

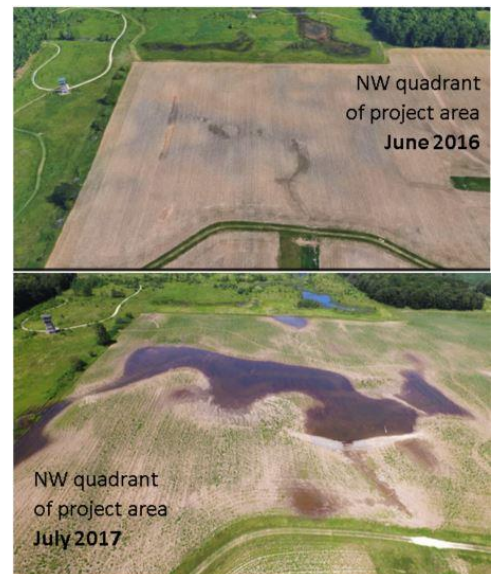


## 2017 End of Year Report

**Mequon Nature Preserve's dual mission is to be a guiding example of land restoration by returning an urban/suburban area to pre-settlement conditions and to establish an environmental education conservancy and natural habitat that inspires exploration and cultivates stewardship, encouraging visitors to get off the path.** Mequon Nature Preserve Inc. (MNP Inc.) fulfills its mission on a 444-acre parcel of land adjacent to the City of Milwaukee. Its environmental education program is free, accessible, and open to any interested individuals year-round. MNP Inc. is a nonprofit 501(c)(3) organization that raises funds for all projects, programs, activities, events and operations. MNP Inc. does not receive local, county, or state tax dollars and relies solely on charitable contributions to achieve its education and land restoration goals. MNP Inc.'s programs are provided at no cost to the public and there are no fees to visit the Preserve which is open to the public daily.

### 2017 At A Glance:

- Land acquisition:
  - **MNP Inc. acquired an additional 6 acres** through the purchase of a parcel on the corner of County Line Road and Wauwatosa Road. This parcel contains an unrestored stretch of Trinity Creek. Creek channel restoration is a probable project for 2019. **MNP Inc. now operates on 444 acres.**
- Land restoration:
  - **MNP Inc. began restoration on 74 acres in 2017**, bringing the **total acreage in active land management to 250 acres.**
  - 4 acres of wetlands created
  - 52 acres sown with prairie seed
  - 3,000 tree and shrub seedlings were planted by students, volunteers, and staff in May
  - 200 container trees and shrubs were planted by volunteers and staff in October
- Wildlife research:
  - **Bird species count increased to 172 species.** By comparison, 68 species were recorded between 2004-2007 and 125 species through 2012.
  - **Annual monitoring tracks presence or absence of certain species.** Below are the number of confirmed species in different categories. If baseline data was taken prior to land restoration work (2002-2004 surveys), that number is shown in parentheses.
    - 11 large mammal species, 8 small mammal species, 4 bat species (and 2 more unconfirmed), 6 (6) frog species, 1 (1) toad species, 1 (0) salamander species, 5 (2) crayfish species, 15 (6) fish species, 2 (0) turtle species, and 2 (1) snake species.
- Environmental Education:
  - Over 11,000 individuals participated in educational programming. Thousands more used the preserve for passive recreation.
    - **4,004 students** stepped off a school bus at MNP specifically for environmental educational programming with **63 percent of the children being from underserved, City of Milwaukee classrooms.**
    - An additional **917 students** were taught by MNP Inc. staff offsite, in their own classrooms.
    - Community (adult and/or family-orientated events) programs attracted **4,868 individuals.**



### **MNP Inc.'s Land Restoration Program**

MNP began land restoration activities in 2004, starting with a minimal amount of habitat: 22 acres of woodlands and 3 acres of wetlands. Over 400 acres were in agriculture or buildings. Since 2004, MNP Inc. has progressively reclaimed sections of the property from agriculture, removed invasive species, spread native grass and flower seed, removed man-made structures (e.g. buildings, fences, sub-surface drain tiles) and planted tens of thousands of trees and shrubs.

**As of 2017, 250 acres are actively managed to either sustain or establish three habitat types common to the Milwaukee area prior to European settlement: 1) mesic, hardwood forest, 2) tall-grass, mesic prairie, and 3) wetlands** (permanent ponds, ephemeral ponds, creeks). MNP Inc.'s Master Site Plan calls for majority of the property to become **maple-beech-basswood forest**.

This year MNP Inc. took on the largest land restoration project since 2004. In January 2017 **multiple lines of clay drain tiles were broken** to restore hydrology in southcentral portion of the preserve. Also in January, portions within the project area that did not have drain tile were broadcast seeded with a 35-species mix of native, local genotype, prairie seeds. In May, the heavy equipment returned to **engineer four wetland basins** that created a total of 4 acres of wetland habitat. In early June the remaining soil in the project area was **drill-seeded with prairie seeds**.

Also in May, MNP Inc. staff, interns, students and volunteers helped to plant **3,000 tree and shrub seedlings** on the south half of the preserve. Throughout the summer, MNP Inc. staff, interns, students and volunteers focused their efforts on **removing non-native, invasive species** from the property, such as sweet clover, garlic mustard, buckthorn, crown vetch, purple loosestrife, and more. In October, MNP Inc. staff and volunteers from local Rotary Clubs planted **200 container trees and shrubs** in the project area. The transformation of the project area from corn field to wetlands and native plants is truly extraordinary!

In 2018 work is scheduled on area to the south of the Swan Road parking lot. Drain tile will be disabled in the field and the wetland basin will be deepened and enlarged. MNP Inc. staff will also focus on clearing invasive buckthorn from the recently purchased, 6-acre parcel on the corner of Wauwatosa Road and County Line Road. MNP Inc. will pursue restoration of the agricultural field and Trinity Creek corridor in 2019.



### **MNP Inc.'s Environmental Education Program**

**The purpose of MNP Inc.'s outdoor science program is twofold: 1) develop scientific thinking skills and 2) create a population empathetic to the natural world.** The program targets k-12 underserved students who live in the City of Milwaukee. Because of their limited exposure to the natural world, they may lack a meaningful understanding of its beauty, complexity and fragility. **MNP Inc.'s goal is to have students leave knowing the importance of being good stewards of the environment.**



Students participate in outdoor, hands-on activities through which they develop critical thinking skills ranging from observation to synthesis and analysis. Students learn ecological concepts that become building blocks for understanding more complex science concepts in the future. **Twenty course offerings** include wetland function, invasive species of WI, aquatic organisms, animal tracking, plant community succession, amphibian adaptation, owl pellets, bird behavior, tree anatomy, monarch butterfly migration, and renewable energy. The complete course catalogue can be found at [mequonnaturepreserve.org/education/field-trips/](http://mequonnaturepreserve.org/education/field-trips/).

Staff and teacher volunteers focus on two or three core concepts during a lesson and evaluate students' understanding at the end of the day. MNP Inc. also gives post-visit evaluation forms to receive feedback from school staff regarding quality of the program and staff performance.



When students arrive for their field trips, they gather in the PieperPower Education Center (PPEC) auditorium where they are introduced to the concept of sustainability and how sustainable features are in place within and outside of the PPEC to reduce its environmental impact. After the introduction, students receive the necessary tools, equipment and gear related to their daily lesson, which takes place in the Preserve's 444-acre outdoor classroom. Some lessons include a land restoration activity such as planting trees, shrubs and flowers; removing invasive vegetation; collecting seeds and nuts to plant the following spring; tracking wildlife; or monitoring water quality and vegetation. After 1-2 hours outdoors, students return to the PPEC for lunch, discussion and a project.

Outfitting children for outdoor experiences is important to ensure a positive experience for students. As such, **MNP Inc. provides mud boots, winter boots, winter jackets, hats, gloves, ponchos, snowshoes, butterfly nets and other materials needed to carry out the lesson.** If any student comes lacking a winter jacket, hat or gloves, MNP Inc. staff gives the student the clothing to keep.

**MNP Inc.'s facility is accessible to people of all ages and abilities.** The education center and most trails are ADA accessible. Several outdoor learning stations are located near the education center and used according to students' needs. To remove barriers to access environmental education programming, MNP Inc. does not charge fees to schools or students. In addition, MNP Inc. funds transportation for City of Milwaukee schools.

## **Addressing the Need for Environmental Education**

**MNP seeks to reverse the trend of "nature deficiency" in American society.** As America and the world become more urbanized, multiple studies have concluded that people are becoming disconnected with the natural world at an increasing rate. This disconnect has caused a loss of appreciation for, knowledge of, and responsibility for the environment. A host of physical and psychological disorders have been linked to nature deficiency including obesity, vitamin D deficiency, ADD and ADHA, high blood pressure, stress, and anxiety. Through educational programs and encouragement, MNP offers nature-based recreation and exercise, as well as education that lead to appreciation for nature and a sense of personal ownership of the natural world. Some of the proven benefits of nature-based programs include:

- 1) physical and mental health benefits such as reduced body fat, reduced anxiety and stress, and improved self-esteem;
- 2) positive changes in behavior;
- 3) enhanced connectedness to nature;
- 4) improved knowledge and skills acquisition.

In addition, multiple studies have shown that students diagnosed with ADD or ADHD function better with contact to nature. Students exhibited fewer symptoms after they walked through a park or played outdoors in green settings, and the greener their surroundings, the fewer symptoms they showed.

Many students also face mental health challenges. Studies found that contact with nature and physical activity in a natural environment, what some call "green exercise," improves psychological well-being and a decrease in aggressive behavior. The before-mentioned scientific, peer-reviewed studies and more can be found in the Children and Nature Network's Research Library at <http://www.childrenandnature.org/learn/research/>.



## **Increased Participation in Collection of Research Data**

In 2017, more teachers chose to involve their students in wildlife (bird counts, snake monitoring, pond macroinvertebrate monitoring, monarch butterfly tagging) and water quality monitoring (e.g. pH, dissolved oxygen, nitrate testing). Data gleaned from wildlife monitoring is a very important as a litmus test for the successes (or failures) of the land restoration programs. The involvement of students in water quality monitoring has become an important initiative for MNP. Through a variety of monitoring techniques (turbidity tubes, digital equipment, colorimetric tests) students learn different parameters of water quality, how to follow instructions, record and interpret data, and recognize the important role natural wetlands play in supplying animals and humans with clean water.

## **2017 Educational Programming Numbers**

In total, educational contact\* numbers increased again in 2017 to over 11,000 children and adults served directly by staff. Thousands more used the preserve for passive recreation.

- **4,004 students** stepped off a school bus at MNP specifically for environmental educational programming with **63 percent of the children being from underserved, City of Milwaukee classrooms.**
- An additional **917 students** were taught by MNP Inc. staff offsite, in their own classrooms.
- Community (adult and/or family-orientated events) programs attracted **4,868 individuals.**

\*An educational contact is defined as a personal interaction with an individual who is taught or otherwise receives an environmental experience. This number includes field trips, summer programs, events, and community outreach workshops. It does not include individuals who passively interact with exhibits in the education center or who use the Preserve for recreational purposes.

2017 MNP Student Contact List											
Month	School Student Contact (excludes adult programs, college volunteers, interns, story times)						All other educational contacts besides K-12 field trips			Monthly totals	
	Total preK-12 students ON SITE field trips	preK-12 from City of MKE	preK-12 Outside City of MKE	College students for Env. Ed.: ON SITE	Classroom (preK-College) visit: OFF SITE - In MKE	Classroom (preK-College) visit: OFF SITE - Outside City of MKE	Adult/family Educ. Presentations: ON SITE	Adult/family Educ. Presentations: OFF SITE	"Indirect education" Volunteers, interns, story time: ON SITE		
January	0	0	0	15	0	0	40	0	9	64	
February	249	125	124	0	0	0	0	861	89	1199	
March	220	55	165	0	162	0	35	53	27	497	
April	297	215	82	20	200	355	156	500	116	1644	
May	1205	769	436	10	0	0	177	145	150	1687	
June	680	615	65	0	0	0	289	85	195	1249	
July	195	0	195	0	75	45	183	80	237	815	
August	217	35	236	0	80	0	57	442	236	1032	
September	325	265	60	0	0	0	108	550	73	1056	
October	417	264	153	0	0	0	297	150	161	1025	
November	134	134	0	0	0	0	660	0	34	828	
December	20	0	20	0	0	0	0	0	36	56	
		2477	1536							TOTAL	Year
	3959	62.6%	38.8%	45	517	400	2002	2866	1363	11152	2017
2016	4580	3080	1500	86	1038	409	971	1570	1845	10499	2016
		67%	33%								
2015	3699	2403	1296	89	943	370	1269	1105	1594	9069	2015
		65%	35%								
2014	3560	2056	1504	175	0	5070	1203	572	1935	12515	2014
		58%	42%								
2013	4977	2807	2170	25	0	145	218	255	1673	7293	2013
		56%	44%								
2012	3130	1920	1210	191	0	698	308	294	1362	5983	2012
		61%	39%								

### MNP Inc.'s Water Passport Program

In partnership with Milwaukee Metropolitan Sewerage District (MMSD), MNP Inc. has launched the its "Water Passport Program". This **multi-visit experience is designed to cultivate water resource awareness and action** among students within the Lake Michigan watershed. The Program includes at least three experiences: 1) in-classroom instruction about watersheds (pictured right), 2) testing water quality as it enters and exits a wetland system at MNP, and 3) a visit to MMSD's Jones Island Water Reclamation Facility (picture on following page) to learn how waste water is treated before being returned to Lake Michigan. Two





other potential activities include a visit to Concordia University's Center for Environmental Science (situated on Lake Michigan) and a stop at a local river with a representative from Milwaukee Riverkeepers.

A total of 150 students from 3 schools participated in the Water Passport Program. Another 148 students from 4 other schools participated in water quality programs at MNP in 2017. This number includes 35 Native American students from the Milwaukee Public School's First Nations Studies Program who spent two weeks at MNP studying various aspects of water and its importance to all living things.

To assess the effectiveness of this new program, MNP Inc. administered pre- and post-program quizzes and surveys. Collectively these different assessment methods gave MNP Inc. information regarding the effectiveness of the program. When testing students' knowledge of water resource terminology, post-program quiz data yielded only a negligible gain of 2 percent. However, **surveys that measured "environmental attitude" produced much more promising results.** In the surveys, students were asked to respond to statements (e.g. A job outside would be fun) to gauge their "environmental attitude". Statements could be delineated into three categories: sense of place, environmental stewardship, and interest in interacting with nature. A comparison of the pre- and post-surveys reflected a positive shift in all three categories. However, it was the "environmental stewardship" category showed the largest increase in positive responses. Through student discussion, MNP Inc. staff found that:

- 81 percent of the students changed how they feel about water resources
- 63 percent of students made a change in their behavior to protect water resources
- 67 percent of the students talked to someone outside of the school about what they learned in the Water Passport Program

Although the students did not improve on their knowledge of water science terminology, **pre- and post-surveys verified that the students positively shifted their mindset about environmental issues.** MNP Inc. staff believe that this positive shift in environmental attitude is more important than any gain made in learning scientific terminology.

### Urban Agriculture Pilot Program

In 2017, MNP Inc. worked with students from Milwaukee Public School's First Nations Studies Program and the Ho-Chunk Community Center (Milwaukee) to implement an "Urban Agri-Camp". In mid-spring MNP Inc. staff visited the students to discuss growing their own food and nutrition. In May the students came to MNP and planted crops they begun growing at their center. Crops included native strain corn, beans, peas, tomatoes, peppers, and squash. Students came out during the summer to tend to the garden and harvest ripened crops. The students took the crops home to share with family and tribal elders.



## New initiatives at MNP

MNP Inc. is a forward-thinking, industry leader when it comes to initiating new practices that no one else has attempted. This year MNP Inc. unveiled two initiatives that are a first in the state of Wisconsin.

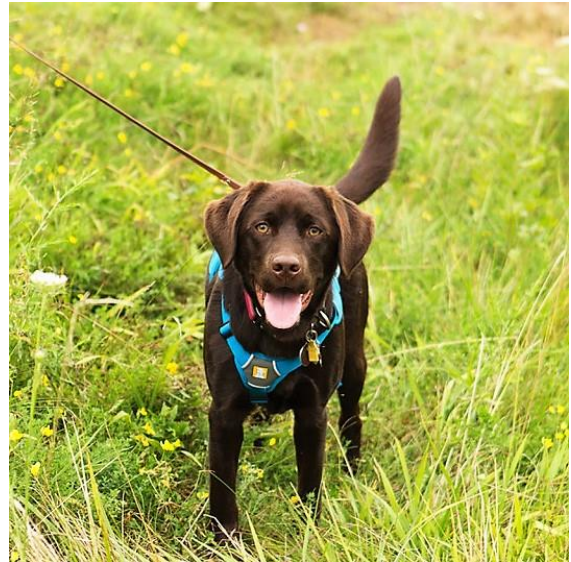
### Tilia - Wisconsin's First On-staff Conservation Dog

Meet Tilia, MNP's chocolate lab. She has completed over one year of extensive scent detection training. In 2017, **Tilia focused on detecting the scent of two species important to land conservation: invasive wild parsnip and native eastern tiger salamanders.** Over time, she might be trained on upwards of 20 different scents.

Wild parsnip is an aggressive, non-native invasive plant that can cause second degree burns on anyone who touches it. Locating and eradicating this plant before it establishes at a site is key to the safety of staff and visitors. Tilia was tasked with confirming that it is not spreading to other areas, safeguarding visitors and MNP's land restoration efforts.

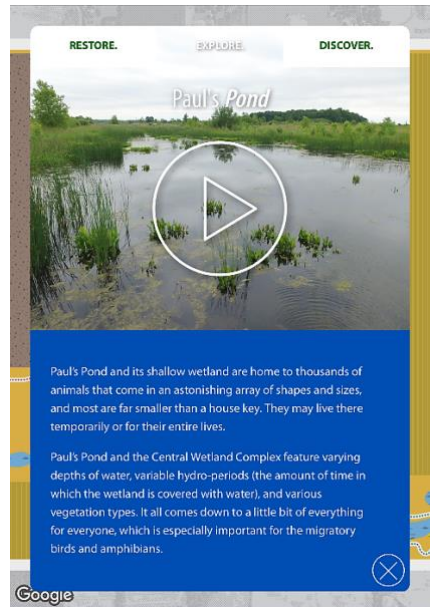
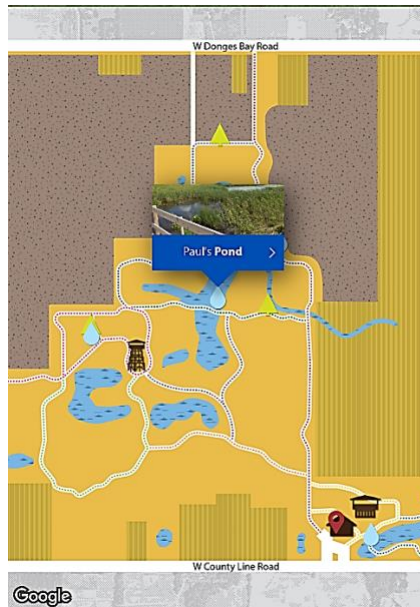
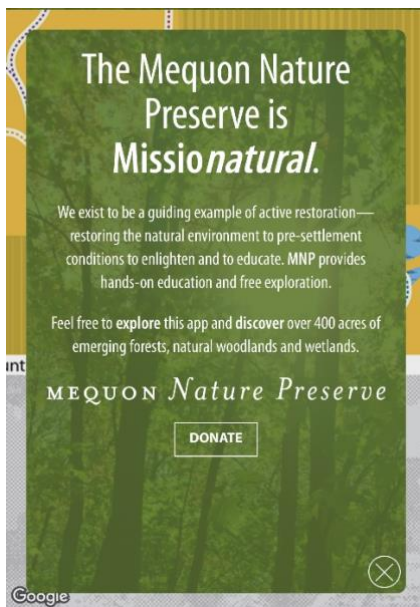
Tilia has also been trained on detecting eastern tiger salamanders in the wild. Salamanders are indicative of high quality woodland habitat, secretive by nature, and very difficult for humans to detect. Tilia has proven she can locate salamanders planted by trainers, but field trials have proven difficult to validate because MNP's salamanders tend to burrow into the soil.

For more information on Tilia or conservation scent dogs, visit: [mequonnaturepreserve.org/about/tilia/](http://mequonnaturepreserve.org/about/tilia/) or [www.midwestconservationdogs.com/](http://www.midwestconservationdogs.com/).



### MNP Inc. Launches Wisconsin's First Nature Preserve App

As the world becomes more digital and less natural, MNP Inc. took the opportunity to merge virtual and tangible through an **educational app about land restoration and conservation.** Highlights include species lists by location, restoration history, and push-notification at unique locations. **Thanks to We Energies and Thiel Design, the app is free to download today!**



### MNP Inc.'s Community Partners

- The following institutions have been engaged on several levels with MNP's land reclamation goals: 1) **Concordia University** - Wisconsin; 2) **UW-Milwaukee's** Geosciences Program, School of Fresh Water Sciences, GIS Graduate Program; 3) **Milwaukee Area Technical College's** Environmental Health and Water Quality Technology, Landscape Horticulture Department; 4) **Wisconsin Lutheran College's** Life Sciences Department; 5) **Cardinal Stritch University**, 6) **Germantown High School**, 7) **Homestead High School**. Post-secondary institutions provide data to MNP Inc. on water quality, wildlife monitoring, tree survivorship, and soil monitoring programs.
- **Milwaukee Metropolitan Sewerage District, Ozaukee-Washington Land Trust, and Ozaukee County Planning and Parks Department** are engaged in water and invasive species management and education.
- Local community groups and businesses volunteered time and materials to land restoration efforts: **Service Club of Milwaukee, Johnson Controls, Johnson Bank, U.S. Bank, American Transmission Company, Eco-Resource Consulting, Mequon-Thiensville Sunrise Rotary Club, Rotary Club of Milwaukee North Shore, and Rotary Club Amigos de Milwaukee After Hours, Fondy Food Market.**



- MNP Inc. has a strong citizen-monitoring program and encourages citizen scientists to monitor water, vegetative and wildlife species.
- Community volunteers and students carry out a variety of land restoration and monitoring tasks. This includes the "Restoration Rangers" volunteer program, where multi-generational volunteers assist with land restoration tasks for three hours on Thursday mornings. The program began in May 2014 and continues to grow.
- Local Eagle Scout candidates often complete their projects at MNP. Recent projects include the building and installation of bat houses; a fire pit with benches to the east of the PPEC; tree identification signs; trail directional markers; resting benches and picnic benches.



## MNP's Lessees in the News

About 180 acres of MNP's land is still in active agriculture. The agricultural fields are leased to different individuals and organizations. Two new lessees on the property have recently been in news for their work.

**Fondy Food Market** began leasing 20 acres of agricultural field to the south of the old Stauss Family Farm in 2017. This non-profit organization grows fresh food for all Milwaukee-area people to access. Their land is divided into a mosaic of one-acre parcels which small-scale farmers use to grow food for themselves and to sell through Fondy Food Market and its farmer's markets. For more information you can visit their website at [fondymarket.org](http://fondymarket.org).



**Dr. Michael Schläppi**, a microbiologist from **Marquette University**, began researching the possibility of growing rice in Wisconsin on a commercial scale. After years of studying more than 200 rice varieties from around the world, Schläppi uncovered a variety that comes from a region in Russia with a similar climate to Wisconsin. An interview with Schläppi from 2015 has more information on his study: [uwvm.com/post/why-scientist-growing-rice-marquette-university-rooftop#stream/0](http://uwvm.com/post/why-scientist-growing-rice-marquette-university-rooftop#stream/0). In 2017 Schläppi planted about an acre of the Russian rice in newly created paddies at MNP, just to the east of the old Stauss farmstead. **His project is the first of its kind in the state of Wisconsin.**

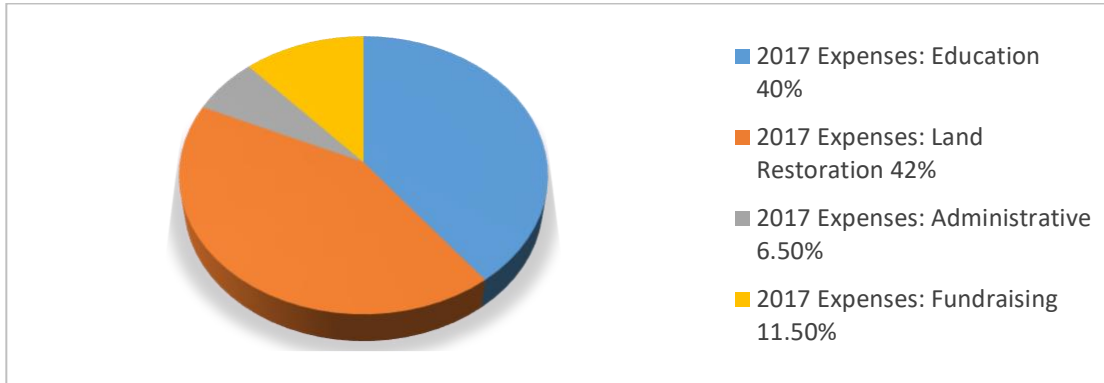
Fondy Food Market's Hmong farmers got involved, too. Schläppi hired some of farmers to hand-plant one of the paddies. Many of the individuals who did the planting reminisced about doing the same thing in their childhood before they came to the United States.

In September, John McGivern from the PBS "**Around the Corner with John McGivern**" came to the paddies to interview Schläppi, Fondy Food Market personnel, and MNP Inc. staff. A community screening will take place on Monday, March 12, at Shully's Watermark in Thiensville.

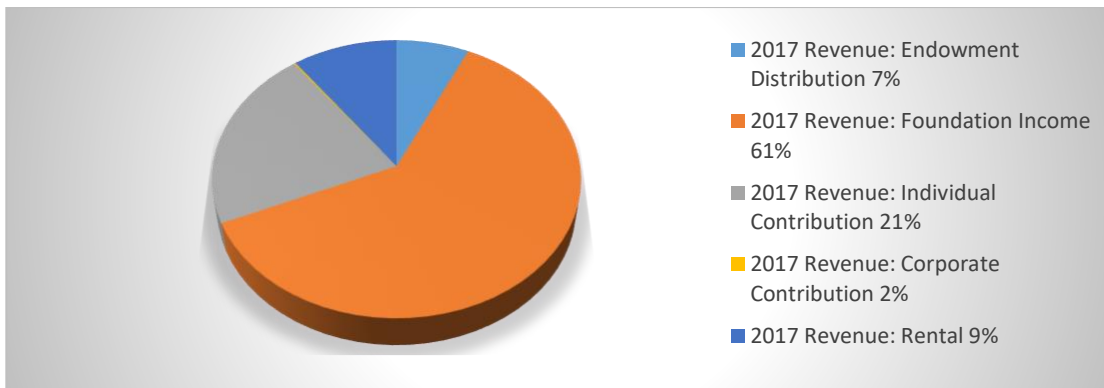


**Fiscal Status**

MNP Inc.'s unaudited financial statement for fiscal year 2017 reports \$787,658 in expenses and \$827,305 in revenue. About 15 percent of expenses supported administration and fundraising. MNP Inc. carries out a comprehensive fundraising program to finance operations and capital projects. MNP Inc. also raises funds for its endowment fund housed at the Greater Milwaukee Foundation (GMF). The endowment fund and a designated donor's endowment fund together total \$2.5 million. MNP Inc. maintains an additional fund at GMF with a balance of \$426,902 to be used for emergencies and unexpected expenses.



2017 Expenses



2017 Revenue sources

The City of Mequon owns the 444-acre Mequon Nature Preserve and leases its land and buildings to MNP Inc. for \$1 per year. Conservation easements cover the entire Preserve, protecting it in perpetuity from development. The City of Mequon contributes services such as mowing the grass trails and plowing its parking lots. MNP Inc. raises all funds needed to carry out programs, projects and maintenance of buildings.

**Governance and Staff**

A twelve-member board governs MNP Inc. The directors include James Bell (chairman), Fredrick Geilfuss (vice-chairman), Christine Nuernberg (secretary/treasurer), Clayton Frazer, Mark Murphy, Nathan Otero, Bruce Ramme, David Scritsmier, Kevin Shafer, Lee Szymborski, and Steve Tews, (one vacancy remains). The board employs six full-time and one part-time staff including Kristin Gies, executive director; Kay Amland, director of development; Jason Nickels, director of education and research; Cory Gritzmacher, director of restoration and operations; Nicol Perez, education manager; Kelly Winkler, development and marketing assistant; and Bruce Roehsner, facilities manager. Kristin Gies sits on the Association of Nature Center Administrators' national scholarship and leadership committee; is a member of the Wisconsin Urban Forestry Council and chair of the forestry awards committee; and serves on the Concordia University Foundation Board. Six seasonal interns learned land restoration techniques and monitoring, removed invasive species, and assisted with field trips throughout the year. In 2017, 300 volunteers actively engaged in mission-driven activities.

**Respectfully submitted,**



**Kristin Gies**  
**Mequon Nature Preserve Inc.**  
**Executive Director**