

# *The Butterfly Effect*

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Harnessing the spirit of residents, schools, organizations, places of worship, and businesses to create a greener community.





# An Introduction to This Journal

In mathematical chaos theory, the butterfly effect is the concept that a *very small difference in the initial state of a physical system can make a significant difference to that state at some later time*. What can this theory offer to the communities in which we live? We think it offers a lot. The cumulative effort of individual actions can positively impact the local ecosystems that comprise our lakes, streams, wetlands, yards, gardens, recreational areas, open spaces, roadsides, schools, and places of worship. Margaret Mead’s powerful idea, “Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it’s the only thing that ever has,” informs the articles you will read in this journal.

Neighborhood Greening, a non-profit organization dedicated to environmental education and stewardship, publishes *The Butterfly Effect* twice per year. In the journal, we celebrate community successes, examine small but impactful changes we can make to become better stewards of our local ecosystems, and tell the stories of those who are striving to green their neighborhoods. By harnessing the spirit of community, we believe focused efforts will make our neighborhoods better places to live for both humans and wildlife. There is much we can do to positively impact our shared environment—together. House by house. Block by block. Neighborhood by neighborhood.

We hope you enjoy *The Butterfly Effect* and that you look forward to receiving this free publication in your inbox twice per year. You can sign up by visiting [www.neighborhoodgreening.org](http://www.neighborhoodgreening.org).

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**Cover:** An Eastern tiger swallowtail butterfly sipping nectar from a Minnesota native wildflower, the [Michigan Lily](#) (*Lilium michiganense*). Eastern tiger swallowtails lay their eggs on, and their emerging offspring eat the leaves of, a range of host plants including native wild cherry (*Prunus*), basswood (*Tilia*), birch (*Betula*), ash (*Fraxinus*), cottonwood (*Populus*), mountain ash (*Sorbus*), and willow (*Salix*). **Photo credit:** Lucy Pilgrim-Rukavina. **Left:** Female black swallowtail butterfly. Unlike the Eastern tiger swallowtail shown on the cover, black swallowtail caterpillars feed on [host plants](#) that are members of the carrot family such as the Minnesota native heartleaf golden Alexander (*Zizia aptera*). Carrots, parsley, dill, and fennel are also host plants to the black swallowtail. **Photo credit:** Vicki Bonk.





## Reflections on a Lake

“Six years ago I decided to do my part to help ensure the health of the small lake I live on. I removed all the roses, daylilies, hydrangeas, and the rest of the plants I had been managing with TLC for years. I had been reading about native plants—about their deep roots and their ability to survive in periods of drought. And as a bonus, they didn’t need fertilizer or deadheading.

“I seeded the entire area from the house down to the lake with native grasses, sedges, and forbs. Today, I couldn’t be happier with the outcome. During the past six years, I have not only grown a good buffer for the lake, I have discovered nature in my backyard. I feel like I have thrown out the welcome mat for species such as chorus frogs, who jump out of the way when I walk into the yard, and a pair of song sparrows, who nest deep in the grasses. And, of course, I am awed by the many butterflies whose delicate presence brings my prairie garden to life.”

—Sue Light, Rogers Lake

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**Left:** A view of Rogers Lake. **Photo credit:** Holley Wlodarczyk.





# Plant It and They Will Come:

*How One Couple Created Sanctuary for Wildlife in Their Half-Acre Suburban Yard*

*Ten years ago, Liz Stanley's and her partner Lynn Gallagher's suburban yard was a weedy, turf-grass expanse, complete with invasive buckthorn. With no backgrounds in gardening—and through trial and error—they have slowly transformed their half-acre yard in Bloomington, Minnesota (a suburb of the Twin Cities), into a lush native habitat for pollinators, birds, and other wildlife. In this interview, Liz, who instigated and orchestrated most of the yard's transformation, recounts the ten-year journey of how she converted the yard from an environment mostly devoid of wildlife to today's bustling habitat.*

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**Left:** A female bluebird near the front yard nest box. Once Liz learned that 96 percent of land birds feed only insects to their young, and that native plants are the key to attracting beneficial insects, she began to plant the types of vegetation that would attract both. **Article photo credits:** Liz Stanley.



**Why did you start to think differently about your yard? Was there a particular inspiration or a “lightbulb” moment? A book you read, or a speaker you heard?**

My initial idea was to make a better habitat for birds. I’m an avid bird watcher. I already had several bird feeders and nest boxes around the property and some vague thoughts about planting native flowers, grasses, trees, and shrubs to attract more birds. I remember reading the book [Bringing Nature Home](#) by Doug Tallamy and being surprised that gardening to attract birds was all about attracting the insects that birds eat. I didn’t completely understand the connection between gardening and wildlife at the time. So I plodded along on my own, not really knowing what I was doing. Then I connected with the non-profit organization [Wild Ones](#) and went on some garden tours that featured yards planted predominantly with native vegetation. That really opened up to me the world of gardening with plants that are indigenous to this region.

**What have been some of the joys of creating habitat in your yard?**

The real joy for me has been seeing the influx of wildlife when I have provided even just a little bit of the right kind of habitat. I also enjoy sharing my learning and my yard with others. I’ve hosted several garden tours, putting the word out on social media for anyone who is interested in dropping by. I’m always impressed by the number of people who show up. I hope that I’ve inspired people to make the kinds of changes in their own yards that are the most beneficial to wildlife.

**What “failures” did you experience?**

Probably the biggest mistake I made was not spending more time and care eliminating invasive species before planting. I was in a rush to get things started. I suggest to people to focus on removing invasive species first. People are surprised that many traditional landscape plants, such as winged burning bush, amur maple, crown vetch, and oxeye daisy are very invasive and destructive to natural areas. Also, at the very beginning I wasn’t thinking of this as a “before and after process,” so I wish I had gotten more photos of some of the areas before I did anything. It’s rewarding to go back and look at the before images and see how things have evolved over time.

**Do you have any other advice?**

One thing I did at the start was to check my city code to see what is allowed. If you live in a city or a suburban area, there are probably regulations regarding vegetation height and other restrictions. Some native plants, like prairie dock, can grow to be very tall. I think it’s helpful to have yard signs and plant labels to communicate the purpose of your garden to the community. A native garden can have a traditional or manicured look. But if you are hoping to recreate a



**Right (clockwise from top left):** An American lady caterpillar in the yard, munching on one of its host plants, pussytoes (*Antennaria* species); the regionally native eye-spotted lady beetle was an unexpected garden visitor; a cedar waxwing eating serviceberries in the front yard garden.





native meadow or a prairie garden, which can have a more unstructured, “free form” look, it helps to communicate the purpose of the garden and its importance to wildlife.

**How did you go about converting your yard into eco-friendly habitat?**

I had absolutely no idea how to start, so the first thing I did was contact a landscaper to develop a plan for removing all of the invasives and design a native garden for the entire yard. When I saw the estimated cost of that, it was quite a shock. So I decided to tackle the back yard myself, loosely following that design. I ordered some plants online, went out, and started digging. It was somewhat overwhelming and discouraging at first. But I stuck with it, and over time I started seeing positive change. Our back yard has quite a bit of privacy, so I felt free to experiment.

I was hesitant about doing work myself in the front yard, so I decided to hire a landscaper to do an informal design, remove ugly shrubs, and install a few garden beds. I’m aware of my front yard being the first impression many people may have of a native plant wildlife garden, so having this professional design was helpful. I didn’t want to experiment through trial and error in the front. I had never thought of the front yard as being a great place for wildlife habitat, but it has turned out to be very popular with pollinators and birds, and it provides visibility for the neighborhood to experience and appreciate a wildlife garden.

**So, has planting native vegetation actually attracted more wildlife to your yard?**

Absolutely! We’ve had over 90 species of birds that I’ve identified in the yard. Many of them are feeder birds, but we’ve also had birds attracted to the fruit-bearing shrubs that I planted. During migration we’ve seen several species using the water feature. It’s fun to watch for new bird visitors, like the bay breasted warbler I saw taking a bath during this past spring migration, or the Carolina wren (unusual this far north) singing his heart out in our bur oak. And of course, it’s always a treat to host nesting bluebirds in the yard. I’ve seen a number of different species of bees, beetles, butterflies, and wasps, and even some native ladybugs.

My big thrill this past summer was finding the rusty patched bumble bee, which is listed as an endangered species by the U.S. Fish & Wildlife Service, on red bee balm (*Monarda didyma*) in the yard. After clearing out all of the invasive buckthorn, I noticed some native false Solomon’s seal growing under our pine trees. A pagoda dogwood seems to have popped up out of nowhere near the patio. Last year an unfamiliar flower bloomed, and I learned it was Indian pink, which does not normally range this far north but is a hummingbird favorite further south.

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**Left, above:** View of the back yard in 2006 showing expanse of weedy grass and invasive mulberry. Note the location of the bird houses. **Left, below:** In 2016, the same bird houses in the same location offer shelter to birds.



**What’s next for your 1/2 acre?**

The garden is a work in progress. Ongoing projects include removing invasives, keeping aggressive natives in check (I’m looking at you, cup plant), finding opportunities to remove lawn and expand the garden, and just generally maintaining paths, feeders, nest boxes, etc. Over the last few years I’ve been looking for things beyond the garden that can be more sustainable. We just installed solar panels. We’ve reduced our weekly trash output to about half of the smallest container offered, and substantially increased our recycling and composting. Our asphalt driveway needs repair, and I’m currently investigating replacing it with a permeable material to help absorb stormwater runoff.

**How do you suggest someone get started naturescaping with native vegetation?**

We are fortunate to have a very active local native plant gardening community in the Twin Cities. And some [area nurseries specialize in native plants](#). I suggest connecting with [Wild Ones](#), which offers educational programs and garden tours in which you can get ideas, ask questions, and be inspired. Many local organizations need volunteers to help with invasive species removal. That’s a great way to help the community and learn how to identify these species.

As far as how people can get started in their own yards, I suggest first determining what your goals are, what type of habitat exists where you live, and how your garden will fit into that context. For example, my initial goal was to attract birds, so I planted many fruit-bearing shrubs. I also have bird feeders and nest boxes throughout the yard, and later I added a water feature because birds are attracted to the sound of moving water. As the garden grew and evolved, I learned more about the types of wildlife that would be attracted to these plants beyond what I had originally expected.

**Any closing thoughts?**

I think it’s important to understand that when we invite wildlife into our yards, it’s our responsibility to be good hosts and provide a safe and pesticide-free environment. That means continuing to maintain the native plants and being vigilant for invasives that are always trying to reestablish themselves. Feeders and water sources need to be kept clean and stocked, otherwise there is no point in having them. Nest boxes should be appropriate for their intended species (not decorative) and mounted so that they are protected from the elements and predators. Cats must be kept indoors, where both they and the wildlife are safer. And our [home windows should not be bird killers](#). Any [unscreened glass can easily be protected](#) with hanging [paracord](#), decals, netting, or perforated film. Make sure to take plenty of photos during the whole process. Change may seem to come very slowly, but over the years it’s very rewarding to look back and see how your landscape evolves. Get out and observe what’s going on in the garden. Something interesting is usually happening!

**Right, above:** Work on the front yard garden begins. **Right, below:** The front yard today. The yard is certified as a [monarch waystation](#) as indicated by the sign on the right-hand side of the photo.







## Other Tips for Native Habitat Naturescaping

- Start with a small garden plot and make it larger with time if you are new to gardening with native plants.
- Experiment with a wide range of native plants to see how they grow (and behave!) in your garden.
- Learn and gather ideas by taking native plant garden tours led and hosted by knowledgeable organizations, such as [Wild Ones](#).
- Gain a deeper understanding of the relationship between gardening with native plants and wildlife; read books such as [Bringing Nature Home](#), by Doug Tallamy; [The Living Landscape: Designing for Beauty and Biodiversity in the Home Garden](#), by Rick Darke and Doug Tallamy; or [Garden Revolution: How Our Landscapes Can Be a Source of Environmental Change](#), by Larry Weaner.
- Visit the websites of [regional native plant retailers](#) for a wide array of information on native plants, grasses, flowers, shrubs, and trees.
- Use the “plant navigators” offered by the online native plant vendors such as [Prairie Moon Nursery](#) and [Prairie Nursery](#). Prairie Nursery offers a particularly useful “[native plant finder](#)” tool. Prairie Moon Nursery and Prairie Nursery also offer a nice range of predesigned gardens with suggested design layouts.
- [Minnesota Wildflowers’ website](#) offers a rich array of information on Minnesota native vegetation as well as information on bloom times, flowers by color, invasive species, and much more.
- Read this [excellent article by Doug Tallamy](#) that explains why native plant gardens attract far more wildlife than traditional landscapes planted with ornamental and non-native vegetation.

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**Left (clockwise from top left):** Liz in the garden, pointing to the prolific cup plant, which can tower to ten feet; a range of signage in the yard helps interpret the utility behind the beauty; to keep wildlife safe, the couple does not allow their cat, Sasha, to prowl in the yard. From her enclosure, Sasha is safely entertained watching birds forage, bathe, and enjoy the yard. According to the Audubon Society, cats kill 1.3 to 4 billion birds each year. **Next page:** A migrating yellow-rumped warbler taking a bath in “Overlook Falls,” a rambling, flowing water feature installed in the back yard for birds and other wildlife. Birds need water for more than drinking. Birds bathe to keep cool, clean feathers, and remove parasites. A clean-water source is an often-overlooked “must have” for wildlife in urban and suburban yards.







“Years of research by evolutionary biologists have shown that the area required to sustain biodiversity is pretty much the same as the area required to generate it in the first place ... Since we have taken 95 percent of the U.S. from nature we can expect to lose 95 percent of the species that once lived here unless we learn how to share our living, working, and agricultural spaces with biodiversity ... The good news is that extinction takes a while, so if we start sharing our landscapes with other living things, we should be able to save much of the biodiversity that still exists.”

–Doug Tallamy, Ph.D., professor and chair of the department of entomology and wildlife ecology at the University of Delaware



# The Thread-waisted Wasp



Drop that bug spray! Thread-waisted wasps may look threatening, but they're much too busy hunting for spiders, grasshoppers, or moth caterpillars to do you any harm. You can sit back and enjoy the fact that they're reducing pests and pollinating your flowers. Species: *Eremnophila aureonotata*.

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**Left:** A Thread-waisted wasp. **Photo credit:** Dave Crawford.



# The Alluring Pairing of Purple and Gold

“That September pairing of purple and gold is lived in reciprocity; its wisdom is that the beauty of one is illuminated by the radiance of the other. Science and art, matter and spirit, indigenous knowledge and Western science ... When I am in their presence, their beauty asks me for reciprocity, to be the complementary color, to make something beautiful in response.”

—From [\*Braiding Sweetgrass\*](#), by Robin Wall Kimmerer

In one chapter from her book, Kimmerer describes how pollinating bees are highly attracted to the colors purple and gold when paired together, such as asters and goldenrod that bloom during the same time period in the fall. As Kimmerer explains, “Their striking contrast when they grow together makes them the most attractive target in the whole meadow, a beacon for bees. Growing together, both receive more pollinator visits than they would if they were growing alone. It’s a testable hypothesis, it’s a question of science, a question of art, and a question of beauty.”

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**Right:** Monarch butterfly on New England aster **Photo credit:** Vicki Bonk.







## Getting Off the Sidelines

“My wife Julie and I feel strongly about taking care of our environment. We believe climate change will be a significant issue for future generations. We decided we couldn’t sit on the sidelines any longer. We recycle more than we discard, we compost, we drive a plug-in electric hybrid car, and we have photovoltaic solar panels that produce close to 100 percent of our annual electrical use.

“As an engineer who spent the first half of his career working on alternative energy projects for Northern States Power, I have always had an interest in energy alternatives. Installing solar panels was always something I thought we should do. But there was always an excuse: The technology was not ready, it costs too much, or we did not have enough disposable income. Then, our neighbors installed photovoltaic panels on their roof with no tax or financial incentives. I asked them why, and they said they felt this was just something they had to do. At that point, Julie and I realized it was something we also had to do for our kids, grandkids, and future generations.

“Today, our neighborhood is a mix of empty nesters and young couples. While there is a growing interest in solar panels, folks with no kids say they are not sure how much longer they will be staying in their house and wonder if they should invest in them. Young couples have the ever-increasing costs of raising a family. Good incentives and financing options are now available for installing solar. And less costly alternative energy programs, like receiving energy from wind or solar farms as a [choice on the utility bill](#), or investing in community solar, now make it a bit easier for many to access alternative energy.”

—As told to *The Butterfly Effect* by Tom Weisbecker, a homeowner in Mendota Heights, Minnesota

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**Left:** Solar panels on the Weisbecker home. An additional nine panels were installed on the roof in the front yard as well as four on the garage. The 26 panels cover nearly 100 percent of the couple’s energy usage. The Weisbeckers worked with [All Energy Solar](#).





## The Waterkeepers of Deer Lake



Minnesota is the “Land of 10,000 Lakes” and “sky blue waters.” But many of Minnesota’s lakes are struggling. According to the Minnesota Pollution Control Agency, 40 percent of Minnesota lakes and streams are impaired for conventional pollutants. And, 50 of these are listed as impaired due to excess chloride from road salt. While lakeshore property owners love their lakes, many aren’t often aware of the causes of their own lake’s decline.

Members of one lake association—the Deer Lake Association (DLA) in northern Minnesota—have taken bold steps to help protect and improve their beloved lake. Information, communication, and action form the core of this group’s mission. Through its Beautiful Deer Lake Water Quality Initiative, the association hopes to tackle ongoing threats to the lake’s water quality. These threats range from damage to the lake’s ecosystem by aquatic invasive species (AIS) and phosphorus, as well as inputs from streams and septic systems.

**About Deer Lake and the Deer Lake Association**

Deer Lake, a 4,000-acre blue glacial lake located 12 miles northwest of Grand Rapids, Minnesota, serves the surrounding local community and is a fishing and recreation destination for visitors. With nearly 350 properties on the lake, many families have been on the lake for generations, resulting in a strong love for the lake. Known as the lake of changing colors, Deer Lake has historically been one of the clearest lakes in Minnesota. Recently, the lake has begun to experience concerning bouts of algae growth. A comprehensive 2013 study confirmed that the nutrient behind the greening of Deer Lake is phosphorus. Just as vegetation on land responds to phosphorous inputs with accelerated growth, so does vegetation in water. Phosphorus is deposited to Deer Lake via streams, septic systems, rainwater run-off, and shoreline erosion. In addition, like most other Minnesota lakes, Deer Lake is threatened by aquatic invasive species, including zebra mussels, starry stonewort, and Eurasian watermilfoil.

The Deer Lake Association was originally formed in 1991 and has evolved into a very active lake association. The DLA is a 501(c)(3) all-volunteer Minnesota non-profit, organized to preserve and improve Deer Lake water quality for fishing, recreational boating, the surrounding community, visitors, resorts, camps, wildlife, and Deer Lake property owners. The DLA also provides social and educational activities for its members and the community.

After the 2013 scientific study, the DLA committed to taking actions to implement recommendations cited in the study, with its highest priorities focusing on AIS prevention and phosphorus mitigation. Since the DLA is purely a voluntary organization, its first step was to provide information to property owners enabling and empowering them to make good decisions.

**Aquatic Invasive Species Become a Growing Concern**

Because of growing threats to the health of the lake posed by AIS, the Association has helped implement AIS strategies such as public access inspection hours, watercraft decontamination, and inspection at private and resort launches, as well as a pre-planned early detection and rapid response plan in case strategies fail to prevent infestation.

Recognizing that AIS moves via transportation routes, the DLA partnered with the Itasca County AIS program to provide public access inspection services, then worked to support the county program by raising and



A loon dances on Deer Lake. **Photo credit:** Rich Anderson.





donating funds, and subsequently assisted the program to optimize inspection hours. A DLA information and communication campaign was developed that offers AIS prevention strategies. Camps, resorts, property owners, and guests were participants in this campaign.

### **Streams Pose Additional Threats to Water Quality**

Members of the DLA were at first overwhelmed thinking through how to approach and include various stakeholders along the 16 streams—current and potential sources of AIS, phosphorus, and more—that run into Deer Lake. The group decided to partner with the non-profit organization, Great River Greening, with the complicated task of developing a tributaries strategy. Great River Greening has been contracted to [perform an assessment](#), then work with the DLA to create and implement an action plan and to help find funding through grant applications. While the work plan is in its early stages, the DLA is hopeful that productive steps will be made to address the complex issues posed by tributary inflows.

### **Pathogens and Nutrients from Septic Systems**

A “light bulb” moment came when association members fully grasped the purpose of a septic compliance inspection. The group learned that the soil underneath a septic system drainfield acts like a filter, effectively filtering the pathogens and nutrients from effluent. Over long periods of time—15, 20, 30 years—that soil filter can become saturated. Effluent then runs unfiltered through saturated soil and into the water table and the lake.

Septic systems, like anything else manmade, have a shelf life. A certified septic compliance inspection includes hand-drawn soil borings near the drainfield and the septic tank. Soil borings indicate whether the tank is leaking and whether the soil underneath the drainfield is continuing to act as an effective filter. A failing result means pathogens and nutrients from human waste are likely making their way to the lake. These failed systems need repair or replacement.

To address septic system issues, the DLA created an information and communication campaign to highlight how septic systems work and to offer best practices for pumping and inspection. Septic systems can be expensive to replace, so the DLA offers to pay the fee for septic inspections for eligible property owners. The Association is also working to arrange an option for no- and low-interest loans for those whose inspections fail. Hoping to sign on ten volunteers the first year, they were delighted when they got 16. The group is focusing on sharply increasing these numbers in the coming years.

### **Loving Our Lakes Back to Health**

Deer Lake property owner and DLA’s president, John Davis, contributes a few of his thoughts about our Minnesota lakes.

“Sometimes we love our lakes too much. Property owners and guests love to be in the lake, near the lake, on the lake, and to sit looking at the lake, both at the shoreline and in their lake cabins. Early on, property owners sometimes clear-cut their shoreline to improve the view. But we now understand that shoreline vegetation filters harmful nutrients like phosphorus that fuel algae and weed growth.



Forested shoreline is the best for protecting water quality, followed by deep-rooted native grasses. Unfortunately, mowed lawns don't serve as a good filter. We are fortunate because most Deer Lake property owners have maintained forested shorelines. The DLA created an information, communications, and incentives strategy that recommends property owners with forested shorelines keep them forested, and those without consider installing vegetative buffers and low berms.

Higher than usual rainfall and water levels the past few years have caused shoreline erosion on the lake. Shoreline erosion deposits phosphorus attached to soil particles and other nutrients into the lake. So, we're encouraging and incenting property owners to repair shoreline erosion by installing natural solutions such as fiber logs and deep-rooted native plantings.

These initiatives and incentives cost money. We knew our \$25 per family annual membership fee would not cover such expenses, so we created a budget and a fundraising campaign. First, we identified a core group of supporters and quietly solicited contributions. Then, once we had a strong base, we reached out to all property owners. We also decided to leverage the money raised from our own members by identifying, writing, and submitting matching grant applications to private foundations and governments.

We are set up to measure phosphorus levels and water clarity, but we're only in the early stages of our effort. It may take 5 - ten years for anything we do to show up in measurements because first we need to arrest existing negative momentum. In the end, though, we're optimists and believe in the butterfly effect ... even a small change now can create conditions for a major change later.”

**John Davis’ Suggestions for Lake Associations**

“I think the best resource is to look at what other lake associations are doing. That's where we started. Our website is <http://deerlakeassociation.org/>.

“Our area includes a "coalition of lake associations" that meets a few times a year to share information. Our group is with the Itasca Coalition of Lake Associations ([www.itascacola.org/](http://www.itascacola.org/)). That was a good resource for us. Another idea is the Minnesota Coalition of Lake Associations (<http://mncola.angelfire.com/>).

“A good, short, ten-minute video produced by the Itasca County AIS program shows what our lake and many lakes in Minnesota are up against. While the focus is on Itasca County lakes, the video’s content is relevant to most Minnesota lakes. Several scenes from Deer Lake are in the video, (<https://www.youtube.com/watch?v=XkOjL4Q-qgU>).

“Programs across the state offer volunteer training and tools to perform lake and stream monitoring. Anyone who lives on a lake or stream should help ensure their waters are being monitored and to keep abreast of monitoring data. Citizen volunteers provide crucial data that is used to assess changes in water quality over time. We are monitoring Deer Lake in conjunction with AW research labs. The Minnesota Pollution Control Agency (MNPCA) and The Metropolitan Council in the Twin Cities have citizen lake monitoring programs. MNPCA maintains a [list of lakes and streams](#) that are classified as impaired in Minnesota. It also compiles [data on numerous lakes and streams](#) throughout the state that is available to the public to review.”



Full moon over Sherwood Bay. **Photo credit:** Tom Nelson.



## Did You Enjoy This Edition of *The Butterfly Effect*?

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Do you have a story or idea to share about how you or someone you know is making your neighborhood greener, more environmentally sustainable, or wildlife friendly? Please send your ideas to [Green@neighborhoodgreening.org](mailto:Green@neighborhoodgreening.org).

*The Butterfly Effect* is published four times per year by Neighborhood Greening, a 501(c)(3) non-profit organization dedicated to community environmental education and stewardship. Block by block. Neighborhood by neighborhood.

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“You and the tree in your backyard come from a common ancestor. A billion and a half years ago, the two of you parted ways. But even now, after an immense journey in separate directions, that tree and you still share a quarter of your genes ...”

– from the book, *The Overstory*, by Richard Powers

## Events, Classes & Volunteer Opportunities

Be sure to visit Neighborhood Greening's Resources page at <http://neighborhoodgreening.org/resources/>





