RESTORATION NEWS MIDWEST

Newsletter of the Midwest-Great Lakes Chapter of the Society for Ecological Restoration – September 2011, Volume 4, Issue 1

2011 ELECTION RESULTS AND RECENT BOARD ACTIVITIES

I am very pleased to report that our Third Annual Chapter Meeting held in April at the University of Illinois Springfield was a tremendous success. Details regarding the meeting are provided in a newsletter article below devoted to the meeting (i.e., *Highlights from the 2011 Annual Chapter Meeting*). During the business meeting held during lunch on Saturday (April 2) the results of the 2011 Elections were announced. The following individuals were elected to the Midwest-Great Lakes (MWGL) SER Chapter Board of Directors:

Vice-President – Hua Chen

Treasurer – Jennifer Lyndall

Indiana State Representative – John Shuey

Michigan State Representative – Donald Tilton

Minnesota State Representative – Chris Lenhart

At Large Representative - Roger Anderson

At Large Representative - Todd Aschenbauch

At Large Representative - David Benson

At Large Representative - Pamela Rice

Student Representative - Autumn Sabo

Student Representative – Lauren Umek

On behalf of the Chapter I thank the five outgoing Board members for their dedication and service to the MWGL SER Chapter:

Robert Barr

Robert Grese

Cara Hardesty

Anne Remek Kominowski

Katherine Martin

Each individual brought a unique perspective to the Board and assisted greatly to the success of the Chapter by providing leadership and contributing to Chapter-related activities.

The Board of Directors has held several conference calls this summer. One of our first decisions was to donate $200 to SER's Travel Grant program to support the travel of a student Chapter member (Hannah Kalk) to SER2011 World Conference on Ecological Restoration in Merida, Mexico in August.

We recently learned that SER 2013 World Conference on Ecological Restoration will be held in Madison, Wisconsin in the fall of 2013. As a result the Board of Directors also voted to form a Chapter Committee that will assist the local organizing committee and SER with preparations for SER 2013. We are excited to assist with the preparation for this meeting because it's a great opportunity for our Chapter members to attend an SER World Conference. If you are interested in serving on either the local organizing committee or the chapter committee please contact Steven Thomforde (stevethomforde@gmail.com).

SER is currently considering additional changes to its membership structure and requested feedback on this issue from the leadership of its Regional Chapters. In response to this request the Chapter Board of Directors sent a letter to SER highlighting what we felt were the advantages and disadvantages of their proposal.

I am also pleased to announce that our 2012 Annual Chapter Meeting will be held in Ann Arbor, Michigan on May 4 to May 6, 2012. Our meeting hosts will be the University of Michigan's School of Natural Resources & Environment and Matthaei Botanical Gardens & Nichols Arboretum. More details to follow but we hope you plan to attend our next Chapter meeting!

Rocky Smiley, President

HIGHLIGHTS FROM THE 2011 ANNUAL CHAPTER MEETING

The Third Annual Meeting of the SER Midwest-Great Lakes Chapter held April 1 to April 3, 2011 at the University of Illinois Springfield was a fantastic success! We had 122 individuals from nine states (Iowa, Illinois, Indiana, Kansas, Michigan, Minnesota, Missouri, Ohio, and Wisconsin) in attendance for this three day event. Our goal for the meeting was to explore the linkages between ecological restoration and ecosystem sustainability and to discuss how current restoration efforts contribute to regaining, preserving, and sustaining the structure and functions of Midwestern and Great Lakes ecosystems. Our meeting consisted of a keynote presentation, a plenary session on floodplain restoration, two workshops, 22 poster presentations, 23 contributed oral presentations, sponsorship exhibits, a guided tour of the Emiquon Restoration Project, a business meeting, an awards ceremony, and two field trips to visit restoration projects in central Illinois and northwest Indiana.

The meeting began with a Special Plenary Session on "*Floodplain Restoration to Sustain Large River Ecosystems*" that consisted of presentations by Richard Sparks (National Great Rivers Research and Education Center), Doug Blodgett (Illinois River Program – TNC), James Herkert (Illinois Department of Natural Resources), Mike Lemke (Therkildsen Field Station at Emiquon), and Michael Wiant (Illinois State Museum – Dickson Mounds). These five presentations discussed regional floodplain restoration efforts, the Emiquon Restoration project, methods for developing monitoring designs, monitoring ecosystem results, and how public education and outreach can contribute to floodplain restoration.

Plenary presenters during the question and answer session (Photo Credit: Marilyn Kok)

After a short break attendees had the choice of workshops on Friday afternoon. One workshop led by Chris Lenhart (University of Minnesota), John Shuey (Indiana Field Office – TNC), and Kim Hall (TNC Great Lakes Project) focused on addressing climate change-related management issues with ecological restoration in the Midwestern United States. The second workshop was led by Steven Banovetz (Stantec Consulting) and Eric Johnson (Stantec Consulting) focused on describing the role of prescribed fire in the natural landscape and the use of fire as a tool for managing plant communities.

Prescribed fire workshop

The evening poster session consisted of 22 posters that encompassed topics ranging from nutrient dynamics within wetlands to prairie restoration experiments to responses of invasive species to restoration practices. A reception also gave the meeting attendees a chance to view sponsor exhibits and to socialize with colleagues during the poster session.

The evening poster session

After dinner Roger Anderson delivered the keynote presentation titled "*Midwest Oak Woodlands and Savannah: Origins, Historic Changes, and Futuristic Trends*". Dr. Anderson's presentation provided an overview of the natural history, his long term research results, and predictions for future trends within oak woodlands and savannah. He concluded that fire management and control of invasive species will be necessary to enable these rare ecosystems to persist within the Midwestern United States.

Dr. Anderson's Keynote Presentation

Saturday morning began with the concurrent oral presentation sessions. We had six sessions of 23 contributed oral presentations. Each session consisted of three to four presentations that focused on either on 1) forest and wetland restoration; 2) grassland and savanna restoration: 3) education, outreach and stewardship: and 4) invasive species and habitat restoration.

The Annual Chapter Business Meeting was held during lunch. Hua Chen (Treasurer) provided attendees with the most recent information on the Chapter's financial status. Chris Lenhart then provided a report from the Book Committee and presented a tentative list of topics and chapters for the proposed book on "Ecological restoration in the Midwestern United States.: putting theory into practice**."** Cody Fleece conducted the awards ceremony and announced the winners of the three student awards. The winners were: 1) Basil Iannone III (DePaul University) Best Student Oral Presentation; 2) Paul Grabowski (University of Chicago) - Best Student Poster Presentation; and 3) Sarah Cusser (Ohio State University) - Student Presenter Who Traveled the Farthest. Jennifer Lyndall then recognized and thanked outgoing board members for their service to the Chapter. The Business Meeting concluded with the announcements of the results of the 2011 Elections.

Cody Fleece congratulates Basil Iannone for winning the Best Student Oral Presentation Award

After lunch we departed on the Emiquon Restoration Project Tour. This was a guided tour of one of the largest floodplain restoration projects in the United States. Our first stop was the Dickson Mounds Museum where we given a tour of the museum. We then proceeded to the overlook bluff that gave attendees an impressive view of the Emiquon Floodplain Restoration project site. Attendees were first treated to a wine and cheese reception upon arrival. Onsite presentations describing different aspects of the project were then given by representatives from The Nature Conservancy, U.S. Fish and Wildlife, Dickson Mounds Museum, and the Therkildesen Field Station. The scale of this project is truly inspiring. One has to visit the site of the Emiquon Restoration Project to clearly grasp the size of the project and the associated challenges that come with such large undertakings. This project is still in its early stages and it is exciting to look at the site and wonder how it will look in fifty years.

The Emiquon Restoration Project Tour

Sunday was devoted to offsite field trips to restoration sites within Springfield, Illinois (Lincoln Memorial Gardens) and northwestern Indiana (Kankakee Sands). The Lincoln Memorial Gardens is considered one of Jens Jensen's greatest intact works. Jim Matheis led tour participants on a tour of Lincoln Memorial Garden and discussed both Jensen's design characteristics and current management challenges faced by the Garden. For more information on the Lincoln Memorial Garden see the next article below.

Kankakee Sands is the location of the Efroymson Restoration project. The Indiana Chapter of The Nature Conservancy (TNC) is attempting to re-establish a semblance of the original wetland / grassland / oak barrens mosaic that once characterized the region by reconnecting three important preserves (Conrad Savanna, Beaver Lake Prairie State Nature Preserve, Willow Slough Fish and Wildlife Area) into a single management unit. John Shuey and Stephanie Frischie led tour participants on visits to restoration sites of different ages, the native plant seed nursery, the green house, and the seed facility and shared the successes and setbacks that the Indiana Chapter of the TNC experienced as part of this project.

Conrad Savannah and Prairie
(Photo Credit Eric Bird)

We are grateful for the support provided by our gracious meeting host (University of Illinois Springfield) and our 15 meeting sponsors (Illinois Chapter of The Nature Conservancy, Stantec, The Alfred O. and Barbara Cordwell Therkildsen Field Station, Great Rivers Partnership – The Nature Conservancy, ENVIRON International Corporation, Prairie Restorations Inc., Eco Logic, Christopher B.

Burke Engineering, Ltd., Lake States Fire Consortium, Spence Restoration Nursery, Northwater Consulting, University of Illinois Springfield Biology Department, Illinois State Museum, Island Press, JFNew). We are also thankful for the contributions of all presenters, moderators, tour leaders, volunteers, and attendees towards the success of the meeting.

Rocky Smiley, President and
Young Choi, Annual Meeting
Committee Chairperson

LINCOLN MEMORIAL GARDEN – A DESIGNED LANDSCAPE AND RESTORATION

Seventy-five years ago while Lake Springfield was being constructed as a depression-era Work Progress Administration (WPA) project, a local civic leader, Harriet Knudson, asked the City of Springfield, Illinois to set aside land at the new lake for a garden that she envisioned as a "living memorial to Abraham Lincoln." It would contain plants from the three states (Kentucky, Indiana, and Illinois) that Lincoln lived in and would be called Lincoln Memorial Garden. Mrs. Knudson recruited the Garden Clubs of Illinois to sponsor the project and then enlisted the services of Jens Jensen, one of the foremost landscape architects of the period, to design the Garden.

Prior to designing Lincoln Memorial Garden, Jensen had done extensive landscaping in the Chicago area including the Garfield Park Conservatory, Columbus and Humboldt Parks, and estates for wealthy Chicagoans along Lake Michigan's north shore. Jensen's other work included the estates of Henry and Edsel Ford in Michigan, his folk school The Clearing located in Door County Wisconsin, and hundreds of other public and private designs throughout the Midwestern United States.

Jensen was also one of the Midwest's earliest environmentalists. He championed causes such as the preservation of the Indiana Dunes, establishment of the Cook County Forest Preserve District, and setting aside outstanding natural areas for an Illinois State Park System. Jensen's landscape designs reflected his familiarity and knowledge of the Midwest's prairies, woodlands, and wetlands. Many natural features of these native ecosystems have been incorporated into Jensen's landscape designs.

The original site of Lincoln Memorial Garden consisted of 0.26 km^2 of open pasture that was drained by several small intermittent streams. These streams flowed towards Sugar Creek that was impounded to construct Lake Springfield. In essence, Jensen had a blank canvas on which to begin his work.

Jensen's design for the Lincoln Memorial Garden consisted of a network of lanes and trails anchored by eight "council rings", which consisted of large stone circles used for group gatherings. Jensen's plantings were located along these lanes and around the council rings.

One of the eight council rings

In his book *The Clearing* (Jensen 1949), Jensen spoke about his landscape design and vision for the Garden:

The Lincoln Garden has been planned on a

large scale, in keeping with the Country of which the garden is a part. Certain plants are used in large masses so to emphasize their beauty and give a feeling of greatness. It will be a real inspiration to see hundreds of our native crabapples in bloom in a sunlit lane, backed by the deep and mysterious shadows of the woodlands, or the fleeting blossoms of plums or shad entwined with the falling snowflakes of a belated storm in late April as a true sign of the arrival of spring, of life resurrected.

I cannot conceive of anything more poetic, more full of love, than a walk through one of these lanes vibrating with the beauty of our native land when in bloom. Beauty is a fleeting thing - it comes and goes – and so it must.

Summer blooms

The lower levels along the margin of Lake Springfield have been dedicated to our lovely sun loving flowers. Thousands of lilies, phlox, and other friends of the open lowlands will greet you in festive array and speak of the beauty the pioneer beheld when first entering Illinois land, a real tapestry of living colors reflected in the blue waters of the lake.

The higher elevations are covered with trees. Here one may seek solitude and repose, and find joy in the carpets of woodland flowers. Many of the trails have been named after these flowers and along the trails masses of the flower for which the trails were named will greet the visitor and call him on and on.

Fall view in the Gardens

Plantings at the Garden began on November 14, 1936 with the Boy Scouts and Girl Scouts planting the first acorns. Plantings continued in earnest with garden clubs from throughout Illinois visiting the Garden and planting wildflowers and trees under the direction of Jens Jensen and Mrs. Knudson. Plantings continue today as additional or replacement plants are added as needed.

Boy Scouts and Girl Scouts planting the first acorns in 1936

After 75 years, the Garden has begun to mature and in essence is an idealized microcosm of the Midwest United States landscape, containing prairie restorations, a cypress grove, silver maple and cottonwood wetlands, oak hickory forests, and a wide variety of other indigenous species. As with any restoration effort, certain problems have been encountered as the landscape matures. The foremost problem we currently face is the invasion of non-native plants.

Chief among the non-native woody species is bush or amur honeysuckle *(Lonicera maackii)*, Japanese honeysuckle (*Lonicera japanica*), multiflora rose *(Rosa multiflora)*, and to a lesser extent, Common Privet *(Ligustrum vulgare*), and Russian Olive *(Elaeagnus umbellata)*. Herbaceous non-native plant species include dame's rocket *(Hesperis matronalis)*, goose-necked loosestrife (*Lysimachia clethroides)*, and garlic mustard *(Alliaria petiolata)*.

Bush honeysuckle is our most serious problem within the Lincoln Memorial Garden. The Garden is located in a semi-rural area on the main body of Lake Springfield. "Common areas" surround most residential areas along the lake shoreline. The "common areas" are unmanaged and have become a weedy mix of pioneering black locust with an understory of mostly bush honeysuckle with Japanese honeysuckle on the sunny edges. The Garden is also surrounded by these "common areas" that serve as a source of bush honeysuckle and other non-native plant seeds. Attempts to control bush honeysuckle within the Garden focus on a variety of management practices including cut surface herbicide treatment, wholesale cutting by work parties, and some burning. We currently are far behind and a major effort is needed gain control of bush honeysuckle.

Japanese honeysuckle is a bit less aggressive than bush honeysuckle and thrives in sunny areas, climbing and wrapping up small crabapples, dogwoods, and woody shrubs. Our main method of treatment for removal of Japanese honeysuckle is to apply Roundup in late fall (late November or early December), on a plus 50^{o} F day, after the host tree or bush has lost all its foliage, and the Japanese honeysuckle is still green and growing. Control of other woody species is mainly accomplished through cut surface herbicide treatment of stumps and occasional burns.

Control of herbaceous non-native plant species is accomplished mainly by pulling and then destroying the plants to make sure there are no seeds left. Garlic mustard is super aggressive and spreads quickly. Once again, "common areas" around the lake are a rich seed source of non-native herbaceous plants. County and municipal mowers and line clearance crews pick up these seeds in their tires while mowing roadsides and under power lines and spread the plant throughout the area. We check the Garden each spring by walking every square meter of more than 0.4 km^2 of the Garden's grounds and the entire watershed. Streambanks and deer runs are common locations for finding new plants. By finding and pulling these plants before they have a chance to seed and spread we have kept garlic mustard from gaining a foothold in the Garden.

We also have to battle succession at the Garden. Sugar maples would eventually take over the entire Garden if they were not kept in check with a combination of fire and cutting. Sassafras also threatens newly planted hawthorn. Shingle oaks invade within the prairies. Cottonwoods invade and attempt to crowd out all other growth in newly planted wetlands.

Control of non-natives and aggressive native plants is a constant battle to keep Jensen's design for the Garden intact. He realized that

certain plants belonged with and were found in association with others and his early restoration attempts were well intentioned. However, Jensen may not have realized the amount of maintenance that would be required to keep his landscape designs viable. One of the country's leading Jensen experts, University of Michigan professor, Robert Grese, speaking in an VIEW magazine interview (Brown 2011), summarized the problems faced by the Lincoln Memorial Garden and other managers of Jensen landscapes: "*The places that were, for him, early experiments in ecological restoration have been particularly vulnerable to invasive exotic species. It's a lesson in humility, in how such spaces need ongoing management to maintain the design*."

Literature Cited

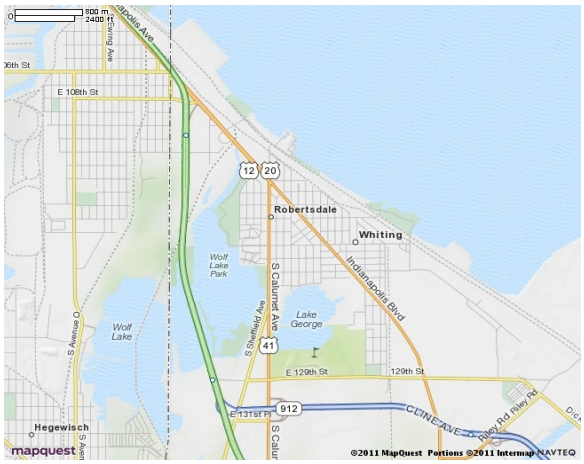
Jensen, J. 1949. The Clearing. R.F. Seymour Publishing.

Brown, J. R. 2011. Interview with Robert Grese. VIEW magazine, summer 2011.

Jim Matheis, Lincoln Memorial Garden

CREATING AND MAINTAINING SAND ISLANDS AT WOLF LAKE

Wolf Lake is a 3.2 km^2 natural lake located on the Indiana/Illinois border near Hammond, Indiana. In pre-settlement days Wolf Lake was part of a vast complex of dunes, lakes, marshes, and wooded uplands. Ecologists refer to this area as the Lake Plain as it was once the bed of Lake Michigan. Development impacts, including dredging to obtain construction fill, filling with construction spoil, industrial discharges, invasive species encroachment, and other nonpoint sources of pollution have significantly altered Wolf Lake. In the 1950s the Indiana Toll Road (I-90) was built through the middle of the lake.



Map of Wolf Lake

Despite these anthropogenic impacts, Wolf Lake still attracts fishermen, boaters, wind surfers, birders, and other nature admirers. It also offers habitat for a wide variety of wildlife and plants, including species listed as threatened or endangered such as the lake sturgeon (*Acipenser fulvescens*) and banded killifish (*Fundulus diaphanus*).

The Wolf Lake Aquatic Ecosystem Project was initiated by the U.S. Army Corps of Engineers (USACE) Chicago District under Section 206 of the Water Resources Development Act of 1996, which gives USACE authority to undertake restoration projects in aquatic ecosystems.

The city of Hammond, Indiana was the project owner and a major project collaborator. The city provided part of the matching funds for this 6.5 million dollar project and is responsible for long-term maintenance. Major project features include restoring 1.6 km of eroded shoreline, creating 0.10 km^2 of aquatic and upland native plantings by constructing more than 30 sand islands, restoring natural water levels, improving boat channels, and controlling invasive plants. In 2009 the city of Hammond received a Conservation and Native Landscaping Award from the U.S. EPA and Chicago Wilderness.

The Restoration Plan

The Wolf Lake Aquatic Ecosystem Restoration Project is unusual in that wetland and upland habitats were created in shallow open water lake areas by constructing islands by hydraulic dredging of bottom sand. Material removed from the lake bottom created deep holes, which enhanced benthic diversity of the lake bottom. The extracted sand created islands with elevations suitable for emergent wetlands, wet prairie, and sand prairie depending on the elevations.

Hydraulic dredging of lake bottom to create sand islands

The benthos of Wolf Lake contains little organic matter or nutrients and as a result it is a less than ideal planting medium. We also anticipated that the lake's high winds would hinder stabilization of the newly formed sand islands. Wave and ice action accompanying these winds had been destructive to previous shoreline restoration and stabilization efforts. Herbivory, particularly by muskrats, carp, and the resident Canada goose population was also expected to be a challenge for establishing plants on the islands.

The project plan used several methods to mitigate the potential effects of a less than ideal planting medium, wind erosion, and herbivory. Erosion blankets anchored with 46 cm landscape pins were installed along the shoreline of the newly created islands to protect the wet prairie seed. Emergent plant plugs were secured with 20 cm steel staples. Plant species selected for the seed and plug mix included fast-growing stabilization workhorses like Chairmaker's rush *(Scirpus pungens)* and Softstem bulrush *(Scipus validus)*, along with annual rye (*Lolium multiflorum*) and oats (*Avena sativa*) for quick cover. The plant and seed mix contained more than 100 native species in the hope that it would result in a diverse native plant community representative of pre-settlement ecosystems. A system of 46 cm tall chicken wire fencing and nylon cord was also installed to protect the 4.6 m wide emergent planting zone from predatory geese, muskrats, and carp. In critical energy zones, unvegetated sacrificial barrier islands were created to protect vegetated islands during the early plant establishment years.

Shoreline of newly created sand island before planting

Shoreline of newly created sand island after planting

Island construction began in late summer 2006 and seeding and planting commenced in spring 2007. The prime contractor was Luedtke Engineering of Frankfort, Michigan and they were responsible for performing the hydraulic dredging and island construction. Cardno JFNew provided all plant materials, installation, and initial vegetation maintenance

Problems Faced

Many planting and seeding areas were lost or damaged by agents of nature despite all the protective features incorporated into the design of the sand lakes. Some of the problems that occurred:

- There were some pockets of organic sediment that provided neither adequate base nor sufficient cohesive material for island construction. Preliminary soil borings of the lake bottom had not predicted this problem. As a result several of the islands had to be eliminated because they were to be located within zones containing these organic sediment deposits.

- High water levels during the early planting stages inundated the emergent and wet prairie planting zones and delayed planting. The cause of the problem was three culverts on the Illinois side of the lake had been dammed by beavers. A concerted effort was required to keep the culverts open so planting could take place at the desired water levels.

- Low water levels during the 2007 mid-summer drought threatened the new plantings. This was particularly detrimental to the sand prairie seedings planted at the highest elevations. Installation of erosion blankets and irrigation, which were not part of the original design, were necessary in this zone to reduce plant mortality.

- High water levels from rainfall occurred after the plantings were completed in August 2007. These high water levels resulted in wave action and inundation that killed many of the newly planted emergent zone plants.

- Predation barriers were only marginally effective. Geese entered the enclosures from the upland side. Carp and muskrats were able to burrow underneath the predation barriers because the chicken wire mesh could not be securely pinned to the soft sand substrate.

- During the first year the most exposed reaches of newly created islands suffered severe erosion. Some areas adjacent to large open expanses of water that were exposed to prevailing winds lost large amounts of sand the first winter. In some cases the new shoreline was 23 m landward from the original location.

- Low levels of nutrients and organic matter in the sand meant slow growth of the stabilizing vegetation prolonged the period of erosive damage to the islands.

Lessons Learned

The restoration community may benefit from the lessons learned on this project. Future designs using dredged spoils to create sand islands within lakes should consider the following:

- **Design island shapes for greatest area-to-perimeter ratio.** Erosion on all sides of long, narrow islands can destroy the entire land mass before native vegetation can become sufficiently established to stabilize the substrate. In general, the larger and more circular the shape, the more resistant it will be to erosive attrition.

- **Use erosion control blankets on all seeded areas.** This will help conserve moisture and slow erosion from wind and rain for faster stabilization.

- **Control construction timing to allow islands to settle before planting**. Wait at least three months to allow the newly created sand islands to become consolidated before doing any planting.

- **Build the islands larger than final desired dimensions.** This will allow for erosive attrition to occur while still maintaining the form and function. Expect greater losses on sides adjacent to large fetches or drop-offs to deep water.

- **Protect all shorelines that have exposure to particularly harsh wind and wave action.** Use hard armor barriers such as log structures or sacrificial islands.

Log structure to protect newly created sand island from wind and wave erosion

- **Focus on establishing vegetation in the above-shoreline zone.** Most vegetative stabilization at Wolf Lake occurred after a dense sod of native grasses, sedges, and forbs became established in the wet prairie zone adjacent to and immediately above the waterline. Plant establishment in the highly dynamic emergent zone was generally much slower and mortality much greater. In many areas erosion was not arrested until the wet prairie zone plants became well established.

- **Limit emergent plantings.** Focus simply on groupings or "pods" spaced along the shoreline. Completely surround the groups with at least 0.9 m tall netting.

- **Size the emergent plant pods to discourage geese landing.** Keep these areas small (i.e., no larger than 0.9 m wide by 1.8 m long). This sized pod can withstand herbivory after the plants mature and will spread vegetatively and by seed to other areas.

- **Be prepared for nature to trump your plan.** The final results delivered by the grand forces of nature may not conform to your plan, despite your best design efforts. Set reasonable vegetative cover goals, and be prepared to modify the goals to account for the unknowns.

Maintenance

As with any restoration project, ongoing management is essential to control the advances of non-native aggressive species and maintain biotic integrity. During project design the USACE developed an operations and maintenance manual that will guide long-term management of the native areas. Wolf Lake is particularly vulnerable to the advances of phragmites *(Phragmites* spp*.)*, purple loosestrife *(Lythrum salicaria)*, and Eurasian watermilfoil *(Myriophyllum spicatum)*.

Project ownership has transitioned from USACE to the City of Hammond. The city is now responsible for managing these species and aggressive native plants like cottonwood and willow. In certain areas, wave and wind erosion requires periodic reinforcement of protective measures such as wave barriers and erosion control blankets, and replanting of native plant plugs. Periodic prescribed burning of upland areas is also planned.

Jon Dittmar, Cardno JFNew

SELECTED CONTENTS OF THE SEPTEMBER 2011 ISSUE OF *ECOLOGICAL RESTORATION*

RESTORATION NOTES

G.S. Kleppel, C.B. Girard, S. Caggiano, & E. LaBarge. Invasive plant control by livestock: from targeted eradication to ecosystem restoration.

D. Conover, W. R. Waulington, & K. Cody. Tipped over duck nest box traps turtles in a restored wetland (Ohio).

D. Conover. Keystone role of beavers in a restored wetland (Ohio).

T. Wu, M.A. Petriello, & Y. Kim. Shifting baseline syndrome as a barrier to ecological restoration in the American Southwest.

P.A. Desserud & M.A. Naeth. Promising results for restoring grassland disturbances with native hay (Alberta).

S. Tischew, B. Youtie, A. Kirmer, & N. Shaw. Farming for restoration: building bridges for native seeds.

C.A. Annen. Manipulating internal system feedbacks to accelerate reed canarygrass (*Phalaris arundinacea*) control: from theory to practice.

ARTICLES

J. Herold, M.R. Anderson, J.T. Bauer, V. Borowicz, & R.C. Anderson. Comparison of the effect of early and late removal of second-year garlic mustard (*Alliaria petiolata*) on first-year plants and deciduous forest spring and summer dominant herbaceous groundlayer species in central Illinois, USA.

J.E. Schoonver, J.L. Hartleb, J.J. Zaczek, & J.W. Groninger. Growing giant cane (*Arundinaria gigantea*) for canebrake restoration: greenhouse propagation and field trials.

S.M. Smith, K. Medeiros, & H. Bayley. Water temperature as a limiting factor in the colonization of a partially-restored coastal lagoon: case study of a gastropod herbivore and control of macroalgae.

R.G. March & E.H. Smith. Combining available spatial data to define restoration goals.

J. Hall, M. Pollock, & S. Hoh. Methods for successful establishment of cottonwood and willow along an incised stream in semiarid eastern Oregon, USA.

J. Nielsen, J. Diebold, T. Walton, M. Boyle, & R. Walt. Converting riparian restoration waste to energy: testing tamarisk (*Tamarix* spp.) woody biomass as fuel for downdraft gasification.

C.J. Stevens & D.D. Tullos. Effects of temperature and site characteristics on phosphorus dynamics in four restored wetlands: implications for wetland hydrologic management and restoration.

DESIGN APPROACHES TO ECOLOGICAL RESTORATION

B. Wilkes. Marine streets- a living marine edge.

C.C. Obropta. Discussion of *Marine streets-a living marine edge.*

For more information on current and past issues of Ecological Restoration see:
http://er.uwpress.org/

UPCOMING ECOLOGICAL RESTORATION RELATED CONFERENCES AND EVENTS – SEPTEMBER TO NOVEMBER

2011 Field Trip Series - Wisconsin Wetlands Association. Five field trips to different locations in Wisconsin are scheduled from September 3 to November 12, 2011. See webpage for details:
www.wisconsinwetlands.org/fieldtrips11.htm

The Prairie Enthusiast Fall Field Trips. There are 10 field trips to different sites in Wisconsin and Minnesota from September 3 to late October 2011. See website for details:
www.theprairieenthusiasts.org/2011%20Summer-Fall.pdf

2011 Annual Meeting of the Michigan Prescribed Fire Council. Hastings, MI. September 9 to September 10, 2011.
firecouncil.brakemandesign.com/app/webroot/img/uploads/MPFC-AnnualMeeting.pdf

Fall 2011 Volunteer Workdays: There are four volunteer workdays scheduled from September 10 to December 10, 2011 on ecologically significant natural areas in Indiana managed by the Shirley Heinze Land Trust. See website for details:
www.heinzetrust.org/Volunteer/Default.aspx

2011 Annual Meeting of the Ohio Chapter of the American Chestnut Foundation. Cumberland, OH. September 10, 2011.
www.oh-acf.org/news.htm

Networks for Life. A Strategy for Addressing the Biodiversity Crisis Through Landscape Connectivity. A lecture by Dr. Doug Tallamy. 6:30 pm on September 13, 2011. Butler University, Indianapolis, Indiana.
mipn.org/Tallamy_2011_presentation_flyer.pdf

River Night, Lake Night, Great Night! 10th Annual Celebration of the Minnesota Waters. Excelsior, MN. September 14, 2011.
www.minnesotawaters.org/content/rivernight-lakenight-greatnight

Asian Carp with Roger Eberhardt and Lisa Brush. Stewardship Network Webcast. September 14, 2011 at noon. See website for details.
www.stewardshipnetwork.org/site/c.hrLOKWPILuF/b.3975187/k.A610/Stewardship_Network_Webcast.htm

Lunch and Learn at the Twin Creek Preserve. Free lunch and tour of stream and restoration project. Sharonville, Ohio. September 16, 2011. Please RSVP by September 7, 2011 to Annie Rahall (arahall@millcreekwatershed.org).

Shoreline Buffer Workshop. Minnesota Waters and Crow Wing Soil and Water Conservation District. Lakeshore, MN. September 16, 2011.
www.minnesotawaters.org/content/shoreline-buffer-workshop-lakes

Jammin for the Dunes. A Save the Dunes fundraising event and beach cleanup. Michigan City, MI. September 17, 2011.
www.savedunes.org/monthly/index.php?uid=7151ea544b7b

2011 Lake Management Conference. Taking Charge: New Trends in Lake Research and Aquatic Plant Management. Michigan Chapter of the North American Lake Management Society. Tustin, MI. September 23, 2011.
hydra.iwr.msu.edu/registrations/mcnalms/register.asp

Healthy Lakes Legislative Forum. Minnesota Waters and Pine River Watershed Alliance. Walker, MN. September 23, 2011.
www.minnesotawaters.org/content/healthy-lakes-legislative-forum

Minnesota Beach Sweep 2011. Great Lakes Aquarium and Ocean Conservancy for International Coastal Cleanup. There are three clean up locations in the Duluth, MN area. September 24, 2011.
www.minnesotawaters.org/content/minnesota-beach-sweep-2011

Grand Prairie Friends Fall Membership Meeting. Urbana, IL. September 27, 2011. Contact Jamie Ellis (james.ellis72@gmail.com) for more info
www.google.com/calendar/event?eid=dGhmNWtib2hrOX

Research Shaping Michigan's Water Future: Michigan H20 Objective Conference. Detroit, MI. September 29 to September 30, 2011. Contact: Erin Dreelin (dreelin@msu.edu).
energy.umich.edu/2011/07/2011-09-29-30-mi-h2objective-conference-research-shaping-michigans-water-future/

Wisconsin Bird Conservation Initiative 2011 Statewide Meeting. Green Bay, WI. September 29 to October 1, 2011.
www.wisconsinbirds.org/annualmeeting.htm

Archean to Anthropocene: The Past is the Key to the Future. Geological Society of America 2011 Annual Meeting, Minneapolis, MN. October 9 to October 11, 2011.
www.geosociety.org/meetings/2011/

Great Lakes Islands with Dave Ewert and Lisa Brush. Stewardship Network Webcast. October 12, 2011 at noon. See website for details.
www.stewardshipnetwork.org/site/c.hrLOKWPILuF/b.3975187/k.A610/Stewardship_Network_Webcast.htm

H20 Now! Great Lakes Water Quality Biennial Meeting. Detroit, MI. October 12 to October 14, 2011.
meeting.ijc.org/

2011 U.S. Areas of Concern Program Annual Meeting. Detroit, MI. October 13 to October 14, 2011.
www.glc.org/rap/aocconference11.html

Rally 2011: The National Land Conservation Conference. Milwaukee, WI. October 13 to October 16, 2011.
www.landtrustalliance.org/training/rally

Natural Landscaping with Native Plants – Make Your Yard An Enchanting Place. Wild Ones. Milwaukee, WI. October 15, 2011.
wildones.org/chapters/milswest/2011%20Brochure

Seventh Annual Michigan Clean Water Corps Annual Conference. Higgins Lake, MI. October 24 to October 25, 2011.
www.micorps.net/conference

2011 Great Lakes Sustainability Summit. National Brownfield Association, Chicago, IL. October 25 to October 26, 2011.
www.brownfieldassociation.org/Events/Default.aspx

State of the Strait Conference. Use of Remote Sensing and GIS to Better Manage the Huron-Erie Corridor. Ypsilanti, MI. November 2, 2011.
web4.uwindsor.ca/units/stateofthestraight/softs.nsf/SubCategoryFlyOut/B5E17EDA8333465C85257845006918A0

If you have a conference or event that you would like listed in this section in future newsletters please email the information to Bill Santelik (wsantelik@eaest.com)

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