THE GREEN INDUSTRY IN THE GREEN ECONOMY

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The Green Industry in Illinois’ Economy

- The combined value of green industry product sales and service sector receipts amounted to $3.99 billion in 2003
- Ornamental nurseries, greenhouses
- Sod production
- Landscaping
- Lawn and tree care
- Golf courses
- Garden and floral centers
- Residential/homeowners

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Illinois Green Industry Association: http://www.ina-online.org/
What is “Green” in the Green Industry?: Sustainability

- Ability to be continued *ad infinitum* without altering the environment or depleting resources
- Refers specifically to impact of human activity on earth
- [http://sustainablelandscaping.us](http://sustainablelandscaping.us)
What is Sustainable Landscaping?

- Finding solutions to problems of environmental harm caused by human practices in the process of constructing, implementing, and managing our residential and commercial landscapes.
Issues

- Global Climate Change
- Water:
  - Storm Water Run-off
  - Water Shortages and Conservation
  - Water Pollution
- Air Pollution
- Pesticide Use
- Non-Renewable Resources
- Energy Sources
Global Climate Change-Impacts on the Green Industry

- Change in average annual temperatures – affects plant hardiness, flowering, pollination
- Flooding in some areas, and drought others will affect:
  - plant growth
  - irrigation practices
  - golf course operation
  - greenhouse production
Water Issues: Solutions in the Landscape Industry

- Stormwater Runoff
  - Rain Gardens and Bio-swales
  - Green Roofs
  - Permeable Paving

- Water Shortages and Conservation
  - Use of Grey Water on Plants
  - Water-wise Landscaping
  - Rain Water Harvest

- Water Pollution
  - Integrated Pest Management
  - Rain Gardens

- Constructed Wetlands

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WIU Environmental Summit 2010
Water Conservation

- Rain Barrels
- Gray Water
- Rain Water Harvest
Gray Water on Plants

- Gray water is not a problem if:
  - It is used immediately (not stored)
  - Does not puddle
  - Is applied to well-draining soil
- If stored, it should be applied within 24 hours
- After 24 hours it becomes noxious, anaerobic, and a potential source of human pathogens
- Normally does not hurt trees, shrubs, flowers, or turf if applied directly to the soil
- Does not damage soils if harsh chemicals are absent
Water Pollution

- 50% of water pollution problems are due to stormwater run-off
- Storm-water run-off travels into streams and rivers
- Urban run-off carries fertilizers, pesticides, pet and yard waste, motor oil and anti-freeze, household hazardous wastes, paint and street litter

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Air Pollution in the Landscape Industry

- Gasoline powered engines
  - 2-cycle pollute more than 4-cycle engines

- Gasoline-powered landscape equipment (mowers, trimmers, blowers, chainsaws) account for over 5% of urban air pollution (EPA)

- Smoke from burning landscape waste
  - Particulate matter creates haze, contributes to smog
Reduce Emissions

- Use 4-cycle engines when possible
- Electric mowers, etc. - ?
- Replace high-maintenance areas with lower maintenance areas
- Avoid plants requiring excessive pruning (i.e. fast-growing trees)
- Tall fescue is more drought tolerant than other turfgrasses in this area. It also is grown taller –3-4” before being mowed, compared to 2-3” for bluegrass, etc.
Pesticide Use in the Landscape

- 7% of pesticides sold in the US is sold to home and garden consumers
- Homeowners use 10-20X the amount of pesticides per acre than farmers (EPA)
- Excess pesticide material is disposed of improperly
  - disposal is not closely regulated
  - education is needed
- Detectable amounts of pesticides have been found in 5-10% of wells
Benefits of Turf

- The average-managed lawn can absorb 4X the amount of carbon than the typical carbon output of a mower.
- A dense lawn absorbs rainfall.
- A 50’ x 50’ lawn releases enough oxygen for a family of four.
- Reduces noise.
- Traps and helps control dust and pollen.
- Limits pesticide runoff by allowing infiltration.
- Improves soil qualities.
Integrated Pest Management

- Less toxic: soaps, oils, biologicals
- Better targeted to pest, life cycle
- Improved genetics
- Mechanical control
- Cultural practices
- Acceptable thresholds
Recycled/Renewable/Remanufactured Resources in Landscape Products

- Plastic for plant pots
- Decking and fencing material
- Hardscaping materials
- Benches, waste cans, other accessories
- (Solar-powered landscape lighting uses renewable energy)
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- Made from recycled materials

- What's Available:
  - Plastic lumber
  - Recycled glass
  - Crumb rubber
  - Crushed concrete, asphalt
Sustainably Harvested

- Wood: the only major construction material that is grown rather than mined
- It takes time to renew a forest
- Smaller cuts of wood are currently harvested as compared with colonial times
- Organic matter must be left for decomposition and recomposition, otherwise nearly sterile soil is all that is left
- There is a certification process
Energy Efficient Landscape Design

- Right plant, right place
- Reduce solar heat gain in summer, maximize it in winter
- Channel wind to maintain cooling breezes in summer
- Plant wind breaks to minimize heat loss in winter
Wind Protection

- At 70°F a building sheltered from the wind will save 23% fuel for heating
- With good protection on 3 sides of a building, the savings may run as high as 30%
National Wildlife Federation's Certified Wildlife Habitat™ program

- All you need to do is provide elements from each of the following areas:
  - Food Sources - For example: Native plants, seeds, fruits, nuts, berries, nectar
  - Water Sources - For example: Birdbath, pond, water garden, stream
  - Places for Cover - For example: Thicket, rockpile, birdhouse
  - Places to Raise Young - For example: Dense shrubs, vegetation, nesting box, pond
  - Sustainable Gardening - For example: Mulch, compost, rain garden, chemical-free fertilizer

http://www.nwf.org/
Interdisciplinary effort by the American Society of Landscape Architects, the Lady Bird Johnson Wildflower Center and the United States Botanic Garden to create:

- voluntary national guidelines and
- performance benchmarks for
- sustainable land design, construction and maintenance practices.
Role of the Homeowner

- Use pesticides in conjunction with cultural and mechanical practices
- Right plant in the right place
- Improved cultivars for pest resistance
- Backyard Habitat (www.nwf.org)
- Use mulching mowers
- Use, store and dispose of pesticides and containers properly
- Practice good soil health
- Compost kitchen and yard waste – and use it on your gardens!*

*(Yard wastes (mostly grass clippings) comprise 20% of municipal waste collected and most ends up in landfills)*
THANK YOU!

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Resources

- Bradley Rowe, Michigan State University. In person at Pro Hort. 2007.
- www.hrt.msu.edu/greenroof
- Greenroofs.org
- Greenroofs.com

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Resources

- Website by Ken Robertson, formerly of the Center for biodiversity at the Illinois Natural History Survey:
  - [http://www.inhs.illinois.edu/~kenr/corridors.html](http://www.inhs.illinois.edu/~kenr/corridors.html)

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- [http://www.pesticideinfo.org/Docs/ref_regulatoryCA.html#CAGroundWater](http://www.pesticideinfo.org/Docs/ref_regulatoryCA.html#CAGroundWater)

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Resources

- http://www.pca.state.mn.us/oea/lc/purchasing/glasspavers.cfm
- http://www.ecobusinesslinks.com/recycled_glass_tiles.htm
- http://www.terragreenceramics.com/
- http://www.wausautile.com/

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