Exhibit B

URBAN ECOLOGY CENTER™

Menomonee Valley Research & Citizen Science 2014 Review

2014 Annual Highlights

The Urban Ecology Center Research & Citizen Science Team is appreciative and humbled by the support from Menomonee Valley Partners to carry out important research and monitoring projects in Three Bridges Park and Stormwater Park. Highlights of the 2014 field season include:

- **April 24th film screening of the *Ordinary Extraordinary Junco***
- **May 4th Kohl's Cares Bioblitz**
  - ◊ 50 species encountered by 30 Kohl's employees and their family members
- **Spring Bird Banding (5/4-5/26)**
  - ◊ 15 species and 59 individuals banded
- **Summer Field Season (June-August)**
  - ◊ 19 Mammal Surveys with 259 individuals captured and released
  - ◊ 13 Snake Surveys with 50 individual Butler's gartersnakes marked
  - ◊ 4 Odonata Surveys with 18 species identified
- **August 23rd CRIKT Group Invertebrate survey**
  - ◊ 20+ taxa photographed and documented
- **Fall Bird Banding (9/9-10/7)**
  - ◊ 15 species and 78 individuals banded
- **September 23rd Journal Sentinel Article about bats**
  - ◊ Photoshoot of Three Bridges Park and MV UEC acoustic survey
- **First MV D2D Young Scientists project**
  - ◊ Students investigated tree distribution and density in naturalized versus planted areas
- **Years' worth of Park Use Surveys Complete**
  - ◊ Estimated 22,386 visitors to Three Bridges Park (based on 81 park use surveys)

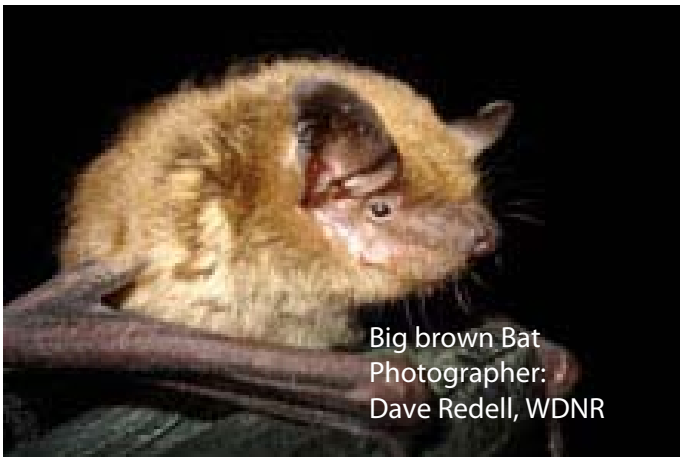
Results and summaries of the wildlife projects are detailed in the following pages. See the 2013 Menomonee Valley Research & Citizen Science Annual Review for more information on project protocols and rationale.

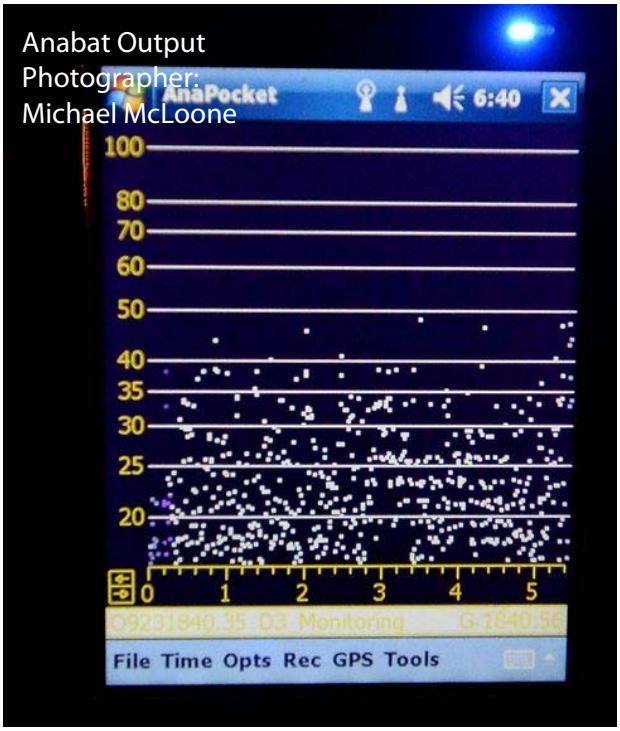
Bats

In 2014 we conducted four acoustic bat surveys in Three Bridges Park, Stormwater Park and along the Hank Aaron State Trail. Sixteen community scientists volunteered 20 hours to confirm that three of Wisconsin's seven bat species (Big Brown, Eastern Red and Hoary) were found in the area this year. Prior surveys confirmed the presence of Silver-haired bats during migration (April-May and September-October).

The advent of the deadly white-nose syndrome (WNS) in Wisconsin stresses the urgency of continued monitoring, particularly in urban areas. Big brown bats in particular are susceptible to the disease and are commonly found roosting in attics and structures of older homes in cities.

Our research tracking presence and activity overtime provides valuable data to help understand current bat distribution (pre-WNS) and track trends over time.





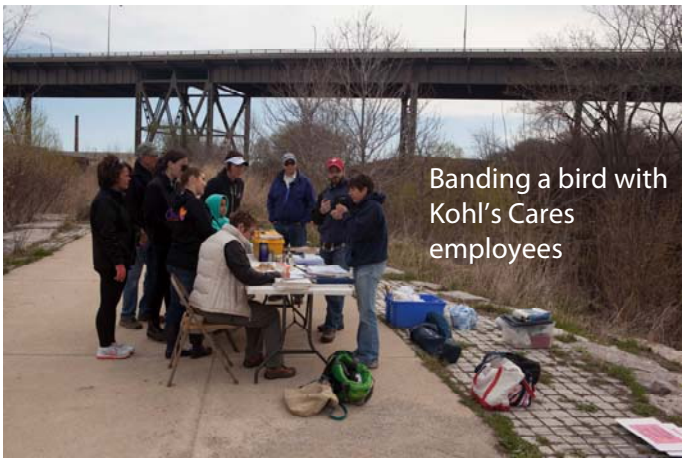
Bird Banding

In 2014, the Center held seven bird banding sessions in Stormwater Park with a total of 87 open net hours. Twenty community scientists contributed over 175 volunteer hours toward the project.

We banded 137 individual birds comprising 24 species during spring migration (May) and fall migration (September through October). The American Goldfinch was the most numerous bird captured (50 individuals) followed by the House Finch, American Robin, Red-winged Blackbird and Swainson's Thrush (see graph below right- American Goldfinch not included in graph).

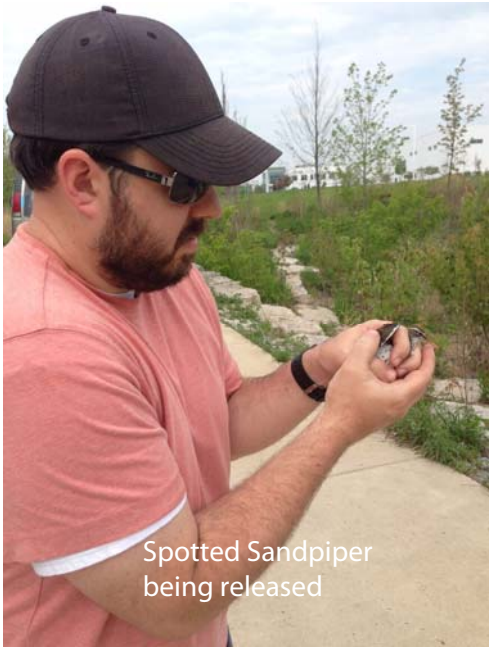
Three birds (Tree Swallow, Song Sparrow and Spotted Sandpiper) were recaptures from the 2013 banding season. For the swallow and sandpiper this means migrating thousands of miles only to come back to their home in the Valley.

Bird banding provides valuable education tools and data are provided to the banding lab run by the US Geological Survey and helps us track how changes we make to the land affect migratory and breeding birds.

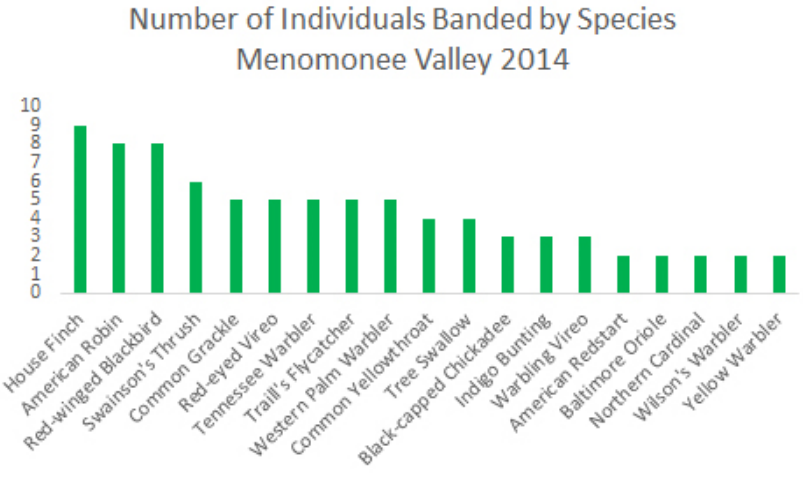


Banding a bird with Kohl's Cares employees

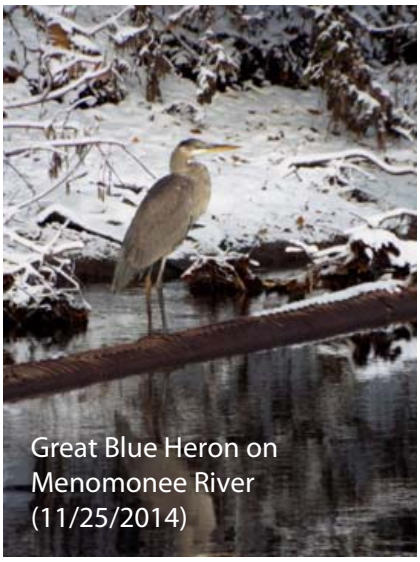
Releasing a bird near the Menomonee River banding station



Spotted Sandpiper being released



Bird Walks

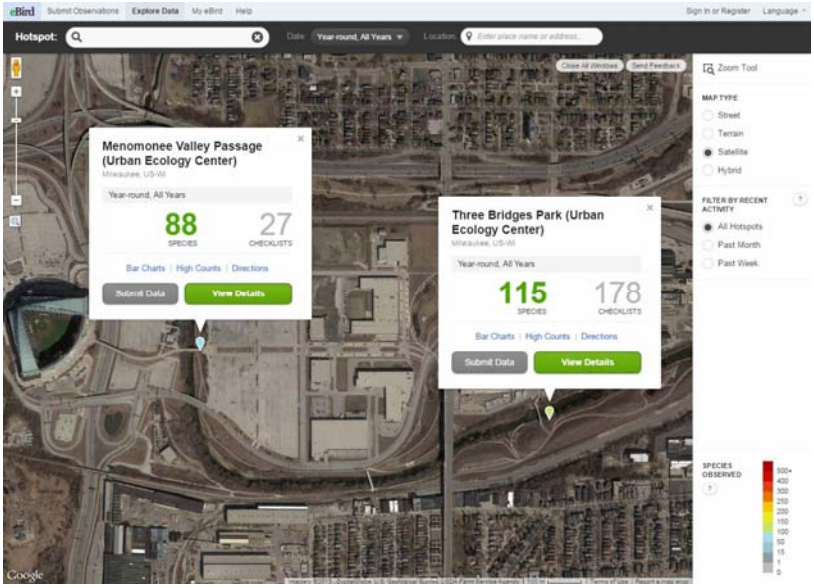


Great Blue Heron on Menomonee River (11/25/2014)

Ten community scientists contributed 108 hours to the Menomonee Valley's Weekly Bird Walk project. Alongside staff, they submitted 48 checklists to the international online database eBird. This project will help the community track changes in bird populations concurrent with natural succession of the newly-planted vegetation of Three Bridges Park (3BP). Researchers divided the weekly walk into two routes each lasting 1-2 hours depending on the amount of activity (see below). On ebird the routes are Hot Spots entitled Menomonee Valley Passage (Urban Ecology Center) and Three Bridges Park (Urban Ecology Center). The routes travel through unique plant communities and likely explains why roughly 25% of the species were only found one route or the other.

In 2014, two owls were observed in 3BP, a Great Horned Owl as part of this project, and a Snowy Owl by a birder from the community. We were also fortunate to observe the acrobatic courtship behavior of the State-Endangered Peregrine Falcon.

We invite all citizens to contribute to the eBird database for Urban Ecology Center hotspots. Create your own profile to manage your own bird observations and submit checklists at ebird.org



Invertebrates

With the financial support of the DNR's Citizen-based Monitoring Partnership Program Urban Ecology Center staff and interested community scientists created a long-term invertebrate monitoring plan for the Center's three branches. The Menomonee Valley provided an ideal location to test protocols as invertebrates will be a foundation for a future adaptive management plan in which the biota inform our land stewards of the effects of their efforts.

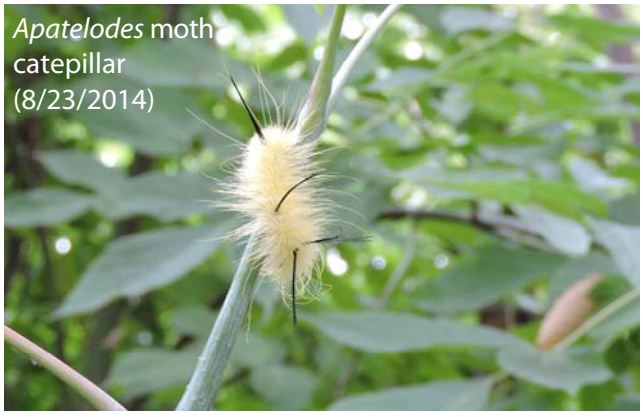
Thirty-four community scientists contributed 69 volunteer hours to conduct four Odonata (dragonfly and damselfly) surveys in 2014. We documented 18 species, with Common Green Darner and Eastern Forktail being present during all four surveys.

The CRIKT group (Citizens Researching Invertebrate Kritters Together) conducted a mini-invertebrate bioblitz and captured and photographed over 20 invertebrates in Three Bridges Park. Over the winter, CRIKT will hold an identification party to assign species identifications to images of the insects and other invertebrates found during the mini-bioblitz.

Odonata Survey (7/23/2014)

CRIKT Group (8/23/2014)

White-banded Crab Spider (8/23/2014)



Apatelodes moth catepillar (8/23/2014)

Mammals

Retrieving Sherman Small Mammal Traps

Showing a WFM to Bioblitz participants

In 2014, five community scientists contributed 20 volunteer hours to conduct 19 small mammal trapping surveys with Center staff. They set 786 traps over the course of the field season and captured 258 individuals. Ninety-seven percent (249) of the captures were White-footed Mice (WFM). They also captured eight Meadow Voles (MV) and one House Mouse (HM). The table at right shows the proportion of males and females and age distribution for WFM.

Sex	Males	114
	Females	121
	Unknown	14
	Pregnant	17
Age	Adult	211
	SubAdult	19
	Juvenile	13
	Unknown	6

The team performed mark-recapture surveys which provide an estimate of population size. The table at left shows the estimated population size for each of the six transect locations with a 95% confidence interval range. Future surveys will allow us to analyze trends over time. Small mammals are an important prey base and good indicators of habitat quality.

Casual observations in 2014 include Striped Skunk, Eastern Cottontail, Eastern Gray Squirrel, Eastern Chipmunk, Woodchuck, Mink, Coyote, Red Fox, Raccoon, feral cat and Virginia Opossum.

Location	Population Estimate	Standard Deviation	Lower 95% CI	Upper 95% CI
Hank Aaron ST West	19.00	2.11	16.89	21.11
Hank Aaron ST East	20.67	3.80	16.87	24.47
Stormwater Park East	24.50	2.21	22.29	26.71
Stormwater Park West	13.14	1.42	11.72	14.56
3BP to 33rd St	17.00	3.79	13.21	20.79
3BP to 27th St	12.50	0.87	11.63	13.37

Park Use

Ten Community Scientists contributed over 51 volunteer hours toward the Park Use Monitoring Project. Working with Center staff, they conducted 81 surveys in 2014. Each season, staff schedule 21 surveys on randomly selected dates so that each day of the week at three time periods are surveyed once per season. Surveys involve passive observations in which the number of adults and children using the park are recorded along with the activities in which they are engaging.

Timeframe	Adults	Children
Year (81)	1432	224
Winter (20)	58	15
Spring (19)	450	63
Summer (20)	660	114
Fall (22)	264	32

The total number of observed park users by age group is shown in the table below for each season. These data collected over time will help analyze how communities are using Valley spaces and how that changes over time.

The majority of park users are bikers and walkers (see pie chart below right), with a handful of additional activities.

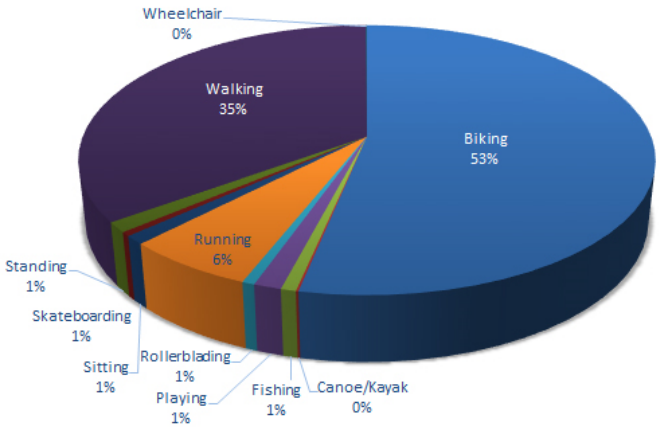
We can derive attendance estimates based on actual observations in relation to the total number of observation periods in a year. Attendance is strongly affected by temperature and time of day. Attendance estimates are below for the full year and by season.

Timeframe	Adults	Children	Total
Year (81)	19,359	3,028	22,387
Winter (20)	265	68	333
Spring (19)	2,161	303	2,464
Summer (20)	3,011	520	3,531
Fall (22)	1,095	133	1,228

Walking the Hank Aaron State Trail in Three Bridges Park

Biking the Hank Aaron State Trail in Three Bridges Park

Park Use Activities in 2014



Snakes


Lifting the coverboard

In 2014, 11 community scientists worked with Center staff to conduct 13 snake surveys through out the area. The Butler's gartersnake, a Wisconsin Special Concern species, is the most commonly encountered snake, comprising all but one of the captures this year. The other individual was a Dekay's Brown Snake. We marked 22 snakes (13 females, 3 males, 6 unknown) with a unique pattern using a cautery unit. The locations of the coverboards used to capture the snakes in 2014 are shown in the map below.

Since 2011, we have marked 50 individuals and as effort continues over the years we will get a good idea of population size and structure, survivorship and trends of snakes in the Valley. We also hope to expand our monitoring efforts to include Three Bridges Park over the coming years.

Snakes serve important ecosystem roles as both predator and prey and serve as indicator species of habitat quality.


Measuring snake length


Weighing the snake

Land Stewardship

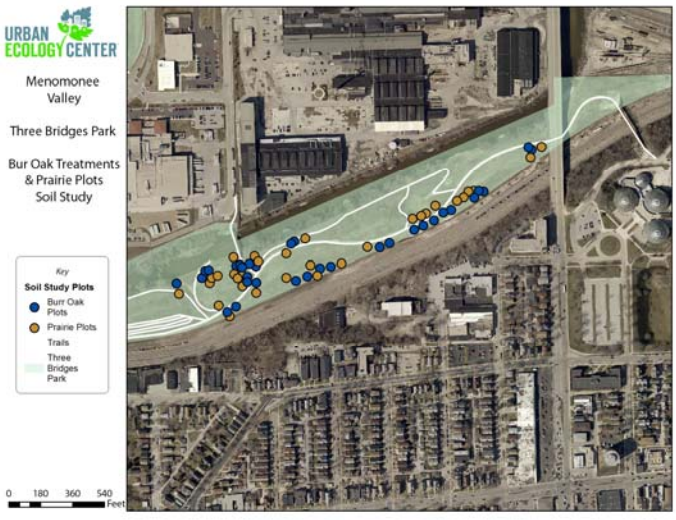
Researchers apply soil amendments

The Land Stewardship and Citizen Science Teams of the Urban Ecology Center are partnering with the Morton Arboretum to track soil development in the newly planted Three Bridges Park (3BP) and evaluate the efficacy of using soil amendments in large-scale urban restoration. The soil base began as 18" of clean fill covered by 6" of top soil, but created soils tend to be deficient in organic carbon, mycorhizzal fungi and other microbes and nutrients that support plant growth.

We are assessing treatments of Biochar and biosolids as amendments by applying one of four treatments to paired plots of bur oak and prairie plantings: 1) biochar, 2) milorganite (biosolids), 3) biochar + milorganite, and 4) no amendment (control). For each treatment we will monitor growth rates of trees (dbh), tree health, prairie plant biomass, soil leachate and organic matter content. (See map for plot locations). Morton Arboretum staff will continue this project for two years and then hand off the data collection to the Center who will build and maintain a dataset to track long-term change.

Buckets of milorganite

Using an air spade to apply treatments



Other Projects

May 4th Bioblitz Participants

30 participants from the Kohl's Cares Foundation attended a Bioblitz in Three Bridges Park where they learned about the Center'swildlife monitoring projects. Attendees helped band birds, wrangle snakes, weigh and measure small mammals and collect invertebrates.

Young Scientists D2D Project

The Menomonee Valley Young Scientists conducted their own research about tree distribution and density in the naturalized versus planted areas of Three Bridges Park. They presented their findings at the University of Minnesota Insect Fair and the Urban Ecology Center Research Intern Presentations.

Carlos checks on his vermicompost

Carlos Vazquez Reyes, a Carmen High student, conducted an original research project in which he investigated how different moisture levels affect compost decomposition in vermicomposting bins. He found that higher moisture levels contributed to more effective decomposition by the worms.

A new group of Outdoor Leaders (OLs) started working at the Urban Ecology Center over the summer. They are employed by the Center and help us conduct research throughout the year.

URBAN ECOLOGY CENTER™

RESEARCH & CITIZEN SCIENCE MISSION

The Urban Ecology Center's Citizen Science Program serves as a meaningful bridge between academic research and the community-at-large.....enabling collaboration, and creating a more engaged, knowledgeable, and ecologically literate citizenry. With careful training, volunteers conduct cutting edge research, from studying the physiology of migrating bats to discovering the winter quarters of hibernating snakes.

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