• What is “renovation”?
• Why renovate?
• How do we renovate?
• Alternatives to total renovation.
• When is the best time to renovate?
• Choosing the right grass.
**What is turfgrass renovation?**

- The process of killing the existing vegetation and regrassing or seeding without grading or tilling.
- Slopes and grades are acceptable – the turf “just” failed

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**Partial Renovation**

Overseeding without disturbing existing stand

- Vegetation is not killed
- Broadleaf weeds treated before overseeding
- Mow existing vegetation low before overseeding
  - growth regulator may be used

- Equipment
  - slice seeder
  - aerator
  - dethatching unit

Key to success with this method is getting seed to soil!
Other Methods for Reestablishment

Total reestablishment

• Step one - kill off existing turf with non-selective weed killer
• Wait 7-10 days
• Step two - rototill disk or plow the entire area
• Step three - soil amendments as needed
• Prepare seed bed and plant
• Follow post care recommendations

Other methods for reestablishment continued:

Reconstruction – Involves modifying or rebuilding the soil

• may be required if soil is poor texture or shallow depth
• soil amendments may be added to modify existing soils
• drainage may be added at the time of reconstruction
Why renovate?

1) Existing turf has failed

2) Plant newer varieties and/or cultivars

1) Existing Turf Failed

Before Renovation ask:

• Why did turf fail?

• How do I correct the cause that led to turf failure?
Reasons for failure of established turf:

Shade

Corrective Measures:
- Improve air movement – prune and clear underbrush
- Improve light – prune or tree removal
- Select the correct grass species
- Select the proper trees at time of planting
- Plant alternatives to grasses

It may come down to trees or turf

Reasons for failure continued:

Weed encroachment

Corrective Measures:
- Maintain proper plant health
  - management practices
  - cultural practices
- Promote plant density – no voids!
- Select the correct grass species for the location or purpose.
- Develop a weed control program
Reasons for failure continued:

Insect problems

Corrective Measures:
- Practice IPM
- Actively scout
- Select endophytic grasses
- Develop an insect control program
**Reasons for failure continued:**

**Disease problems**

Corrective Measures:
- Maintain proper plant health
- management practices
- cultural practices
- Do not overwater
- Irrigate to species requirement
- Create air movement
- Select resistant grass species

**Drought**

Corrective Measures:
- Maintain plant health
  - management practices
  - cultural practices
- deep roots
- Irrigate
- Select the correct grass species
**Reasons for failure continued:**

**Poor Drainage**

Corrective Measures:
- Improve drainage
- Adjust irrigation programs
- Improve irrigation design
- Select the correct grass species

**Wear and/or compaction**

Corrective Measures:
- Select the correct grass species*
- Fertilize as needed
- Maintain plant health**
  - management practices
  - cultural practices - aeration
Reasons for failure continued:

Unforeseen events

Unforeseen events

2) Another reason to renovate:
Establish new varieties and cultivars:

Different color or texture desired

Creeping red fescue

K.B.
New varieties and cultivars continued:

**Overall Improved performance**

- Improved mowing heights and quality
- Heat and drought tolerance
- Shade tolerance
- Wear tolerance

---

**Steps in “complete” renovation:**

1. Evaluation of site – determine the cause for failure
   - Soil test
**Turfgrass Evaluation Form for New England Home Lawns**

<table>
<thead>
<tr>
<th>Address:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Total area in square feet/acre:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Age turf stand or establishment date:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1. Turfgrass species present, approximate percentages:</td>
</tr>
<tr>
<td>Kentucky Bluegrass  Fine leaf fescue</td>
</tr>
<tr>
<td>Perennial ryegrass  Full leaf fescue</td>
</tr>
<tr>
<td>Others:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>2. Overall turf density:</td>
</tr>
<tr>
<td>_____ high            _____ medium            _____ low</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>3. Growing conditions/environment:</td>
</tr>
<tr>
<td>a. Shade:</td>
</tr>
<tr>
<td>_____ heavy            _____ partial shade/sun          _____ full sun</td>
</tr>
<tr>
<td>b. Thatch:</td>
</tr>
<tr>
<td>_____ 0.5”            _____ 0.5”-1”                      _____ &gt; 1”</td>
</tr>
<tr>
<td>c. Mowing:</td>
</tr>
<tr>
<td>Clippings collected</td>
</tr>
<tr>
<td>Height of cut</td>
</tr>
<tr>
<td>Mowing problems (height of cut, dull mower, infrequent, etc.)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>d. Water:</td>
</tr>
<tr>
<td>Drainage overall characteristics</td>
</tr>
<tr>
<td>Irrigation:</td>
</tr>
<tr>
<td>_____ if yes, evaluate below:</td>
</tr>
<tr>
<td>Too much            _____ Too little            _____ last right</td>
</tr>
<tr>
<td>Recommendations to improve growing conditions /environment:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
4. Soil Conditions:
   a. Soil texture
   b. Soil Test Results:
      pH
      Potassium
      Phosphorus
      Calcium
      Magnesium
      Other:
   c. Soil Compaction
      not compacted  Moderately compacted  severely compacted
   Recommendations to improve soil conditions:

5. Pest Problems:
   i. Weeds:
      a. Broadleaf weeds:
         Dandelion
         Clover
         Narrow-leaf plantain
         Mouse-ear chickweed
         Violet
         Ground ivy
         Speedwell
         Other(s):
      b. Grass or "grass-like" weeds:
         Crabgrass
         Goosegrass
         Poa annua
         Poa trivialis
         Creeping bentgrass
         Yellow nutsedge
         Other(s):
   ii. Insect Problems:
      White grubs
      Billbugs
      Wireworm
      Soil Weevil
      Cutworm
      Other(s):

6. Disease Problems:
   Red Thread
   Powdery Mildew
   White rust
   Rust
   Brown patch
   Pythium
   Fairy Ring
   Gray snow mold
   Other
   Other
   Other
   Other
   Other
   Other
   Other
   Other
   Other
   Other
   Other
   Other
   Other

Recommendations for reducing pest problems:

Recommendations for improving lawn:

Evaluator: ____________________________
Date of evaluation: ____________________
2. Determine:

- What are my customers expectations?
- How will the turf be utilized?
- What are maintenance inputs?
- What are the growing conditions?

Species or cultivar selection

3. Alleviate the cause that created the problem
4. Apply nonselective herbicide (glyphosate)
   • Allow to translocate through roots, rhizomes etc. (approximately 10 days)

5. After existing vegetation has died - mow down (scalp) and remove debris
6. Aerate – Relieve compaction
   • Increase soil to seed contact
   • THE MORE THE BETTER!

7. Amend - based on soil tests
   • Lime
   • Fertilizer – N, Phosphate, etc.
8. Seed into existing vegetation

Ensure good soil to seed contact

Slits with Seed
9. Broadcast seed or lightly drag to “work seed” downward into soil, seed slits and aeration holes

- Water-light and often
- Diseases- watch for pythium and damping off
- Mowing
  - first mowing turf 1/3 taller desired height
  - mow dry
  - collect clippings
  - use sharp mowers
- Weed Control- Tupersan® or mesotrione (spring seeding)
  - Herbicides after 5 mowings read the label
- Fertilizer- apply light application .5 - 1 lb. fertilizer 3 weeks after emergence

10. Post care for newly seeded areas

photo: J. Henderson
Mulch (for bare soil seeding)
- aids in germination
- keeps moisture and heat in ground

Types of mulch-
- straw weed free
- hay
- paper - ie. Penn Mulch

Ensuring success in planting

1. Remove excessive thatch
Excessive thatch will inhibit good soil to seed contact when overseeding.

Methods of thatch removal

If seeding after dethatching and not slicing in seed, add 20% to seeding rate.

http://www.progreenlawncare.co.uk/6.html
Total removal of vegetation should be considered when thatch is > than 1”

- Time of planting
- Selecting the right grass for the right location
  - What is turf to be used for
  - Location- shade or sun
  - Degree of or cost of maintenance
  - Soil conditions
  - Drought resistance
  - Growth habit
  - Color and density
  - Disease resistance
Common Turfgrasses Utilized in New England
“Home Lawn” Grass Seed Mixtures

Bluegrasses
- Kentucky

Ryegrass
- perennial
- annual

Fescues
- fine leaf
- turf-type tall

Kentucky bluegrass - Poa pretensis

- H.O.C. 0.5-2”
- Medium/fine texture
- Full sun
- Newer cultivars shade tolerance
- Medium/high mgmt
- High nitrogen needs
- pH 6-7
- Irrigation required
Kentucky bluegrass continued

Desirable Characteristics

- Good grass for home lawns
- Propagated by seed or sod
- Medium to dark green color
- Survives drought through dormancy
- Excellent low temperature hardiness
Kentucky bluegrass continued:

- Good wear tolerance
- Good recuperative potential

**Management Challenges**

- Thatch
- Disease - summer patch, leaf spot
- Insect
- Summer dormancy
- Shade tolerance - Poor
- Fertility - Medium to high
- Salinity tolerance - Poor
- Establishment - slow
  - 14 days

Ryegrass

K.B.
Ryegrasses - Species Lolium
Two ryegrasses: perennial and annual

*Perennial Ryegrass - *Lolium perenne*
Most widely used Rye

**Uses:**
- Lawn mixes
- Roughs
- Parks
- Roadsides
- Athletic fields
- Golf courses
- Endophytic varieties

*Perennial Ryegrass continued:*

**Characteristics:**
- Bunch type grass
- Dark green color
- Propagation-seed
- Germination 5 to 7 days.
- H.O.C.- 0.5-2"
- High N levels 4-6 lb./year.
- pH-6.7
- Good wear tolerance
- Excellent recuperative capacity
- Good salt tolerance
Management Challenges

- Infrequent mowing reduces quality
- Aggressive in mixtures; limit to less than 50% of mixture
- Susceptible to rust and red thread diseases under low N
- Susceptible to gray leaf spot and brown patch under higher fertility
- Medium to high fertility required
- Susceptible to ice kill

Annual Ryegrass- *Lolium Multiflorum*

- Life cycle in one year
- Poor low temperature hardiness.
- Adapted to moist fertile soils
- pH of 6-7
- Germinates quickly

USES:
- "quick fix"
- nurse grass
- used in mixes quick stabilization is needed.
- READ the label when buying seed
Fescues—genus Festuca

- Over 100 species
- Endophytic Varieties
- Common species used in fine turf:
  - Fine leaf fescues
    - Red fescue (*Festuca rubra*)
    - Chewings fescue (*Festuca rubra var. commutata*).
  - Tall Fescue (*Festuca arundinacea*)
**Fine-leaf Fescues**

Creeping red 
Chewings

---

**Creeping red fescue* Festuca rubra**

Uses
- Lawn mixtures with Kentucky bluegrass perennia ryegrass.
- Parks
- Golf course
  - roughs
  - Fairways
- Cemeteries
- Roadsides
Desirable Characteristics

• Fine texture
• High density
• Excellent shade tolerance
• Good drought tolerance
• Tolerates low pH and fertility
• Germination 10-14 days
Management Challenges

- Build up of thatch
- Over-irrigation and fertilization reduces persistence
- Poor tolerance to wet soils
- Does not tolerate high traffic
- Recuperative potential - poor
- Poor mowing quality - need sharp mowing blade
- Not tolerant to high salinity

Chewings fescue *Festuca rubra*

Uses

- Mixes well with K.B. and P.R. for lawns
- Perennial - similar to CRF except that it is non-creeping, bunch-type
- Vigorous tillering

Characteristics & Management Challenges

- Similar to Creeping red fescue
Chewings fescue
Tolerant to shade

Tall fescue *Festuca arundinacea*
Two different types

- **Utility, Forage Types**
  - very coarse, bunchy;
  - KY-31, Alta

- **Turf-Type** - finer
  texture than KY-31;
  texture slightly coarser than KBG
Turf-Type Tall fescue

**Uses**
- Heavy trafficked areas
- Low-budget recreational sports fields
- Playgrounds
- Soil conservation purposes
- Roadsides
- High and low maintenance lawns

**Characteristics**
- Bunch Type grass
- Adapted to wide range - wet to dry; acid to alkaline
- Dark green color potential
- Good wear tolerance
- Excellent drought tolerance
- Good heat tolerance
- Good shade tolerance
- Good salt tolerance
- Tolerates submersion
- Low to moderate fertility needs
Management Challenges

- Courser leaf texture
- May segregate out
- Susceptible to brown patch
- Susceptible to gray snow mold
4. Use quality grass seed mixtures or blends

5. Use recommended seeding rates

<table>
<thead>
<tr>
<th>Seeding Rates</th>
<th>lb/1000sq’</th>
<th>Seeds/lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kentucky bluegrass</td>
<td>1-1.5</td>
<td>1-1.75 million</td>
</tr>
<tr>
<td>Perennial ryegrass</td>
<td>7-9</td>
<td>210-270,000</td>
</tr>
<tr>
<td>C.R. fescue</td>
<td>3.5-4.5</td>
<td>365,000</td>
</tr>
<tr>
<td>Chewings fescue</td>
<td>3.5-4.5</td>
<td>450,000</td>
</tr>
<tr>
<td>Tall fescue</td>
<td>7-9</td>
<td>178-234,000</td>
</tr>
</tbody>
</table>

Possible reasons for failure of recent renovation / overseeding projects –are:

- Cause for original failure not corrected
- Improper timing for establishment
- Pest invasion - disease/weed/insect
- Improper seed selection
- Poor seed to soil contact
- Poor post planting care
  - mowing
  - fertility
  - water

Homeowner??

What to do??

Educate!!
Overwatering not only increased disease but encouraged undesirable species!

- Obtain a soil test
- Correct the cause—eliminate the problem!
- Utilize the proper seed or variety
- Best if timed to plant in late summer early fall.
- Remove excessive thatch

Summary overseeding and renovation strategies:
• In spring planting, be aware of weed competition. Spring planting utilize the correct pre-emergent products, Tupersan® or Tenacity®

• Proper post care
  • light frequent watering
  • post fertilization

Summary overseeding and renovation strategies continued:

• If utilizing multiple methods of cultivation aerate first, slice and seed, then broadcast seed and lightly rake or drag

• Don’t skimp on the seed
  correct species
  viable seed
  new seed
Prepare area to be sodded as you would for seed bed preparation
1) Firm Bed to reduce foot printing
2) If soil dry wet lightly.
3) Outline area to be sodded.
4) Start laying sod from top of slopes and work down.
5) Staples where grades exceed 10%.
6) First row straight and even

Planting (laying) sod continued:

5) Work soil as you proceed-this will keep surface level
6) Butt all seams tightly
7) Stagger sod ends for less chance of movement.
Questions to ask when buying sod:

1) The age of sod  older sod ———> thatch
2) Quality- i.e. density
3) Purity- weeds, undesirable grasses present
4) Height of cut - grown at the sod farm
5) Soil texture sod was grown on
6) Cost- per square foot. Delivery etc.
7) Harvested-Specify that you want sod cut no more than 12-24 hours before delivery
8) Equipment to move sod on site
**Post-care for newly sodded areas**

1) Keep sod watered - wilts easily without roots! Also if sod dries it shrinks.
2) First mowing as needed
3) May topdress frequently to smooth and accelerate thatch decomposition
4) Aerate and return soil often. This reduces thatch and aids in smoothing the surface.

THANK YOU FOR YOUR SUPPORT