LAWN TO LAKE
midwest
Natural Lawn care practices for Clean Lakes

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Outline

• Lawn care as an urban runoff issue
• Conventional vs. natural approaches
• Promoting healthy environments with Lawn to Lake
United States land surface covered by lawns

NASA Earth Observatory
United States land surface covered by lawns

NASA Earth Observatory
40 million acres of turf grass in the U.S.

- Turf grass covers 3 times more area than irrigated corn
- Which would make lawns the single largest irrigated crop

Illinois
~37 million acres
## Hidden Costs of Lawn Care

*average upkeep for residential lawns*

### Water
- Typical suburban lawn uses **10,000 gallons** of irrigation water per year
- Residential lawns consume **2.5 billion gallons** per year

### Energy
- A **580 millions gallons** of gasoline used in lawnmowers
- **270,000 BTUs** to produce a 100 lb bag of 6-6-6 fertilizer

### Pesticides
- **67 million pounds** of synthetic pesticides on residential lawns each year
- Homeowners use **3 times more** pesticide per acre than farmers

### Fertilizer
- **3 million tons** per year applied to residential lawns

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*References:

- Bormann F.H. et al, 1993
- Perry, L. 2006
- Vickers, A., 2006
- Wilson and Boehland, 2009*
Excess nutrients in water

Todd Marsee, Michigan Sea Grant
**Pesticides**

"a pesticide by any other name..."

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grub Control</strong></td>
<td><strong>Insecticide</strong></td>
</tr>
<tr>
<td>Broadleaf, dandelion spray</td>
<td><strong>herbicide</strong></td>
</tr>
<tr>
<td>Weed and Feed</td>
<td><strong>herbicide</strong> <em>(combined with fertilizer)</em></td>
</tr>
<tr>
<td>Fungal Control</td>
<td><strong>fungicide</strong></td>
</tr>
</tbody>
</table>
What is Natural Lawn Care?
focusing on sustainable solutions

<table>
<thead>
<tr>
<th>Natural</th>
<th>Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td>🌱 soil care is foundation</td>
<td>✗ one-size-fits-all approach</td>
</tr>
<tr>
<td>🌱 natural, organic products (when needed)</td>
<td>✗ focus on applying products to all lawns</td>
</tr>
<tr>
<td>🌱 treats problems, not symptoms</td>
<td>✗ treats symptoms for short-term fixes</td>
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Lawn to Lake: Goals

Inform homeowners and communities how actions we take on land have effects on our watersheds.

Offer resources to encourage adoption of sustainable lawn and landscaping practices.
Watershed Perspective

What you do on the land...
- Apply fertilizer and pesticides
- Water your lawn and garden
- Plant choice

Has effects on watershed...
- Nutrient and chemical runoff
- Consumes water
- Maintenance needs, storm water infiltration, etc.
Natural Lawn Care Principles

1. Right plant, right place
2. Fertilize appropriately
3. Manage lawn pests responsibly
4. Water efficiently
5. Compost
6. Attract wildlife
7. Reduce storm water runoff
Nurture the **Soil**

Take a soil test!

- Every 2–3 years
- See what’s there, restore balance

### Table 1.
**Nutrient composition of some organic materials used as fertilizer**

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>N</th>
<th>P</th>
<th>K</th>
<th>RELATIVE AVAILABILITY</th>
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</thead>
<tbody>
<tr>
<td>Alfalfa pellets</td>
<td>3</td>
<td>0.5</td>
<td>3</td>
<td>Slow</td>
</tr>
<tr>
<td>Blood meal</td>
<td>13</td>
<td>2</td>
<td>0.5</td>
<td>Medium/rapid</td>
</tr>
<tr>
<td>Bone meal</td>
<td>0.5-6</td>
<td>15-34</td>
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<td>Slow</td>
</tr>
<tr>
<td>Compost</td>
<td>1-3</td>
<td>0.5-1</td>
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<tr>
<td>Fish emulsion</td>
<td>3-5</td>
<td>1-2</td>
<td>1-2</td>
<td>Rapid</td>
</tr>
<tr>
<td>Soybean meal</td>
<td>6-7</td>
<td>1-2</td>
<td>2</td>
<td>Slow/medium</td>
</tr>
<tr>
<td>Rock phosphate</td>
<td>0</td>
<td>20-32 (2% avail.)</td>
<td>0</td>
<td>Slow</td>
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Source: Adapted from Purdue University Extension Service: Organic Vegetable Production
Nurture the **Soil**

Aerate in the fall

- Increase air spaces for root growth
- Improve water infiltration
- Reduce compaction that benefits weeds
Nurture the Soil
Topdress with compost, overseed

- Increase organic matter
  - holds more water
- Add beneficial microbes
- Improve water infiltration
Mow Properly

• Mow to 3 - 3 ½ inches tall
• Use a sharp blade
• Cut only the top 1/3 at any time
• Leave clippings on the lawn
Mow Properly
Raise the blade to 3”

- Increases root depth
- Enhances photosynthesis
- Shades out weeds
Mow Properly
Leave the clippings

• Adds organic material to soil
• Adds nitrogen to soil
• Does NOT cause thatch
Water efficiently

- 1” of water is needed per week (includes rain)
- Water deeply and infrequently
- Water in the morning
- Let lawn go dormant in summer
Water efficiently
1” preferably ON the lawn
Water efficiently
1” preferably ON the lawn
Just remember, **3" LAWNS**

- **3"** mowing height
- Leave grass clippings
- Aerate soil
- Water wisely, when needed
- Natural nutrients, when needed
- Soil care is the foundation
In the works...

Targeting Natural Lawn Care Communications to Homeowners in Illinois
Interdisciplinary Collaborations in Extension Grant
LAWN TO LAKE midwest

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# Natural Nutrients

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Source: Adapted from Purdue University Extension Service: Organic Vegetable Production
Preventing common weeds

- **Crabgrass.** To eliminate crabgrass, mow your lawn to at least three inches high and deliver one inch of water to your lawn each week (including rainfall).

- **Dandelions and Plantains.** To prevent dandelions and plantains from appearing, aerate your soil and add nutrients by top dressing with compost to improve soil health.

- **Creeping Charlie.** The presence of creeping Charlie indicates excessive moisture and compaction. Place dirt in low areas in the lawn to eliminate poorly draining spots. Reseed and top dress to outcompete this weed.