

HEALTHY LAKES REPORT
HLk-Fox Lake Healthy Lake (LPT52516)

Grant Sponsor: *Fox Lake Preservation Organization*

Were all projects completed as proposed? No

The ***diversion project*** originally proposed was eliminated because of projected cost of installation. The contractor determined the scope of the project was well beyond that defined by the Healthy Lakes initiative. The funding for the diversion project was redirected to a second fish sticks project. (See fish sticks project report below.)

Property owner contracts & design specifications/locations:

Contracts with each property owner, all design specifications and locations of each best practice herein are on file.

A brief SUMMARY of projects completed

Rain Gardens – 3 projects

Average rain garden dimensions: 259 sq. ft.
Total rain garden dimensions: 778 sq. ft.
Average drainage area captured: 1,016.6 sq. ft.
Total drainage area captured: 3,050 sq. ft.

Shoreline restoration Native Plantings – 5 projects

The average length of restored lakeshore among the five projects: 38.4 feet.
The total length of lakeshore restored: 192 feet
The surface area of each project complied with the 350 sq. ft. minimum established by the Healthy Lakes initiative

Fish Sticks projects – 2 projects

Approximate length of shoreline/habitat (fish sticks) restored: 200 feet

NOTES: Considerations – establishing partners and “tapping resources”

The Fox Lake Preservation Organization (FLPO) contracted a professional environmental consultant to *help* the property owners define definitively the proposed project sites, and to *work in partnership* with them in plotting, designing and installing **rain garden** and **native plantings** projects. Contracting a professional consultant assured that: (1) *property owners’ wants and needs were met* and (2) *their completed projects adhered to the best-practice guidelines* established by the WDNR and the Fox Lake Healthy Lake grant.

The FLPO partnered with the *School for Agricultural and Environmental Studies (SAGES)* a project-based, public charter school for kindergarten through 6th grade for *financial support* in the form of volunteer hours. The partnership proved to be mutually beneficial. The Sponsor’s obligatory 25% cost-share amount was attained. SAGES secured the opportunity for its students and staff *to work* on restoration projects such as shoreland plantings and rain gardens and *to learn* how thoughtful management of shoreland environments works to preserve and maintain good water quality and healthy native plant communities. Our young learners worked hard and learned much about the “magnificent natural resource” within our community – Fox Lake. Mission accomplished!

Many thanks to the Wisconsin Department of Natural Resources and the Healthy Lakes initiative “team & partners” for crafting Wisconsin’s *Healthy Lakes Implementation Plan* and the statewide initiative, thereby affording Fox Lake lakeshore property owners the opportunity to participate actively in the protection and improvement of the health of our lake. The individual grant recipients (participating lake property owners) are “honored” to have met and visited with “team members”, Pamela Toshner and Amy Kowalski. Their touring the individual project sites added a much-appreciated personal touch. Thank you!

Many thanks to Susan Graham, Water Resources Mgt. Specialist, and Sandra Chancellor, Grant Specialist, for their unending support and encouragement given throughout the two-year “life” of the Fox Lake Healthy Lake grant. Questions were always answered and concerns always “laid to rest”.

Many thanks to Travis Motl, Fisheries Biologist; Dylan Bell, DNR/Dodge Co. Forester; Mark Baldock and Derek LaVigne, DNR Technicians for **helping the kids of SAGES school** to gain an informed understanding of how our precious natural resources like Fox Lake can be preserved and conserved for future generations. Their guiding these young learners to a greater appreciation of our lake, its waters and environment will remain invaluable. What was taught – so enthusiastically – will be retained by these young folks who will become advocates of our lakes and rivers.

FINAL REPORT: HLk-Fox Lake Healthy Lake (LPT52516)

Property Owner Name: Victoria Schmidt (Project #1)

Shoreline Restoration – Native Plantings (Project #1 – Summer 2016)

Total number of native plantings: 275*

*Two shrubs were planted in addition to native plantings.

Surface area: 350 sq. ft.*

*The planting areas are approximately 350 sq. ft. *each*. They extend back from the sea wall an average of 7' but are narrower at the pier and wider at the lot lines.

Length of lakeshore restored: 40 ft.

Before project picture – Project #1



Shoreline prior to project 1 installation. Background: Off-shore aquatic plants (herbicide application three weeks before installation of project) Photo by Lisa J. Reas

Completed project photos Project #1– September 2016



Photos by Lisa J. Reas



After picture Project #1 – August 2018



FINAL REPORT: HLk-Fox Lake Healthy Lake (LPT52516)

Property Owner Name: Victoria Schmidt (Project #2)

Shoreline Restoration - Native Plantings (Project #2)

Total number of native plantings: 300

*Two shrubs were planted in addition to native plantings.

Surface area: 350 sq. ft.

Length of lakeshore restored: 26 ft.

Grand total length of lakeshore restored (projects #1 & #2): 66 ft.

Before project picture - Project #2 (Summer 2015)



Proposed site for projects #1 and #2

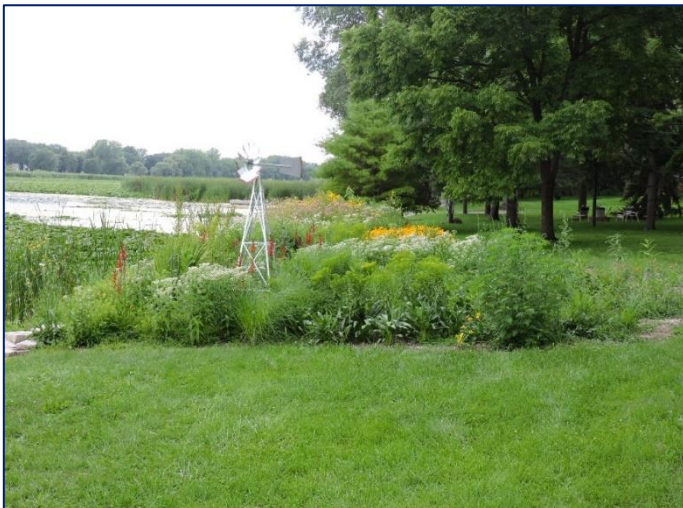
Photo by Lisa J. Reas

Completed project photo Project #2- October 2017



Expansion of native plantings garden – project #1

After pictures Projects #1 & #2 – August 2018



Native plantings projects #1 and #2 looking south



Shoreline native plantings – property owner's view

FINAL REPORT: HLK-Fox Lake Healthy Lake (LPT52516)

Property Owner Name: Hector & Ivelisse Lopez

Shoreline Restoration – Native Plantings

Total number of native plantings: 215 + 2 shrubs, 1 tree

Length of lakeshore restored: 46

Surface area: 50' x 7'* (350 sq. ft.) *Extends back from the sea wall an average of 7'; narrower at the pier, wider at the lot lines. (*Restoration Project Plan, LJ Reas Environmental Consulting Corp.*)

Before project pictures



Full view of shoreline unrestored (left)



Partial view of shoreline—looking south (right)

Photos by Lisa Reas, LJ Reas Environmental Consulting

Completed project pictures – October 2016



After pictures – August 2018



**Full view shoreline restoration project (left)
North shoreline native plantings garden with native tree (maple) (right)**

Two gardens: Each is functional and esthetically appealing, due to the property owners' commitment to thoughtful & on-going maintenance practices.



FINAL REPORT: HLk-Fox Lake Healthy Lake (LPT52516)

Property Owner Name: L. Leizinger, Tom & Nancy Mueller

Shoreline Restoration – Native Plantings

Total number of native plantings: 300 (3.5" cupped plants)

Surface area: 350 (+) sq. ft*.

Length of lakeshore restored: 45 feet

*Full description from Restoration Project Plan (*LJ Reas Environmental Consulting*): The planting area (approximately 45'x 8') extends back from the sea wall an average of 7' but is narrower at the pier and wider at the lot lines.

Before project pictures



The

main goal of the project was to restore diverse, native vegetation to the shoreline, thereby creating good habitat for a variety of beneficial "critters" (insects & birds) and dense root systems for the control of excessive run off. An added benefit: the dense native vegetation now provides a deterrent to the influx of uninvited guests, namely Canada geese.

Installing the project – August 24, 2016



The School for Agricultural & Environmental Studies (SAGES), a *charter school* in the City of Fox Lake, was a "financial partner" of the FLPO. Our young volunteers (5th & 6th graders) committed a full-day of their summer break to haul, shovel and spread mulch and to prep for and "install" 300 plants. These young folks proved to be diligent workers. Highly motivated kids!



SAGES teacher learns to use an auger and SAGES kids learn the planting “process”



SAGES kids apply newly-learned skills

The SAGES crew & “satisfied” property owners



Completed project pictures – August 24, 2016



Shoreline native plantings project “expertly” completed – north and south gardens



After pictures – August 2018



Shoreline plantings – south and north gardens– after two years are esthetically appealing and functional.



FINAL REPORT: HLk-Fox Lake Healthy Lake (LPT52516)

Property Owner Name: Jay & Sue Sugar

Shoreline Restoration - Native Plantings

Total number of native plantings: 276 Surface area: 35' x 10' Length of lakeshore restored: 35 feet

Before project pictures



Sugar native plantings site – September 2015 “The main goal of the project is to restore diverse, native vegetation to the shoreline area. Any desirable plants/ bushes remaining from the initial shoreline planting will be left or transplanted in the project area.” (Sugar Restoration Project Plan- LJ Reas Environmental Consulting)

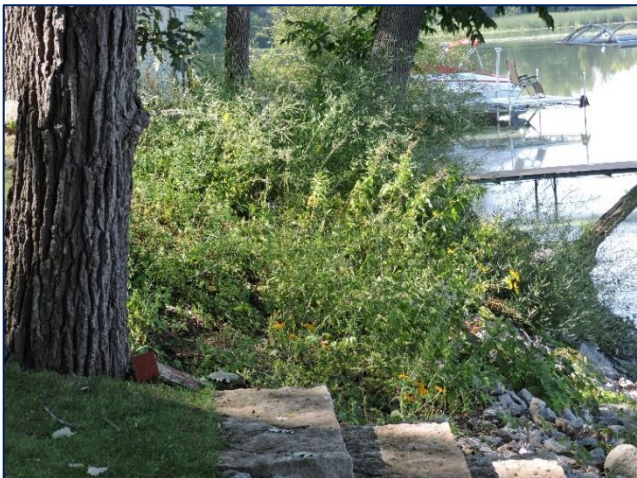
Completed project pictures – September 2016



Photos by Lisa J. Reas



After pictures – August 2018



FINAL REPORT: HLk-Fox Lake Healthy Lake (LPT52516)

Property Owner Name: Mike & Carol Raczynski

Rain Garden

Total number of rain gardens: 1

Dimensions: 168 sq. ft.* (approx. 16' x 10' 6")

*The project is an extension of an existing rain garden. The total ft.2 (existing + extension) approx. 560 sq. ft.)

Drainage Area Captured: Approximately 1,450 sq. ft.

Before project picture + plan



Existing rain garden + planned garden extension (by LJ Reas Environmental Consulting)

Completed project pictures – Summer 2016



Raczynski rain garden – lake view & excavation, drain gutter, drain tiles view

After pictures – August 2018



FINAL REPORT: HLk-Fox Lake Healthy Lake (LPT52516)

Property Owner Name: Mark Brieman

Rain Garden

Total number of rain gardens: 1

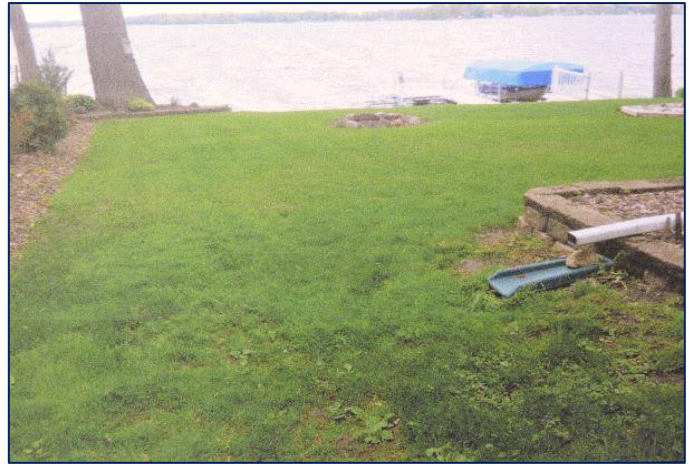
Dimensions: 450 sq. ft. (approx. 45' x 10')

Drainage Area Captured: 1,050 sq. ft. (approximately)

Before project pictures



Planned rain garden showing natural swale



Proposed site showing swale & 1 of 2 roof drains pipe to drain (between house & lot line)

Completed project pictures – July 2016 (Invoice date: 7/29/2016)

None available

After pictures – August 2018



The property owner not only appreciates the aesthetic appeal of the rain garden, but acclaims also the garden's functionality. The runoff from recent heavy rains "pooled up" then quickly infiltrated, just as it was designed to do.

FINAL REPORT: HLK-Fox Lake Healthy Lake (LPT52516)

Property Owner Name: Peter & Virginia Ware

Rain Garden

Total number of rain gardens: 1

Dimensions: 160 sq. ft. (Approximate size of rain garden **expansion** project.)

Drainage Area Captured: 550 sq. ft.(approx.) (Half garage roof-1 downspout + impervious surface-concrete drive)

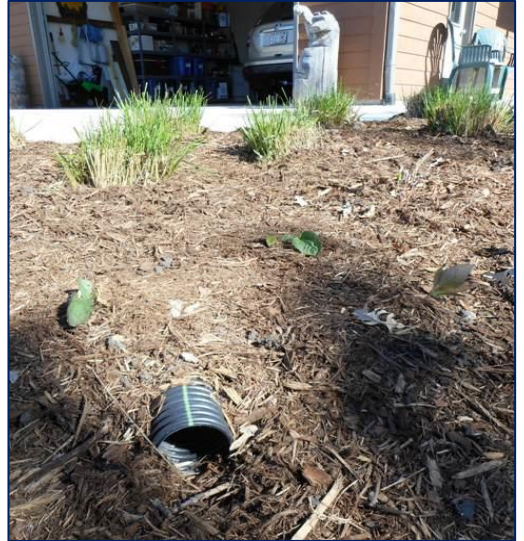
Before project pictures



Existing garden before transformation to functioning rain garden (left)

Rain garden prep work – rerouted drain-tile outlet in rain garden (right)

(Work done by Pine Hill Construction LLC)



Completed project pictures – October 2016



125 3.5” cupped plants positioned ready for planting. A volunteer helps plant the rain garden. Photos by Lisa Reas,



After pictures – August 2018



After two years, a rain garden both appealing and functional.



FINAL REPORT: HLK-Fox Lake Healthy Lake (LPT52516)

Property Owner Name: Waupun Area School District (WASD)

Property description: **WASD Dearholt Outdoor Laboratory**, a forty-eight acre wooded property, incorporates 1,100 feet of untouched, natural lake frontage on Fox Lake's north shore. The land's primary use is the environmental and agricultural education of WASD students.

Fish Sticks

Number of Fish Sticks clusters installed: 4 Total number of trees: 14

Before project pictures – December 2015

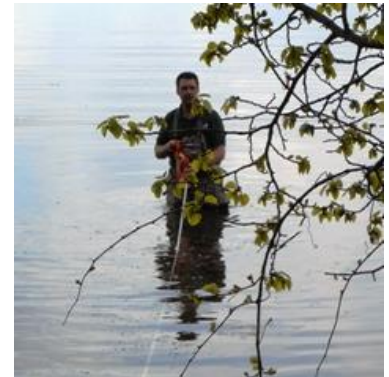


WASD Dearholt Outdoor Lab. shoreline – looking west

WASD Dearholt Outdoor Lab. shoreline – showing “natural fall” fish stick



Defining the project – May 2017



SAGES school 5th grade students learn about shoreline preservation and fish & wildlife restoration from DNR Technicians, Derek LaVigne & Mark Baldock.



Aerial view of the Dearholt Outdoor Laboratory fish sticks project showing the precise locations of the tree clusters as proposed and defined by local WDNR Fisheries Technicians



Travis Motl, Fisheries Biologist & Lisa Reas talk about restoring shoreline water quality and habitat. Integrity of shoreline waters and habitat.



Dylan Bell, DNR Forester, defines the use of hardwood & softwood species for fish sticks.

Bell helps students calculate the height of an ash tree. (right)



Constructing the project – February 2018



First trees felled to be clustered (left)

Crew clustering first fish sticks (right)



Cabling the cluster (left)

Securing (cabling) the cluster to shore (right)



Completed project pictures – February 2018



After pictures – Spring 2018



Summary – promotion of Healthy Lakes initiative fish sticks project

Healthy Lakes *FISH STICKS* project – an update: Shoreline Fish & Wildlife Habitat Enhancement

Fox Lake project: Our two-year Fox Lake Healthy Lake grant includes state/DNR funding for a Fish Sticks project to be installed at the Waupun Area School District/Dearholt Outdoor Laboratory shoreline. This 48-acre recreational property is located on the north shore immediately west of Del Bern Acres Drive. The primary use of the Dearholt recreational property is the environmental and agricultural education of the students of WASD. The property is maintained so as to demonstrate good forest, land and shoreline management. The property incorporates 1,100 feet of untouched, natural lake frontage. WASD and Wisconsin Department of Natural Resources (WDNR) have approved the site as an apt location for the FLPO best practice project – **fish sticks**.

Cooperative effort: This major shoreline management best practice demands a close partnership of four groups: the Waupun Area School District (WASD), the WDNR, FLPO, and professional landscapers (for design and construction). We are currently working with our local DNR fisheries biologist, two shoreline technicians, and the DNR/Dodge County forester. The WASD people who are assisting the project include Superintendent, the Director of Building & Grounds and the principal, staff and students of SAGES elementary. LJ Reas Environmental Consulting will design the project.

We gathered at the entrance to the Dearholt Outdoor Laboratory Friday, May 12 for the requisite site visitation. Our group included 18 fifth-grade SAGES students, Jewel Mucklin, SAGES principal, and Sheri Hicken, agriculture/outreach teacher. Mike Bos, WASD Building & Grounds Director, and FLPO members, Joe Little, Gae & Bob Bergmann participated.

The intent of the visitation was to assess the property as a viable site for the *Healthy Lakes* grant fish sticks project. **Mark Baldock** and **Derek LaVigne**, DNR Technicians, provided a valuable learning experience especially for the 18 SAGES students. According to SAGES feedback, the young folks left understanding how our important natural resources, like Fox Lake, can be preserved and conserved for future generations. They learned about and gained respect for career possibilities in the “*environment-helper*” (kids’ phrase) field.

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