

The Top 10 Things You Can Do for Your Lake

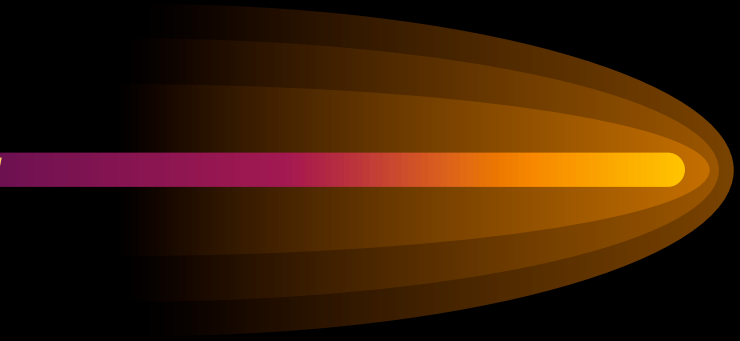


ILMA Conference

Sandwich, IL – April 10, 2014

- **Mary Colwell** – *Lake County Forest Preserve District & ILMA board member*
- **James Fitzgerald** – *EA Engineering & ILMA board member*
- **Greg Hitzroth** – *Illinois-Indiana Sea Grant & Illinois Natural History Survey*
- **Holly Hudson** – *Chicago Metropolitan Area Planning (CMAP) & Northeastern Illinois VLMP Coordinator*
- **Tim Pasternak** – *Round Lake Management Commission & ILMA board member*
- **Margaret Schneemann** – *Illinois-Indiana Sea Grant & University of Illinois Extension*

*Although each lake is unique,
some problems and strategies
are similar.*



Here are The Top Ten Things...

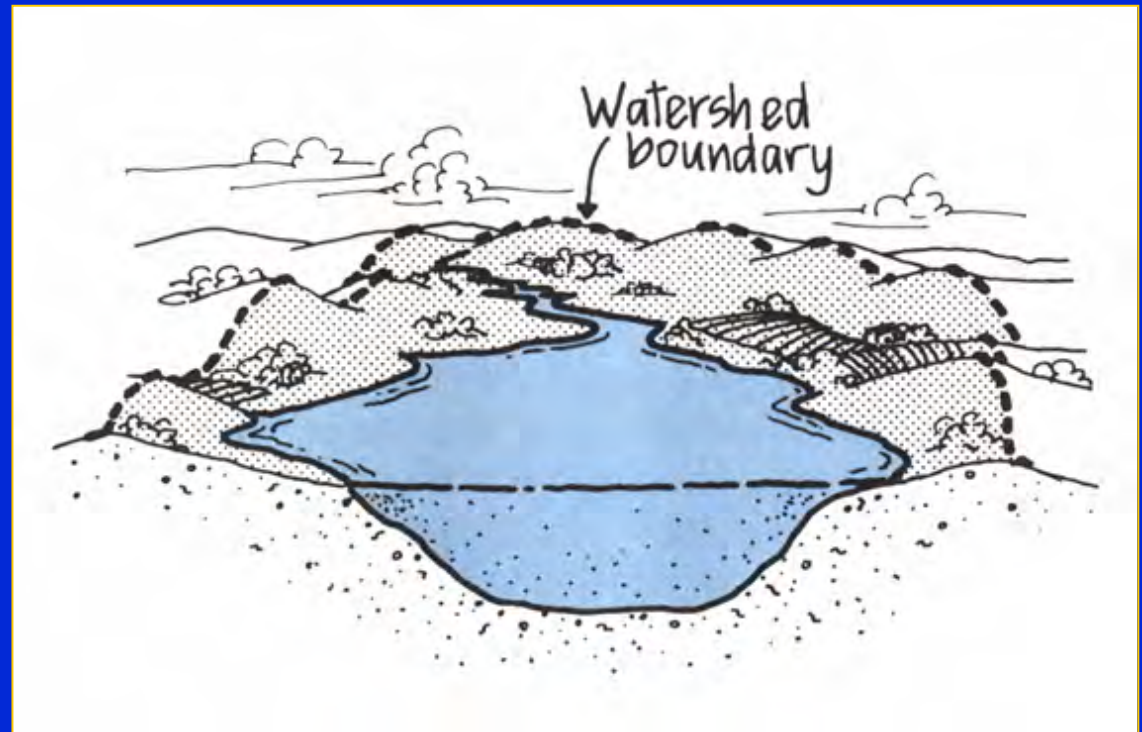


#10 Get to Know Your Lake's Watershed

- *Mary*

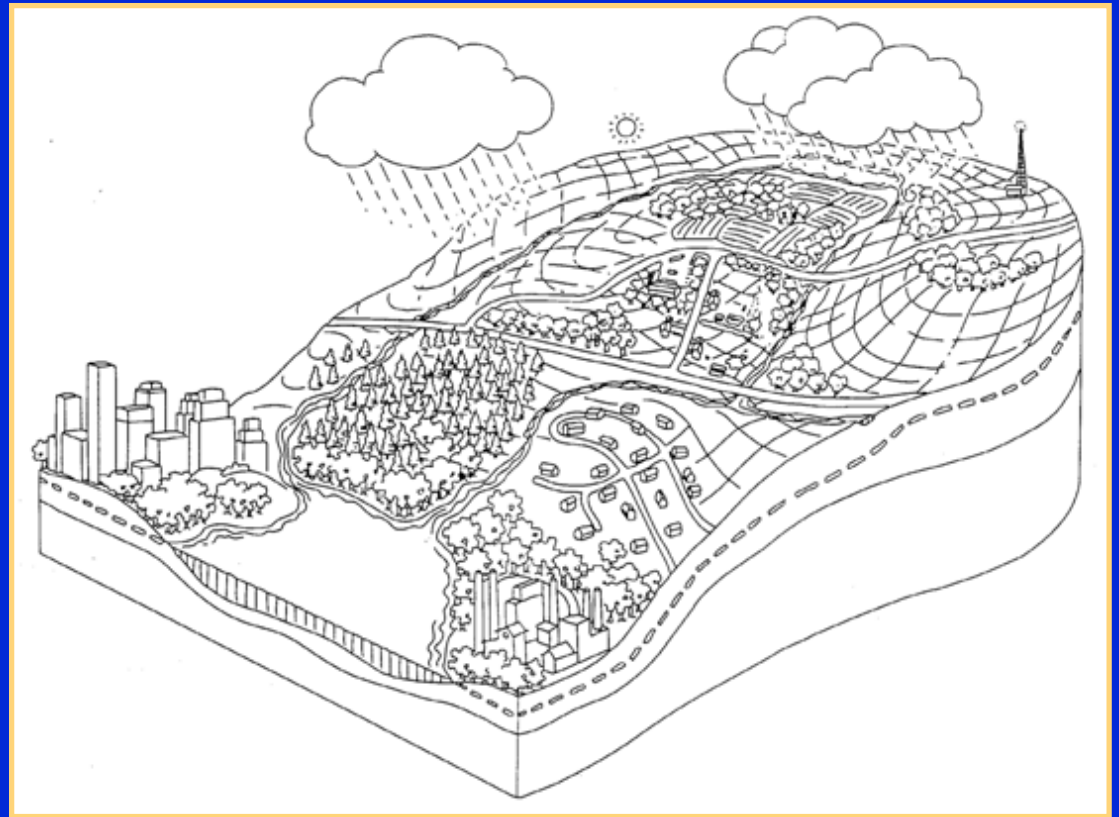
What is a Watershed?

- The land area that drains into a body of water
- The edge or boundary of your lake's watershed is defined by the highest points and ridges of land around the lake



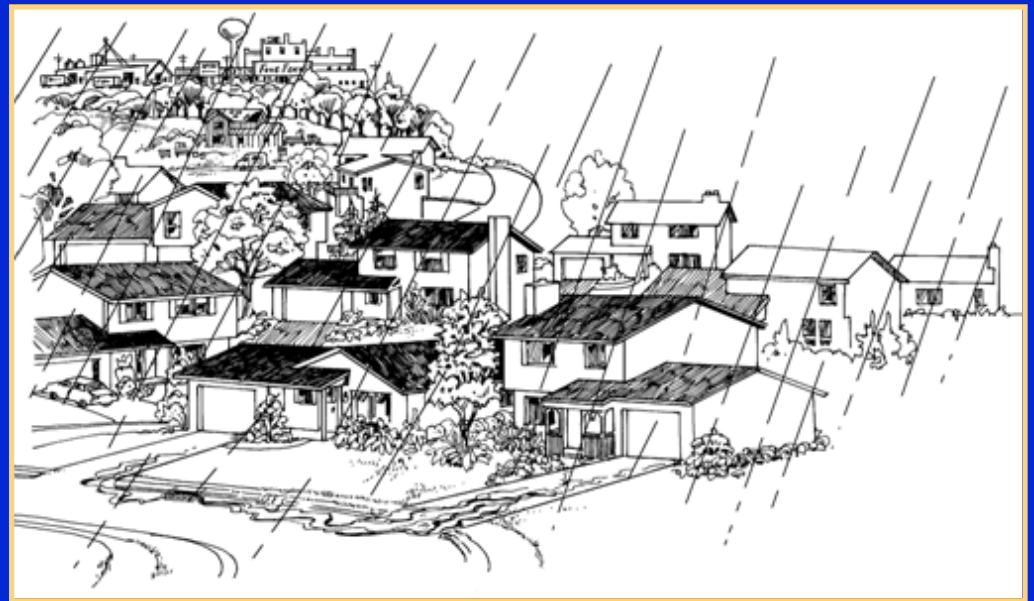
What is a Watershed?

- Falling rain or melting snow on the near side, or “inside” of the ridge flows by gravity, over the ground and in streams and groundwater, to your lake
- Also called drainage basin, drainage area, catchment



Why is it Important?

- Any substance that can be transported by water can eventually reach your lake
- Anything that you and all the other people do who live, work, and play in the watershed can have an effect on your lake's water quality

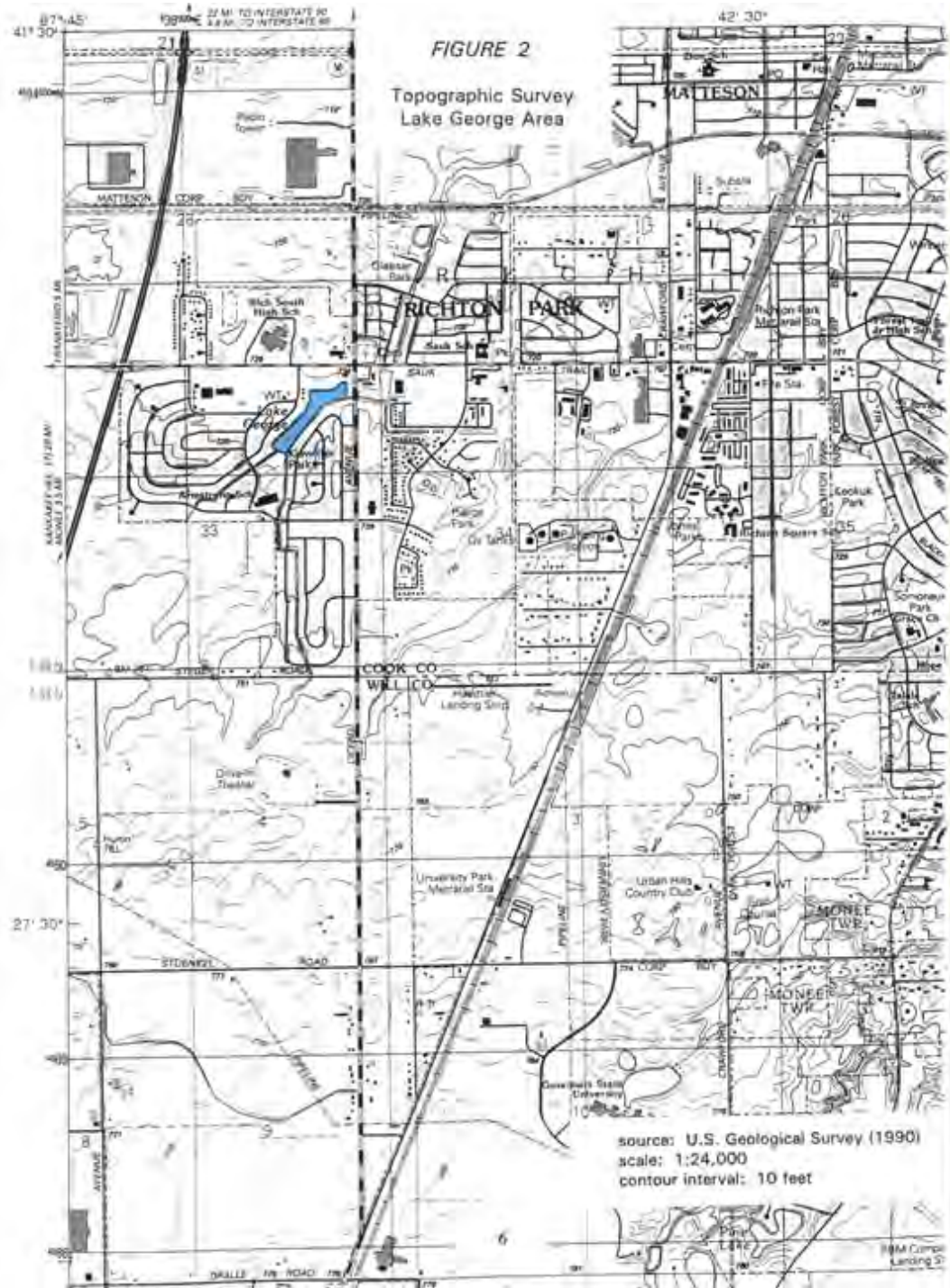


Why is it Important?

- Knowing your lake's watershed boundary and the land uses and activities going on within that boundary can help you understand your lake's quality and manage your lake more effectively



Where do
you begin?
*with a
topographic
map*



*and an
aerial
photograph*



Land Use in the Lake George Watershed

Cook and Will Counties, Illinois

a part of the Butterfield Creek watershed



Lake George Watershed Land Use

LAND USE/COVER CATEGORY	TOTAL AREA (acres)	% of WATERSHED
agriculture - row crop	434.6	50.9%
agriculture - cover crop	10.8	1.3%
high density residential (3-4 units/acre)	253.4	29.7%
low density residential (<1 unit/acre)	11.2	1.3%
low density residential (farmhouse and buildings)	29.3	3.4%
commercial	20.5	2.4%
institutional (school)	7.4	0.9%
Interstate highway	4.2	0.5%
major roads	2.5	0.3%
rural roads	5.1	0.6%
forested wetland	20.1	2.4%
emergent wetland	17.4	2.0%
meadowland	11.6	1.4%
woodland	1.0	0.1%
ponds	0.4	0.05%
parkland	3.0	0.3%
vacant	21.2	2.5%
Total drainage area	853.7	100%

Average Annual Nutrient/Solids Loading to Lake George by Watershed Land Use

LAND USE/COVER CATEGORY	Total Phosphorus		Total Nitrogen		Total Solids	
	lb/yr	%	lb/yr	%	lb/yr	%
agriculture - row crop	935	73.28	3927	67.79	1,868,235	90.48
agriculture - cover crop	9	0.71	61	1.05	64,752	3.14
high density residential (3-4 units/acre)	249	19.51	1131	19.52	101,360	4.91
low density residential (<1 unit/acre)	6	0.47	37	0.64	112	0.01
low density residential (farmhouse and buildings)	10	0.78	97	1.67	147	0.01
commercial	25	1.96	253	4.37	14,375	0.70
institutional (school)	5	0.39	29	0.50	2664	0.13
interstate highway (internally drained)	0	0.00	0	0.00	0	0.00
major roads	6	0.47	46	0.79	5000	0.24
rural roads	7	0.55	68	1.17	6247	0.30
forested wetland	3	0.24	36	0.62	181	0.01
emergent wetland	2	0.16	30	0.52	59	0.00
meadowland	2	0.16	19	0.33	91	0.00
woodland	0	0.00	3	0.05	2	0.00
ponds	0	0.00	0	0.00	0	0.00
parkland	2	0.16	12	0.21	162	0.01
vacant	15	1.18	44	0.76	1359	0.07
TOTALS	1276	100%	5793	100%	2,064,746	100%

For more information and assistance:

- *Lake Notes* fact sheet:
“Determining Your Lake’s
Watershed” (available free from Illinois EPA -
Lakes Unit, 217-782-3362; & on-line at [http://
www.epa.state.il.us/water/conservation/lake-notes/
index.html](http://www.epa.state.il.us/water/conservation/lake-notes/index.html))
- Your local Soil & Water Conservation
District (SWCD) or USDA-Natural Resource
Conservation Service (NRCS) [http://
www.aiswcd.org/Guide/swcd.htm](http://www.aiswcd.org/Guide/swcd.htm)

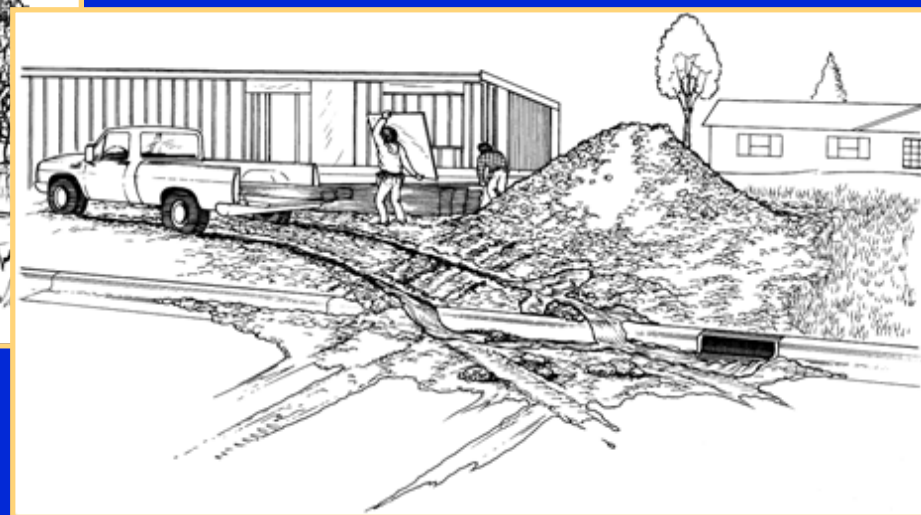
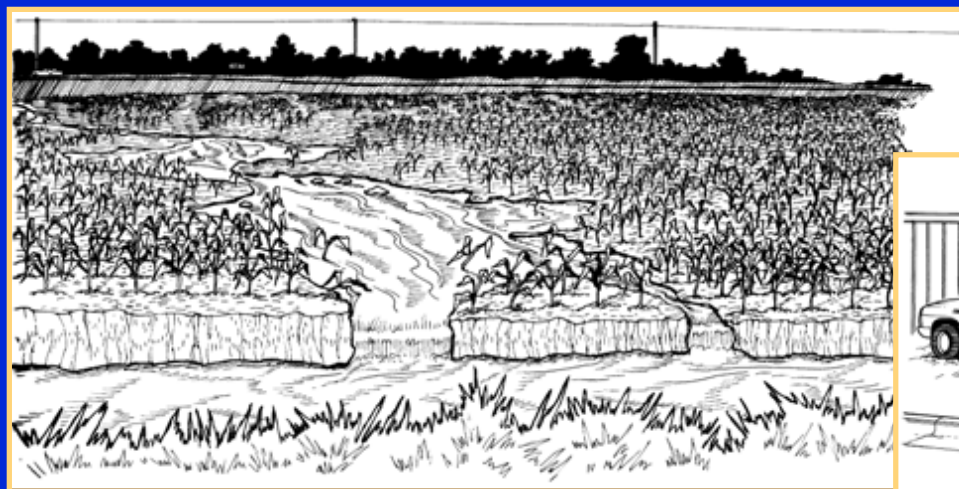


**#9 Use Agricultural & Urban
Best Management
Practices (BMPs)**

- Holly

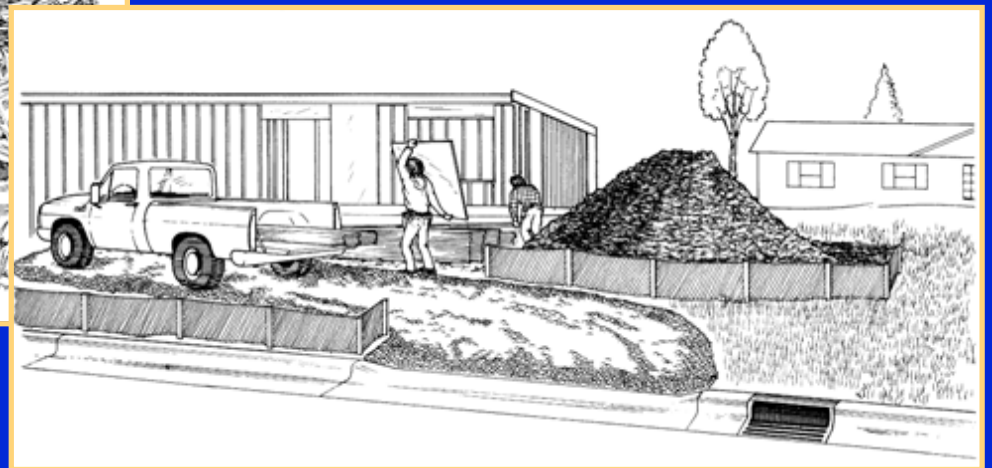
What is a “BMP”?

- Land use practices (and policies, plans, and programs) that protect against soil erosion and nutrient transport



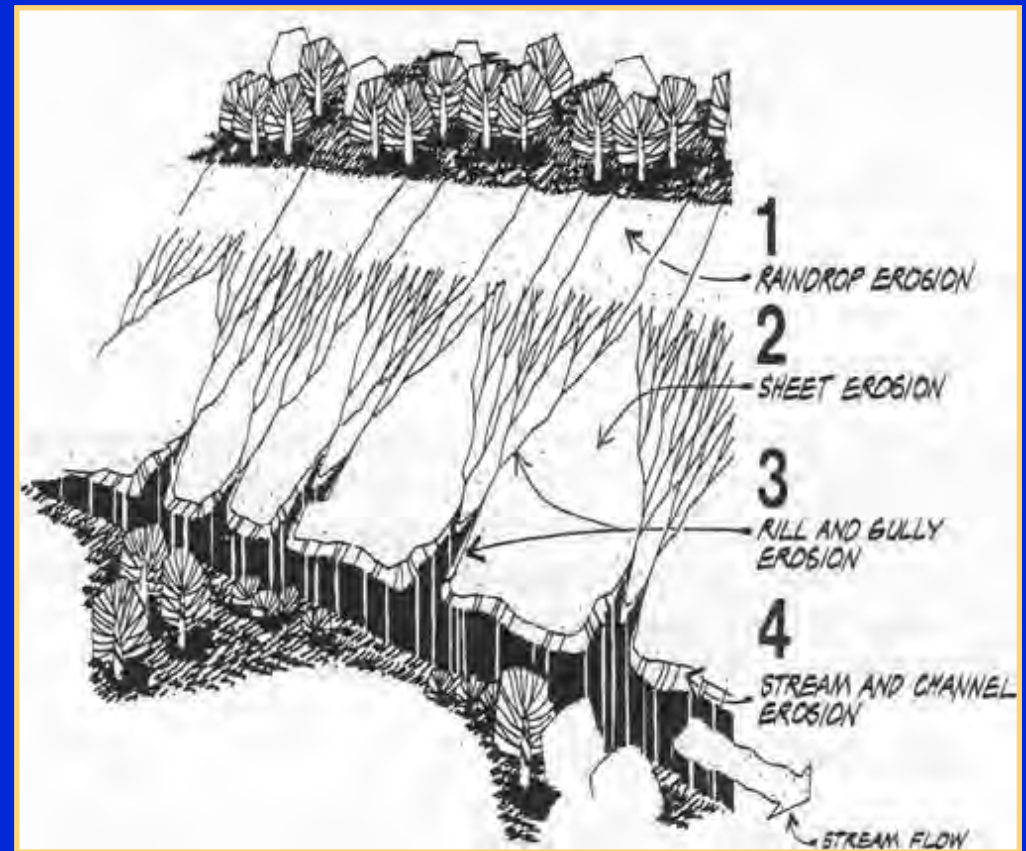
Why are BMPs Important?

- To prevent soil erosion that allows stormwater to carry soil and attached nutrients to lakes, ponds, wetlands, and streams



Types of Erosion

- Raindrop erosion
- Sheet erosion
- Rill and gully erosion
- Shoreline erosion
- Streambank and streambed erosion
- Wind erosion



Graphics credit: *Illinois Urban Manual*

Raindrop Erosion

This is where it starts

- Raindrops act as little bombs
 - Drops dislodge soil particles and allow for transport



Photo credit: USDA-NRCS

Types of BMPs

AGRICULTURAL

- Conservation tillage
- Contour cropping / strip cropping
- Terracing
- Sod-based crop rotation
- Cover crops
- Grassed waterways
- Filter strips / Riparian buffers
- Water & sediment control basins
- Wetland restoration
- Fertilizer management (Nutrient management plans)
- Integrated pest management
- Range & pasture management
- Animal waste management practices

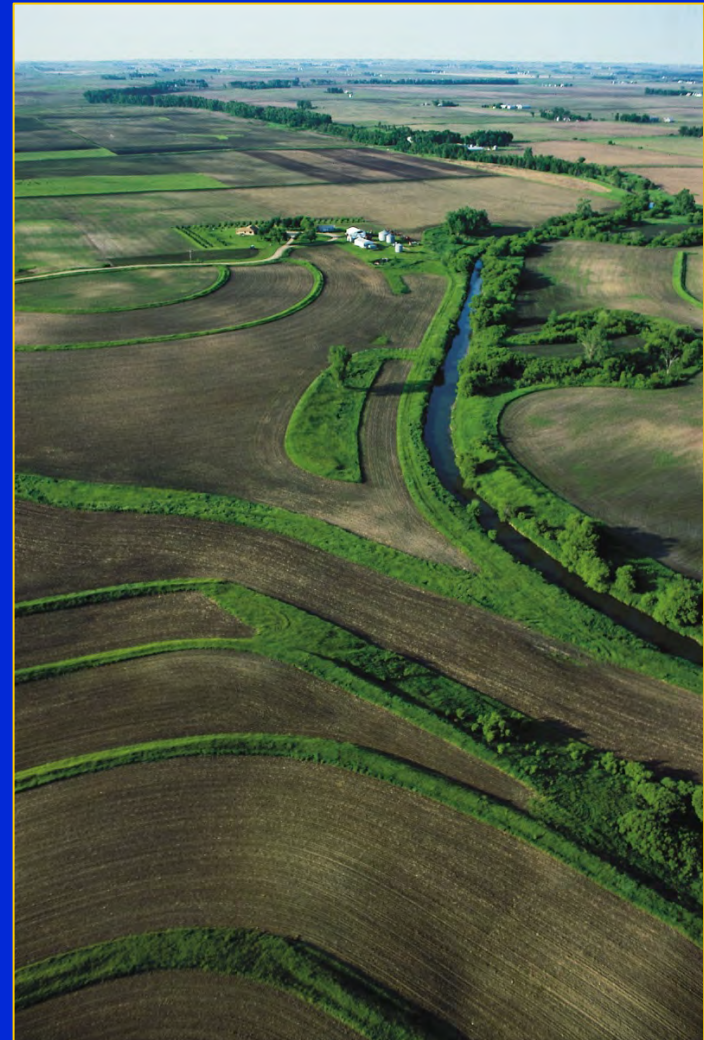


Photo credit: USDA-NRCS

Grassed Waterway with Contour Strip Cropping



Photo credit: USDA-NRCS

Filter Strip



Photo credit: USDA-NRCS

Types of BMPs

URBAN

Long-term / Permanent

- Vegetated filter strips / buffers
- Vegetated swales
- Bioswales
- Green roofs
- Rain gardens, rain barrels
- Infiltration planters
- Porous & permeable pavements
- Infiltration trenches & basins
- Oil & grit separators
- Stormwater detention basins

*Filtering, Infiltrating,
Settling Out ...*

Short-term / Temporary

- Construction site soil erosion & sediment control practices (e.g., temporary seeding with mulching, erosion blanket, silt fences, sediment traps and basins, rock or straw bale check dams)

Housekeeping

- Street & parking lot sweeping
- Catch basin cleaning
- Road salt storage

Policy, Planning, Programming

- Ordinances
- Integrated planning
- Education

Stream Buffer



Bioinfiltration Basins



Bioinfiltration Trench



Bioswale

Permeable Pavers



Green Roof



Stormwater Detention Basins



Wet Detention
(naturalized basins recommended)



Stormwater Detention Basins



Dry Detention
*(look for opportunities
to retrofit)*



Erosion Blanket



Photo credit: NRCS Plainfield



Photo credit: Kane-DuPage SWCD

Filter Fabric Fences (Silt Fences)



Rock and Straw Bale Check Dams



Photo credit: NRCS Plainfield



Photo credit: North Cook SWCD



Rain Gardens



Brookfield Zoo

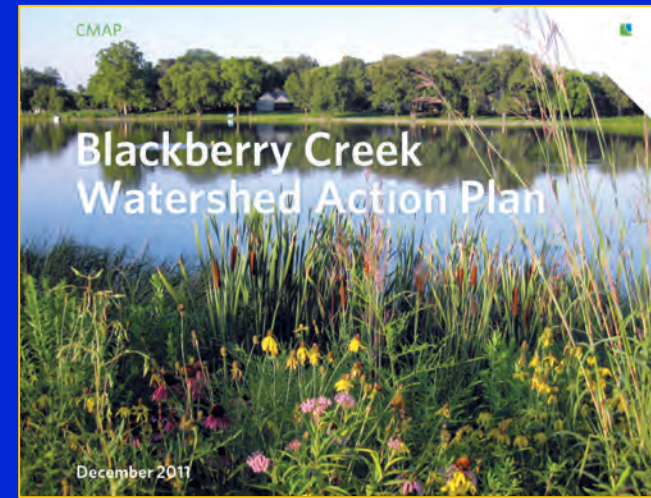
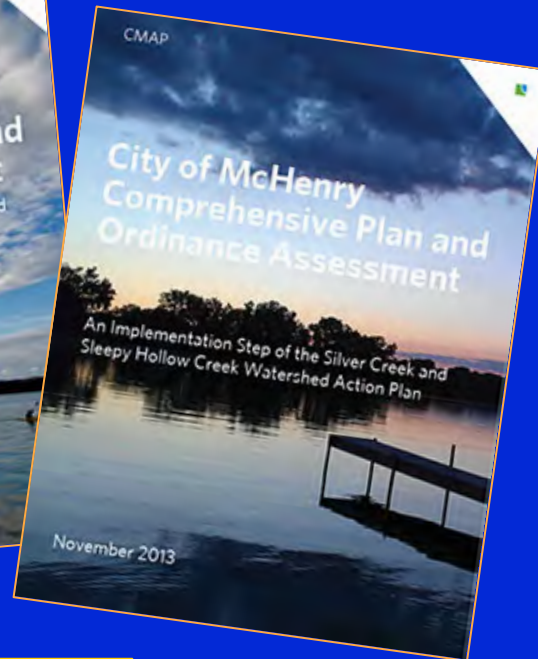
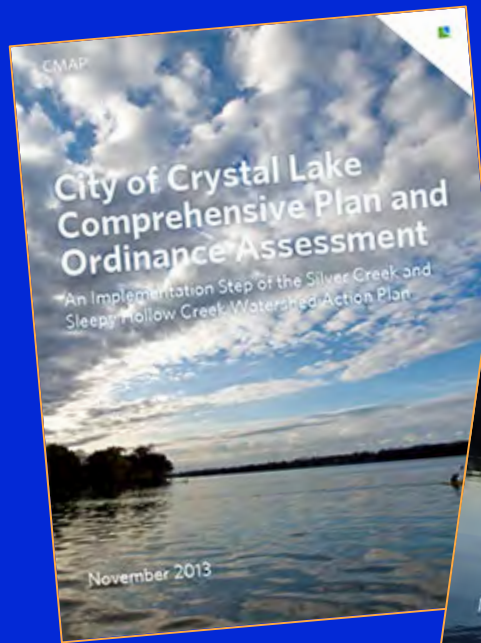


Photo credit: City of Lincoln, NE



Crystal Lake Park District

Policy, Planning, Programming




For more information & assistance:

- Your local Soil & Water Conservation District (SWCD) or USDA-Natural Resources Conservation Service (NRCS)
<http://www.aiswcd.org/Guide/swcd.htm>
- NRCS *Field Office Technical Guide* <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/fotg/>
- *Illinois Urban Manual*
<http://www.aiswcd.org/iум/>
- *National Menu of Stormwater BMPs*, incl. fact sheets:
<http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm>

For more information, cont.:

- All about rain gardens:
 - <http://www.raingardens.org>
 - <http://clean-water.uwex.edu/pubs/pdf/rgmanual.pdf>
 - http://www.lowimpactdevelopment.org/raingarden_design/whatisaraingarden.htm
- *Plants for Stormwater Design: Species Selection for the Upper Midwest*
 - <http://www.pca.state.mn.us/index.php/water/water-types-and-programs/stormwater/stormwater-management/plants-for-stormwater-design.html>
- *57 Ways to Protect Your Home Environment (and Yourself)*
 - <http://thisland.illinois.edu/57ways/57ways.html>

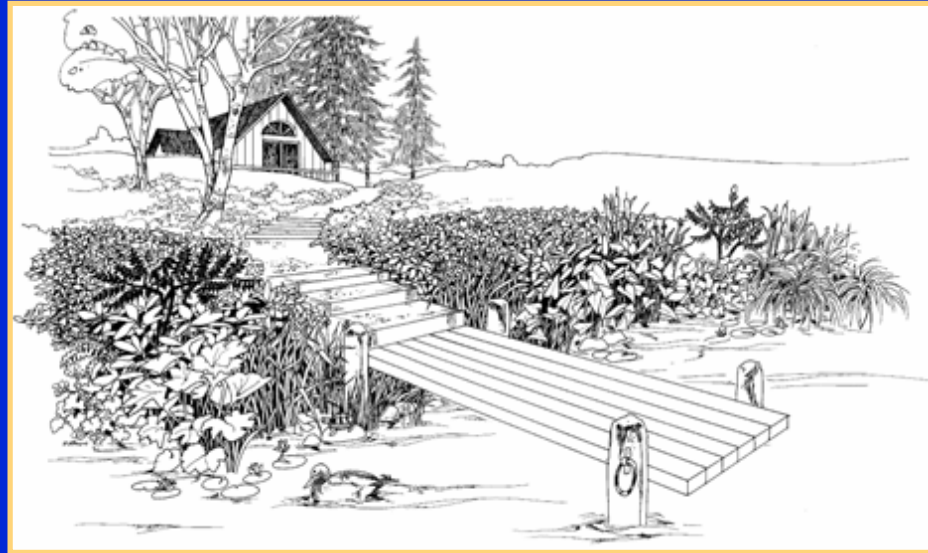


#8 Establish Buffer Strips
Along the Lakeshore
and Tributary Streams

- Holly

What is a Buffer?

- A continuous, vegetated strip of land comprised of the types of native plants which naturally exist in an undisturbed riparian (shoreline, stream side) setting
- Can be forest, prairie, or wetland vegetation



What is a Buffer?

- Recommended minimum width of 25 feet from the water's edge; wider for larger and more ecologically-sensitive lakes and rivers
- USDA recommends "filter strips" of 66-99 feet for water quality protection

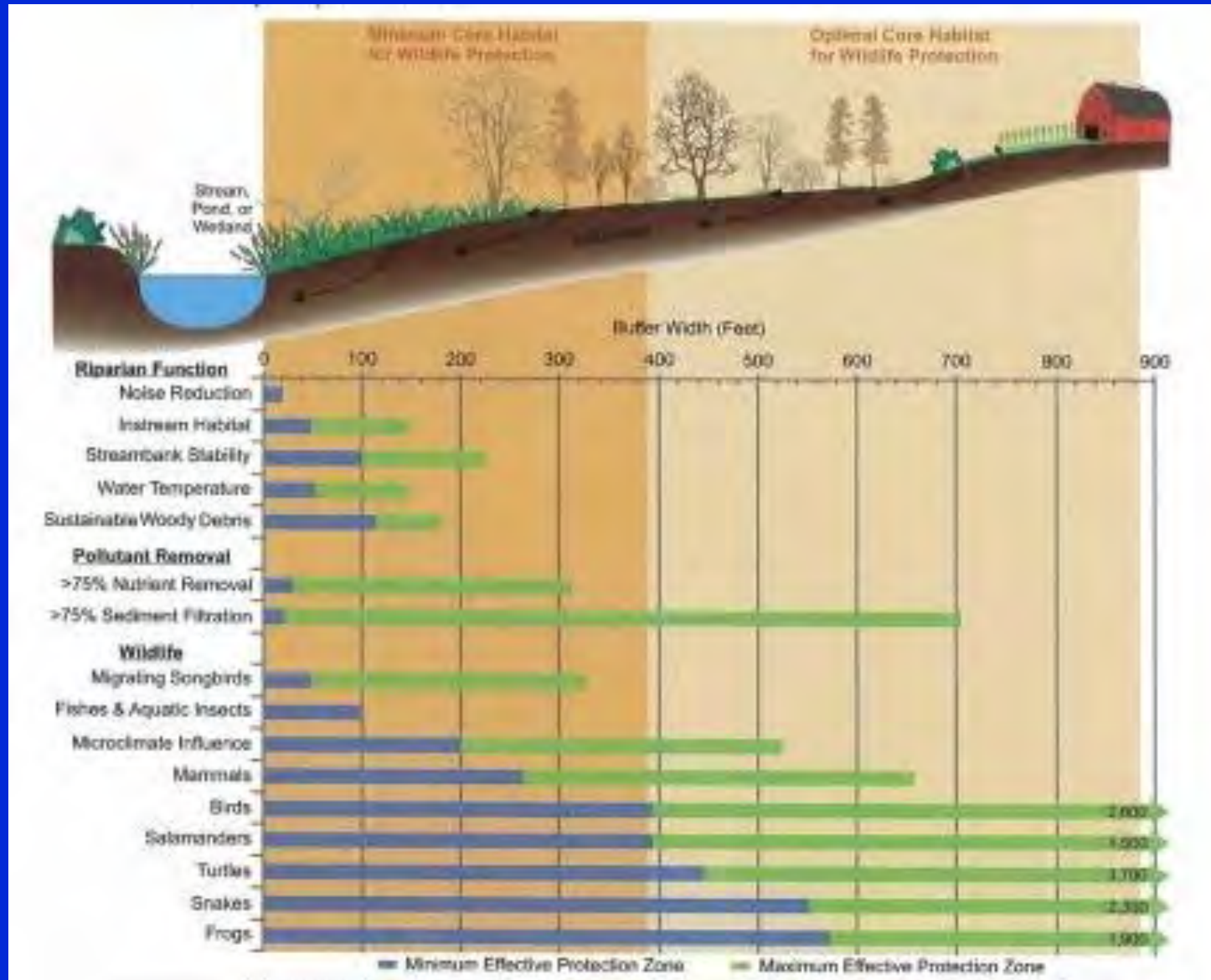


Why is it Important?

- runoff filtering
- shoreline / streambank stabilization
- fish & wildlife habitat
- screening noise
- aesthetic values

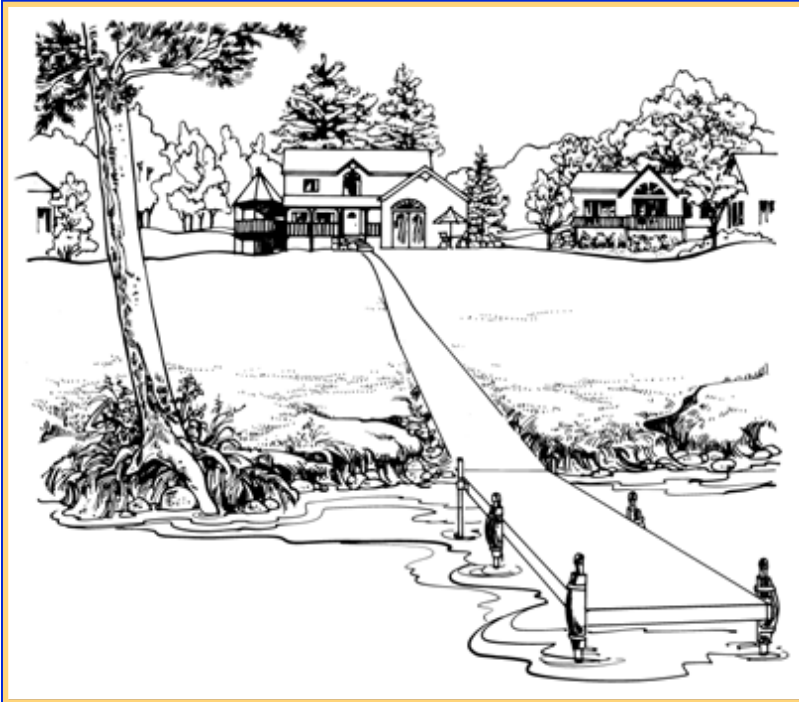


Why is it Important?



from *Managing the Water's Edge*
(SEWRPC, 2010)

How Do You Get From ...



...here...



...to here?

For more information:

- *Lake Notes* fact sheet: “Shoreline Buffer Strips”
<http://www.epa.state.il.us/water/conservation/lake-notes/index.html>
- *Managing the Water’s Edge: Making Natural Connections* <http://www.sewrpc.org/SEWRPCFiles/Environment/RecentPublications/ManagingtheWatersEdge-brochure.pdf>
- *Lakescaping for Wildlife and Water Quality* <http://www.comm.media.state.mn.us/bookstore/mnbookstore.asp?page=viewbook&BookID=67748&stocknum=310>
- Chicago Botanic Garden webpages: Lake Shoreline Erosion Control & Habitat Enhancement
<http://www.chicagobotanic.org/research/shoreline/>



**#7 Practice Lake-Friendly
Home & Yard Care**

- Margaret

The logo features a dark blue background with a stylized wave graphic in shades of blue and yellow-green. The text "LAWN TO LAKE" is written in white, bold, uppercase letters.

LAWN TO LAKE

Lake-friendly home & yard care: natural lawn care in your community

*Presented to:
2014 Illinois Lake Management Association
April 10, 2014*

Margaret Schneemann
Lawn to Lakes Program Manager



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EXTENSION

The logo features a stylized white bird in flight above the text "Sea Grant" in a large, blue, serif font. Below it, "ILLINOIS - INDIANA" is written in a smaller, blue, sans-serif font.

Sea Grant
ILLINOIS - INDIANA

Great Lakes
RESTORATION





from the lawn to the lake





lawns in landscapes





basics of natural lawn care

3" LAWNS

3" mowing height

Leave grass clippings

Aerate soil

Water wisely when needed

Natural nutrients when needed

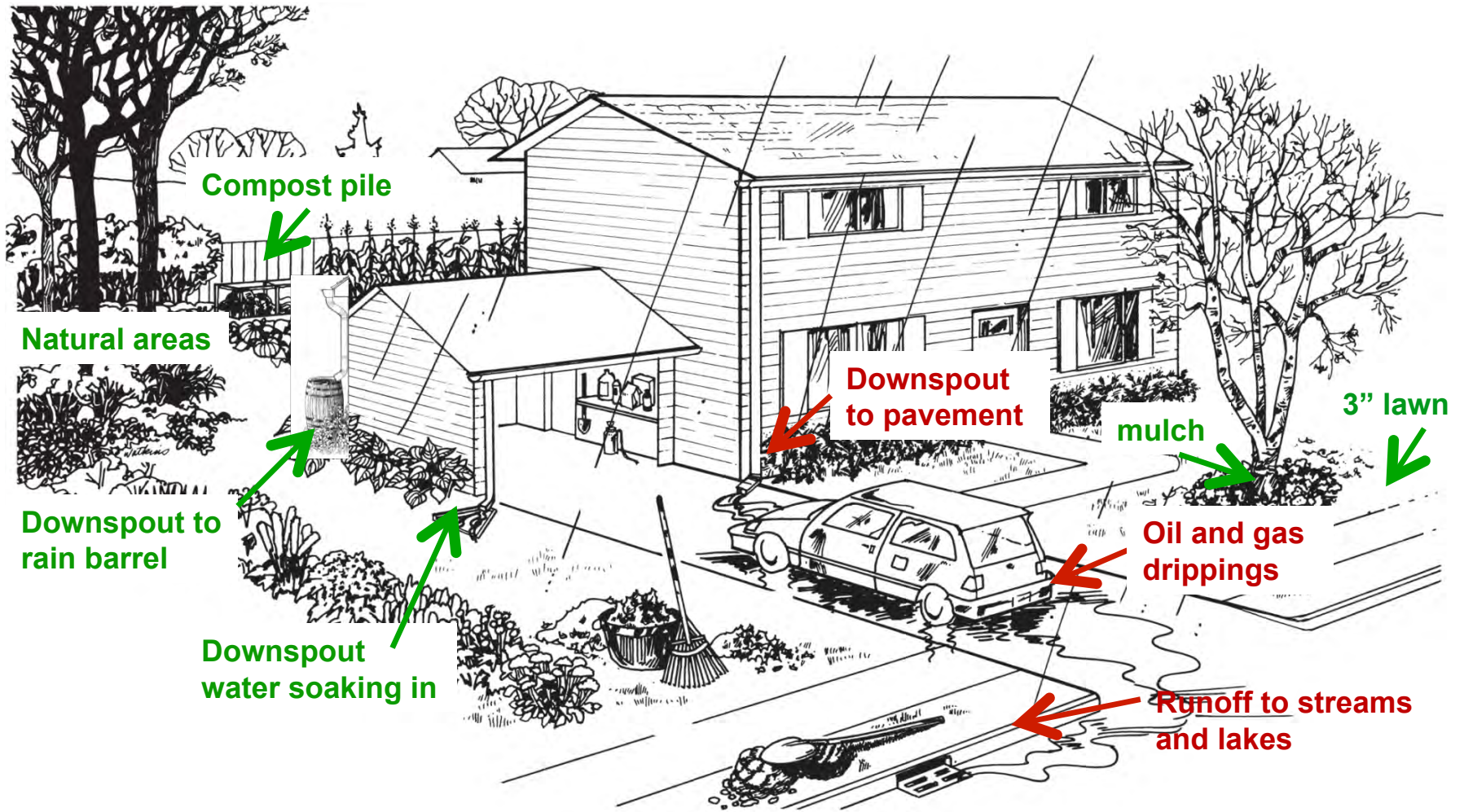
Soil care is the foundation

alternatives to lawn

choose
your
landscap
e



a natural yard



lawn to lake in the community

- landscape professionals, municipalities, homeowners associations
- train the trainer
 - Extension's Master Gardener
 - Teachers
- business and institutional property owners
- lawn product retailers
- general public involved in lawn and landscape care



what can I do?

- Educate yourself
- Natural Lawn Care BMPs on your own property
- Find willing partners to educate and do projects
- Talk to local officials, public property managers
- Use social marketing concepts to encourage BMP adoption





getting started

- Lawn to Lake – www.lawntogreatlakes.org
- Lawn Talk - <http://urbanext.illinois.edu/lawntalk/>
- Midwest Pesticide Action Center (formerly Safer Pest Control Project) – <http://midwestpesticideaction.org/>
- *Lake Notes* fact sheets:
“Home and Yard” “Fertilizers and Pesticides” “Septic Systems”
(available free from Illinois EPA - Lakes Unit, 217/782-3362;
on-line at
<http://www.epa.state.il.us/water/conservation/lake-notes/index.html>)
- Recommended reading:
 - *The Organic Lawn Care Manual* – by Paul Tukey
 - Great step-by-step ‘how to’ manual
 - *American Green: The Obsessive Quest for the Perfect Lawn*
– by Ted Steinberg
 - *How to Get your Lawn Off Drugs* – by Carole Rubin



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EXTENSION




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5/20/14

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#6 Create (or Update) a Bathymetric Map

- *Mary*

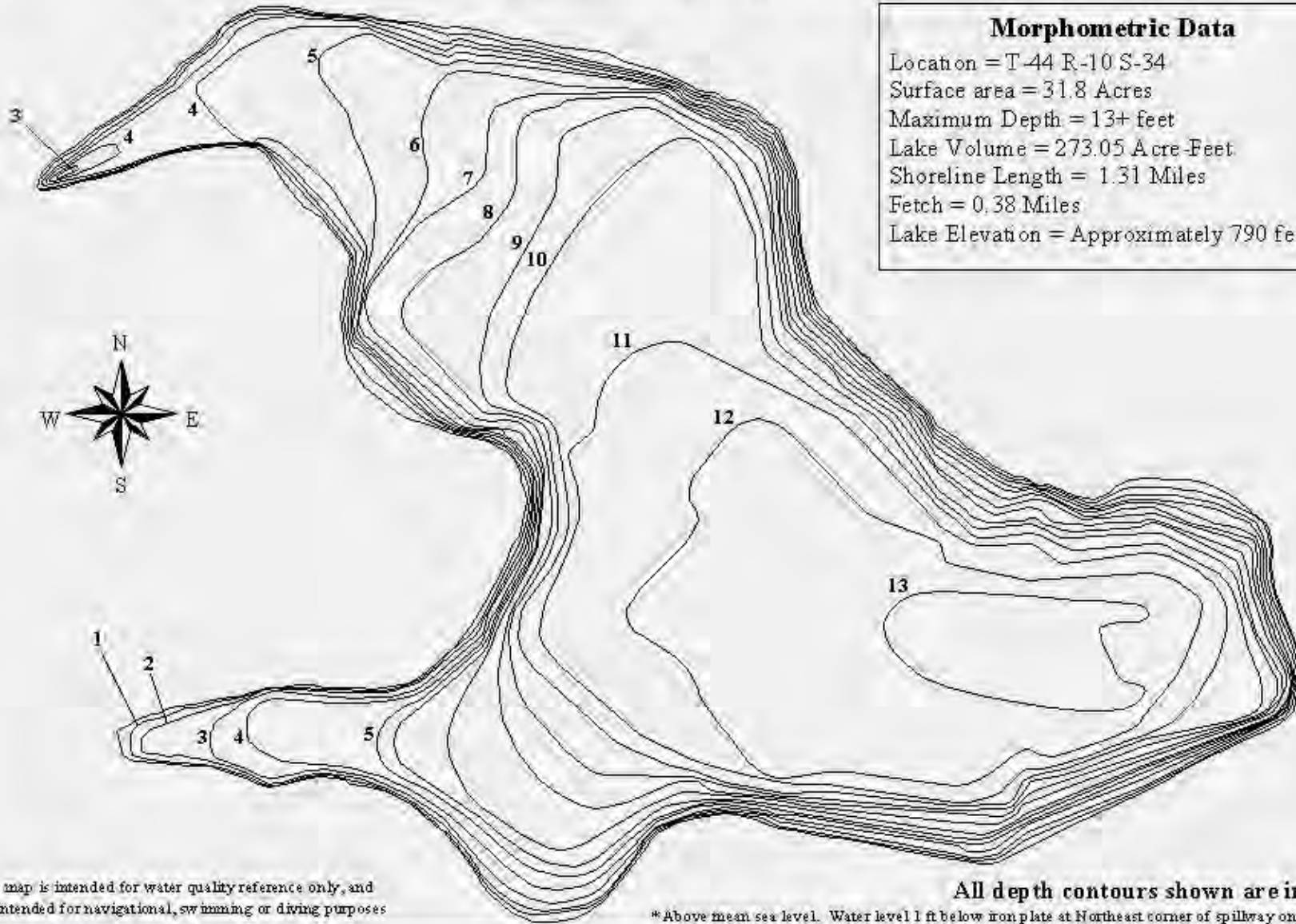
What is a Bathymetric Map?

- A map of a lake's bottom depth contours (like an underwater topographic map)
- Morphometric data (e.g., surface area, maximum depth, average depth, lake volume) and a table of volumes by depth intervals should be provided as part of the mapping calculations

Bathymetric Map of Sylvan Lake

Morphometric Data

Location = T-44 R-10 S-34
Surface area = 31.8 Acres
Maximum Depth = 13+ feet
Lake Volume = 273.05 Acre-Feet
Shoreline Length = 1.31 Miles
Fetch = 0.38 Miles
Lake Elevation = Approximately 790 feet*



This map is intended for water quality reference only, and not intended for navigational, swimming or diving purposes

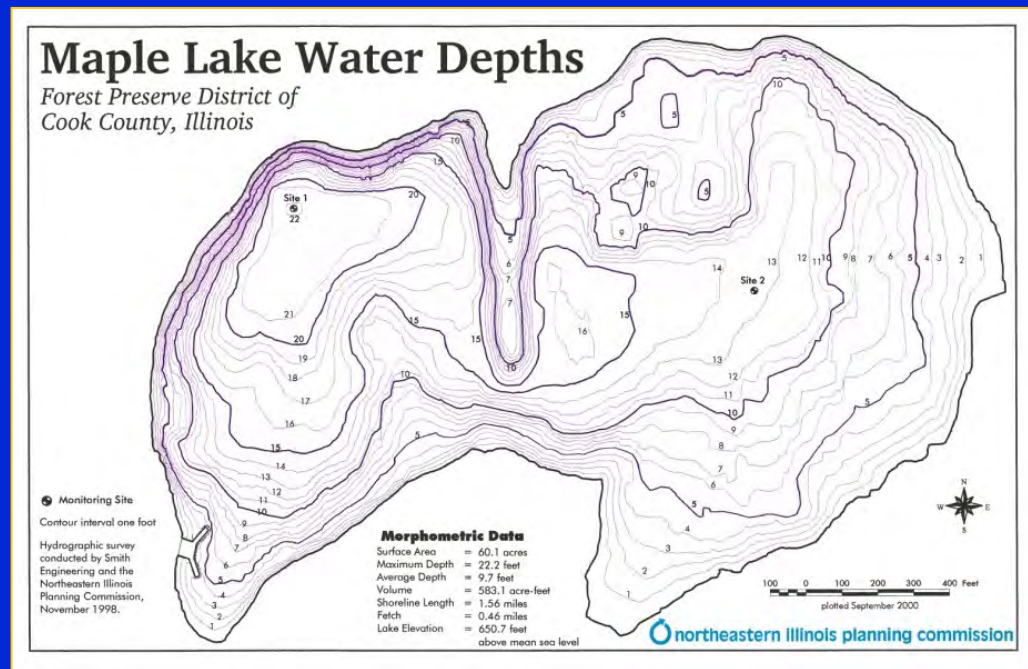
All depth contours shown are in feet

* Above mean sea level. Water level 1 ft below iron plate at Northeast corner of spillway on 4/28/03



Lake Practices Needing Bathymetric Map Information

- **Lake Monitoring:** The location of sampling sites is influenced by the lake's size, shape, and depths. One sampling site is typically located over the deepest portion of the lake since this usually best represents average conditions.



Lake Practices Needing Bathymetric Map Information

- **Aquatic Herbicide Use:** Some products require the knowledge of lake volume for effective treatment. An incorrect map (or no map at all) can result in the application of too much or too little herbicide.



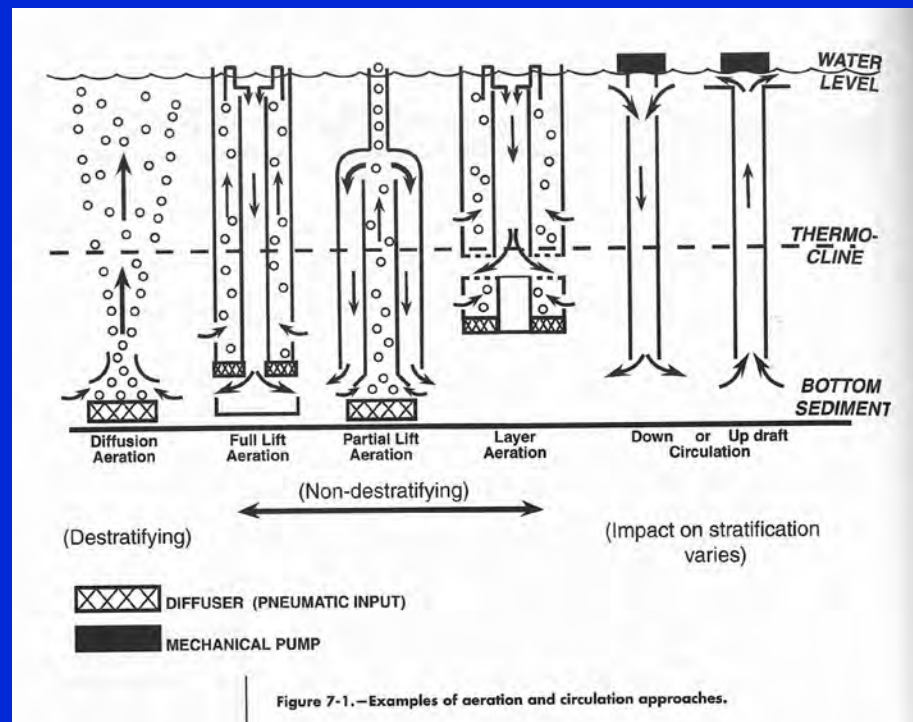
Lake Practices Needing Bathymetric Map Information

- **Fisheries Management:** Knowledge of the littoral zone (shallow areas) and deeper water locations is important for fish crib placement and habitat information. Lake volume is important for stocking.



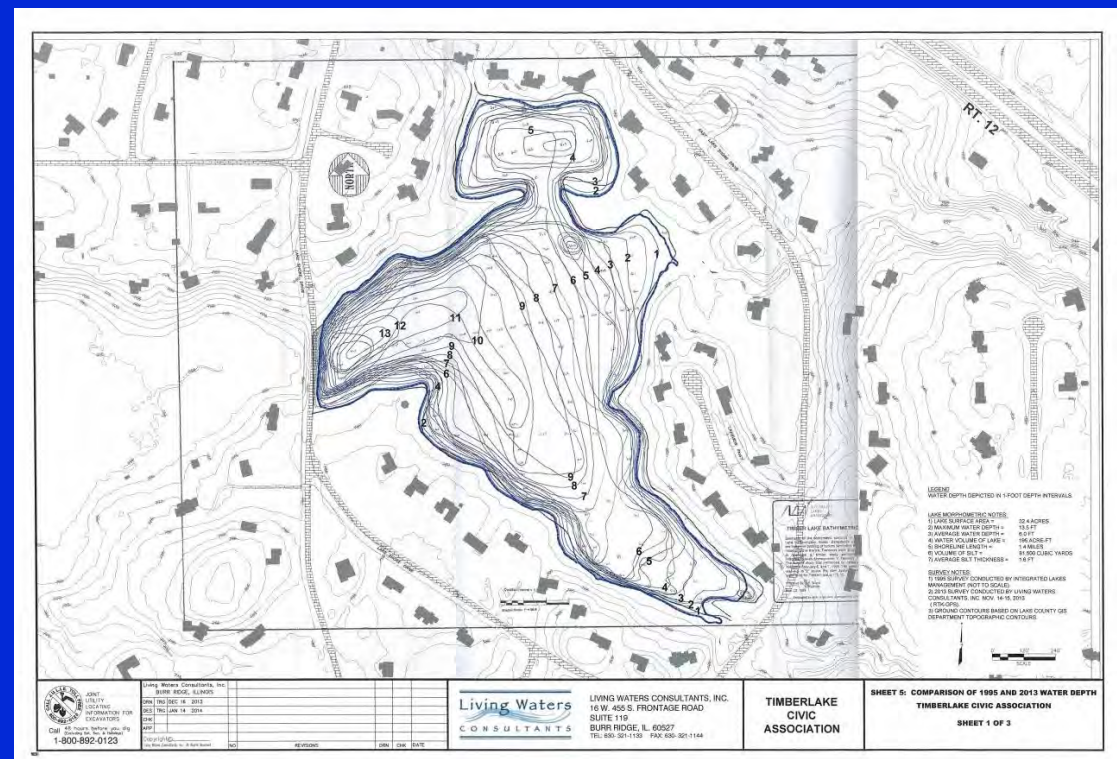
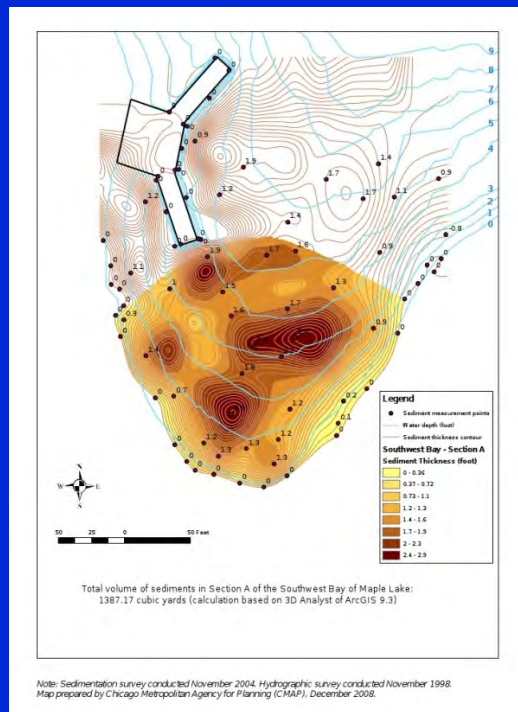
Lake Practices Needing Bathymetric Map Information

- **Lake Aeration:** In order to properly choose and size an aeration system, lake bathymetry and volume are critical.

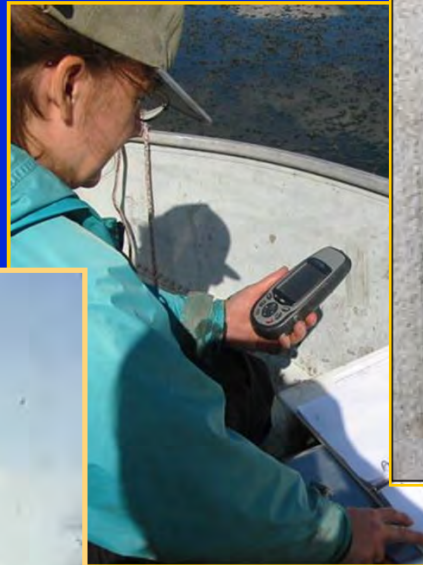


Lake Practices Needing Bathymetric Map Information

- Dredging:** Knowledge of shallow locations where sediment has accumulated is necessary for a dredging plan. By comparing bathymetric maps over time, an estimate of sediment accumulation can be made.



How Do You Make a Bathymetric Map?



For more information:

- Publication on-line: *A Beginner's Guide to Water Management – Lake Morphometry* (Circular 104)
<http://lakewatch.ifas.ufl.edu/LWcirc.html>
- USGS – Illinois Water Science Center:
P. Ryan Jackson, Hydrologist, 217-328-8747,
pjackson@usgs.gov (re: EcoMapper®, <http://pubs.er.usgs.gov/publication/fs20133018>)
- Lake County Health Dept. – Lakes Management Unit: 847-377-8030, <http://health.lakecountyil.gov/Population/LMU/Pages/default.aspx>
- Consultants / Vendors



#5 Obtain a Fisheries
Survey with
Recommendations

- James

Obtain a Fisheries Survey With Recommendations

James Fitzgerald

Why?

- When was the last survey done?
- Stocking Questions?
- Fish Kill?
- Water quality poor?
- Species Concerns?



When?

- Spring/Summer/Fall?
- Day/Night?



What Gear?

- Passive
 - Trap Net
 - Gill Net
- Active
 - Seine
 - Electrofishing



Gillnets



Trapnets



Electrofishing



Seining



What can your survey tell you?

- Fish Community
- Trends
- Overall Lake health



Recruitment



D.E.L.T.



Reports

- Simple
 - Abundance
 - Gamefish
- In Depth
 - PSD
 - Diversity Indexes
 - Non-Gamefish (T&E)



Surveys lead to new questions

- Stocking
- Regulation Changes
- Habitat/Vegetation
- Lake/Watershed issues
- When to do another survey



For more information and assistance:

- Your local Illinois Dept. of Natural Resources' District Fisheries Biologist <http://www.ifishillinois.org/FAQS/biologists.html>
- Book: *Fish and Fisheries Management in Lakes and Reservoirs*
available free from:
U.S. Environmental Protection Agency <http://www.epa.gov/owow/lakes/ordrdocs.html>



#4 Regularly Monitor Your
Lake

- Holly

Why Monitor?

- If you don't know what you have, how can you make wise lake management decisions?

Is the fish population in good shape?

Why is the water so green this year?

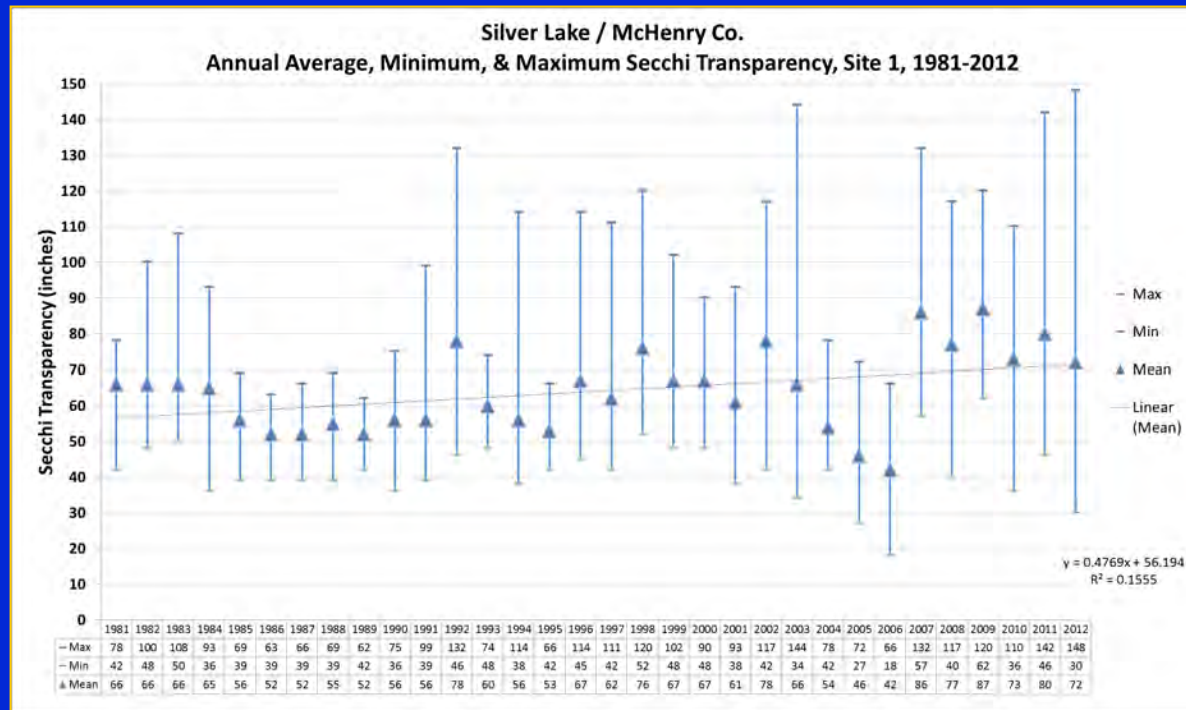
Is it safe to swim?

What are the impacts of that new housing development?

What is that weird plant?

The Value of Monitoring

- Increases knowledge of factors affecting lake quality
- Provides baseline data & trend detection
(historic data is extremely useful and informative)
- Supports informed decision making



What to Monitor?

Depends on objectives...

Physical measurements

- Water clarity (Secchi transparency)
- Dissolved oxygen
- Temperature
- Lake level



What to Monitor?

Chemical measurements

- Nutrients
(phosphorus, nitrogen)
- Suspended solids
- pH
- Conductivity
- Alkalinity



What to Monitor?

Biological measurements

- Algae (chlorophyll, phytoplankton)
- Aquatic plants (T&E species)
- Fish (T&E species)
- Invasive aquatic species (plants & animals)
- Zooplankton
- Macroinvertebrates
- Bacteria
- Waterfowl counts



When to Monitor?

- Depends on your monitoring objectives
 - Secchi, D.O./Temperature (twice/month, May-October, + under-ice D.O./Temp.)
 - Nutrients, Suspended Solids, Chlorophyll (once/month, May-October)
 - Bacteria (weekly during swimming season)
 - Aquatic plant community (twice/ growing season: spring, summer peak)



Illinois Volunteer Lake Monitoring Program (VLMP)

- Basic Program
 - Secchi disk transparency
- Advanced Program
 - Secchi disk + water quality samples, CHL, D.O./temperature




For more information:

- *Lake Notes* fact sheets:
 - “Monitoring Lake Quality”
 - “Common Lake Water Quality Parameters”
 - “Illinois Volunteer Lake Monitoring Program”
(available free from Illinois EPA - Lakes Unit, 217-782-3362; and on-line at <http://www.epa.state.il.us/water/conservation/lake-notes/index.html>)
- *Illinois VLMP Training Manual* <http://www.epa.state.il.us/water/conservation/vlmp/what-does-my-data-mean.html#manual>
- *Volunteer Lake Monitoring: A Methods Manual*
<http://www.epa.gov/owow/lakes/ordrdocs.html>

VLMP Contact Information:



- *Statewide Coordinator:*
Greg Ratliff, Illinois EPA
(217-782-3362; greg.ratliff@illinois.gov)
- *Northeastern Illinois Coordinator:*
Holly Hudson, Chicago Metropolitan Agency for Planning
(312-454-0400; hlhudson@cmmap.illinois.gov)
- *Lake County Coordinator:*
Kelly Deem, Lake County Health Department
(847-377-8030; kdeem@lakecountyil.gov)
- *Southern Illinois Coordinator:*
Beau Henson, Greater Egypt Regional Planning & Development
Commission
(618-997-9351; beauhenson@greateregyp.org)



#3 Prevent the Spread of Exotic Species

- *Greg*

Aquatic Invasive Species - Introduced across natural barriers Oceans, mountains, deserts, temperature, etc

Uncontrolled population growth Herbivory and disease

Aquatic ecosystems Connectivity Rapid spread



Economic impacts

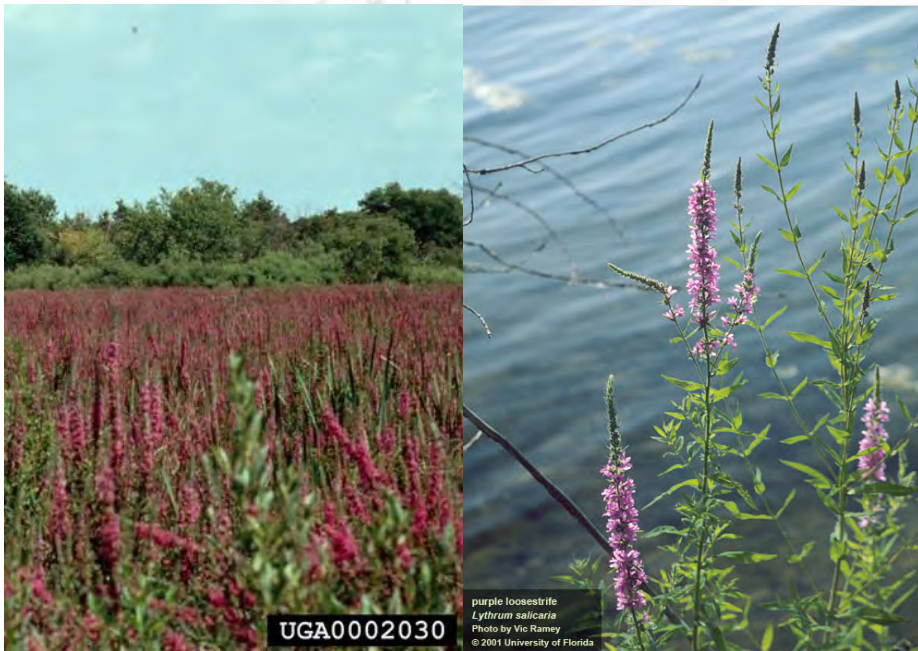
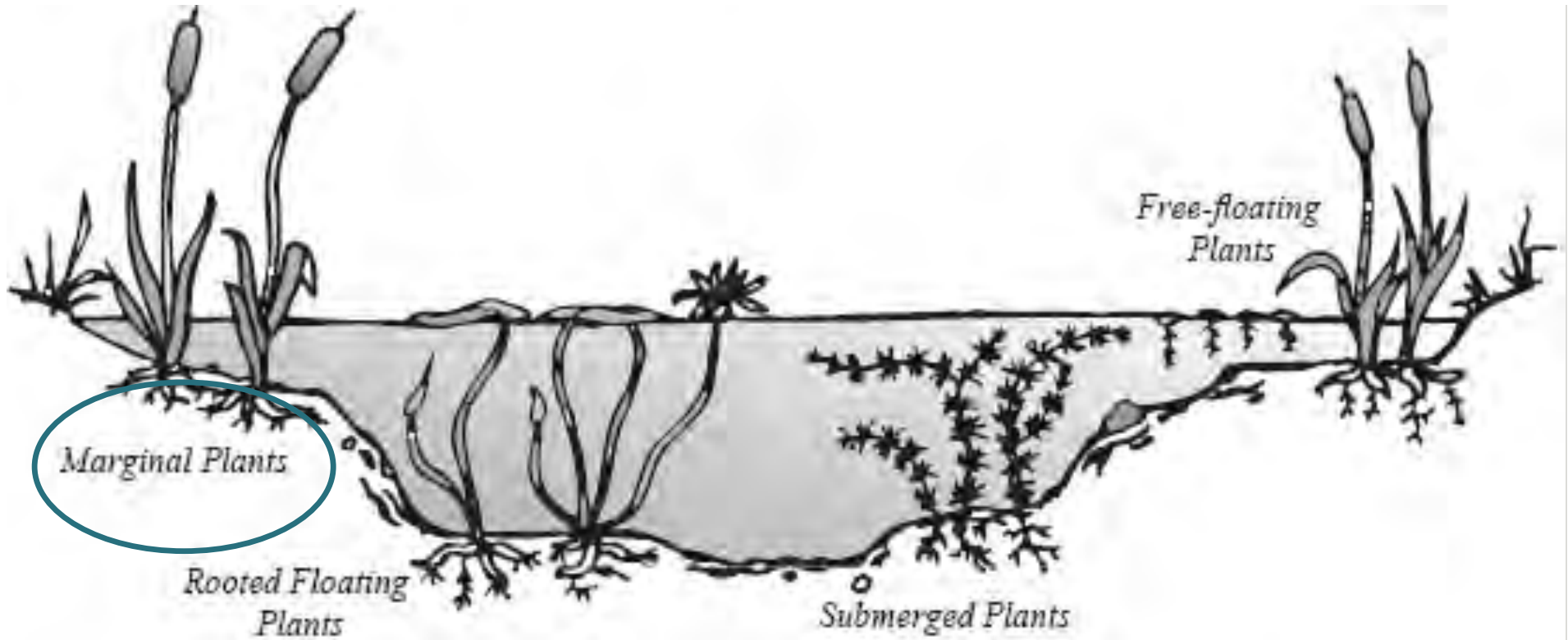
- Impair recreation
- Decrease property values
- Removal – estimate \$100million/year

Ecosystem impacts

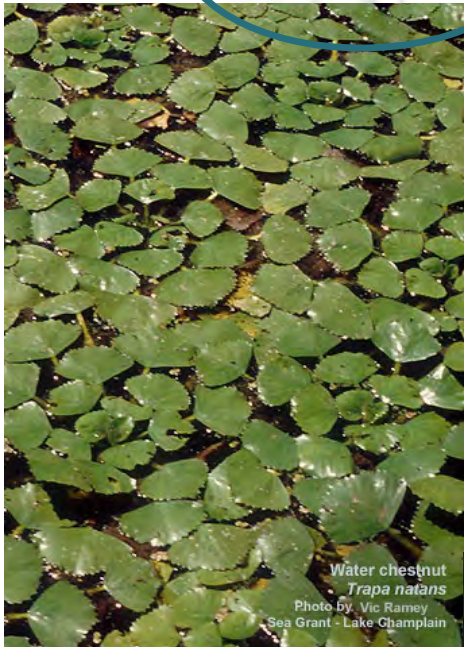
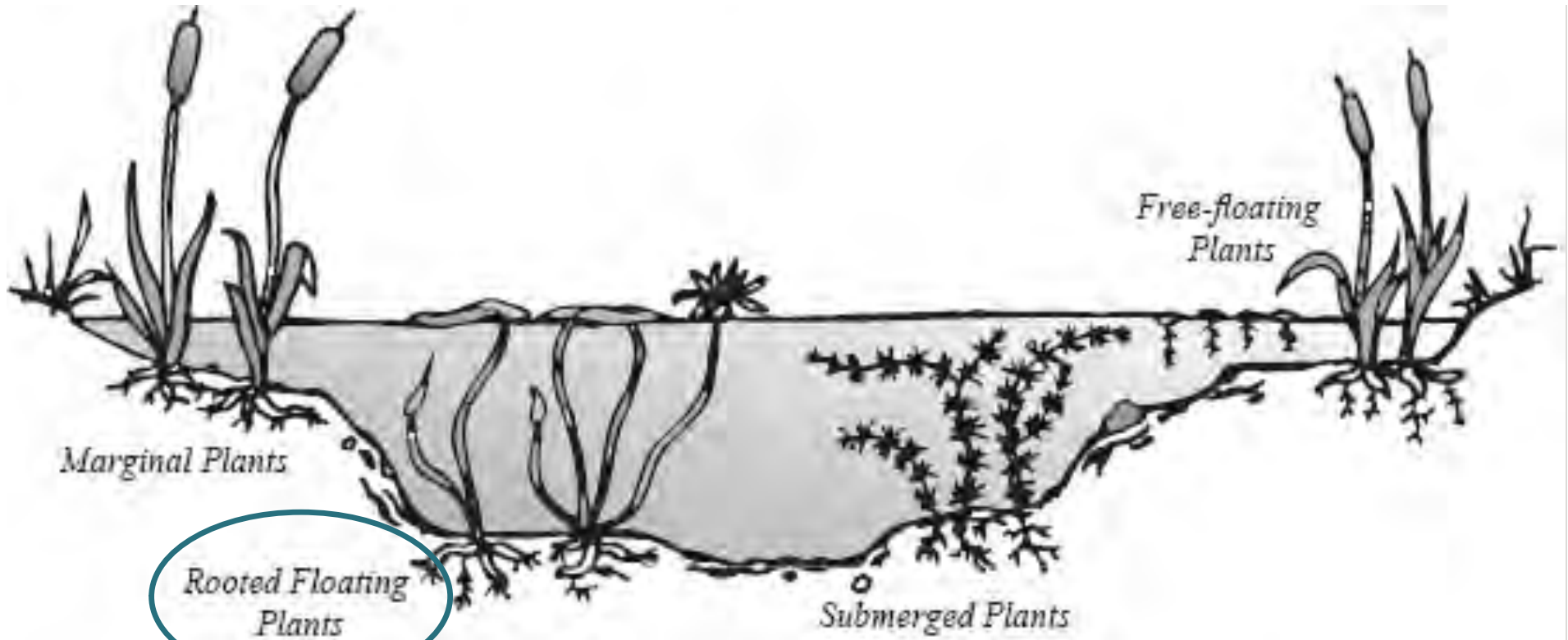
- Reduce species diversity - threatened and endangered species
- Degrade water quality
- Increase debris buildup
- Change sediment chemistry
- Impede water flow and movement



Ornamentals introductions



Purple loosestrife *Lythrum salicaria*

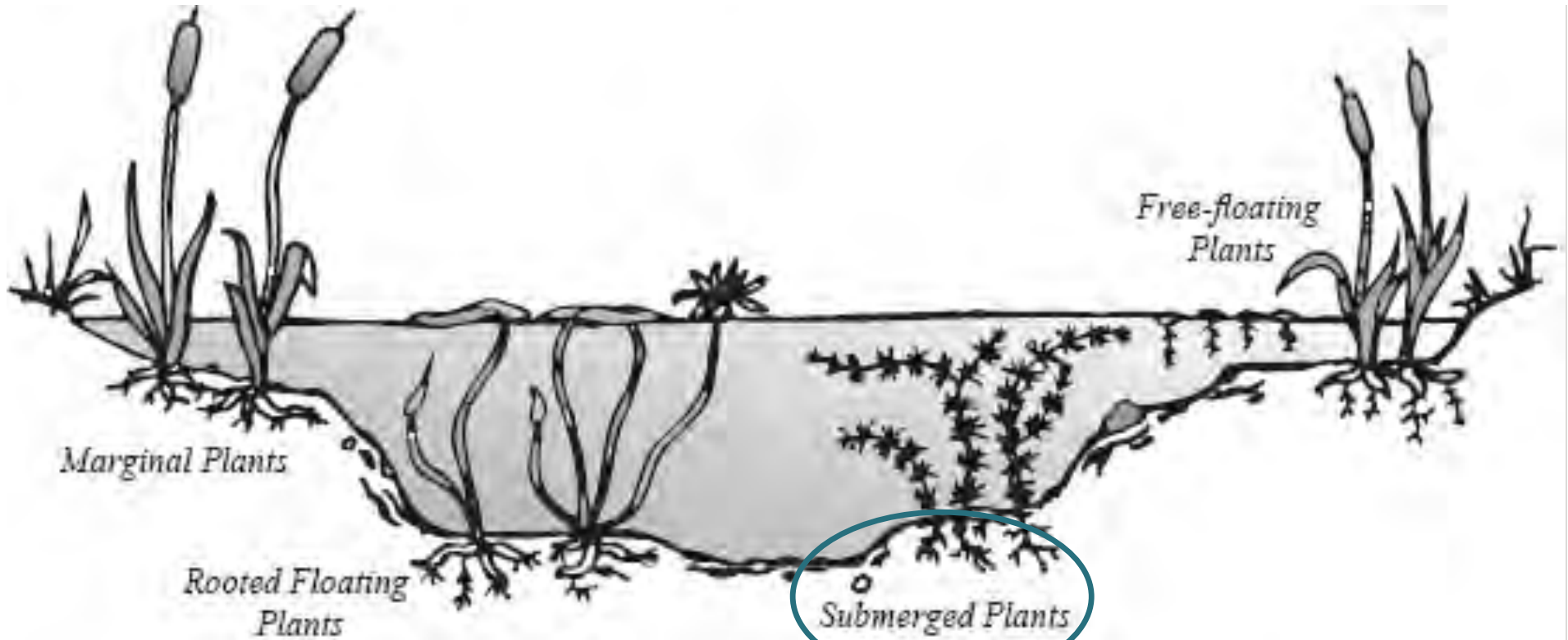


Water Chestnut

Trapa natans

Water chestnut
Trapa natans
Photo by Vic Ramey
Sea Grant - Lake Champlain

Trapa natans
Water chestnut
Photo by Vic Ramey
© 2002 University of Florida



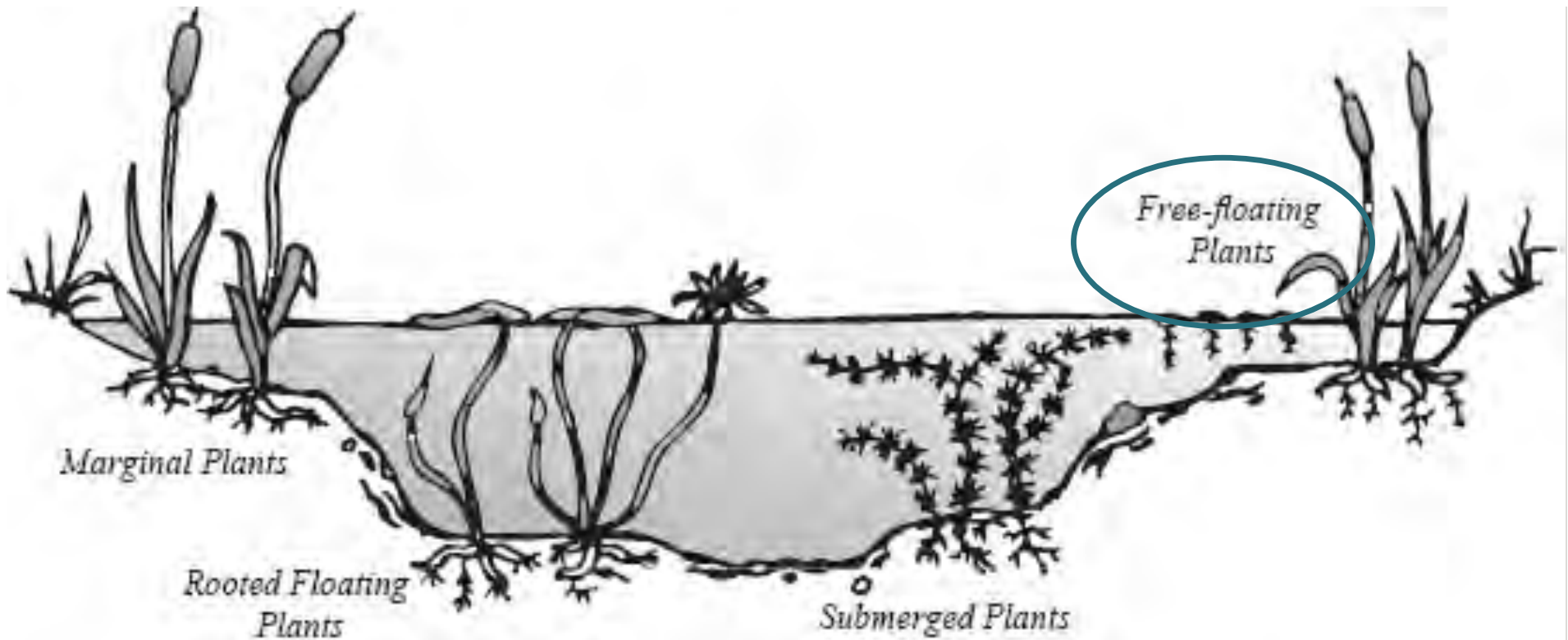
Hydrilla
Hydrilla verticillata
 Photo by Ann Murray
 © 1999 University of Florida



Hydrilla
Hydrilla verticillata
 Photo by Vic Ramey
 © 1999 University of Florida

Hydrilla

Hydrilla verticillata



Water Hyacinth
Eichhornia crassipes

An Ounce of Prevention is Worth a Pound of Cure

- “Once a species is established, impacts grow over time and space, and are usually irreversible in perpetuity.”
 - -David Lodge, Ph.D.
- Preventing introduction and spread of aquatic invaders is more cost effective than managing the problems once they happen
- Risk assessment estimates potential for invasion based on biological factors
 - Gordon et al 2012

Native and Non-Weedy Alternatives

Marginal



Asclepias incarnata
(swamp milkweed)



Liatris spicata
(dense blazing star)



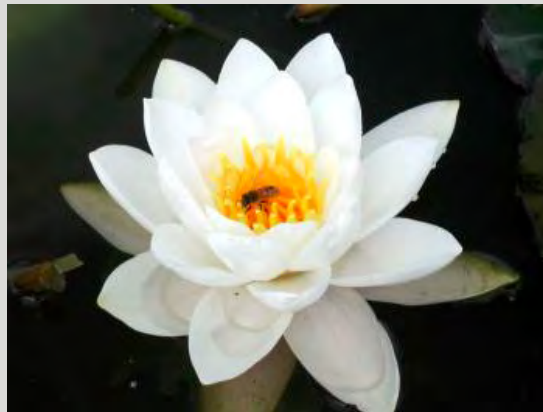
Decodon verticillatus
(swamp loosestrife)

Native and Non-Weedy Alternatives

Free and Rooted Floating



Nuphar advena
(yellow pond lily)



Nymphaea odorata
(white water lily)



Nelumbo lutea
(american lotus)

Native and Non-Weedy Alternatives Submerged (a.k.a. Oxygenators)



Ceratophyllum demersum
(coontail)



Elodea canadensis
(American waterweed)



Potamogeton pectinatus
(sago pondweed)



Choose a location away from natural waterways and flood-prone areas.

This will help ensure that the plants and animals in the water garden will not be carried into local streams, ponds or lakes as a result of heavy rainfall.

Occasionally check that the water garden remains isolated from natural waterways and areas that flood. Installation of standard landscape water diverting structures (e.g., water bars, swales) or relocation of the water garden should be considered.



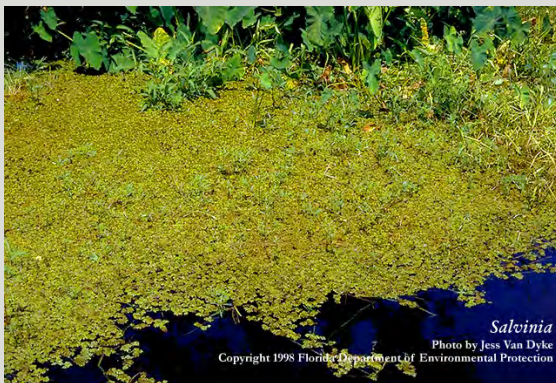
Purchase from licensed nurseries.

Many jurisdictions require that the license be posted. If the license isn't clearly visible, ask an employee about their licensing.



Rinse plants in a bucket before planting. Remove all dirt and any attached debris including other vegetation, animals, or eggs before planting; dump bucket water and debris on dry land.

This will help keep unwanted plants and animals from being accidentally introduced into your water garden, and keep these same organisms out of storm drains that might lead to natural waterways.



Salvinia minima
(water spangles)



Egeria densa
(anacharis)



Hydrilla verticillata
(hydrilla)

The image shows a dense growth of water hyacinth plants in a pond. The plants have bright green, rounded leaves and some yellowish flowers. A semi-transparent green box is overlaid on the top half of the image, containing text. The bottom half of the image shows a close-up of the plants, including a brown stem and a small white flower.

Remove uninvited plants that colonize your pond.

A plant that moves into your pond and becomes established is likely an invasive species. It should be removed and disposed of properly.

Freeze unwanted plants in a sealed plastic bag and dispose in the trash. Unwanted plants should not be composted because their seeds and other reproductive plant parts may remain viable.





Find a new home for unwanted animals such as a pet retailer, animal shelter, or other water gardener.

If euthanasia is an option, consult with a veterinarian.



Nymphaea odorata Photo by: Ray Matthews Courtesy of Lady Bird Johnson Wildflower Center

You can help to stop the spread of invasive plants and animals when you:

Choose water garden location away from natural waterways and flood-prone areas.

Purchase from licensed nurseries.

Choose regionally-native or non-weedy plants.

Rinse plants in a bucket before planting. Remove all dirt and any attached debris, including other vegetation, animals, or eggs before planting; dump bucket water and debris on dry land.

Check that the water garden remains isolated from natural waterways and areas that flood.

Remove uninvited plants that colonize your pond.

Freeze unwanted plants in a sealed plastic bag and dispose of in the trash.

Find a new home for unwanted animals such as a pet retailer, animal shelter, or another water gardener.

Never release plants or animals into natural waterways.

What should I plant? Non-Invasive Plants

Marginal

- Asclepias incarnata* (Swamp Milkweed)
- Caltha palustris* (Marsh Marigold)
- Decodon verticillatus* (Swamp Loosestrife)
- Erianthus ravennae* (Hardy Pampas Grass)
- Glyceria canadensis* (Rattlesnake Mannagrass)
- Hibiscus moscheutos* (Rose Mallow)
- Iris versicolor* (Blue Flag Iris)
- Juncus effusus* (Soft Rush)

Justicia americana (American Water-Willow)

Liatris spicata (Dense Blazing Star)

Lobelia cardinalis (Cardinal Flower)

Mimulus ringens (Squarestem Monkey Flower)

Orontium aquaticum (Golden Club)

Peltandra virginica (Arrow Arum)

Pontederia cordata (Pickerel Weed)

Sagittaria latifolia (Broadleaf Arrowhead)

Saururus cernuus (Lizard's Tail)

Schoenoplectus pungens (Three Square)

Floating

Lemna minor (Common Duck Weed)

Nelumbo lutea (American Lotus)

Nuphar advena (Yellow Pond Lily)

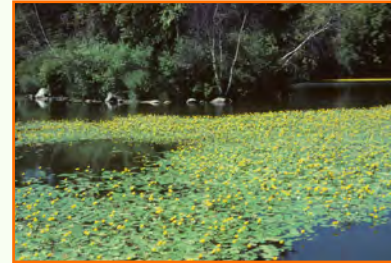
Nymphaea odorata (Fragrant Water Lily)

Submerged

Ceratophyllum demersum (Coontail)

Elodea canadensis (American Waterweed)

Potamogeton pectinatus (Sago Pondweed)



Nymphaeoides peltata Photo by: Howard, R.A. Courtesy of Smithsonian Institution

Some plants and animals available to water gardeners are invasive and cause harm to natural waterways. They can drastically change ecosystems and create inhospitable conditions for native plants and animals. They can also hinder recreational activities such as boating and swimming, and can be costly or near impossible to remove.

You can help to protect our natural waterways by choosing non-invasive plants and animals.

What plants should I avoid? Potentially Invasive Plants

Marginal

- Alternanthera philoxeroides* (Alligator Weed)
- Butomus umbellatus* (Flowering Rush)
- Crassula helmsii* (Swamp Stonecrop)
- Glyceria maxima* (Reed Mannagrass)
- Ludwigia grandiflora* subsp. *Hexapetala*
(Large-Flower Primrose Willow)
- Lythrum salicaria* (Purple Loosestrife)
- Marsilea quadrifolia* (European Waterclover)
- Phragmites australis* (Common Reed)

Floating

- Azolla pinnata* (Mosquito Fern)
- Eichhornia crassipes*
(Common Water Hyacinth)
- Hydrocharis morsus-ranae* (Common Frogbit)
- Nymphaeoides peltata* (Yellow Floatingheart)

Submerged

- Cabomba caroliniana* (Carolina Fanwort)
- Egeria densa* (Brazilian Waterweed)
- Hydrilla verticillata* (Waterthyme)
- Lagarosiphon major* (Oxygen Weed)
- Myriophyllum aquaticum*
(Parrot Feather Watermilfoil)
- Myriophyllum spicatum*
(Eurasian Watermilfoil)
- Najas minor* (Brittle Waternymph)
- Potamogeton crispus* (Curly Pondweed)
- Vallisneria spiralis* (Eel Grass)

Need advice about how to control invasive plants?

Look no further than the Midwest Invasive Plant Network's new database!



To access the control database:

<https://gomeet.itap.purdue.edu/p17925623/?launcher=false&fcsContent=true&pbMode=normal>

Webinar on how to use the database: <http://mipncontroldatabase.wisc.edu/>



Thank you!

David Lodge, Reuben Keller, Crysta Gantz,
Bob Kirschner, Kay Havens-Young, Jeremy
Fant, Jacob Burns, Pat Charlebois, Sarah
Zack, Danielle Hilbrich, Alice Denny



For more information:

- Illinois-Indiana Sea Grant – Aquatic Invasive Species
 - http://iiseagrant.org/topic_ais.html
 - http://iiseagrant.org/catalog/products_ais.html
- Protect Your Waters: Stop Aquatic Hitchhikers!
 - <http://www.protectyourwaters.net/>
- Nonindigenous Aquatic Species – U.S. Geological Survey
 - <http://nas.er.usgs.gov/>

For more information, cont.:

- The Center for Aquatic and Invasive Plants – University of Florida
 - <http://plants.ifas.ufl.edu/>
- *A Field Guide to Fish Invaders of the Great Lakes Region*
 - <http://iiseagrant.org/catalog/ais/flgdgdgl.htm>
 - http://www.seagrant.umn.edu/downloads/fish_guide_final.pdf
- *Lake Notes* fact sheets:
 - “Aquatic Exotics” “Zebra Mussels”
(available free from Illinois EPA - Lakes Unit, 217-782-3362; on-line at <http://www.epa.state.il.us/water/conservation/lake-notes/index.html>)



**#2 Educate & Involve
Watershed Residents &
Lake Users**

- Tim

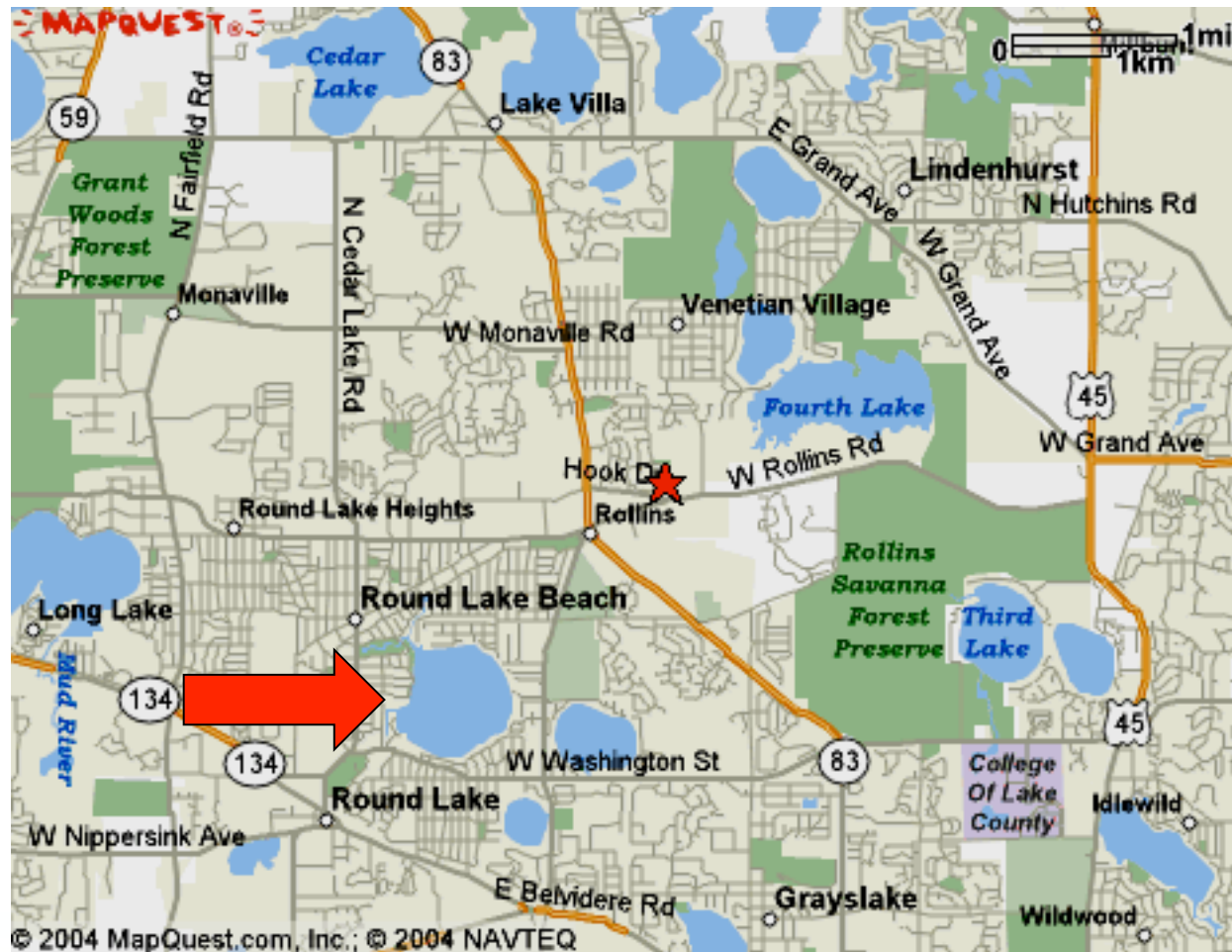


Round Lake Management Commission and

Your Lake: Top 10 Ideas to Engage, Inform and Educate the Public

ILMA 2014 Annual Conference

Round Lake, Lake County, IL



Round Lake Facts & Figures

- Size: 228.6 acres
- Shoreline: 4.4 miles
- Maximum Depth: 32 feet
- Average Depth: 8 feet
- Volume: 600 million gallons
- Watershed: Part of Squaw Creek (Long Lake) drainage of the Fox River watershed
- Elevation: 763 feet above sea level
- Municipal Boundaries:
 - Village of Round Lake
 - Village of Round Lake Beach
 - Village of Round Lake Park
- Public Access Points: 2



Round Lake Management Commission

Purpose:

Provide a Safe, Clean and Pleasant Lake for the Enjoyment of All Area Residents

Methods:

Protection, Maintenance, Enhancement of our Natural Resource

History:

Formed in 2003 by an intergovernmental agreement between the Villages of Round Lake, Round Lake Beach and Round Lake Park for the betterment of Round Lake, surrounding lakes and the Round Lake Watershed (includes Highland & Cranberry Lakes)



RL Commission Newsletter



WHAT'S INSIDE →

Find out why we need to replenish our fish stocks and what kinds of fish are good for the lake and what kind are not.
Page 4

Looking for something fun to do with the kids? Learn about the recreational options available to all residents.
Page 2

Planning a day out on the lake? Make sure you're up to speed on the rules of the road. 10 Boating Safety Rules.
Page 3

providing a safe, clean and pleasant lake for the enjoyment of all area residents

The Round Lake Compass

Issue No. 1
Fall
2006



The Round Lake Management Commission

Created in 2003 by the Villages of Round Lake, Round Lake Beach and Round Lake Park, the Round Lake Management Commission's primary goal is to provide a safe, clean and pleasant lake for the enjoyment of all area residents.



Village Newsletters, Websites & Social Media



75th Anniversary Celebrations Continue

Harvest Moon 75th Anniversary Gala
 Saturday, October 27 @ the Cultural & Civic Center
 6:00 pm Cocktails 7:00 pm Dinner and Program
 Only \$19.37 per person - limited tickets

Everyone is invited to join in this special celebration - residents, neighbors, friends and family! A sparkling evening past with a slideshow and refreshments to add to the nostalgia. Tickets are available at the Cultural & Civic Center.

Trick or Treating Hours
 Sunday, October 28
 1:00-5:00 pm

Next Electronics Recycling
October 18
 8:00 am-3:00 pm
 Public Works facility
 911 Lotus Drive

Hike/Bike/Canoe
 September 16 10:00 am

Experience first-hand our Village's 3-mile hike, peddle or paddle around the lake and the surrounding area. Registration is encouraged by September 10 and accepted at the event. Details at the event.

BeachFest 2012
 Celebrating our 75th Anniversary at
BeachFest 2012
 Visit the Village website or call (847) 546-2351 for all the exciting details!

Village Hall will be closed May 28 and July 4

Friday, June 15
 Miss Round Lake Area Pageant
 Old Fashion Family Games and Cardboard Car Contest! Bring a picnic!
 Outdoor Movie **Cars 2** (indoors in case of rain)

BeachFest 2012



Let's Get This Year Long Party Started!

Village of Round Lake Beach 75th Anniversary Kick-Off Beach Party
Sunday, January 8 at 3:00 pm at the Cultural & Civic Center

Admission is only 75¢ per person, but Members of the "75 Club" are free! Tickets are available at the Center starting December 1 - great stocking stuffer! See the village website on how to join the "75 Club"!

Beat the winter blues by enjoying a summer beach party including picnic meal and treats, beach music, hula dancers, hula hoop contests, sharing stories of the Beach with neighbors & friends, and more! Folks are encouraged to wear their luau shirts or summertime gear to help celebrate 75 years of Round Lake Beach. Now is the time to drag out that 1937 Beach costume!

Check out all the Holiday Events in the Center on page 4.

Round Lake Beach 75th Anniversary 2012
 See all the year-long celebrations at the Village website.

Food and drinks all weekend long!

June 16

Events to include:
 - Piggyback
 - Piggyback zoo, pony rides, trackless train ride around Hook Lake
 - Live entertainment
Lumberjack Show is coming!
 - Lumberjack shows along with camps for the kids!

BeachFest 2012

Top Cover Band
Miss! 75th Anniversary Fireworks Show & Live, Original Lead Singer of Rare Earth
17
's Day @ BeachFest!

Events to include:
 - Piggyback
 - Piggyback zoo, pony rides, trackless train ride around Hook Lake
 - Live entertainers
are Coming!
 - Lumberjack shows and camps for the kids!

For Kids
 Rock Band for the family

75th Anniversary Events - The Celebration Continues!
 See page 3 for more events.

www.villageofroundlakebeach.com



Kids Ice Fishing Clinic

Children had the opportunity to learn about ice fishing through games and interactions with an experienced fisherman as he explained various techniques, equipment, and safety.



“Get Caught” Fishing Photo Contest

The Park District held a contest during the winter and summer seasons where people could send in their photos of themselves, family, and friends fishing. Staff reviewed all of the entries, and a certificate and fishing equipment were given to the winners.



Streambank Cleanup And Lakeshore Enhancement (SCALE) Grant

SCALE

The Streambank Cleanup And Lakeshore Enhancement (SCALE) program funds are available only to organizations that have established, recurring streambank or lakeshore cleanups. Applications will be selected for funding based on the event's proximity to Illinois EPA's priority waters, the number of people who have participated in past events and the size of the cleanup area. Selected applicants can receive up to \$3,500 for implementation of their streambank or lakeshore cleanup events in 2008. Funding is provided by Illinois EPA through Section 319 of the Clean Water Act.

What's Eligible?

SCALE was specifically created to assist with **litter** collection and disposal. Funds can be used for safety attire (includes gloves and vests), litter bags, event promotion, logistical needs and dumpster or landfill fees. It is expected that some woody debris removal will be necessary to collect entangled litter; however, events that focus solely on the removal of woody debris or invasive species do not qualify for the SCALE program. If your event requires woody debris removal (whether funded by SCALE or not), make sure that you obtain all required local, state or federal permits prior to conducting the event.



Illinois
Environmental
Protection Agency

**RLMC Received \$500 SCALE Grant
For 9th Consecutive Year in 2013!**



2013 Annual Spring Clean Up of the Round Lake Shoreline & Channels

Saturday, May 18, 2013, 9:00 AM to 1:00 PM

Starting at ROUND LAKE PARK, Lake Front Park, Washington & Lake Shore Drive

CLEAN UP: Join us at 9 a.m. at the Round Lake Park boat dock for the kick off of our 9th annual spring clean up of Round Lake.

Volunteers of all ages and skills are needed and welcome for the clean-up. We will start at the Round Lake Park lake front park across from the RLP Village Hall (south side of the lake off Washington & Lake Shore Drive) and work around the lake shoreline & channels to the Round Lake Beach lake front park by about noon.

Gloves and garbage bags will be provided. We will likely be in water up to our knees as we walk the shoreline. Wearing an old pair of sturdy gym shoes and appropriate clothing is recommended.

All participants will receive a free Volunteer Tee Shirt, snacks, refreshments, and a great pizza lunch at about noon.

Sponsored by:

Round Lake Management Commission (RLMC), Whose Mission is to Provide a Safe, Clean and Pleasant Lake for the Enjoyment of All Area Residents, Huebner Fishery Management Foundation, and Illinois Environmental Protection Agency (IL EPA) Streambank Cleanup and Lakeshore Enhancement (SCALE) Fund



For more information call RLB
RLMC Commissioner
Tim Pasternak
At 847-644-3976



Annual Shoreline Clean Up



Anglers
Unlimited
Community
Volunteers



Public Works Departments



Annual Shoreline Clean Up



Thanks
Pizza Place !!!
130 West Main St,
Round Lake Park



Fishing Line Recycle Program



Free Paddling Day

The RLAPD hosted a free paddling trial day on Round Lake where people had the opportunity to try out kayaking and canoeing



Round Lake Area
Park District



Illinois Volunteer Lake Monitoring Program

- ❖ Initiated by Illinois Environmental Protection Agency (IEPA)
- ❖ Unites citizens, state agency staff and regional planning commissions to monitor the quality of Illinois lakes
- ❖ Volunteers measure lake water transparency or clarity, typically 2x a month from May through October
- ❖ IEPA used for:
 - Local lake & watershed management decision making
 - Biennial assessment of State's waters as required by the Federal Clean Water Act





Village of Round Lake Beach 75th Diamond Jubilee Celebration Beach Party on the **BEACH** and Venetian Night on Round Lake



Saturday, July 14th 2 to 9 PM
RLB Lake Front Park on North Lake Shore Drive

Bring your beach chairs, beach towels & blankets, sun screen and sand buckets for an all day free fun filled Beach Party

2:00 to 6:00 PM

- DJ, Music, Beach Games & Prizes: Water Balloons, Hula Hoop competition, Beach Volleyball, and more!
- Kids Moon Walks, Climbing Walls and Slides
- Balloon Artist, popcorn, cotton candy
- Beach Blanket BINGO and prizes for all ages

6:00 to 9 PM

- *LIVE BAND: Peach's Beach Party with the Songs of Jimmy Buffett and Friends*
- Venetian Night - 75th Anniversary Lit Boat Parade & Awards

Food & Refreshments For Purchase All Day

This is a SMOKE FREE Family Event

For the latest details, go to your Village website and click on the 75th Diamond Logo at: www.villageofroundlakebeach.com



*"Knee deep in the water somewhere,
with the blue sky breeze blowin' wind
through my hair, only worry in the world
is the tide gonna reach my chair. I
think I might have found my own kind of
paradise. So lose yourself and join us
for the fun!"*

www.PeachsBeachParty.com



"Fishing Should Be Fun" Fishing Derby

Saturday, August 4
8a.m.— Noon
Round Lake Beach Park
Lake Shore Dr.

Every child deserves the opportunity to catch the "big one". That is why Competition Bassmasters of Northern Illinois, Round Lake Management Commission, and the Round Lake Area Park District are proud to cooperatively sponsor the annual "Fishing Should Be Fun" Fishing Derby. This event will give all children the opportunity to experience the joy of fishing. Come out, bring your rod and reel, cast your line, and help make this year's event the best yet. Don't have your own equipment? Don't worry. We'll have plenty of equipment to loan you all you'll need to make sure that you don't let the "big one" get away.

Event will feature:
Kids fishing and boating safety seminar
Kids casting event
Fishing knots and rigging

Fish in special designated Family Fishing Areas.



FREE
Family
FUN!!!



Sponsored by
Competition Bassmasters of Northern Illinois,
Round Lake Management Commission
In conjunction with the
Round Lake Area Park District



Fishing Should Be Fun Derby

This annual kids fishing derby hosted by the Competition Bassmasters of Northern Illinois was put on in conjunction with the RLMC and the RLAPD.

Children spent the morning learning about safe fishing and boating, trying their hand at casting, and fishing along the shore of Round Lake.

Over 150 children and their parents came out to this family friendly event.



End of the Summer Round Lake Clean Up Day

- RLAD staff and volunteers spent the morning cleaning up the shoreline of Round Lake and its channels.
- Several hundred pounds of trash was removed from the lake.





The Village of Round Lake Beach 75th Diamond Jubilee Celebration, Round Lake Management Commission and the Round Lake Area Park District's *HIKE, PEDAL or PADDLE a-Round Round Lake* Course Map



“.....Experience first-hand our community's treasured natural resource namesake, our lake. Enjoy a leisurely counter clockwise 3-mile Hike, Pedal or Paddle a-Round the Lake. There will be lake shore stops & activities along the way learn about the lake and surrounding areas' storied past, present and future.....”



Hike, Pedal, Paddle A-Round Round Lake

- RLAPD partnered with the Village of Round Lake Beach and the RLMC to once again, put on this Historical Tour of Round.
- One of the stops along the way was at the future site of Huebner Park. Participants had a chance to learn a little about John Huebner and his vision.
- A group of eager paddlers joined park district staff in the paddling portion of the day.



The Village of Round Lake Beach, the Round Lake Management Commission and the Huebner Fishery Management Foundation's 2nd Annual HIKE, PEDAL or PADDLE a-Round Round Lake

Course Map

Hole Punches 1 to 5

Hole Punches 6 to 10

Map 7: Where is Huebner Park?

Follow the course counterclockwise around the lake. Be sure to visit each of the 10 stops (paddlers have 9) to get your map hole punched. Hole punch the appropriate number to the left or right of the above map. A description of each stop is on the back of this map.

Round Lake Area Park District

The complex block contains a course map of Round Lake with 10 numbered stops. The map is surrounded by logos for the Round Lake Area Park District, the Round Lake Management Commission, and the Huebner Fishery Management Foundation. There is also a small green triangle logo at the bottom right.

Environmental Tour and Lecture On Round Lake

Sunday, September 23, 2012

1pm - 3pm



Meet at the Round Lake Beach Lake Front Park Boat Launch

Located on the northwest corner of Round Lake just off N. Lake

What causes algae in Round Lake? Is that plant a “weed” or a benefit to our lake? What is the water quality in our lake, how is it measured, and why? Shoreline erosion, what causes it and how can it be prevented? What type of fish and other animals live in and on our lake? How can I help improve our lake?

Come out and on the lake to learn answers to these questions and much more! The Lake County Health Department - Environmental Services (LCHD-ES) team in conjunction with the Round Lake Management Commission (RLMC), the Round Lake Area Park District (RLAPD), & the Huebner Fishery Management Foundation (HFMF) will be conducting a **FREE Environmental Tour and Lecture on Round Lake.**

So bring out your boat and fill it with questions for the LCHD-ES staff. All powered and self-powered boats are welcome! No boat? No problem; we’ll have plenty of room for you. In addition, adults wishing to do the tour in a canoe/kayak that do not have a boat can contact the RLAPD at 847-546-8558 and ask for Frank Palmisano. There is a limited number of canoes/kayaks, so please contact the RLAPD by Thursday, September 20 to reserve a boat. Refreshments will be served compliments of the HFMF.

For questions, please call Tim Pasternak at 847-644-3976
or Frank Palmisano at 847-546-8558.



Environmental Tour on Round Lake

- ❖ What causes algae in Round Lake?
- ❖ Is that a plant, a weed, or a benefit to our lake?
- ❖ What is the water quality in our lake, how is it measured and why?
- ❖ Shoreline erosion, what causes it and how can it be prevented?
- ❖ What type of fish and other animals live in and around our lake?
- ❖ How can I help improve, maintain or preserve our treasured natural resource?



LakeCounty

Health Department
Environmental Services
Kathleen Paap
and associates



Invasives, Invaders and IMPACT

❖ Canada Geese



❖ Phosphorus Based Fertilizer
(Village of RL & others still allow!)

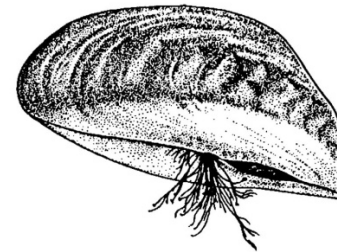
❖ Boaters & Anglers

❖ Contribute to:

✓ Zebra Mussels

✓ Algae (1# of phosphorus can produce up to 500 # of algae!)

✓ Shoreline Erosion



Fish Stocking-in action...



Based on species recommendations from IDNR fish surveys of Round Lake, Northern Pike and Walleye were stocked in Round Lake by Richmond Fisheries.

- 900 Walleye (7-9 inches)
- 115 Northern Pike (12-15 inches)



Fish Stocking-Results!



17 inch Walleye



34 inch Northern Pike



RLMC Motorboat

- Random boat 'patrol' of the lake as volunteer time allows.
- Focus on safety, education, and re-enforcement of proper boating behavior by presence on the lake.
- Docked at Lakeview Estates HOA -Thanks!
- Stored at Alpine Country Club -Thanks!

**PROVISIONS OF
THE ILLINOIS
BOAT REGISTRATION
AND SAFETY ACT
625 ILCS 45/1 - 45/12
ARE ENFORCED
ON ROUND LAKE**



Round Lake Boat Safety Rules

1. No alcohol or drug impaired boater operators.
2. All boat occupants must have a personal flotation device and children under 13 must wear them at all times.
3. No wake near the shoreline, piers, channels or swimming areas.
4. Your boat must be a safe distance when under power from other boats at all times.
5. Non-motorized boats always have the right-of-way.
6. If skiing, you must have 2 people in the boat, one operator and observing the skier.
7. Motorized boats should travel counter-clockwise around the circumference of the lake.
8. No littering or polluting of the lake. Please help keep your lake clean by picking up any trash.
9. Respect your fellow boater. Provide help if needed.
10. No reckless or careless operation, use common sense and follow all State boating laws!

CALL 911 IN AN EMERGENCY OR TO REPORT VIOLATIONS

Sponsored by your Round Lake Management Commission, Whose Mission is to Provide a Safe, Clean and Pleasant Lake for the Enjoyment of All Area Residents



RLMC Partnerships

- Villages of Round Lake Beach, Round Lake Park & Round Lake
 - ✓ Mayors Lucassen, Hill, & MacGillis, Village Trustees, and Staff, RLB & RLP Public Works
- Round Lake Area Park District
- Huebner Fishery Management Foundation
- Alpine Country Club
- Lake View Estates: Commission Boat Docking
- Competition Bassmasters of Northern Illinois
- Lake County Health Department Environ.Services Team
- Illinois Lakes Management Association
- Volunteer Residents



RLMC Partnerships, cont.

➤ Funding

- ✓ Villages of RL, RLB & RLP: Annual Contributions
- ✓ Illinois EPA: \$500 annual Stream Bank Clean Up & Lake Shore Enhancement (SCALE) Grants (9th year)
- ✓ Huebner Fishery Management Foundation



2014 & Beyond Visions/Plans

Maintain & Build Partnerships

- Villages of Round Lake, Round Lake Beach, Round Lake Park and Round Lake Area Park District
- Huebner Fishery Management Foundation
- Alpine & Other Resident Groups
- Illinois Lakes Management Association



2014 & Beyond Visions/Plans

Activities and Volunteer Opportunities

- Lake Safety Monitoring
- Annual Kids Fishing Derby
- Annual Shoreline Clean Up Events
- Environmental Education
- Historical Tour on the Lake
- Multiple Paddling Events
- Fish Stocking



2014 & Beyond Visions/Plans, cont.

- **Support Recommendations Lake Report**
 - ✓ Shoreline erosion abatement & Educational Pilot Area
 - ✓ Chloride/conductivity levels (Reduce/Replace Road Salt use)
 - ✓ Eliminate use of fertilizers with phosphates
 - ✓ Increase public access - parks and fishing piers
 - ✓ Promote safety
 - ✓ Healthy fish populations
- **Continue Volunteer Water Clarity Monitoring**
- **Widen Reach of the RL Management Commission to the RL Watershed**





Lake Notes

- Series of lake-related fact sheets ranging from A – Aquatic Exotics to Z – Zebra Mussels...and everything in between.
- Objective is to provide lake and watershed residents with greater understanding of environmental cause-and-effect relationships, and actions we all can take to protect our lakes.
- <http://www.epa.state.il.us/water/conservation/lake-notes/index.html>

Lake Education Assistance Program (LEAP)

For the study of lakes and ponds and
their watersheds

- \$500 Grant
- Eligible Recipients
 - Not-For-Profit Organizations
 - Schools

For more information on:

Illinois EPA's

Lake Education Assistance Program (LEAP)

- Greg Ratliff, Illinois EPA
greg.ratliff@illinois.gov, 217-782-3362
- *Lake Notes* fact sheet:
“Lake Education Assistance Program”
(available free from Illinois EPA - Lakes Unit, 217-782-3362; on-line at <http://www.epa.state.il.us/water/conservation/lake-notes/index.html>)



#1 **Develop a Lake
Management Plan**

- Mary

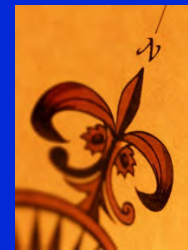
What's a Lake Management Plan?

- A written document incorporating lake management goals with objectives in an organized format. This would need to include all aspects of the lake including lake uses, identification of current and potential problems and their causes, and feasible actions to address the problems.
- Actions may include aquatic plant management, fisheries management, shoreline stabilization, recreational time and space zoning, marina ordinances, education and awareness, etc.



Why is a Lake Management Plan Important?

- A plan unifies the managing entity and provides a guideline for lake management activities.
- Planning forces people to think clearly about what they want while at the same time helps resolve differences among people with disparate ideas.
- It charts a course to follow, a series of steps to ensure that “you can get there from here.”

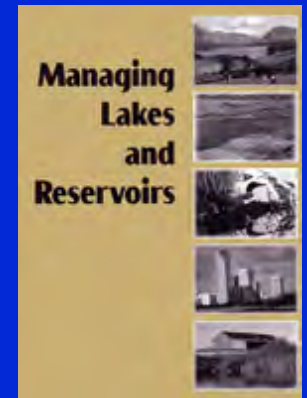


How Do You Prepare a Lake Management Plan?

- Include the topics of this presentation.
- Involve all stakeholders.
- For some lakes, you may need an aquatic plant management plan.
- Use a goal-setting exercise to narrow down to the important issues. You should be able to find a common purpose. The Nominal Group Technique is one method. Be realistic – don't set goals that are impossible to meet. No, you can't get your lake back to pre-settlement status! *That's final!*
- Review the plan every other year and revise as necessary.

For more information:

- Book: *Managing Lakes and Reservoirs* (2001) (includes “A Model Lake Plan for a Local Community”) (available from North American Lake Management Society; \$45 + \$6 S&H; www.nalms.org)
- Book: *The Lake Pocket Book* (2000) (available from North American Lake Management Society; \$10 non-members, \$8 members, + \$4 S&H; www.nalms.org)
- You can also check with consultants for assistance in writing a plan



A scenic sunset over a lake. The sun is low on the horizon, casting a warm orange and red glow across the sky and reflecting on the water. Silhouetted tree branches with small dark berries or leaves are visible in the foreground, framing the scene. The overall mood is peaceful and serene.

**Time for the panel session
questions and answers.**

Thanks for joining us today!

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- **Mary Colwell** – LCFPD & ILMA board (mcolwell5@att.net)
 - **James Fitzgerald** – EA Engineering & ILMA board (jfitzgerald@eaest.com)
 - **Greg Hitzroth** – IISG & INHS (hitzroth@illinois.edu)
 - **Holly Hudson** – CMAP & NE Illinois VLMP Coordinator (hhudson@cmapp.illinois.gov)
 - **Tim Pasternak** – Round Lake Management Commission & ILMA board (tim_pasternak@baxter.com)
 - **Margaret Schneemann** – IISG & U of I Extension (mschneemann@cmapp.illinois.gov)