LAWN TO LAKE
Healthy Landscapes, Healthy Lakes
www.lawntolake.org

# Great Lakes Binational Toxics Strategy Integration Workgroup Meeting November 30, 2011

Presented by:
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Sea Grant Illinois-Indiana
CMAP
PURDUE UNIVERSITY
SAFER PEST CONTROL PROJECT
Great Lakes RESTORATION

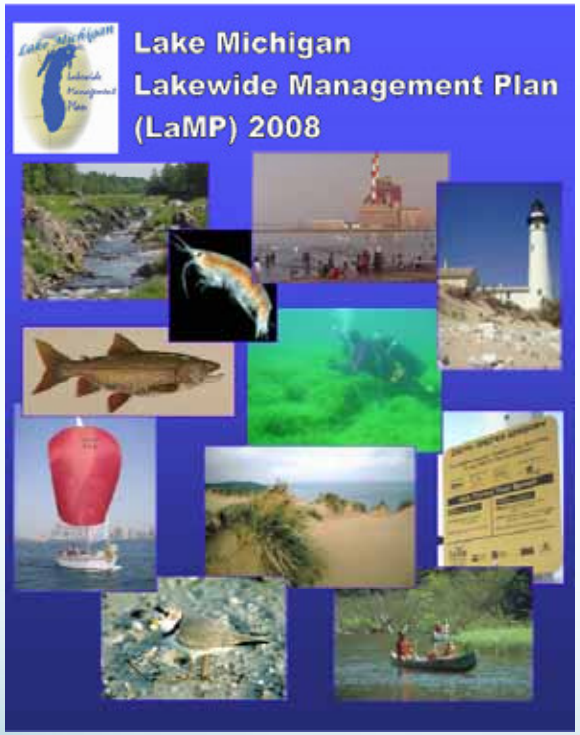
## Goal

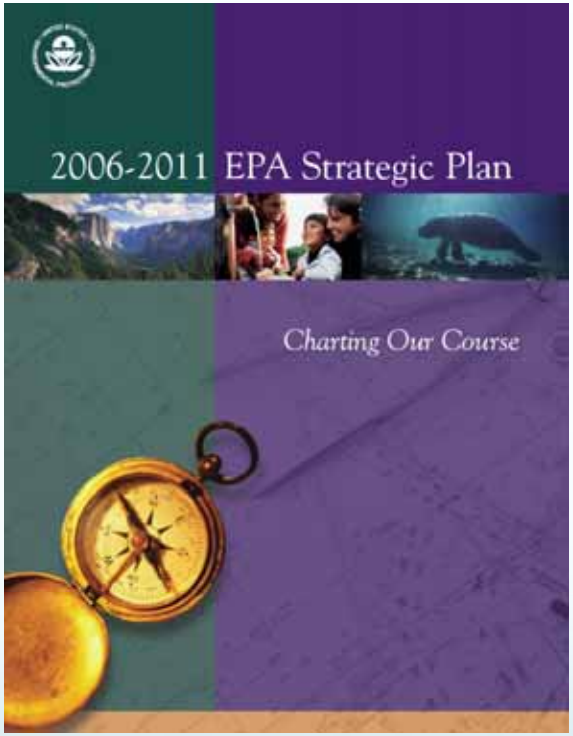
To reduce inputs of pesticides, nutrients, and other pollutants into the Great Lakes Basin, by promoting and implementing sustainable lawn and landscape practices at the community and household levels.

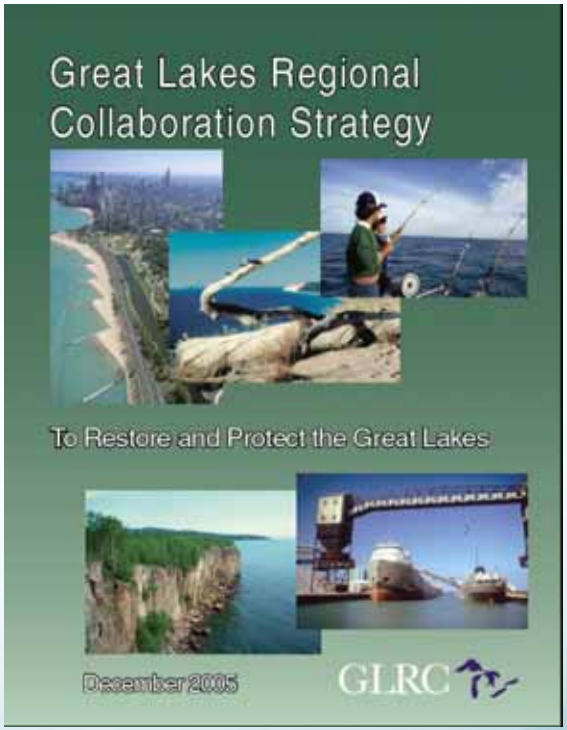
GLRI Area:

Reduced inputs of pesticides and other potential harmful substances into the Great Lakes Ecosystem (I.A.9)

# Background – Project Relevance to the Great Lakes



# Lawns in Urban Landscapes

- Individual lawns seem insignificant, but…
- Nationwide, turf grass is *everywhere*
  - 63,000 square miles
    - Enough to blanket Illinois
    - Largest irrigated crop by area in U.S.
- ≈ 25% of land cover in (sub)urban areas

Source: Adapted from Safer Pest Control Project *From Conventional to Natural Lawn Care An Alternative to Unsustainable Lawns* Undated Presentation

# The Costs of Lawn Maintenance

- **Water**
  - Avg. suburban lawn uses 10,000 gallons per year
  - Nation: lawns consume 270 billion gallons per week
- **Energy**
  - 580 millions gallons of gasoline used in lawnmowers
  - 270,000 BTUs in 100 lb bag of 13-13-13 fertilizer
- **Fertilizer**
  - Over 3 million *tons* per year
- **Pesticides**
  - 67 million lbs of synthetic pesticides
  - Homeowners use 3 times more pesticide per acre than farmers

Source: Adapted from Safer Pest Control Project *From Conventional to Natural Lawn Care An Alternative to Unsustainable Lawns* Undated Presentation

# Water & Energy


http://www.cmap.illinois.gov/water-2050/bill-inserts

# Pesticides

# Nutrients

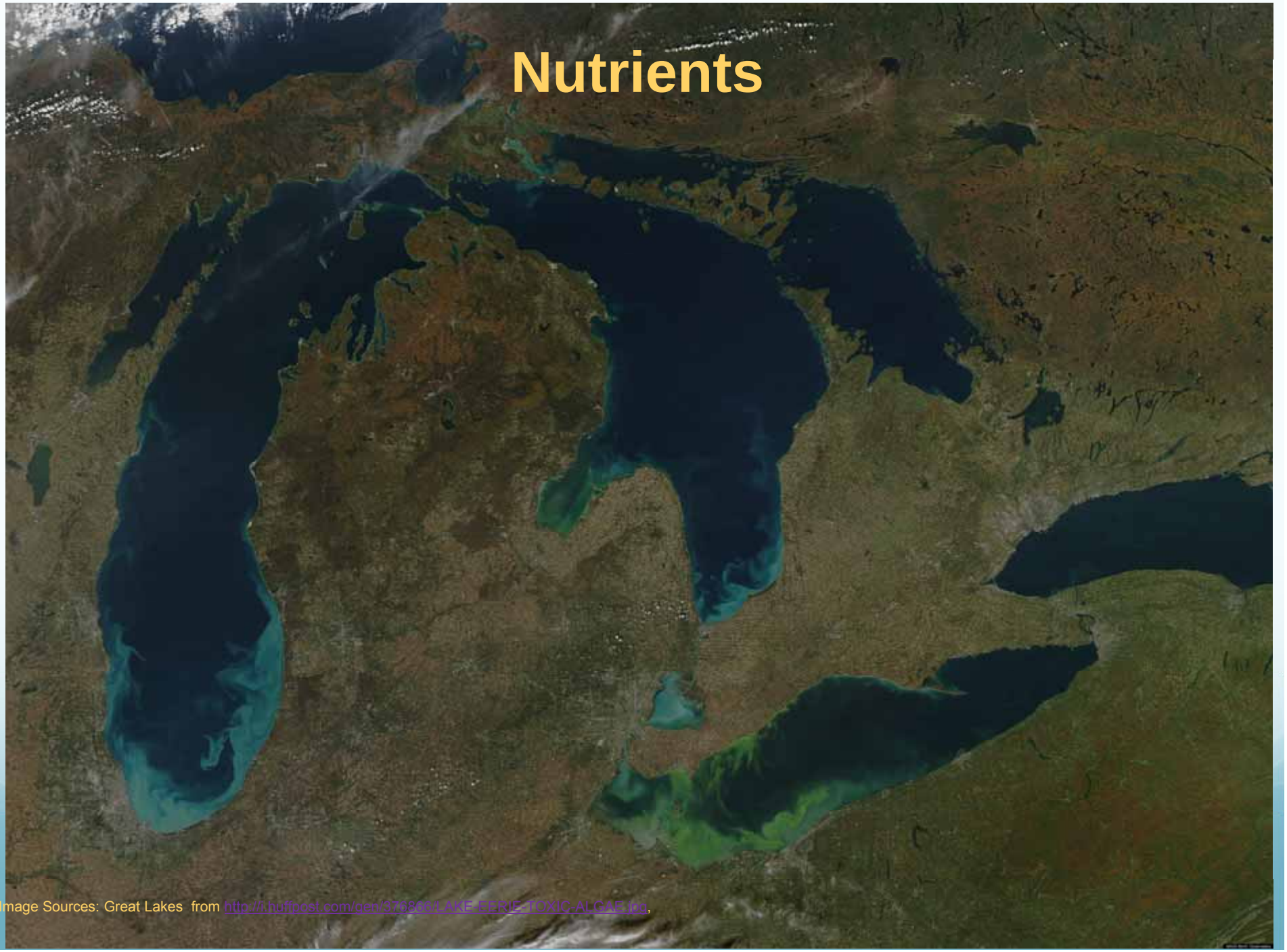


Image Sources: Great Lakes from http://i.huffpost.com/gen/370866/LAKE-ERIE-TOXIC-ALGAE.jpg,

# Chemical Lawns not "Healthy" Lawns

Fossil-fuel products can:

- Stunt/weaken turf grass
- Inhibit beneficial microbes
- Kill non-target organisms (garden plants, flowers, bees, butterflies, fish)
- Harm earthworms
  - Excellent aerators & prime source of natural fertilizer
- Compact ground surface
  - Difficult to grow anything under such conditions


Source: Adapted from Safer Pest Control Project *From Conventional to Natural Lawn Care An Alternative to Unsustainable Lawns* Undated Presentation

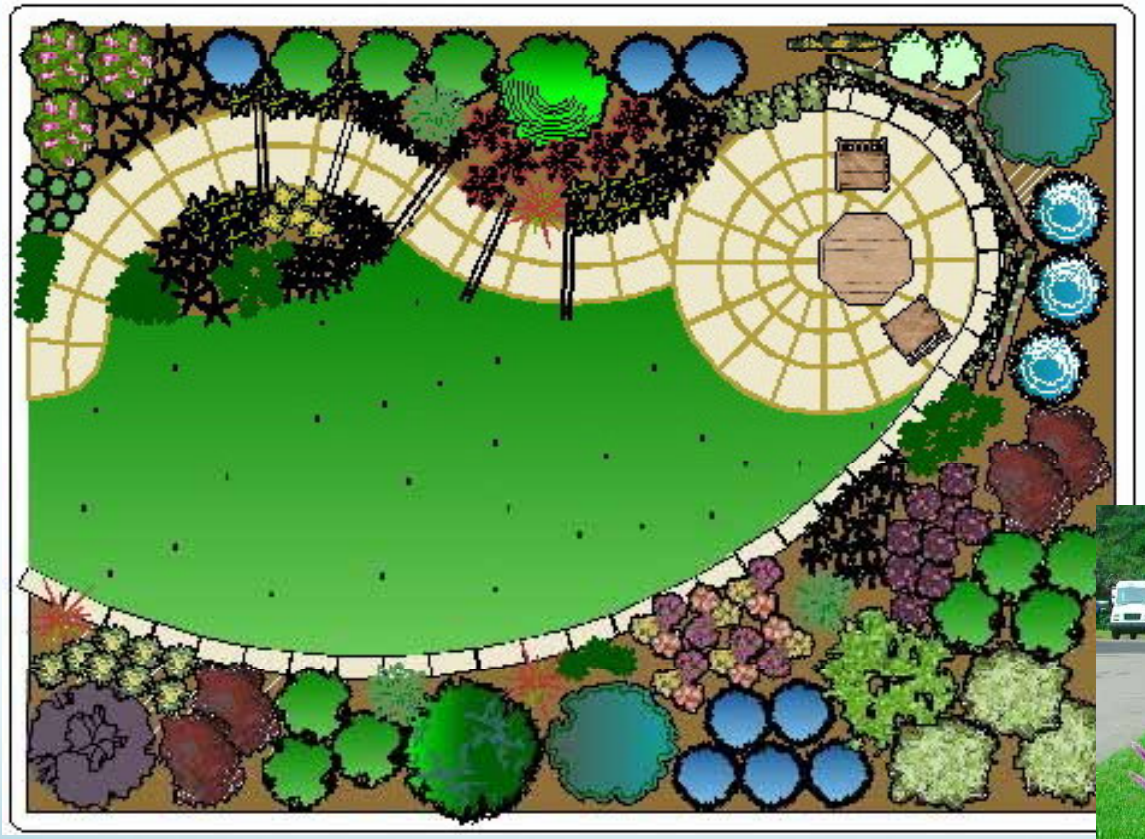
What if we could go from unhealthy, chemical, stunted lawns that look like this…


…to naturally healthy lawns like this:

Wouldn't our lawns, lives and environment be better off? More importantly, how do we achieve this?

Source: Adapted from Safer Pest Control Project *From Conventional to Natural Lawn Care An Alternative to Unsustainable Lawns* Undated Presentation

# Healthy Landscapes



# Strategic Approach

- Clearly defines the link between individual decisions/ behavior and lake and watershed water quality;
- Uses existing, off the shelf, proven outreach and education strategies developed locally;
- Is community based, and relies on partnerships for sustainable effort beyond the project scope;
- Leverages outreach effort by focusing on key target audiences, including Master Gardener and Master Naturalists who will multiply the investment made by Sea Grant/EPA;
- Is outcome oriented – measurably reducing inputs, and changing behavior.

# Timeline

- Year 1
  - Branding, materials & program development
  - Professional workshops
  - Master Gardener trainings
- Year 2
  - Continuing professional and train the trainer workshops
  - Retailer and large property owners outreach
  - Media messaging campaign & finalize materials
- Year 3
  - Continuing professional and train the trainer workshops
  - Retailer and large property owner implementation
  - Public and teacher trainings workshops


Lawn and garden chemicals applied in the Lake Michigan basin can wind up in the water, polluting the lakes with pesticides and excess fertilizer. But it's easy to adopt healthy landscape practices by following these simple steps:

- **BUILD YOUR SOIL**
  *Compost improves soil's health*
- **NATURAL LAWN CARE**
  *Mow high, leave clippings, core areate*
- **SHRINK YOUR LAWN**
  *Reduce lawn area when lawn isn't necessary*
- **LET THE RAIN SOAK IN**
  *Capture rainwater with rain gardens, cisterns and rain barrels*
- **RIGHT PLANT, RIGHT PLACE**
  *Choose appropriate plants for your site*
- **WATER SENSIBLY**
  *Reduce watering requirements of the lawn and landscape*
- **LET NATURE DO THE WORK**
  *Use natural organic fertlizers*
- **SAVE TIME AND MONEY**
  *Reduce inputs to reduce costs*
- **TEST YOUR SOIL**
  *Soil test tells if adequate nutrients are available for plant growth*
- **MANAGE PESTS SENSIBLY**
  *Correct the underlying problem prior to applying pesticides*

Lawn to Lake is a collaborative program to protect water resources in the Great Lakes region by promoting healthy landscape practices. With funding from the Great Lakes Restoration Initiative, partners are coordinating a pollution prevention campaign addressing the needs of those responsible for lawn and landscape care.

Great Lakes RESTORATION

For more information, visit http://www.lawntolake.org/GreatLakes/ or contact Margaret Schneemann at MSchneemann@cmap.illinois.gov or 312.676.7456.

# Strategic Approach

## Target Audiences

- Professionals & municipalities
- Train the trainer
  - Master Gardener
  - Teachers
- Schools
- Homeowners
- Pilot Grounds Care Program
- Retailers

## Project Location

# Estimated Environmental Impacts

| Estimated Environmental Impacts of *Healthy Landscapes Healthy Lakes* Program | | | | | |
|---|---|---|---|---|---|
| | Outreach Metric | Direct Audience Impact | Residents Reached | Lawn Acres Impacted[1] | Estimated Loadings Reduction[2] |
| TOTAL[3] | | | | 38,290 | Weed and Feed Use Reduction: 4,290,300 lbs/yr<br>*Associated Pesticide Reduction: 32,177 lbs/yr*<br>*Associated Phosphate Reduction: 242,074 lbs/yr* |

[1] Based on a comprehensive 1995 study estimating a national average lawn size of 0.20/acre. Estimated average lawn size varies from state to state, ranging from 0.06 acre in Washington, DC to 0.51 acre in Georgia. See Vinlove, F.K. & Torla, R.F. (1995). Comparative estimations of U.S. home lawn area. Journal of Turfgrass Management, 1(1), 83-97. Note that the average area of lawn per household in the Lake Champlain-St. Lawrence area is 0.347 acres, which is used for the pilot grounds care program estimates. This provides a conservative estimate as landscape garden acres are not included.

[2] Estimated annual loadings reduction sustained over time is based on the following: Typical urban/suburban use of weed and feed product; 5% reduction due to households who stop using weed and feed products completely and 50% reduction for households who continue to use weed and feed, but at a lower application rate. Calculations assume average pesticide content of 0.8% Pesticide content is approx. 0.8% (see below), so the actual /pesticide/ application rate (at the minimum 140 lbs/acre single application rate for the weed and feed) is 1.12 lbs of pesticide/acre/application. The actual pesticides are 2,4-dichlorophenoxyacetic acid (0.61%) (+)-(R)-2-(2 methyl-4-chlorophenoxy)propionic acid (0.15%) Dicamba: 3,6-dichloro-o-anisic acid (0.05%); the minimum recommended application rate is 140 – 170 lbs/acre at least twice a year, estimate of 300 lbs/acre/yr. Phosphate use reduction estimates based on $P_2O_5$ (Phosphate) in a typical weed and feed product at 5% P205, that comes out to 15 lbs. P205 (phosphate) per acre for two applications yearly. (sources Homziak, J. personal communication March 9, 2009; and Kostelnick, M. personal communication March 9, 2010).

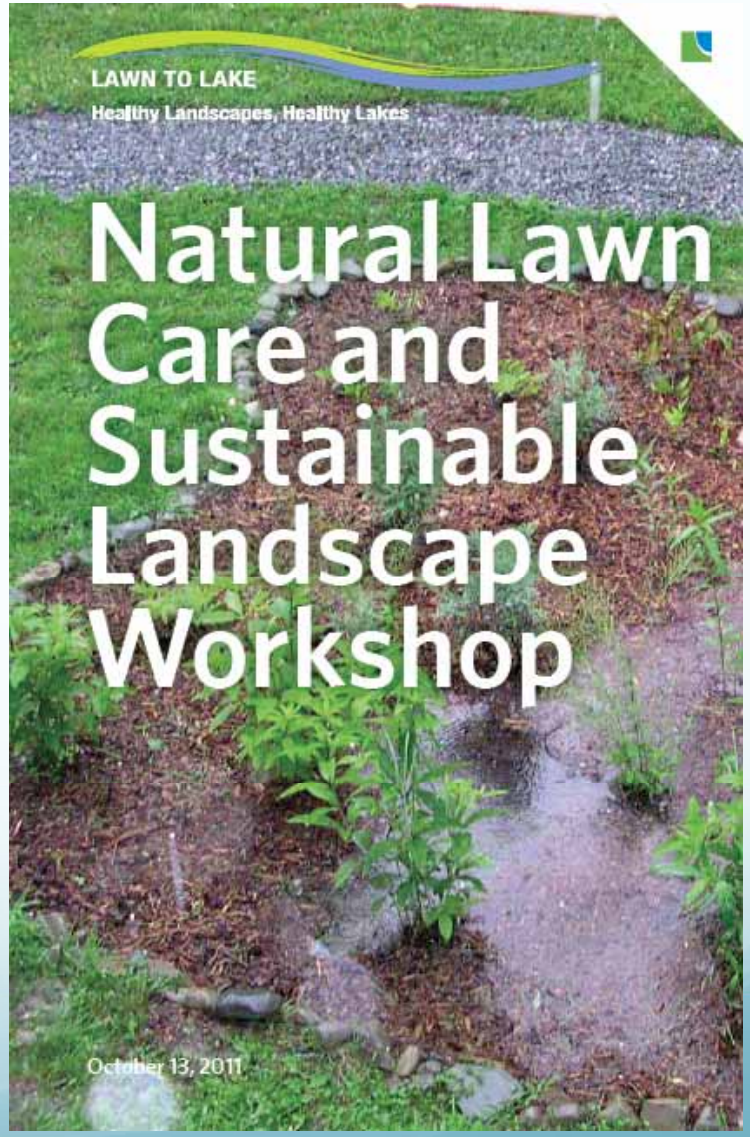
[3] The best way to quantify impacts is to perform pre- and post- surveys of fertilizer and pesticide use by targeted audience, which will be performed as part of the *Healthy Landscapes Healthy Lakes* program evaluation component. It is additionally important to note that the frequency of application, application rates and pesticides used is highly variable by location, season, weather, etc. The provided estimate uses the best available information and the assumptions described, to provide a rough, and conservative, estimate of expected impacts.

# Professionals & Municipalities

Great Lakes RESTORATION

**orkshop Agenda:**

| All Attendees | | |
|---|---|---|
| 7:30am-8am | Registration and Coffee | |
| 8:00-8:15 | **Introduction & Welcome – The Advantages of Natural Lawn Care** | Scott Grams -ILCA, Carol Becker – MELA,Susan Ask - Illinois-Indiana Sea Grant, Rachel Rosenberg - SPCP |
| 8:15-9:00 | Sustainability in the Landscape: Putting Natural Lawns into Perspective | Mike Nowak, "The Mike Nowak Show" |
| 9:00-10:30 | It's All in the Soil – The Basic Science/Process of Growing Healthy Landscapes | Chip Osborne, Osborne Organics, Richard Hentschel, U of I Extension, Q & A |
| 10:30-10:45 | Break | |
| 10:45-12:15 | Horticultural Practices for Natural Lawns **DOWNLOAD PRESENTATION - Quandt** | Chip Osborne, Osborne Organics, Richard Hentschel, U of I Extension, Q & A |
| 12:15-1:00 | Lunch (provided with registration) | |
| 1:00-1:35 | Transitioning to Natural Lawn Care – Common Challenges and Solutions **DOWNLOAD PRESENTATION - Nye** **DOWNLOAD PRESENTATION - Osborne** | Chip Osborne, Osborne Organics, Christine Nye, Shedd Aquarium |



| | Outreach Metric | Direct Audience Impact | Residents Reached | Lawn Acres Impacted[1] | Estimated Loadings Reduction[2] |
|---|---|---|---|---|---|
| **Landscape Professionals and Municipalities[3]** | 5 workshops | 330 | 87,450 | 17,490 | Weed and Feed Use Reduction: 2,361,150 lbs/yr<br>*Associated Pesticide Reduction: 17,709 lbs/yr*<br>*Associated Phosphate Reduction: 118,058 lbs/yr* |

*Landscape Professionals and Municipalities Workshops[4]*

| | | | | | | |
|---|---|---|---|---|---|---|
| ○ Preparation and Promotion | Nov. 2010–Dec. 2010 | - | Complete | 100% | 100% | (a) Prepare workshop binders, publicize meeting, arrange speakers and venue |
| ○ 1 Workshop (IL) | Fall 2010 | Spring 2011 | Complete | 100% | 100% | (a) 1 workshop conducted<br>88 Direct Audience Impact<br>22,525 Residents Reached<br>4,505 Lawn Acres Impacted[3]<br>Estimated Loadings Reduction[4]<br>▪ Weed and Feed Use Reduction: *608,175* lbs/yr<br>▪ *Associated Pesticide Reduction: 4,561.31 lbs/yr*<br>▪ *Associated Phosphate Reduction: 30,408.75 lbs/yr* |

## Follow-Up Lawn Care Survey

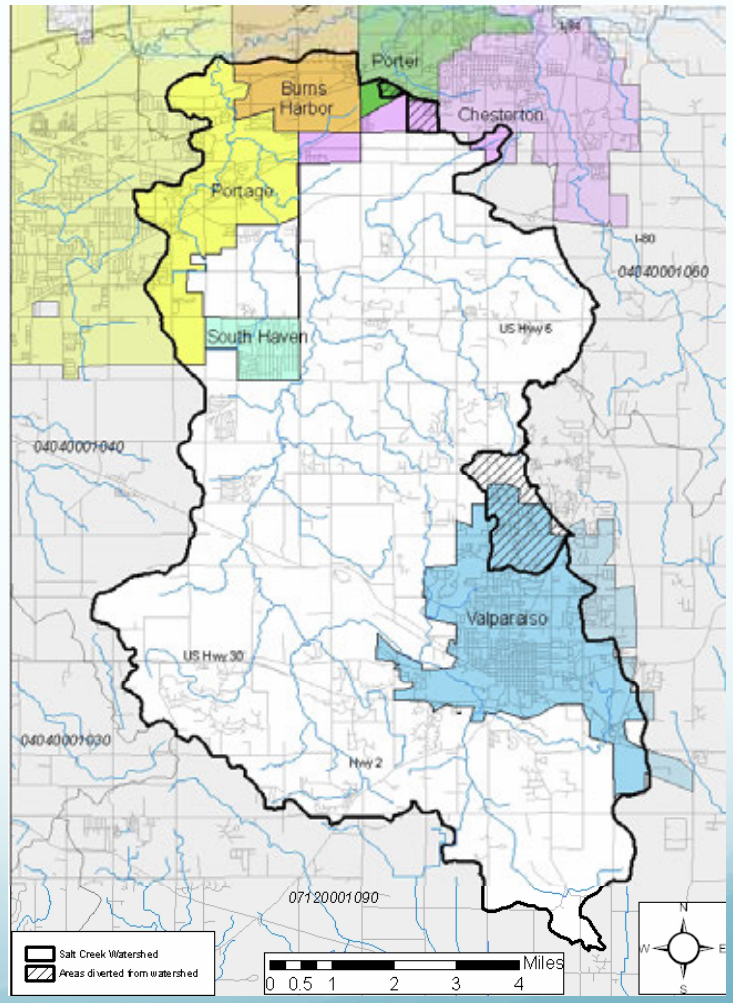
Thank you for attending the Natural Lawn Care workshop on March 23, 2011. We are now in the process of conducting a follow up survey in order to evaluate the effectiveness of the program. Please take a few minutes to answer the following questions. We appreciate your time!

# Train the trainer
# Master Gardener & Teachers

# Pilot Grounds Care Program

## What We Can Do For You

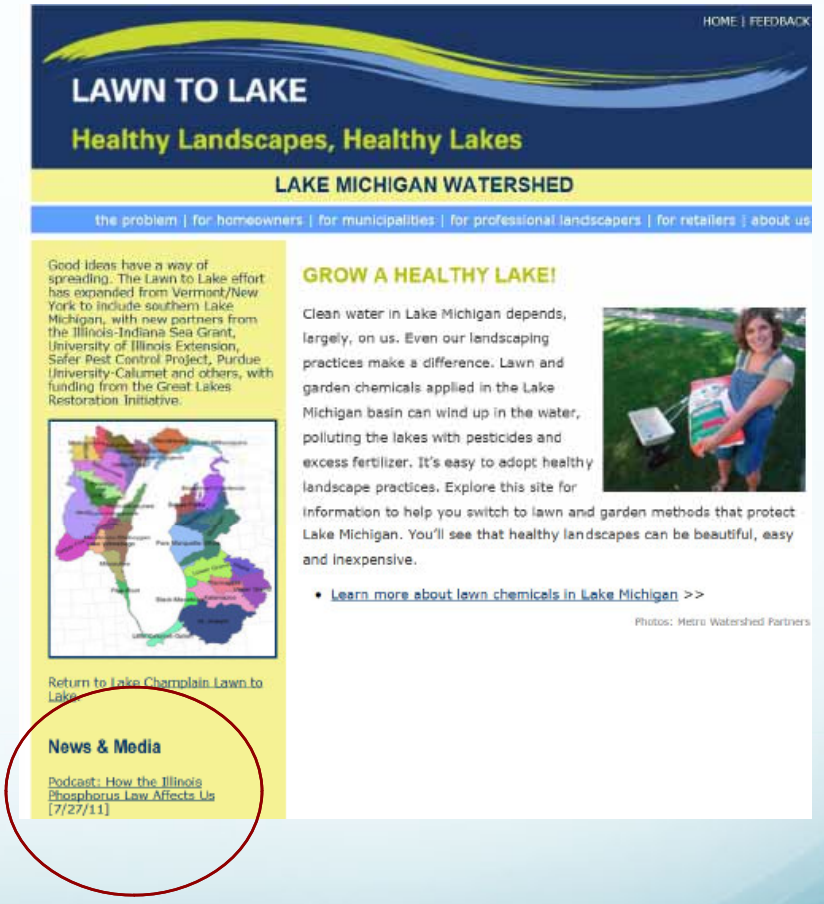
- We provide the information to convert the consumers, landscapers provide the service
- Small business management workshops to improve profits
- Organic/Low Input practices training
- IPM training
- Tailored promotional materials
- Applied research on the most appropriate successful practices



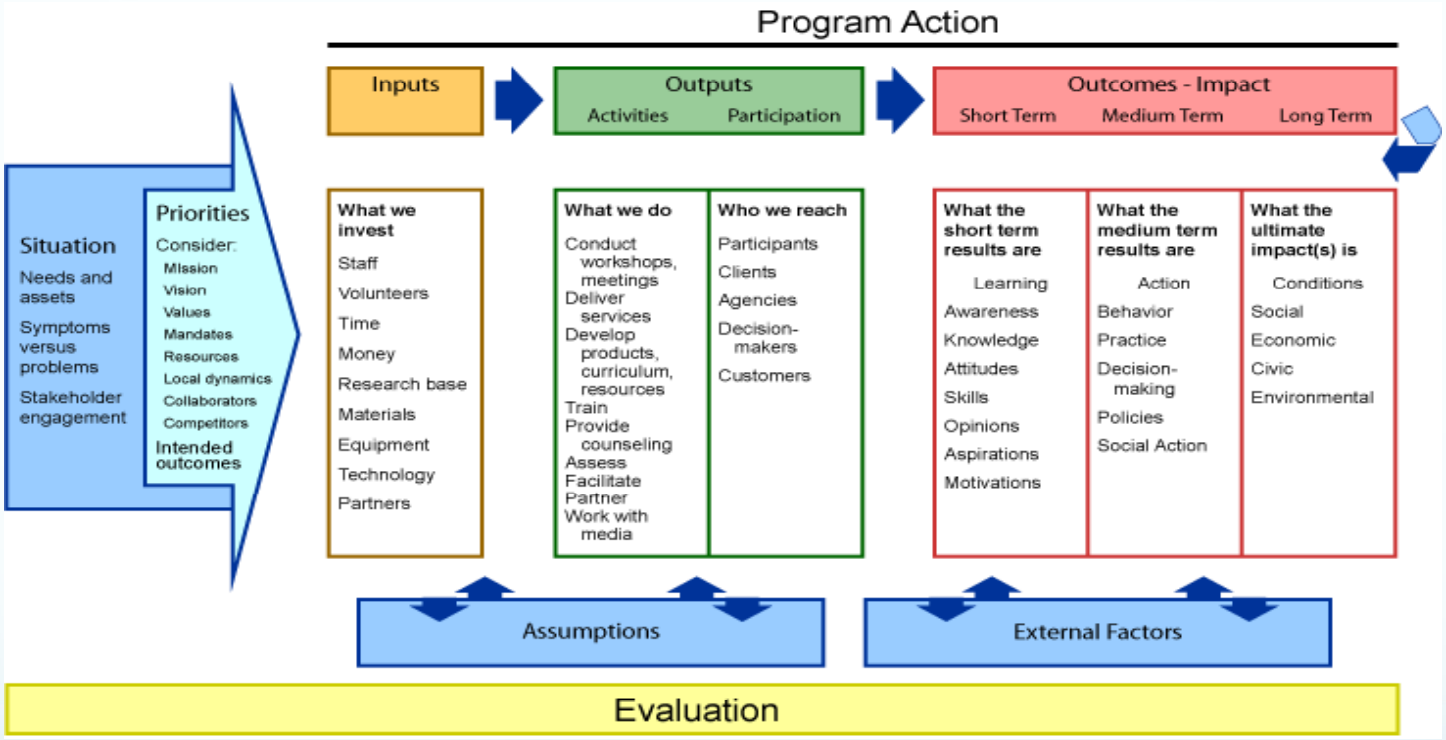
# Retailers


# Websites, Social Media



# Measuring Progress Toward Outcomes, Outputs and Results




**What do you want to know?** **How will you know it?**

EVALUATION: check and verify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