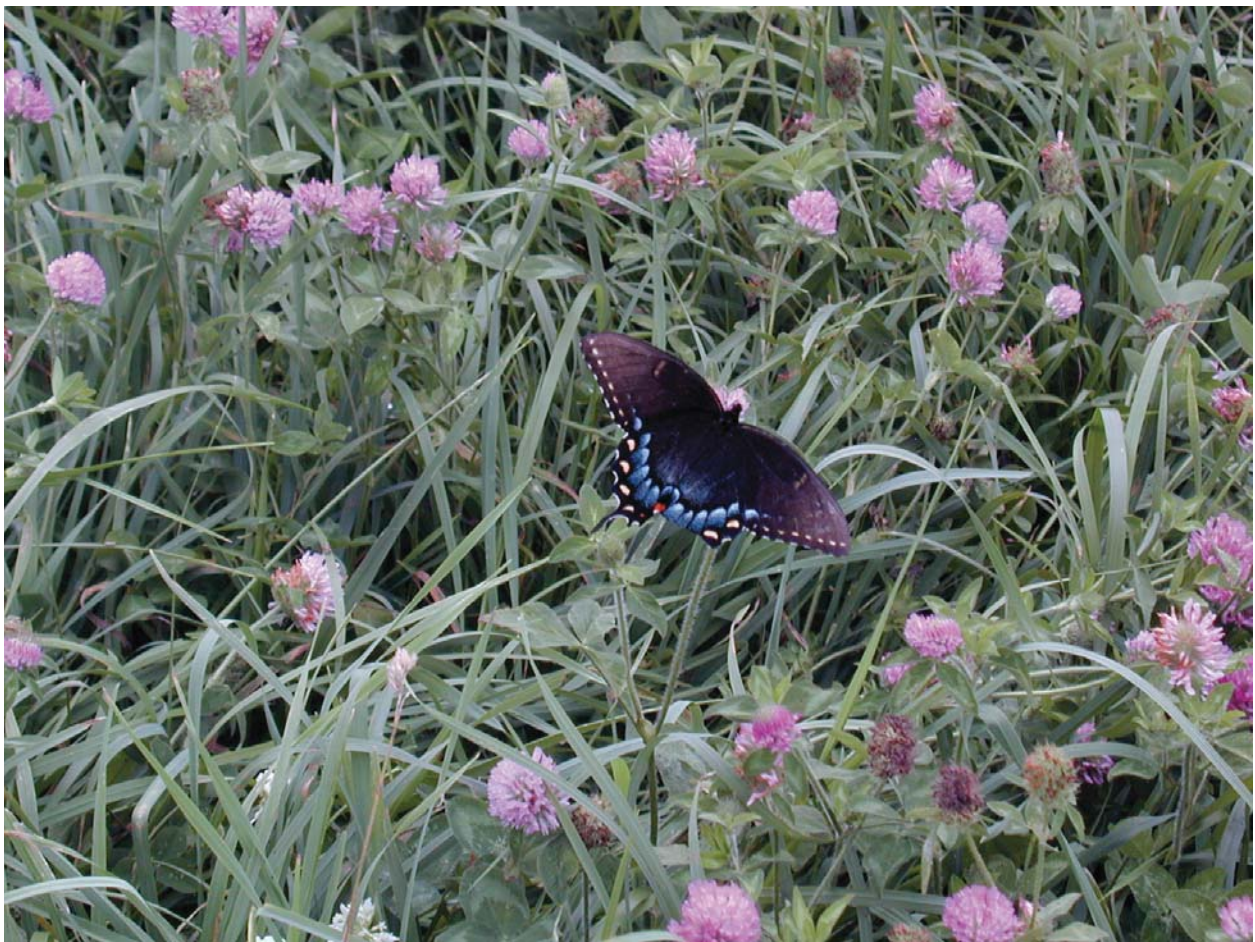


Pasture Plants of the Northeastern US

USDA ARS PSWMRU
University Park, PA



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Second Edition: March 2018

<http://grazingguide.net/pages/pasture-plants.html>

Temperate humid grazing lands are an important component of the landscape of the northeastern United States, as well as of the economy of this region, yet unlike their European counterparts, little is known about their basic ecology. During an eight-year survey of 44 farms across the northeastern United States, we sampled 136 modified Whittaker plots on pastureland, some multiple times (482 plots sampled across all years), and found 326 identifiable plant species. These pastures were highly diverse, with a mean of 9 species per 1 m², and as many as 32 in 1 m² and 73 in the whole 1000 m² area sampled. Although most agronomic species have been introduced to the region, nearly half of the species we identified were native.

Figure 1. Locations of farms sampled for this survey.

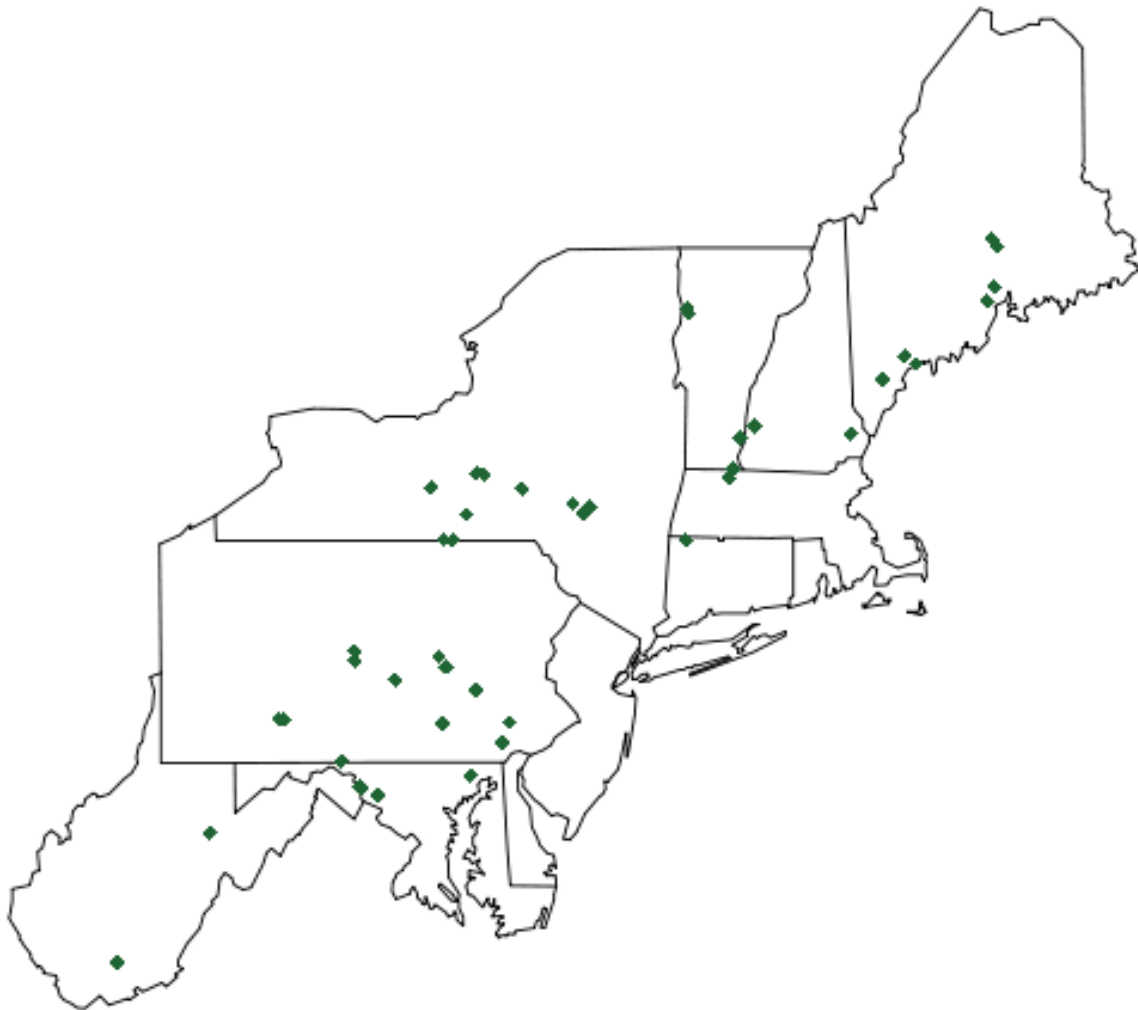


Table 1. Species richness by life history type and functional group.

	Introduced	Native	TOTAL
Annual forbs	38	27	65
Biennial forbs	15	2	17
Perennial forbs	51	73	124
ALL FORBS	104	102	206
Annual legumes	4	0	4
Perennial legumes	11	2	13
ALL LEGUMES	15	2	17
Annual grasses	18	4	22
Perennial grasses	25	15	40
ALL GRASSES	43	19	62
Annual vines	2	1	3
Perennial vines	3	2	5
ALL VINES	5	3	8
Woody perennials	9	24	33
TOTAL	176	150	326

This second edition adds many new species to the guide, with additional photographs and black and white line art from the 1913 edition of the three-volume *An Illustrated Flora of the Northern United States, Canada and the British Possessions*, by Britton and Brown.

Table 2. Species found on the highest percentage of farms.

	Frequency
Kentucky bluegrass	100.0
dandelion	100.0
white clover	100.0
orchardgrass	97.7
timothy	97.7
common plantain	97.7
red clover	97.7
yellow wood sorrel	90.9
quackgrass	88.6
tall fescue	88.6

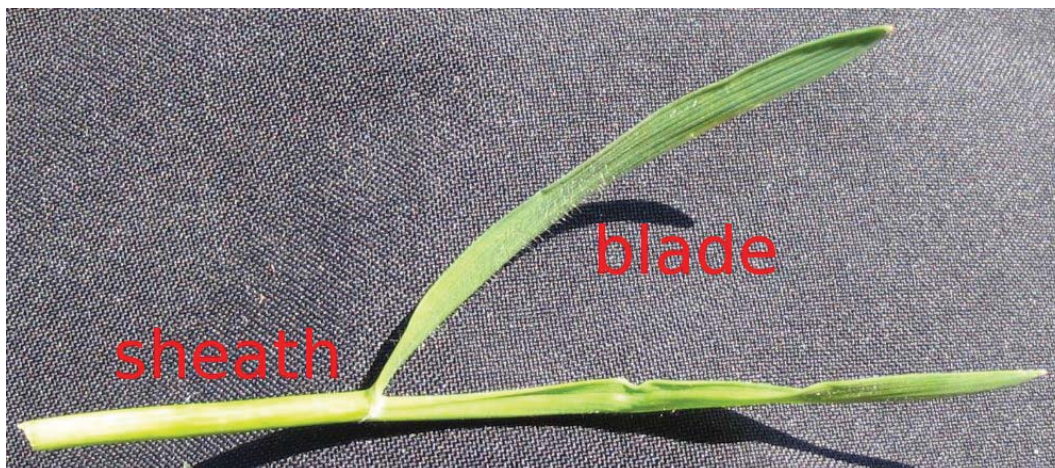
Table 3. Most abundant species by mean percent cover across all samples.

	Cover (%)
Kentucky bluegrass	16.4
tall fescue	13.5
orchardgrass	11.7
white clover	10.2
dandelion	5.0
perennial ryegrass	4.3
timothy	3.6
quackgrass	3.0
common plantain	2.1
red clover	2.1

Parts of Grasses

Sheath: part of leaf wrapped around stem.

Blade: free part of leaf. May be folded or rolled when young.



At the point where the leaf blade meets the stem (top of the sheath), some species have a membrane called a **ligule**, or the leaf wraps around the stem as an **auricle**.

Ligule



Auricle



Parts of Forbs

Forbs are broad-leaved plants, or non-grasses. Legumes are forbs, but for pasture plant lists are usually itemized separately because of their importance.

When identifying forbs, it can be useful to look at leaf arrangement and leaf shape, as well as flower color, shape, and number of petals.

Arrangement: Leaves can be arranged **alternately** along the stem, in pairs (**opposite**), or **whorled**, with multiple leaves at a single point. Leaves can also form a **rosette**, with no stem.



Alternate

Opposite

Whorled

Rosette

Shape: Leaves can be entire (with smooth margins), toothed, lobed, or dissected.

Entire

Toothed

Lobed

Dissected



Leaves can also be compound, with many leaflets making up a single leaf. The leaflets can be arranged palmately, like fingers on a hand, or pinnately, like a feather.

Palmate



Pinnate



In some species, the base of the leaf wraps around or **clasps** the stem.



Some forbs have **stipules**, growths at the base of the leaf that may be leafy or spiny.

