Common Grasses & Meadow Plants
Jim Kennedy, NH Coverts

- Identification
  - Taxonomy
  - Ecology
  - Gestalt

- Gramminoids
  - Grasses
  - Sedges
  - Rushes

- Forbs
  - Wildflowers
  - Legumes
  - Ferns
  - Weeds
# Grasses - Identification

## Characteristics of Forage and Pasture Grasses Found in the Northeast U.S.

<table>
<thead>
<tr>
<th>Species</th>
<th>Growth Habit</th>
<th>Seedhead</th>
<th>Leaf Characteristics</th>
<th>Other Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bluegrass</strong> (<em>Poa</em> spp.)</td>
<td><em>Kentucky</em> – <em>P. pratensis</em></td>
<td>Short, low growing perennial</td>
<td>Kentucky</td>
<td>Truncate ligules</td>
</tr>
<tr>
<td></td>
<td><em>Canada</em> – <em>P. compressa</em></td>
<td>Grasses; they form a dense sod</td>
<td>Canada</td>
<td>Narrow leaves with boat shaped tip</td>
</tr>
<tr>
<td></td>
<td></td>
<td>spreading by short rhizomes; Ky BG is</td>
<td></td>
<td>Leaves folded in bud shoot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dark green and Can. BG is blue-green</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Annual bluegrass</strong> <em>Poa annua</em></td>
<td>An annual often found near gates and laneways where soil is compacted</td>
<td>Many short rhizomes</td>
<td>Kentucky</td>
<td>Truncate ligules</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Canada</td>
<td>Narrow leaves with boat shaped tip</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Leaves folded in bud shoot</td>
</tr>
<tr>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Roughstalk bluegrass</strong> <em>Poa trivialis</em></td>
<td>Creeping perennial</td>
<td>Small, short panicles</td>
<td>Pointed ligule</td>
<td>Leaves have boat shaped tip and double grooved, translucent midrib when held in light; leaves folded in the bud shoot</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>crinkled leaves</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Orchardgrass</strong> <em>Dactylis glomerata</em></td>
<td>Tall growing bunchgrass;</td>
<td>Loose, green panicle</td>
<td>Pointed ligule; rough surface</td>
<td>Leaves strongly folded</td>
</tr>
<tr>
<td></td>
<td>Long leaves that are lighter green compared to other grasses;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leaves strongly</td>
<td>Prolific tillering grass</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>folded in bud shoot</td>
<td>Panielle seed head with ball-like clumps</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long, pointed ligule, no auricle</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Diagram

- **Seed head** (inflorescence)
- **Leaf & node** (ligules, auricles)
- **Stem** (culm)
- **Roots** (cespitose, rhizomatous)
- **Basic parts of a grass plant**
- **Aboveground reproductive stem - Stolon**
- **Underground reproductive stem - Rhizome**
- **Leaf & node (ligules, auricles)**
- **roots (cespitose, rhizomatous)**
Gramminoids (grass-like Plants)

SEDGES have edges

RUSHES are round

GRASSES have joints down to the ground

1 bract under sac (periginium)

6 bracts under capsule

2 bracts (glumes) under floret
Grasses - Types

Sod-forming Grasses (rhizomatous & stoloniferous)
- quackgrass
- brome grasses

Cool Season Grasses
- bluegrasses
- fescues
- ryegrass

Warm Season Grasses
- bluestems
- switchgrass
- crabgrass

Bunch Grasses (cespitose)
- orchard grass
- red fescue
Gestalt: the whole is greater than the sum of its parts

<table>
<thead>
<tr>
<th>WHERE</th>
<th>WHEN</th>
<th>WHAT</th>
<th>HOW</th>
<th>WHO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hayfield</td>
<td>Summer</td>
<td>clumped seed heads bunch grass</td>
<td>single clumps</td>
<td>ORCHARD GRASS</td>
</tr>
<tr>
<td>Wet Meadow</td>
<td>Winter</td>
<td>tall seed stems wide flag leaves sod-forming</td>
<td>thick masses</td>
<td>REED CANARY GRASS</td>
</tr>
</tbody>
</table>
WHERE - Ecological Groups

* Woods
* Weedy & Waste Places
* Cover Crops & Grains
* Ornamentals
* Hayfield/Pasture/Lawn
* Upland & Prairies
* Wet Meadows & Marshes
* Riparian & Floodplain
<table>
<thead>
<tr>
<th>Season</th>
<th>TOP DOZEN</th>
<th>EASY ID</th>
</tr>
</thead>
</table>
| **SPRING** | sweet vernal grass  
kentucky bluegrass                          | meadow fescue  
rushes  
sedges                                      |
| **SUMMER** | orchard grass  
timothy  
smooth brome  
red/hard fescue  
redtop  
perennial rye | quackgrass  
crabgrass  
barnyard grass                              |
| **FALL**   | switch grass/panicums  
big/Little Bluestem            | purple lovegrass  
phragmites  
cordgrasses                               |
| **WINTER** | reed canary grass  
winter rye                           | poverty grass  
wild rye                                   |
**sweet vernal grass**
*Anthoxanthum odoratum*

**Grasslands**

- ✓ short brown spike-like panicle
- ✓ hairs at base of short pointed leaf

sweet smelling short bunch grass
Kentucky bluegrass
Poa pratensis
turf grass, pastures - universal species

✓ boat-shaped leaf tip
✓ grooved leaf with translucent midrib
✓ open triangle-shape panicle

3-5 branches/node
cobwebby hairs on lemma
glumes shorter than first lemma
orchard grass
*Dactylis glomerata*
turf grass, pastures - universal species

- Very clumped form, wintergreen leaves
- Ball-like clumps of 1-sided spikelets
- Long pointed ligule
- Very clumped form, wintergreen leaves
<table>
<thead>
<tr>
<th><strong>Timothy</strong>&lt;br&gt;Phleum pratense&lt;br&gt;Forage grass - hayfields</th>
<th><strong>Meadow Foxtail</strong>&lt;br&gt;Alopecurus pratensis&lt;br&gt;Hayfields</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ pencil spike</td>
<td>✓ corms - “onions”</td>
</tr>
<tr>
<td>forked florets&lt;br&gt;(meadow foxtail has awns)</td>
<td></td>
</tr>
<tr>
<td>sweet tasting stem base</td>
<td></td>
</tr>
</tbody>
</table>
Timothy vs. Meadow Foxtail

Timothy has a spike-like panicle that usually heads out late (mid to late June). The Spikelet has two “horns”.

Meadow foxtail has a spike-like condensed panicle that usually heads out early (late April to May). Spikelet has a single awn.

These are the two most common grasses in the Northeast with spike-like panicles.

Anthers protrude out of the florets to disperse pollen during anthesis (flowering).

Slide courtesy Sid Bosworth, UVM
smooth brome*
*Bromus inermis
Forage grass - hayfields

✓ 1-sided long, thin spikelets with no awns
✓ “M” in middle of leaf

curly leaves - black fungal spots
red fescue
*Festuca rubra var.*
Turf & conservation, dry fields

- ✓ clumping habit
- ✓ tight inflorescence
- ✓ rolled, thin leaves

sheep fescue
*Festuca trachyphylla (ovina)*
conservation, dry fields

- ✓ shorter glumes, awned lemmas
redtop
Agrostis gigantea
wet meadows, conservation

✓ red tops

bent grass
Agrostis capillaris
lawn grass, dry fields

single florets

✓ tight inflorescence
perennial rye*
*Lolium perenne*
Turf & conservation, hayfields

- ✓ spikelets on **EDGE**
  - “ryeee”
- ✓ dark green shiny leaves, midrib
- ✓ zig-zag stems
  - A rye grass spikelet is oriented in a flat plane along the peduncle
- ✓ spikelets on **EDGE**
  - “quaaak”
- ✓ long clasping auricles
- ✓ long white roots

quackgrass*
*Elytrigia repens*
Weedy pest

- ✓ spikelets FLAT
  - “quaaak”
- ✓ constriction at tip of leaf
- ✓ long clasping auricles
- ✓ long white roots

Slide courtesy Sid Bosworth, UVM
switchgrass
_Panicum virgatum_
warm season grass

✓ wide open panicles
with _single_ seeds

fall panicum
_Panicum dichotomiflorum_
weedy, waste areas

✓ cloud of panicles, tumbleweeds
little bluestem
Schizachrium scoparium
warm season grass

✓ small fuzzy seed heads
✓ long fuzzy seed heads
✓ turkey foot

✓ bunch grass growth forms

big bluestem
Andropogon gerardii
warm season grass

✓ tan, orange, purple fall colors
reed canary grass
*Phalaris arundinacea*
Hayfields, Wet Meadows

✓ wide pointed “flag” leaves

✓ lines of leaves, stems, heads
Native
Warm Season
Perennial
Rhizomatous

winter rye*
*Secale cereale
Cover crop, conservation

✓ bristly seed heads

Canada wild rye
*Elymus canadense
riparian areas

✓ gray-green
stems, leaves
Common Meadow Plants

• Wildflowers
• Legumes
• Weeds
• Ferns
## Pollinator Plants

<table>
<thead>
<tr>
<th>Season</th>
<th>HIGH VALUE</th>
<th>INVADERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPRING</td>
<td>dandelions golden alexanders heal-all plantain</td>
<td>golden alexanders wild chervil sheep sorrel hawkweeds ragged robin</td>
</tr>
<tr>
<td>SUMMER</td>
<td>milkweeds daisies clovers legumes joe-pye weed Queen Anne’s Lace</td>
<td>bedstraw wild parsnip yellow rattle chickory</td>
</tr>
<tr>
<td>FALL</td>
<td>goldenrods asters</td>
<td>tall goldenrods thistles</td>
</tr>
</tbody>
</table>
common dandelion
*Taraxacum officinale

golden Alexanders
*Zizia aurea
Lawn Weeds

broad-leaved plantain*
*Plantago major

heal-all
*Prunella vulgaris
Milkweeds

common milkweed
Aclepias syriaca

swamp milkweed
Aclepias incarnata

butterfly milkweed
Aclepias tuberosa
Daisies

ox-eye daisey*
Leucanthemum vulgare

black-eyed Susan*
Rudbeckia hirta
Legumes

Racemes
- Alfalfa
- Sweetclover
- Vetch

Umbels
- Birdsfoot trefoil
- Black medic
- Alsike clover

Flower Heads
- White clover
- Red clover
Pollinator Weeds

wild carrot (Queen Anne’s lace)*
*Daucus carota

joe-pye weed
*Eupatoriadelphus maculatus
Goldenrods

Group 1
early/gray/seaside
Solidago spp.

Group 2
tall/Canada/late
Solidago spp.

Group 3
downy/hairy/white
Solidago spp.

Group 4
blue-stemmed/zig-zag/slim
Solidago spp.

Group 5
grass-leaved/slim
Euthamia spp.
New England aster
Symphyotrichum novae-angliae

Flat-topped white aster
Doellingeria umbellata

Smooth blue aster
Symphyotrichium laeve

Photos courtesy Toby Alexander, VT NRCS
Commonly Found Weeds in Vermont Pastures

Sid Bosworth, Extension Professor, Department of Plant and Soil Science, University of Vermont sid.bosworth@uvm.edu

There are many weeds that can be found in pastures in Vermont. The following list represents some of the more commonly found species or some of the more problematic species. According to a 2010 survey of 49 pasture farms in Vermont, the top five weeds identified as most problematic were smooth bedstraw, common milkweed, Canada thistle, goldenrod and bull thistle. To see the complete list, refer to Table 1.

Weeds vary in their habitat and degree of aggressive growth. Some weeds are opportunistic only showing up in open areas or compacted areas near fence gates and watering sites. Others can be quite competitive and will spread quickly through a field or pasture.

To see a larger image, click on the respective thumbnail picture.

Broadleaf Weeds

Bedstraw, Smooth
Creeping perennial
Propagation by seed and rhizomes
Very aggressive spreading weed

Buttercup species
Simple and/or creeping perennial
Propagation by seed (and stolons for some species)
Mildly toxic to livestock but usually unpalatable

Burdock
Biennial
Propagation by seed
Mostly found around watering or feeding areas
Worst Weeds

whorled (smooth) bedstraw*  
*Galium mollugo

common thistle*  
*Cirsium vulgare

little yellow rattle*  
*Rhinanthus minor
Field Session

Noon - 12:45 Lunch Break

12:45 - 3:00 Field Session at the Strafford County Farm

Led by Matt Tarr and Andy Fast, UNH Cooperative Extension