**Whispers Underground**

By: Diana Thottungal

We don’t tend to think of the soil beneath our feet as a particularly busy place. Roots quietly growing, earthworms burrowing, seeds sprouting in silence...not quite. The mushroom equivalent of roots, called mycorrhizae, carry messages from trees throughout the forest, including ones of different species. Much like the Force in Star Wars, the mycorrhizae bind the forest together. If a tree’s leaves are being munched by hungry insects, a message goes down to the roots, which are enveloped by those fungal mycorrhizae and the warning is carried throughout the rest of the forest. The trees can then start defending themselves by producing unpalatable chemicals, like tannins, in their leaves. The trees pay for this service by feeding the mycorrhizae with the sugars their leaves produce. The research on this subject is so new that the publication Science had an article describing the first mapping of the wood wide web in May of this year in Science Vol. 364 May 2019.

**Earthworms**

If you’re an earthworm and don’t want to become dinner for a bird, there’s nothing better than tuning your whole body into a sort of ear to catch the lightest footfall from above ground. And it seems earthworms are smart enough to differentiate between the regular pat pat pat of a bird or small mammal's footsteps and the pat-pat-patty-pat of rain. Down to hide, up to avoid drowning.

Makeway!

Seeds sprout and their roots start to grow. They also start to sing. At 220 hertz (the A note). They also use that 220 Hz as a directional signal. After all, if there are other roots in that direction, there may well be food and water. No one seems to have worked out what prevents the roots from becoming entangled with those from other plants, but here’s a photo of a time when, whatever it is, didn’t work.

**I’m Thirsty!**

During a period of drought, xylem cells (the ones that bring liquid up) send up bubbles that do what bubbles do...they crackle and pop! That popping sound notifies that wood wide web of mycelia which then carry the warning throughout the forest to start conserving water.

**Karrikin, Help My Skin**

Some plants, called fire ephemerals, produce seeds that sit around in the soil until there’s a fire. When there’s a forest fire the parent plant isn’t going to survive. But a chemical message (that’s the karrikin) is left on the soil surface. Later rains wash the karrikins down into the soil over dormant seeds. They get the message that it’s a good time to sprout. To summarize...

“A murmur in the trees to note, Not loud enough for wind...”

-Emily Dickenson
Boardwalk Ribbon Cutting
By: Kathy Connelly

There are two wonderful announcements I am happy to make this issue. First, with great pleasure and humility, the Friends want to express their gratitude to the generous anonymous donor of $50,000 to the Friends of the Wild Flower Garden, Inc. This sum, received this spring, is truly meaningful for an organization of our size, and we definitely feel the responsibility placed in our hands to use these funds in the best possible ways to advance the interests of the Garden. We have hopes for collaborative Garden projects where this money can be put to good use. In the interim, we hope to strengthen our chances of receiving supplemental funding of planting projects in the Garden. Thank you, donor, for your generosity.

Second, the MPRB has begun efforts to reconfigure the Shelter’s character to improve the visitor experience. In the making at her home close in to north Minneapolis, one of the MPRB’s long-time board members – vice president Janet Anderson - who comes to the board with terrific experience, strong affinity for the Garden and a wildflower garden in the making at her home close in to north Minneapolis.

In late May, I spent a week in Ely, taking in the boreal forest, and enjoying a second spring. The flowering wild plum and juneberries are cloud-like puffs of white everywhere I turn. Nodding trillium, golden thread, bunchberry, blue bead lily, wood anemone, blueberries and fly honeysuckle were blooming during my visit. When I spend time in an environment like this, I cannot help but think about the Garden. In particular I am struck by how artfully the Garden’s curators, Susan Wilkins and her predecessors, have crafted a setting that is cultivated, and yet so naturalistic as to appear untended. To be sure, the Garden is skillfully and constantly managed. Trees are taken down that could pose a danger to public safety, and efforts are made to contain plants containing skin irritants away from pathways. The results of decades of efforts removing invasive plants can be seen, as openings in the Garden are flush with new herbaceous, tree and shrub plantings, some of which have been paid for by the Friends. Look for new hemlocks in the Garden, a tribute to past president Pam Weiner sponsored by the Friends.

By the time this newsletter arrives in your mailbox, the lady’s slipper season will have passed, but the new boardwalk provides an incomparable urban opportunity to admire our state flower. The wetland area remains a stunner all season, with flag, swamp saxifrage and buttonbush yet to come.

A particular success in the development of the Garden is the upland meadow, called the prairie by many. It is the 75th anniversary of the establishment of this part of the Garden. This issue highlights its history and its future. It is a beloved place, with spots to enjoy the special peace of the Garden. On any summer day, one can be lulled into a contemplative state by the insect hum and indigo bunting calls on the breezy oak knoll. Our remaining Garden oaks persist through the efforts of the Minneapolis Park and Recreation Board to protect them from oak wilt disease, and through the watchful attention of the curator. Controlled burns help feed the soil and rejuvenate the plant diversity in this area as well. The raspberry thicket and sumac invasion have been tamed. The sitting stone collection (1995 gift from the Friends) remains one of my favorite places to sit and look up at the solitary oak. The upland garden is an important resource for native pollinators. At a time when other bloomers are winding down, the asters and solidago flowers bridge these beneficial insects to their winter retreat. Grasses burnished to bronze, rich gold and burgundy make the upland meadow the focal point of most late season visits to the Garden. Please celebrate with us this season as we recognize the important milestone for this part of the Garden by going up to the bright open upland meadow, and pausing to appreciate the many hands that wrenched, pulled, weeded, planted, cultivated, and tended the land.

Sincerely,

Kathy Connelly
Chris and Anne Hegg are the owners and stewards of this extraordinary spot. “The wildflower sanctuary began much like Eloise Butler Wildflower Garden,” Chris told me in a later phone interview. In 1958, a private individual, Lucille Hedstrom Walker, dedicated a two acre site as a wildflower sanctuary. Walker was a part of the Hedstrom family that has operated a lumber mill on an adjacent property since 1914. The local Garden Club tended the Sanctuary, but over time interest waned. Weeds and bushes returned, and paths became overgrown. In 1979, Grand Marais area residents began restoration of the Sanctuary. A dedicated group maintained it into the early 1990’s. By the 2000’s dead and dying trees covered the site, so in 2009, the Hedstrom company decided to sell the surplus land that included the wild flower sanctuary, Chris and Anne seized on the opportunity and purchased it in 2013.

On arriving, I found the Sanctuary entry, and spent the next couple hours on the comfortably narrow winding paths. The sound of the Devil Track River obscured any sounds other than birdsong from nearby shrubs. The tree canopy rained dappled sun on large communities of native plants below paired with small unobtrusive identification signs. I was particularly struck by the outstanding unclump of stemless lady’s slipper and numerous other Minnesota wild flowers. The Sanctuary also boasts a very large community of a rarity called black hawthorn.

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Last year, while visiting friends in the Grand Marais area, I noticed a small brown sign off the Gunflint Trail that said “Wildflower Sanctuary.” With that map from long ago in my mind, I turned toward the promised sanctuary.

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Chris sees the Eloise Butler Wildflower Garden as a model for the development of the Sanctuary. On his next trip to Minneapolis, he plans to visit the Garden to experience a designed and curated naturalistic environment, to give him ideas for the Sanctuary. He is concerned about the looming impacts of climate change, so in his plans he is factoring in the loss of some species while searching for what will replace them in the unique Arrowhead riparian habitat. He has heard people say that, as evergreens retreat north, they will be replaced by deciduous trees, but he is skeptical. “There isn’t enough soil for oaks or maples up here where the pines grow,” he observed. “Plants are adaptable, to a point.” He has planted over 400 trees on the site – including red and white pine, tamarack, maples and cedar. He is watching to see what survives. The Heggs realize that the Sanctuary will need a devoted following to ensure it does not again become overgrown. It will require consistent tending and management to stand as an example of the diversity present in the northwoods plant community. The Heggs hope to create an organization, like the Friends, that will take care of the Sanctuary in perpetuity. They also look to the history of the development of Eloise Butler Wildflower Garden, which was begun in 1907, as a model worth following, even though the Sanctuary most likely will remain in private hands, while the Garden is owned by the Minneapolis Park and Recreation Board. The Heggs recognize it has taken more than 110 years for the Garden to become what it is today including the efforts of many people advocating for and contributing to its survival and progress. The Sanctuary has moved partway through the same development cycle as the Garden has. With dedicated advocates like the Heggs, its promise and potential are assured. The restoration of this northern Minnesota wildflower sanctuary is an important opportunity for the Grand Marais community and for those of us who love native plants and contemplate the changes that will come with climate changes coming.

Sign Up for Our e-Newsletter!

Make a no-cost gift to the Garden by checking off the email option for the newsletter on your next membership renewal. Email subscribers to The Fringed Gentian help us decrease our printing and mailing costs, reduce our use of valuable environmental resources, and allow us to direct more of your support to the Garden. If you would like to switch to an emailed newsletter prior to receiving your renewal notice, or if you have questions about making this change, please contact Membership Coordinator Christi Bystedt at membership@friendsofeloisebutler.org. Mem bers who already receive the Gentian by email have been very satisfied - photos are vivid, type size is easily enlarged, and there is no paper to recycle. We hope you will consider making this choice. Thank you!
Upland Garden: 75th Anniversary
By Annelise Brandel-Tanis

In 2019 we celebrate 75 years since Martha Crone—Eloise’s successor and Clinton Odell began weeding and planting what is now the Upland Garden. Eloise Butler had claimed to run a “wild garden run on the political principle of laissez-faire,” and while the garden under her management certainly bucked the trends of turn-of-the-century plant display, a garden run completely as “laissez faire” would perhaps reach the same state in which Crone found the upland: full of nettles, jewelweed, thistles, oaks and sumac; plants that do well in sunny, disturbed areas. By the 1940s, garden staff realized they had neither the time nor personnel to keep the wetlands now north of the fence more “garden-y” than “wild”. Odell proposed abandoning that space and adding the upland. Crone saw an opportunity to add color in summer and fall by adding prairie plants. From the plum trees, the Upland Garden appears: a sun-filled bowl marked out long ago by glaciers. These paths predate Park Board management (see Martha Crone’s photograph). As you walk these paths, think about how they interact with the rise and fall of the ground. Do they feel like a smooth way to move through the space? When are they steep? When gradual? Consider coming to the Garden in the rain. How does water move through the upland then? Differences in light, slope and nearby plants create pockets for different species to thrive in. Martha Crone tested these microclimates through her careful arrangements of new plants. Then, and today, garden managers add thousands of plants per year. Some were typical of tallgrass prairie, some of mesic prairie, which is wetter, and some of neither ecosystem. Some survived (the wild blue indigo, for instance) and some didn’t (pasque flower).

Martha Crone often photographed lupines, clustered on a “Lupine Hill” which appears to be the south slope of Aster Aisle. We no longer see their commanding presence: like the pasque flower, they did not survive re-plantings. We note bloom dates and plants found in the garden for many species, but not all disappearances are as obvious as the lupines. Susan Wilkins, the current Garden Curator, thinks the lupines might have struggled here due to climate change. Certainly other species also struggle to adapt to changing temperature and weather. Have other plants flourished? Consider species like the Kentucky Coffee Tree, moved here from its typical range further south. This information hides in visitors’ memories of favorite plants or in the binders of phenology notes in the attic. While we dig through those, look for other purple flowers at the crossroads of Blazing Star Boulevard and Goldenrod Trail. Giant hyssop and wild bergamot, both in the mint family, have wonderfully textured leaves and flowers, attract bees, and smell lovely. The Park Board asked Crone and Odell not to remove oak saplings in the Upland. The duo seem to have focused on removing individual plants, possibly because management techniques like burning might not have been widely practiced yet. The Upland garden developed alongside the fields of ecology and ecological succession. Techniques like burning became popular again for managing prairie and savanna, and in 1965 Head Gardener Ken Avery switched from mowing the Upland to burning. One of his notes on the process makes me wonder how oak savanna was understood at that time: “Many seem to think that fire is a magic word and you have only to burn an area and, presto! You have a prairie. I will agree that fire is an important tool in maintaining prairies but
my experience is that fire alone will not do the job. Fire seems particularly ineffective in controlling sumac and oaks — two of our greatest problems in the garden.” Did he not know that Indigenous people managed oak-based ecosystems with fire, to promote oak tree health? How did he view the ecosystems he managed as he focused the garden on native plants? His prairie burns, over time, would help spread out the neat clumps of plants Martha Crone established.

Martha Crone documented the garden seasons photographically, so we see how time and attention changed the upland garden. Her slides live at the Minnesota History Center in St Paul; it’s worth taking an afternoon to request the box from storage and lay out the slides on a light table. The orange plants in her photos are “butterfly flower,” Asclepias tuberosa, a type of milkweed. It’s still in the garden, though notice how plants are laid out differently in the photo than they appear today.

Asters, goldenrods and blazing star now intermingle on their namesake paths.

With a hand lens and some patience, even an amateur botanist can practice differentiating species by color, texture and pattern. The prairie dock, the cup plants, the Michigan and Turk’s cap lilies—these flowers fill the skyline by late summer along the Prairie Path. Martha Crone planted the prairie dock in the upland, and its distinctive basal leaves and long stems clearly name at least one yellow composite flower. Other yellow flowers (genus Helianthus) throughout the Upland have interbred over the years, complicating precise identification. This garden holds old stories in new configurations. We know it will change again over the next 75 years, as Minneapolis changes in both culture and climate.
Q: What’s so special about the trombone?
A: Trombone sits in the tenor register, and, especially in choirs or chamber groups, sounds like a chorus. People think of it as a loud, comical instrument, but many composers over the years have understood its powerful lyrical and golden sound.

Q: So far what are highlights playing trombone?
A: I’ve been lucky to have so many amazing moments in my career. My favorites are performing for big, enthusiastic crowds as part of Brass Lassie and chances to make new, improvisatory music. I work with local composer Dameun Strange, playing his experimental, soul-affirming music has been one of the highlights of my career in recent years.

Q: Talk about rewards gained from teaching students.
A: When I realized you have to learn to teach just like any skill, I understood what educating could mean for me. I now love coming up with new solutions for students, helping them see their potential, and giving them tools to use their whole lives. My favorite memories with students involve those ‘aha!’ moments, but I also love when they express what music means to them.

Q: Have you played your trombone in the Garden?
A: I have not! I value the Garden so much Garden?

Q: When did you discover the Garden and kept you coming back?
A: About 10 years ago, I was taking a bike ride down Wirth Parkway and saw the sign. With nowhere to be, really, I pedaled up the driveway and walked into a world full of magic. I had no idea such a place could exist in a city. I became a regular visitor for a few years before deciding to volunteer. I was looking for something outside of music to do, and with liberty in my schedule, I try to come every week to really experience the seasons’ changing. It’s a ritual for me. It helps me stay connected to the world around me and brings me down to earth (quite literally!)

Q: Why did you take on this new role distributing Garden information out to a wider audience through MailChimp?
A: Because it’s so important to me to know what’s going on each week, I’m hoping I can highlight some of our smaller features. I love the lady slippers and the prairie in August, but I also relish basking in the wild geraniums, watching bees pollinating the turtleheads, and poking at funky slime molds and mushrooms. I want other people to know they can come anytime during the open seasons and maybe make new discoveries as I have. If you are a member of the Friends, your email will automatically be added to our list. If you have any questions, suggestions, or aren’t getting emails but think you should be, email me at: news@friendsofeloisebutler.org.

We are stronger together, so I hope more frequent communication from the Friends Board will unify our organization and help us represent the Garden for many years to come.

Q: What do you like to do while visiting the Garden and why?
A: I try to walk every path so I don’t miss anything! By now I’m pretty good at knowing where to go for specific blooms, and I try to come every week to really experience the seasons’ changing. It’s a ritual for me. It helps me stay connected to the world around me and brings me down to earth (quite literally!)

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Memorials & Donations

Memorials and donations to the Friends are tax deductible and constitute an important part of keeping the Garden a special place for generations of people to enjoy. In 2019 undesignated donations were used for the Student Transportation Grant Program and for new shrubs and trees for the Garden. Project update information is on The Friends website. An acknowledgment of donation will be provided to all donors. Note on memorials: Please give a name and address for the person honored, or their family, so that we can acknowledge to them that a memorial has been received. Memorials and donations should be sent to: Friends of the Wild Flower Garden, P.O. Box 3793, Minneapolis, MN 55403. Checks are payable to: Friends of the Wild Flower Garden or donate on our website: https://www.friendsofthewildflowergarden.org.

Donations and Memorials Form

Donations of gifts or memorials may be made at www.friendsofthewildflowergarden.org or mailed with a check payable to: Friends of the Wild Flower Garden Membership P.O. Box 3793 Minneapolis, MN 55403-0793

Thank you for helping to sustain the Eloise Butler Wildflower Garden and Bird Sanctuary.

All gifts are tax-deductible.

New Members

INDIVIDUAL

Bob Bowman
Kathleen Huesting
Thea Evans
Christi Bytech
Mary Chamberlain
Valeria Dickner

FAMILY

Wendy Dant
Robert Ambler
Pamela Layton
Julie Homebracht

MEMORIALS RECEIVED

For: Glendora
    Garrett
    Settler Berg
    Lanning
    From: Lou Ann
    Lanning
    For: Sue Meriman
    From: Ferrand
    Anderson
    For: David R.
    Ollund St.
    From: Marguerite
    Sullivan & David
    Weiser
    For: Catherine
    Rudberg
    From: Jim &
    ☐ Individual $15  ☐ Family $25  ☐ Sponsor $100  ☐ Sustaining $200  ☐ Life $500

GIFTS RECEIVED Feb - May

Amazon Smile
Donna Abraham
Amazon Smile
Anonymous
Armstrong
Zachary Baker
Colin Bartel
Ivan and Rachel
Bialostosky
Deborah Boehm
Boston Scientific
Bob Bowman
Faith Clove
Catherine
Fernberg
J. S. Futter

Nancy and Jack
Garland
Dean Gulstad
Cindy
Johnson & Vic
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Nancy Eicher
Mary Dolan
Lynn Wallin
Sandra Dowd

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For: Cheryl Penkivec
    Tamara & Douglas
    Schlue and friends
    of Jim Rudberg
    From: Bob Bowman
    Lynn Sommer
    From: Ruth William
    Louis Dick
    From: Pat Sjoquist
    From: Adrienne
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    Nancy & Phil
    Tschumperlin
    Steven Matusak
    Barbara Pappenhaus

Sponsor $100
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Grow Your Legacy: Remember the Garden in Your Estate Plan

Please consider a gift in your estate plan to benefit the Garden. Gifts to Friends of the Wild Flower Garden are tax deductible to the full extent allowed by Minnesota and federal law for gifts to charitable organizations. Friends of the Wild Flower Garden has been approved by the IRS as a 501(c)(3) charitable organization since 1953.

Gifts can be made through your will, revocable living trust, retirement plan or life insurance. Leave a gift for the Garden in your will or revocable living trust by a provision such as “I give $_____ to Friends of the Wild Flower Garden, Inc., to benefit the Eloise Butler Wildflower Garden.” Or name Friends of the Wild Flower Garden as a beneficiary of a portion of your life insurance or retirement account.

If you have questions, please call Friends Board member Steve Pundt at 612-333-1900 or email steven@pundtlaw.com. Thank you for helping us fulfill our mission to preserve and protect the Garden!

Membership Form

Memorials can be ordered online at www.friendsofthewildflowergarden.org or mailed with a check payable to: Friends of the Wild Flower Garden Membership P.O. Box 3793 Minneapolis, MN 55403-0793

Please specify if the membership is a gift. Each membership is tax-deductible to the extent allowed by law.

Donations:

☐ Boardwalk  ☐ Student Transportation  ☐ General  ☐ Amount $_______

☐ Individual $15  ☐ Family $25  ☐ Sponsor $100  ☐ Sustaining $200  ☐ Life $500

Name ____________________________________________________________

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This is a ☐ MEMORIAL or a ☐ GIFT IN HONOR OF: ______________________

The recipient of your gift will receive a letter of welcome from the Friends of the Wild Flower Garden.

Please notify: ____________________________________________________
The Eloise Butler Wildflower Garden and Bird Sanctuary comprises cultivated but naturalistic woodland, wetland and prairie environments, 2/3 mile of mulch covered pathways and a rustic shelter where educational programming and materials can be found. It is the oldest public wildflower garden in the United States, established in 1907. The 15 acre site is located within the city of Minneapolis and is owned and operated by the Minneapolis Park & Recreation Board. The Garden is open from April 1 through October 15 from 7:30 A.M. to a half hour before sunset. Weekends only October 15 to October 31.