



stLUKE  
Presbyterian church

# GROUNDS RESTORATION PROJECT

# St. Luke Grounds Restoration Project



St. Luke is beginning the process of restoring its 4.29 acres to a healthy, diverse ecosystem of native plants for the purpose of creating habitat for all creatures. Our project scope and goals are reflected by our guiding vision to: (1) Act as good stewards of the land on which we are located by (2) restoring a biologically diverse, native ecosystem habitat (3) that supports our local watershed and (4) welcomes the community into a beautiful, immersive learning environment that (5) nurtures climate connection and care.

## Ecological Restoration. What is it?

Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.

**Ecosystems** are dynamic communities of plants, animals, and microorganisms interacting with their physical environment as a functional unit. These communities can be **damaged, degraded, or destroyed** by human activity. Harmful impact upon an ecosystem could be from selective logging, road building, poaching, long term cultivation, invasions of non-native species, long-term grazing, land clearing, urbanization, or mining.

“It is not enough to just ‘love nature’ or to want to ‘be in harmony with the Earth.’ Our relation to the natural world takes place in a place, and it must be grounded in information and experience.”

—Gary Snyder



# Ecological Restoration. Why?

Healthy ecosystems are rich in biodiversity, that is, they have a large number of different species of plants, animals, and microorganisms.

Our biodiversity is very important to the well-being of our planet. All species, including humans, are adversely affected by the loss of species diversity.



Healthy ecosystems and rich biodiversity:

- Increase ecosystem productivity which is important because each species in an ecosystem has a specific niche, or role to play.
- Support a larger number of plant species than degraded ecosystems.
- Protect freshwater resources.
- Promote soil formation and protection.
- Provide for nutrient storage and recycling.
- Aid in breaking down pollutants.
- Contribute to climate stability.
- Speed recovery from natural disasters.
- Provide more food resources for birds, mammals, pollinators, and humans.
- Provide more medicinal resources and pharmaceutical drugs.



“When native plants disappear, the insects disappear, impoverishing the food source for birds and other animals.”

—Doug Tallamy, *Bringing Nature Home*

# St. Luke Site History



Before our site was a farm it was homeland to the Dakota people.

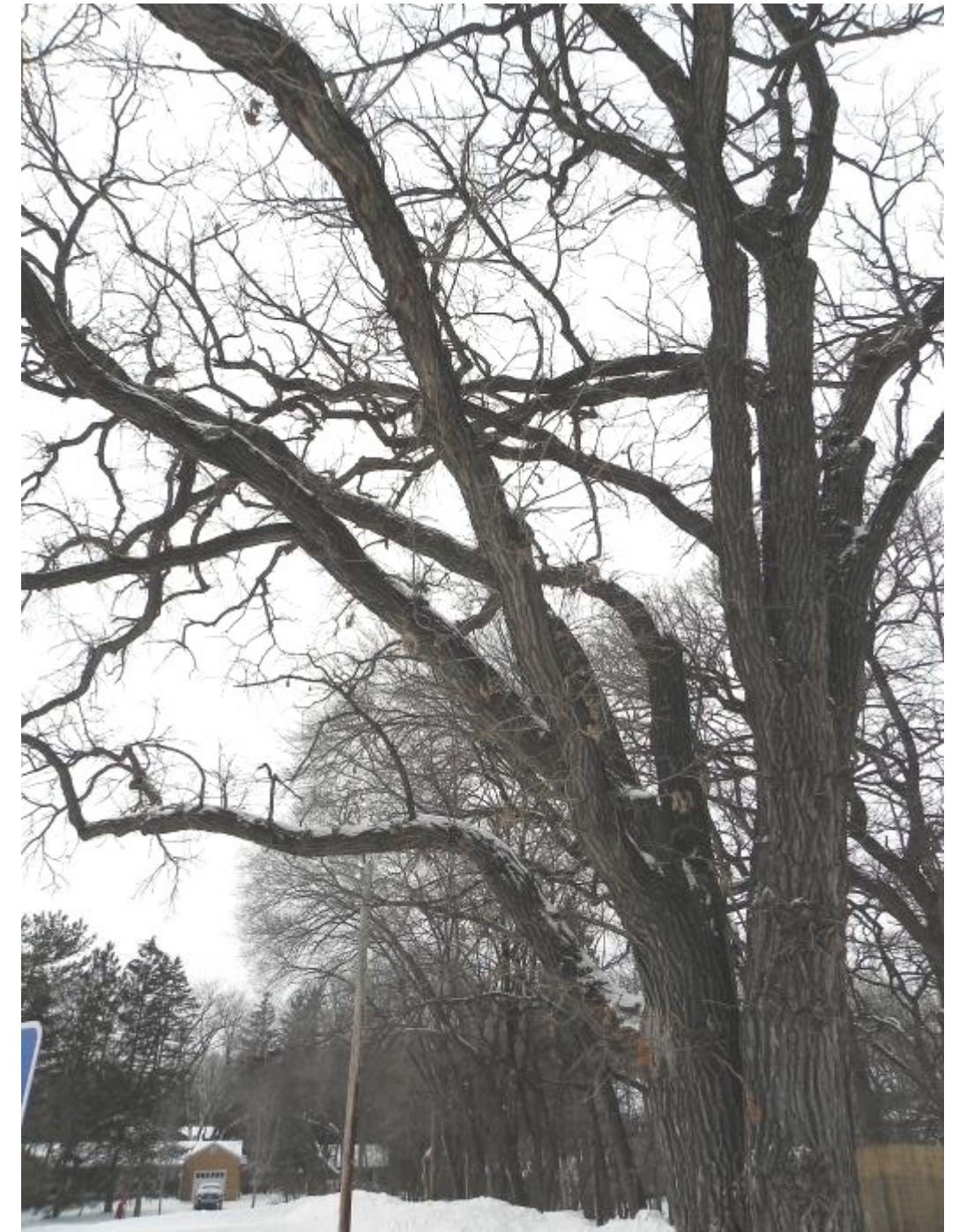
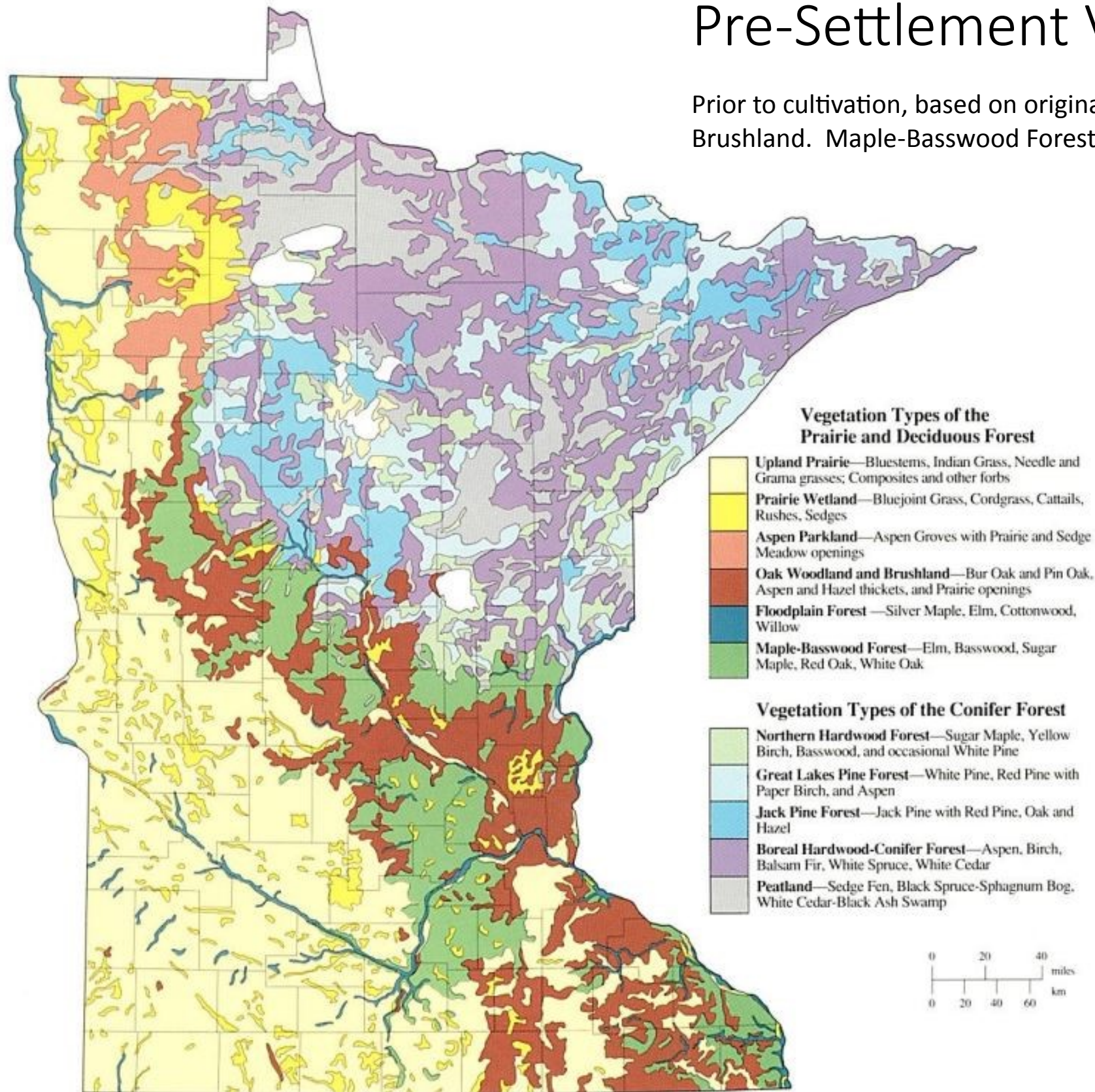


**1947 Aerial Photo:** While low density residential was beginning to develop around us, in 1947 our site was still a working farm with cultivated crops from edge to edge.



# Pre-Settlement Vegetation

Prior to cultivation, based on original survey data, our site was likely Oak Woodland and Brushland. Maple-Basswood Forest was also very prevalent in our area.



**The Natural Vegetation of Minnesota at the Time of the Public Land Survey: 1847-1907**

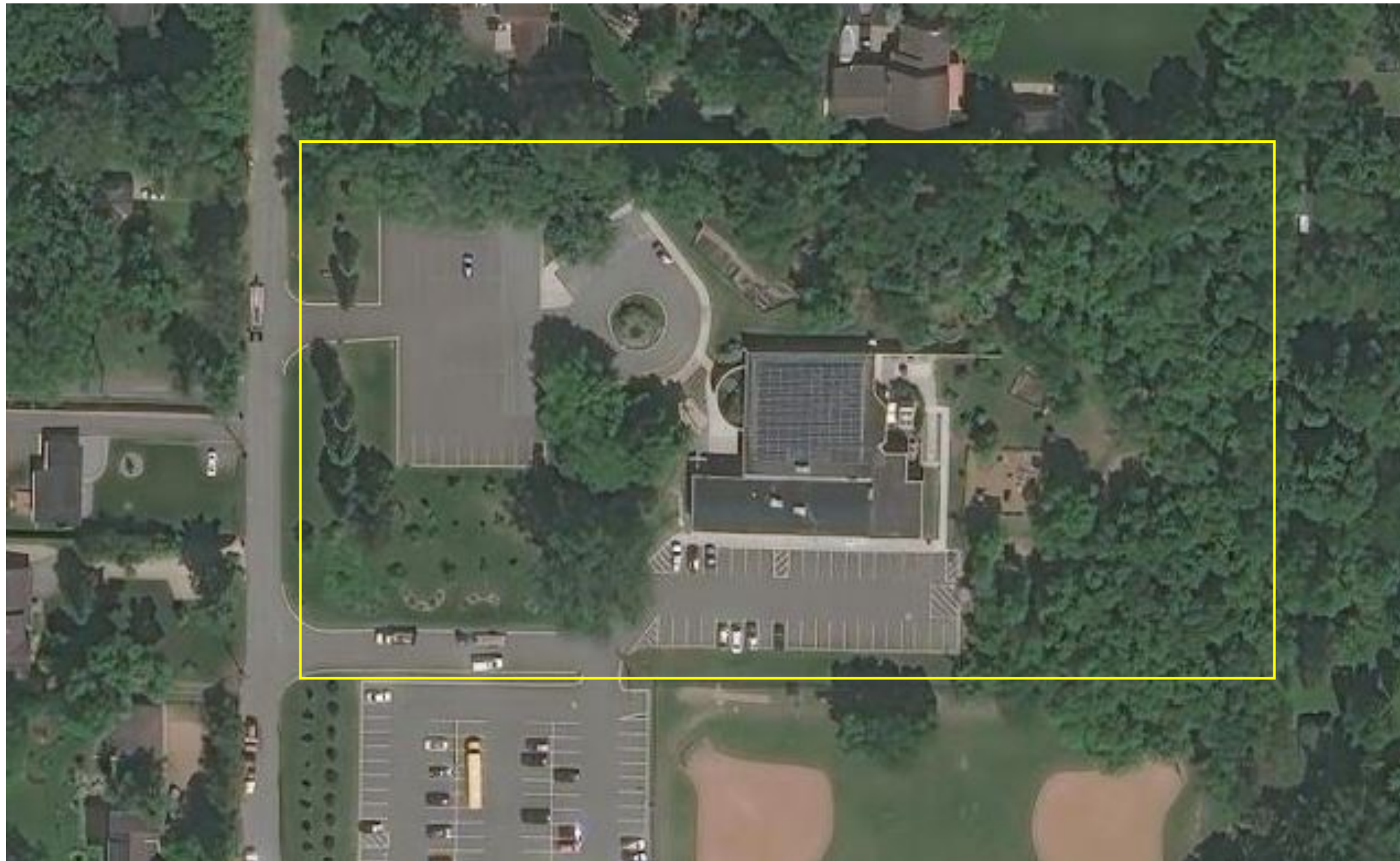
Our largest oak may be a remnant of the original vegetation type and survived the plow as a farmstead shade tree.

# St. Luke Grounds Existing Conditions

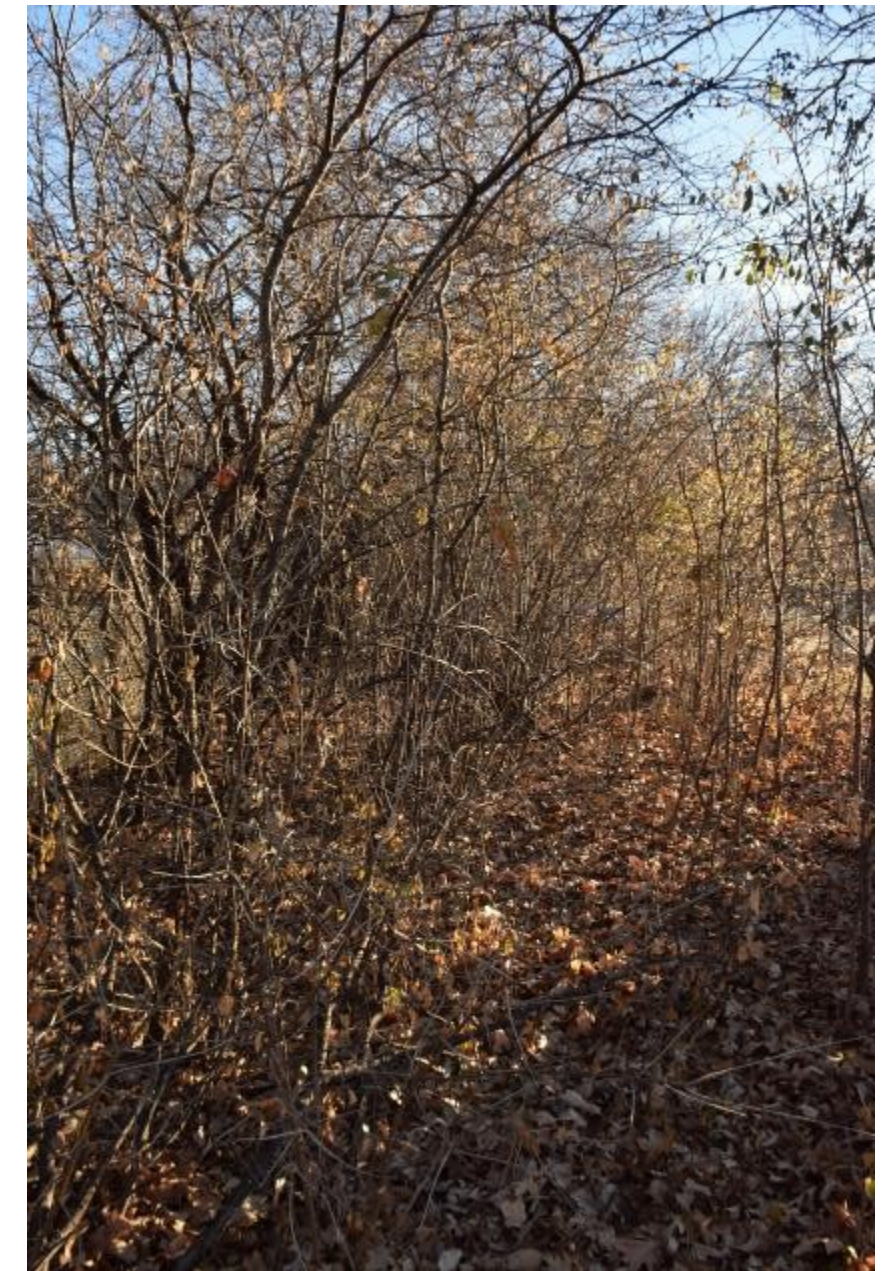


St. Luke purchased this land in 1957 and the first church building was built in 1959-60. At that time some land was developed into lawn and parking. Many very fine additions were added over the years: sanctuary, sweat lodge, 2 food gardens, 2 rain gardens, cistern, orchard, columbarium, solar panels, and paved parking lot which reduced the amount of siltation, or eroded particles, from our site. The increased stormwater run-off was stored in underground tanks installed beneath the lower parking lot.

1.4 acres at the north and west ends of the property were left to grow wild after farming ceased in 1957. The formerly cultivated land was left to revegetate by wind and animal seed dispersal. The very invasive, non-native common buckthorn (*Rhamnus cathartica*) quickly took over. In 2008 the St. Luke Building & Grounds and Environmental teams made a valiant effort to remove the buckthorn, but without a long term management plan, the buckthorn returned with a vengeance.



Current aerial photo of St. Luke



Buckthorn thicket in 2020

# St. Luke Grounds Existing Conditions



St. Luke has been invested in earth care for many years. In 2014, two large rain gardens were installed to collect rain water from the roof and grounds and hold the water in specially engineered basins for long enough for the rain to soak into the ground rather than run off into the storm drain system. These rain gardens are planted with native plant species that easily tolerate being inundated for a limited time. They are butterfly magnets all summer and insect hibernaculum all winter.

In 2021, the City of Minnetonka rebuilt Groveland School Road, including all the associated utilities. As part of the restoration following construction, by special request, a native seed mix of grasses and forbs was sown on St. Luke's right-of-way instead of the usual non-native turf grass mix. Native plants with typically deeper roots will also reduce runoff and encourage infiltration. The existing raingarden nearest the street was enlarged to accommodate runoff from Groveland School Road via a curb cut.



Raingarden: insect hibernaculum all winter



Raingarden: butterfly magnet all summer

Common Name	Scientific Name
Virginia wild rye	<i>Elymus virginicus</i>
American slough grass	<i>Beckmannia syzigachne</i>
fowl bluegrass	<i>Poa palustris</i>
riverbank wild rye	<i>Elymus riparius</i>
prairie cordgrass	<i>Spartina pectinata</i>
tall manna grass	<i>Glyceria grandis</i>
rice cut grass	<i>Leersia oryzoides</i>
fowl manna grass	<i>Glyceria striata</i>
	<b>Grasses Subtotal</b>
fox sedge	<i>Carex vulpinoidea</i>
dark green bulrush	<i>Scirpus atrovirens</i>
pointed broom sedge	<i>Carex scoparia</i>
woolgrass	<i>Scirpus cyperinus</i>
tussock sedge	<i>Carex stricta</i>
path rush	<i>Juncus tenuis</i>
	<b>Sedges &amp; Rushes Subtotal</b>
blue vervain	<i>Verbena hastata</i>
marsh milkweed	<i>Asclepias incarnata</i>
giant sunflower	<i>Helianthus giganteus</i>
spotted Joe pye weed	<i>Eutrochium maculatum</i>
bunched ironweed	<i>Vernonia fasciculata</i>
autumn sneezeweed	<i>Helenium autumnale</i>
spotted touch-me-not	<i>Impatiens capensis</i>
	<i>Pycnanthemum virginianum</i>
Virginia mountain mint	<i>Pycnanthemum virginianum</i>
tall coneflower	<i>Rudbeckia laciniata</i>
common boneset	<i>Eupatorium perfoliatum</i>
great lobelia	<i>Lobelia siphilitica</i>
giant goldenrod	<i>Solidago gigantea</i>
blue monkey flower	<i>Mimulus ringens</i>
	<b>Forbs Subtotal</b>
Oats	<i>Avena sativa</i>

Native seed mix sown in the right-of-way in 2021

# St. Luke Woods Existing Conditions

In December of 2020, St. Luke contracted with Minnesota Native Landscapes to remove the massive invasion of common buckthorn, a particularly troublesome invasive that had overrun our wooded grounds. After the initial removal of the thickest of buckthorn we watched for what was left growing in the 1.4 acres of wild land. We found 46 native plant species that found their way onto the property in the past 64 years. That sounds like a lot, but a healthy diverse habitat should have hundreds of native plant species. Also, those 46 species are not great in quantity. For example, we found only one bloodroot (*Sanguinaria canadensis*).

Even though much of the buckthorn was removed we still have a significant population of missed and resprouted buckthorn. We also found 22 other non-native plant species, which are in great quantity.



## Natives Plants On Site

- Bloodroot *Sanguinaria canadensis*
- Canada Mayflower *Maianthemum canadense*
- Columbine *Aquilegia canadensis*
- Common blue violet *Viola sororia*
- Enchanter's Nightshade *Circaea lutetiana*
- False Solomon's Seal *Maianthemum racemosum*
- Jack-in-the-pulpit *Arisaema triphyllum*
- Little-leaf Buttercup *Ranunculus abortivus*
- Rough Bedstraw *Galium asprellum*
- Solomon's Seal *Polygonatum biflorum*
- Sweet Cicely *Osmorhiza claytonii*
- Virginia Waterleaf *Hydrophyllum virginianum*
- White Snakeroot *Ageratina altissima*
- Wild Ginger *Asarum canadense*
- Wild Leek *Allium tricoccum*
- Wood Sedge *Carex blanda*
- Zigzag goldenrod *Solidago flexicaulis*
- Downy Yellow Violet *Viola pubescens*
- Virginia Creeper *Parthenocissus quinquefolia*
- Red Baneberry *Actaea rubra*
- White Avens *Geum canadense*
- Late Horse Gentian *Triosteum perfoliatum*
- Hoary Vervain *Verbena stricta*
- Sticky-willy *Galium aparine*
- Fragrant Bedstraw *Galium triflorum*
- Tall Blue Lettuce *Lactuca biennis*
- Calico Aster *Symphyotrichum lateriflorum*
- New England Aster *Symphyotrichum novae-angliae*
- Wild Four O'Clock *Mirabilis nyctaginea*
- Sneezeweed *Helenium autumnale*
- Annual Fleabane *Erigeron annuus*
- Common Cinquefoil *Potentilla simplex*
- Pennsylvania Pellitory *Parietaria pensylvanica*
- Common Yarrow *Achillea millefolium*

Bloodroot  
*Sanguinaria canadensis*



Zigzag goldenrod  
*Solidago flexicaulis*



Red Baneberry  
*Actaea rubra*



## Non-native/Invasive Plants On Site

- Buckthorn *Rhamnus cathartica*
- Burdock *Arctium minus*
- Creeping Bellflower *Campanula rapunculoides*
- Creeping Charlie *Glechoma hederacea*
- Daylily *Hemerocallis fulva*
- Garlic Mustard *Alliaria petiolata*
- Motherwort *Leonurus cardiaca*
- Siberian squill *Scilla siberica*
- Tatarian Honeysuckle *Lonicera tatarica*
- White Campion *Silene latifolia*
- Leafy Spurge *Euphorbia virgata*
- Spotted Knapweed *Centaurea stoebe*
- Catnip *Nepeta cataria*
- Black Mustard *Brassica nigra*
- Curly Dock *Rumex crispus*
- White Sweet Clover *Melilotus alba*
- Crown Vetch *Securigera varia*
- Yellow Archangel *Lamiaeum galeobdolon*
- Borage *Borago officinalis*
- Coriander *Coriandrum sativum*
- Yellow Nutsedge *Cyperus esculentus*
- White Mulberry *Morus alba*
- Siberian Elm *Ulmus pumila*

Garlic Mustard  
*Alliaria petiolata*



Buckthorn  
*Rhamnus cathartica*



White Mulberry  
*Morus alba*





# Ecological Restoration. How?



**Ecological restoration seeks to initiate or accelerate ecosystem recovery** following damage, degradation, or destruction.

We will not carry out the actual work of ecosystem recovery. Rather, we create the conditions needed for recovery so the plants, animals, and microorganisms can carry out the work of recovery themselves. Assisting recovery can be as simple as removing an invasive species or reintroducing a lost species or a lost function (like fire); or as complex as altering landforms, planting vegetation, changing the hydrology, and reintroducing wildlife.

The goal of ecological restoration is to return a degraded ecosystem not to its historic condition, but to a trajectory that results in a stable and resilient system. The ecosystem may not necessarily recover to its former state since contemporary ecological realities, including global climate change, may cause it to develop along an altered trajectory, just as these same realities may have changed the trajectory of nearby undisturbed ecosystems. History plays an important role in restoration, but contemporary conditions must also be taken into consideration.

## St. Luke Process and Strategies

Our site is relatively simple since we've had no serious degradation such as chemical spills, mining, erosion, or drainage tiling. It is a three step process: Remove disturbance, restore vegetation, and manage.

- Removing sources of disturbance: eradicating invasive exotic species, removing junk and debris.
- Restoring vegetation: In many cases, restoration activities involve direct revegetation of a site. Usually, native species suited to local environmental conditions are chosen for planting. Seeds or cuttings are generally collected from a variety of sources within a local region in order to ensure genetic diversity. Vegetation can be planted as seeds, or seedlings.
- Monitoring and maintenance: Monitoring the restoration site over time is critical to determining whether goals are being met, and can inform future management decisions. Observations made at the site may indicate that further action, such as periodic weed removal, is necessary in ensuring the long-term success of the project. Ideally restoration projects would eventually achieve a self-sustaining ecosystem without the need for future human intervention.

## Timeline

Phase One - Fall 2020: Remove lion's share of buckthorn

Phase Two - 2021: Continue removing invasive species, junk and debris, align trail, locate program elements (labyrinth, stump circle)

Phase Three - 2022: Continue removing invasive species; plant over 300 trees, shrubs and herbaceous plugs; seed 62 species of native grasses, forbs and woodies

Phase Four - 2023: Manage invasive species; monitor plantings and seedlings.

# Phase One - Fall 2020: Remove lion's share of buckthorn



The removal of the buckthorn onsite was a foundational first step to our wider grounds restoration work. It was also a massive undertaking: one that we embraced, in part, because of the pandemic which made outdoor mission/justice a premium for our faith community.

Practitioners from Minnesota Native Landscapes arrived on site in late fall of 2020 and removed the largest buckthorn, the most difficult task of our ecological restoration. Without this head start, we would still be Sisyphus-ing, e.g. rolling a large stone up hill for eternity.

## Pro Tip: Habitat Piles

The removal of the buckthorn created mountains of cut branches, most of which were burned onsite. However, with other restoration activities (tree thinning, missed and resprouted buckthorn), the branch piles began to grow again. Hauling brush off site seemed anathema to our “closed loop” ethos, but what to do with the surplus? We procured a battery-powered chipper/shredder so that we could make our own mulch of the branches <2.5 inches. We used limbs >4 inches to edge the trails. And anything in between (2.5” - 4”) that we didn’t use for bonfire events became intentional habitat piles. Wildlife such as song birds, voles, chipmunks, squirrels, rabbits, salamanders, frogs, lizards, snakes, and insects use piles as dens or nesting spots, to shelter from bad weather, to escape predators, and to forage. We located them away from neighbors and our trails and human gathering spots to provide the best haven for wildlife.



# Phase Two - 2021: Continue removing invasive species, align trail, locate program elements (labyrinth, stump circle)



Early spring of 2021 and every other Saturday all season found us tackling small buckthorn resprouts and herbaceous invasive plant species that had festered unseen beneath the buckthorn, like Siberian Squill (so pretty, but so detrimental to a healthy, diverse habitat)! Non-native, invasive species can outcompete the native species through a variety of methods: crowding, shading, and allelopathy (emitting a chemical from roots or leaves that inhibits growth of other species).



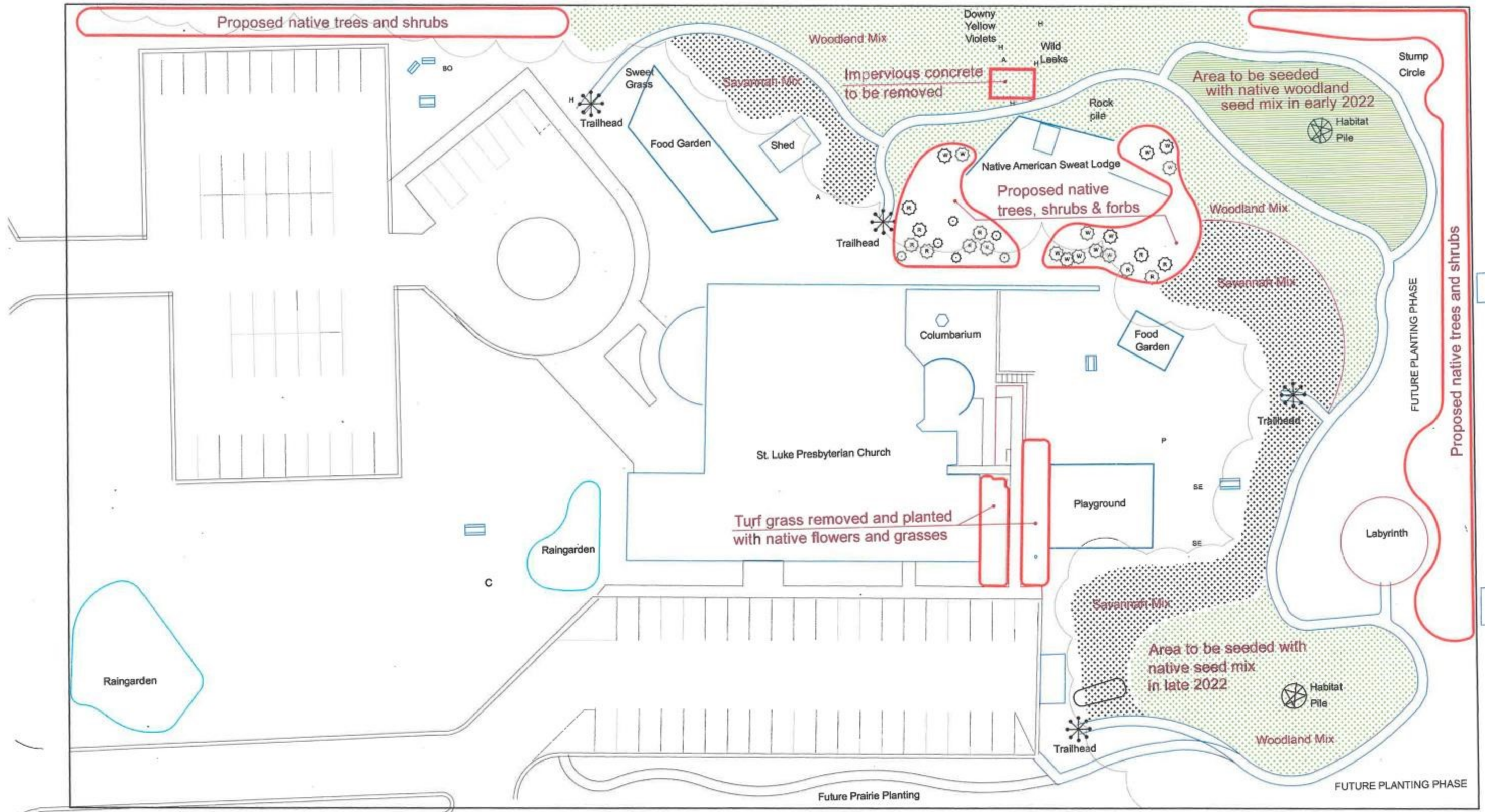
# The Plan

Phase One - Fall 2020: Remove lion's share of buckthorn

Phase Two - 2021: Continue removing invasive species, junk and debris, align trail, locate program elements (labyrinth, stump circle)

Phase Three - 2022: Continue removing invasive species, plant 350 trees and shrubs, seed 62 species of native grasses, forbs and woodies

Phase Four - 2023: Manage invasive species; monitor plantings and seedings



# Proposed Plant List

## Big Planting Event - June 4, 2022

On June 4 we will plant native shrubs and trees along our peripheries where the buckthorn left open, exposed edges.

We will also restore some buffering for the Sweat Lodge with native species important to the Native American culture: Sweet grass, sage, and cedar.

We will also be planting the edges of the new walkway to the Columbarium with neat and tough native grasses and flowers, to reduce turf grass area and avoid needing to water this droughty area.

The planting and seeding happening in 2022 is made possible by a generous grant from the Riley, Purgatory, Bluff Creek Watershed District.



Plants			
	Common Name	Binomial	Qty
Ground Layer	Sweet Grass	<i>Anthoxanthum hirtum</i>	50
	Prairie Sage	<i>Artemisia ludoviciana</i>	60
	Butterfly Weed	<i>Asclepias tuberosa</i>	24
	Wild Geranium	<i>Geranium maculatum</i>	24
	Prairie Smoke	<i>Geum triflorum</i>	108
	Prairie Phlox	<i>Phlox pilosa</i>	12
	Little Bluestem	<i>Schizachyrium scoparium</i>	54
	Prairie Dropseed	<i>Sporobolus heterolepis</i>	48
	Asure Aster	<i>Symphotrichum oolentangiense</i>	60
			440

Shrubs	Smooth Serviceberry (Juneberry)	<i>Amelanchier laevis</i>	6
	Leadplant	<i>Amorpha canescens</i>	36
	Black chokeberry	<i>Aronia melanocarpa</i>	10
	New Jersey Tea	<i>Ceanothus americanus</i>	25
	Pagoda dogwood	<i>Cornus alternifolia</i>	15
	Gray dogwood	<i>Cornus racemosa</i>	17
	American hazelnut	<i>Corylus americana</i>	25
	Witch Hazel	<i>Hamamelis virginiana</i>	19
	Common Juniper	<i>Juniperus communis</i>	5
	Chokecherry	<i>Prunus virginiana</i>	18
	Nannyberry	<i>Viburnum lentago</i>	16
	High-bush Cranberry	<i>Viburnum trilobum</i>	20

Trees	American hornbeam (Blue Beech)	<i>Carpinus caroliniana ssp. virginiana</i>	15
	Red Cedar	<i>Juniperus virginiana</i>	10
	Ironwood	<i>Ostrya virginiana</i>	16
	White Cedar	<i>Thuja occidentalis</i>	24
			65

# Ecological Restoration. When?

## When is restoration complete?

Ecological restoration aims to re-establish a self-organizing ecosystem on a trajectory to reach full recovery. While restoration activities can often place a degraded ecosystem on an initial trajectory of recovery relatively quickly, full recovery of the ecosystem can take years, decades, or even hundreds of years. For example, while we can initiate a forest restoration process by planting trees, for full recovery to be achieved, the site should be a fully functioning forest with mature trees in the age-classes representative of a mature native forest. If there were 500-year-old trees in the forest that was destroyed, then the restoration should logically take hundreds of years to achieve full recovery. During that recovery period, unforeseen barriers to recovery may be encountered, or additional restoration activities may become possible at later stages of development. Thus, while individual restoration activities may be completed, in most cases the restoration process continues as the ecosystem recovers and matures.



“The best time to plant a tree was 20 years ago. The second best time is now.”

—Ancient Proverb,  
authorship unknown

# Bringing It Home: Guide to getting started at home



One of the goals of embarking on this Grounds Restoration project is to “welcome the community into a beautiful, immersive learning environment that nurtures climate connection and care.” We seek to encourage the community to enact these same principles in their own backyards (and front yards). Here we provide a bit more encouragement by debunking some myths, and providing resources and rationales for creating healthy ecosystems at home.

## Best practices and priorities

1. Remove invasive, non-native species from your yard: buckthorn, garlic mustard, burning bush, Japanese honeysuckle, Siberian squill, etc. Replace with native plant species from native plant nurseries.
2. Reduce turf grass area: Turf grass requires water, chemicals, and mowing but provides no ecosystem services (such as habitat, carbon sequestration, stormwater filtration, etc.). Look for areas of turf that you never ever walk on except to mow. Replace those areas with native plants from native plant nurseries.
3. Begin to replace benign non-native species with native species: Not all non-native species are invasive (yet), but they are not doing much good and are taking up space where a native plant could be doing a lot of good.
4. Connect your native plantings with your neighbors’ native plantings. Wildlife needs corridors of habitat to increase in numbers and species richness. An island of great habitat in a sea of traditional non-native yards will have a tough time attracting the endangered rusty patch bumblebee.

## Start

1. Start. Start small. But start. Make a plan and execute a chunk of it each year. Utilize resources: grants, watersheds, websites, model site plans (see next page).
2. Enjoying the increase in birds and butterflies in your yard.

## Stop

1. Accepting shared plants from friends and neighbors, lest they share jumping worms with you. Jumping worms are a relatively new invasive pest from Asia that are especially voracious and can destroy your soil and kill plants.
2. Using any chemicals (pesticides or fertilizers)

“If suburbia were landscaped with meadows, prairies, thickets or forests, or combinations of these, then the water would sparkle, fish would be good to eat again, birds would sing and human spirits would soar.”

—Lorrie Otto,  
Founder of Wild Ones

# Model Native Garden Design for Twin Cities Area



Carmen Simonet Design LLC  
landscape architecture + ecology + gardens

Native Plant Garden Design Guide  
Wild Ones Residence - Minneapolis, MN  
Landscape Plan 1 of 6

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Native Plant Garden Design Guide  
Wild Ones Residence - Minneapolis, MN  
Prairie Gardens 2 of 6

## Contents

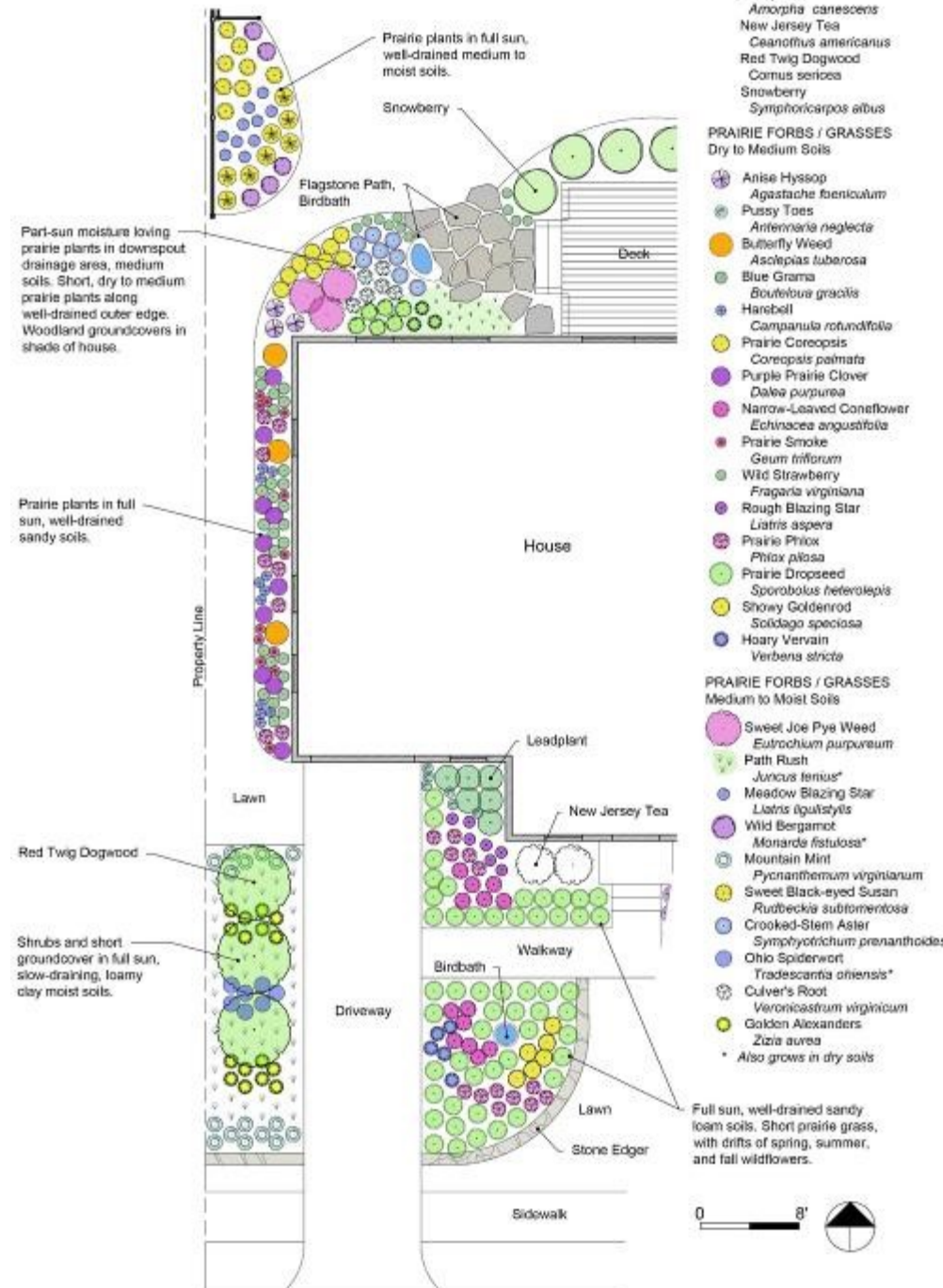
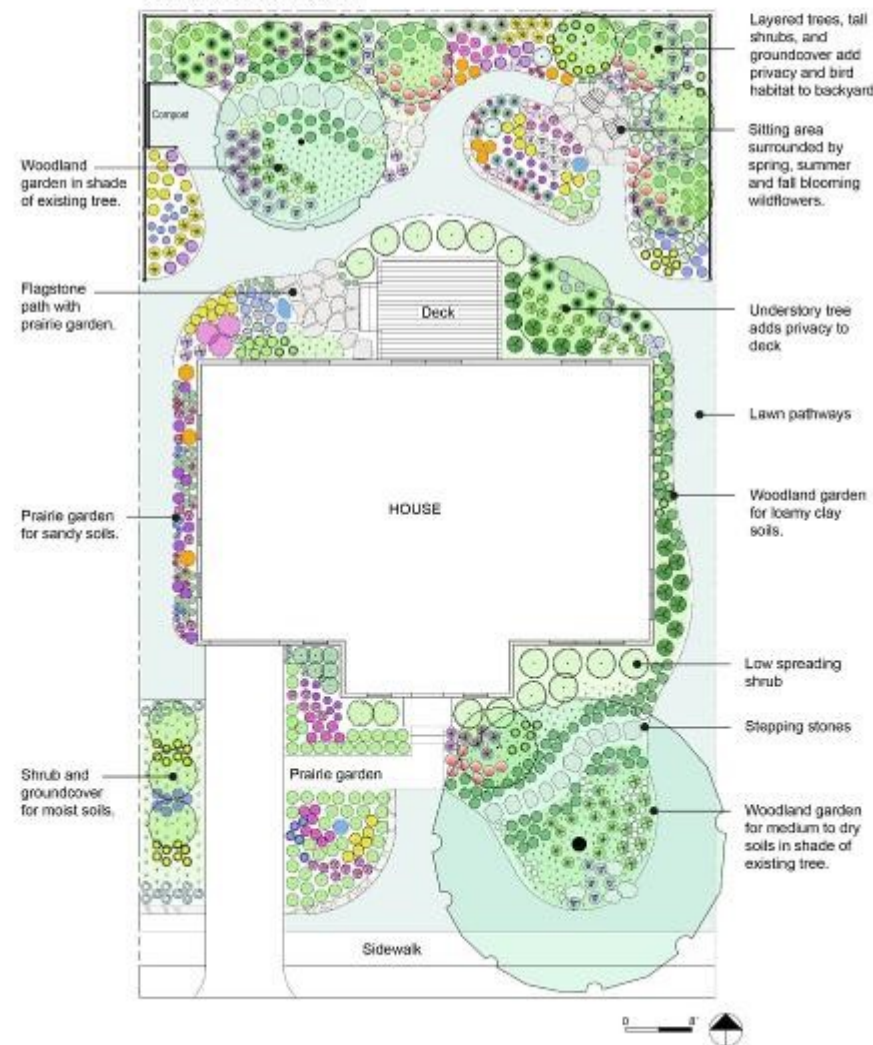
- 1 - Landscape Plan
- 2 - Prairie Gardens
- 3 - Woodland Habitats
- 4 - Layered Habitat
- 5 - Design Strategies
- 6 - Native Plants

This design guide begins by showing you a planting plan for a beautiful garden with healthy habitat. Detailed plans show sunny (prairie), shady (woodland) and bird-friendly layered gardens, followed by the design strategies that can guide planning for your unique site. The final page contains pictures of many of the native plants used in this plan and work well in a residential garden setting.

## Design Overview

This design works with nature. Plants are selected to thrive in the site conditions and on their ability to regenerate and cover the ground. The landscape structure is designed to reduce maintenance of weeds, while creating habitat.

Layout decisions and plant selection anticipate natural processes shaping the garden. Ultimately, the success of the design rests with the management of the garden. Management is a continuation of design, as it guides the development and adapts to the dynamic nature of the garden.



## SHRUBS

- Leadplant
- Amorpha canescens*
- New Jersey Tea
- Ceanothus americanus*
- Red Twig Dogwood
- Cornus sericea*
- Snowberry
- Symphoricarpos albus*

## PRAIRIE FORBS / GRASSES

Dry to Medium Soils

- Anise Hyssop
- Agastache foeniculum*
- Pussy Toes
- Antennaria neglecta*
- Butterfly Weed
- Asclepias tuberosa*
- Blue Grama
- Bouteloua gracilis*
- Harebell
- Campanula rotundifolia*
- Prairie Coreopsis
- Coreopsis palmata*
- Purple Prairie Clover
- Dalea purpurea*
- Narrow-Leaved Coneflower
- Echinacea angustifolia*
- Prairie Smoke
- Geum triflorum*
- Wild Strawberry
- Fragaria virginiana*
- Rough Blazing Star
- Liatris aspera*
- Prairie Phlox
- Phlox pilosa*
- Prairie Dropseed
- Sporobolus heterolepis*
- Showy Goldenrod
- Solidago speciosa*
- Hoary Vervain
- Verbena stricta*

## PRAIRIE FORBS / GRASSES

Medium to Moist Soils

- Sweet Joe Pye Weed
- Eutrochium purpureum*
- Path Rush
- Juncus tenuis\**
- Meadow Blazing Star
- Liatris spicata*
- Wild Bergamot
- Monarda fistulosa\**
- Mountain Mint
- Pycnanthemum virginianum*
- Sweet Black-eyed Susan
- Rudbeckia subtomentosa*
- Crooked-Stem Aster
- Symphoricarpos prenanthoides*
- Ohio Spiderwort
- Tradescantia ohioensis\**
- Culver's Root
- Veronicastrum virginicum*
- Golden Alexanders
- Zizia aurea*
- \* Also grows in dry soils

The Wild Ones organization has commissioned model native garden designs created by professional landscape designers for multiple ecoregions in the United States, taking into account various light, soil and moisture conditions. A plant list accompanies each design and provides a quick preview of the diversity and beauty of the native plants incorporated in each design. Both the designs and the plant lists are printer-friendly.

We hope these resources inspire, encourage and motivate you in your native garden journey!

<https://nativegardendesigns.wildones.org/>





# Model Native Garden Design for Twin Cities Area - Page 2

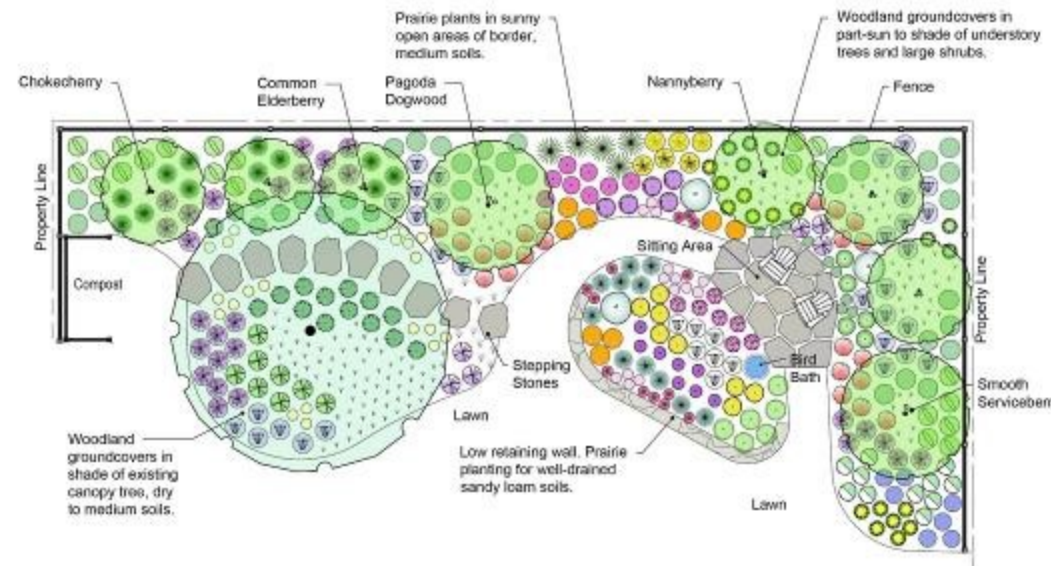
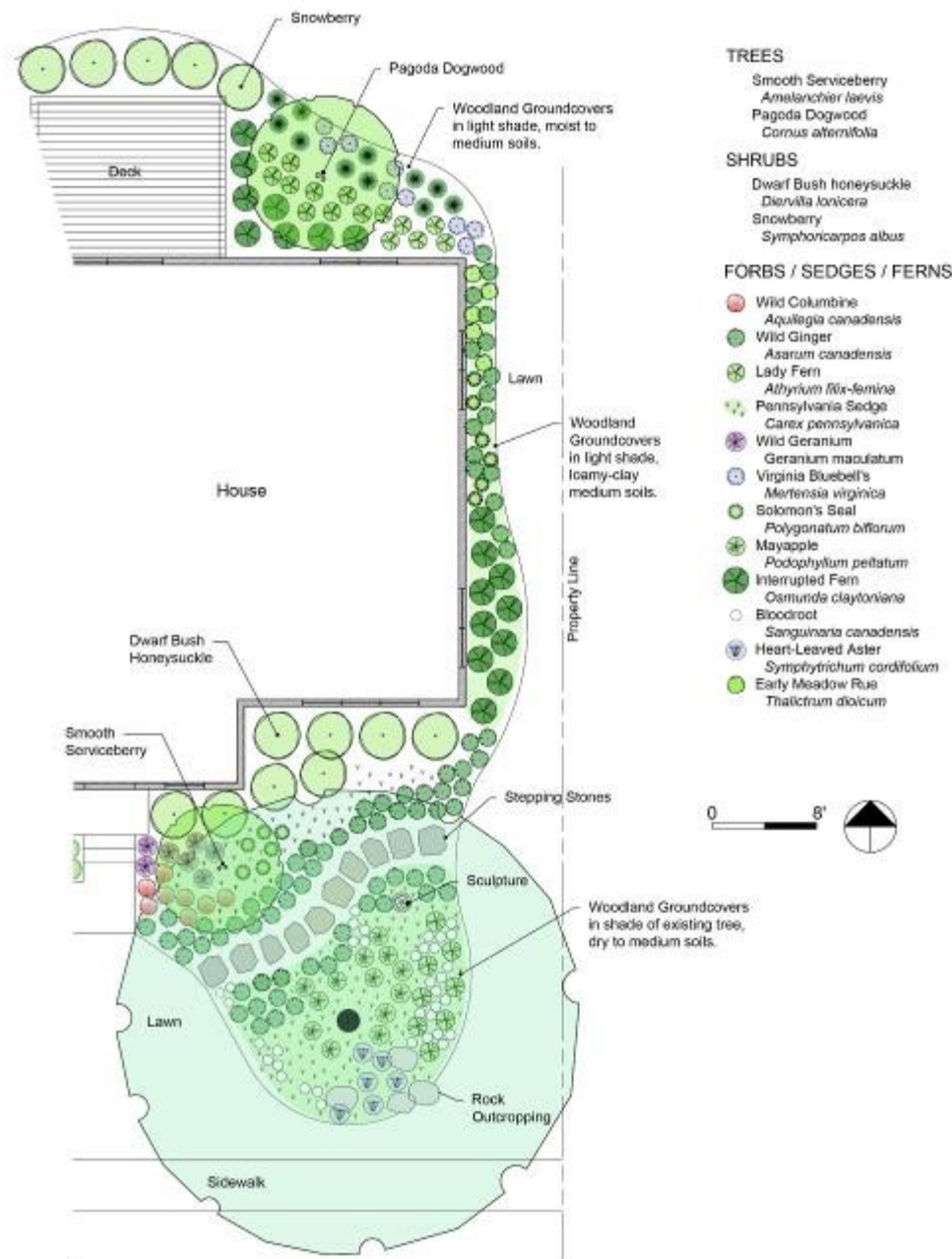


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Native Plant Garden Design Guide  
Wild Ones Residence - Minneapolis, MN  
Woodland Gardens 3 of 6

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Native Plant Garden Design Guide  
Wild Ones Residence - Minneapolis, MN  
Layered Habitat 4 of 6



“The time has come for science to busy itself with the earth itself. The first step is to reconstruct a sample of what we had to start with.”

—Aldo Leopold

# Model Native Garden Design for Twin Cities Area - Page 3



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## Native Plant Garden Design Guide Wild Ones Residence – Minneapolis, MN Design Strategies 5 of 6

These design strategies guided the layout and plant selection illustrated in this plan set. Though your yard will be different, these strategies can help you create an ecological garden adapted to your site.

### MATCH PLANTS TO SITE CONDITIONS

Identify site conditions – light, moisture, soil type, drainage patterns, microclimates, etc. Match the unique qualities of native plant communities (prairie, oak savanna, woodland) with the site conditions and use as a model to develop plant selection.



Native to upland deciduous woods, Pennsylvania sedge is used in this garden as a groundcover in the shade of trees.

### MAKE IT ATTRACTIVE

Add visual appeal to the biodiverse garden by adding order, neatness and familiarity.



A garden frames open space creating an outdoor room.



A low wall or a mowed edge adds neatness to biodiversity. Colorful blooming flowers are familiar and loved.

### CREATE HABITAT

Increase habitat richness by creating a layered landscape of native trees, shrubs, and groundcovers.

A layered landscape provides food and shelter for birds.

Provide pollinators with host plants and continuous blooms from spring to fall.

Let leaves and other plant debris collect on the woodland floor as mulch to build soil and retain moisture, as well as a place where birds can forage and insects can overwinter.

Leave seed heads standing overwinter for the birds. Cut back prairie vegetation in late spring to give overwintering insects time to leave their nests.



### DESIGN FOR EASE OF MANAGEMENT

Bare mulch is an invitation for weeds – develop a dense, continuous groundcover that fills the open space between and under plants.

Consider a plants ability to colonize – match a plants ability to spread by root or seed dispersal with the size and goals of a garden area.

Discourage one plant from taking over a bed by combining plants with similar competitive levels.

Plan for succession – combine short-lived plants that are quick to grow and fill a space, with long-lived plants that are slow to establish and fill in.



A dense groundcover layer discourages weed growth.

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landscape architecture + ecology + gardens

## Native Plant Garden Design Guide Wild Ones Residence – Minneapolis, MN Native Plants 6 of 6

### Prairie/Savanna (Sun to part-sun, Medium to Moist Soils)



### Prairie/Savanna (Sun to part-sun, Medium to Dry Soils)



### Woodland (Shade to Light Shade, Medium to Moist Soils)



### Woodland (Shade to Light Shade, Dry to Medium Soils)



### Understory Trees / Large Shrubs



“You don’t have to remove all non-native plants from your yard, but moving forward, plant native!”  
—Anne Deuring

# Bonus: The Honey Bee Myth



Honey bees are cute and make delicious honey, but did you know they are not native to the U.S.?

North America's native bees, on the other hand, are in trouble—and these insects bear little resemblance to the familiar honey bee. Unlike honey bees, more than 90 percent of our nearly 4,000 native bee species live not with other bees in hives but alone in nests carved into soil, wood or hollow plant stems. Often mistaken for flies, the majority are tiny and do not have queens or produce honey. Without a hive's larvae and food supplies to defend, native bees almost never sting.

**And they are better pollinators than honey bees!**

Get to know some of our native bees on the next page.

“Native bees are two to three times better pollinators than honeybees, are more plentiful than previously thought and not as prone to the headline-catching colony collapse disorder that has decimated honeybee populations.”

Bryan Danforth, Cornell entomology professor

# GROUND-NESTING NATIVE BEES



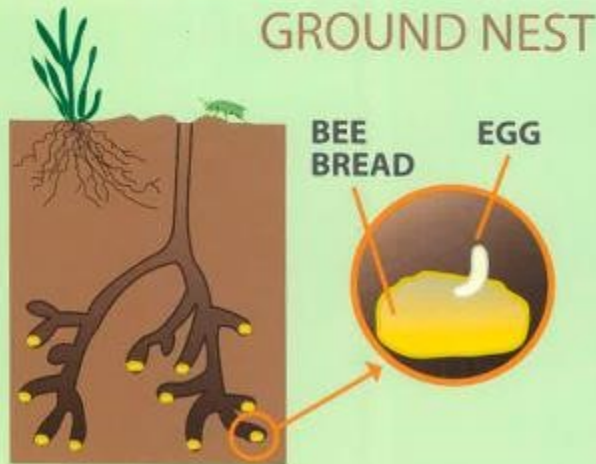
Mining Bees, *Andrena* spp.



Cellophane Bees, *Colletes* spp.



NEST EXCAVATION



Green Sweat Bees  
*Agapostemon* spp.



Sweat Bees  
*Halictus* spp.



Small Sweat Bees, *Lasioglossum* spp.



Digger Bees, *Anthophora* spp.



Long-Horned Bees, *Melissodes* spp.



# CAVITY-NESTING NATIVE BEES



Small Carpenter Bees, *Ceratina* spp.



Mason Bees, *Osmia* spp.



Holes in Wood  
Standing Dead Trees



Cavities in Rocks



Cavities in Plant Stems

## CAVITY NEST

EGG BEE BREAD



Leafcutter Bees, *Megachile* spp.



Yellow-Faced Bees, *Hylaeus* spp.



## Bonus: It's All About the Bugs



“The Pulitzer prize–winning author and renowned ecologist E. O. Wilson (1987) has called insects “the little things that run the world,” in part because of their role in transferring energy from plants to other animals, animals that cannot eat plants directly. In sum, if we want to have members of higher trophic levels in our managed ecosystems, we must also have their primary food source: insects.

It is increasingly clear, as we shall see, that much of our wildlife will not be able to survive unless food, shelter, and nest sites can be found in suburban habitats.”

—Douglas W. Tallamy, *Bringing Nature Home*

# Ecological Restoration: Only One Piece of the Puzzle

## Restoration is not a substitute for conservation.

While we can successfully restore biodiversity, structure, and function to a degraded ecosystem, ecological restoration is not a substitute for conservation, nor should the promise of restoration be used to justify destruction or unsustainable use. In reality, restoration may not succeed in re-establishing the full assemblage of native species or the full extent of the original ecosystem's structure and function.

Restoration is an essential piece of a much larger puzzle. That is why we at St. Luke are also striving to change our consumption habits by reducing our waste, conserving energy, and actively embracing carbon education practices. The Session of St. Luke has set a goal for our congregation to become carbon neutral by 2040. Each year, we will be looking for ways to adapt our practices to better meet our wider restoration and conversation goals. We invite you to join us in this meaningful endeavor!



## And, we're all connected

St. Luke occupies the very northernmost tip of the 50-square-mile Riley Purgatory Bluff Creek Watershed District (RPBCWD) which flows south eventually into the Minnesota River. This means it all begins with St. Luke. What we do matters to the entire rest of the watershed. Any harmful action (chemical use, grass clippings, stormwater runoff, litter, even invasive seeders) will adversely affect every stream, wetland, and lake in its downhill path before it adversely affects the Minnesota River. Alternatively, every helpful action we take on our grounds will help every stream, wetland and lake along that same downhill path.

**We are all uphill from somewhere else. Our actions matter.**

