URBAN LAND ACCESS

BEGINNING FARMERS

Mapping your Soils, History, Climate & Topography

Learn about your site using online mapping tools before you create a site map.

KEY TERMS

Plat Map: Map showing **land owners**. Online maps have info on landowners, like home addresses and property lines. You can buy printed plat maps or use them at libraries. There are online programs also that show land for sale, recent selling prices etc.

Soil Survey: A map showing **soil types** and typical soil characteristics. These are useful for urban sites, but not where bulldozers moved soil or spread fill dirt. The results often are general for a larger area than the actual field.

Growing Zone: Map showing areas with the same expected **winter low temperatures**. This lets you know which perennials and trees will survive winters based on the growing zone location.

Redlining: Racist US government policy that is now illegal in the united States. Neighborhoods with Black, Indigenous, Hispanic, Asian, Immigrant or other people of color were shaded red and denied home loans. Green areas had all-white populations and received the best loan terms. Yellow areas were considered at risk of rising populations of people of color. Wealth disparities from redlining remain today by using other tactics that produce similar results.

SUPPLIES NEEDED

If meeting in-person

- Soil Scorecard Handouts and an outdoor space to assess soils
- Mapping Handouts and computers for mapping

If meeting online:

- Online meeting space (Zoom, Meet, etc.) with breakout rooms
- Links to handouts
- Shared documents for discussions.

How do you do this?

Step 1: **Look at the maps** in this handout and in the **Mapping Links** below. Choose 2 maps to try.

Step 2: As a whole group, learn how to make a few of the maps that are popular with the group members.

- The **Soil Survey** is a good option if everyone has a laptop. People who are on phones can try the LandPKS app (LandPKS.org), since the Web Soil Survey does NOT work on a phone but LandPKS offers soil results from the Web Soil Survey.

Step 3: Create a Site Plan for your farm. See the examples on P. 15.

Mapping Links:

- USDA Web Soil Survey https://websoilsurvey.nrcs.usda.gov/app/
  - NOTE: Soil Survey maps are NOT accurate in areas where bulldozers and construction have occurred and provide a general overview of soil types for that area.
- Google maps https://maps.google.com/
  - History (choose 1 or 2)
    - Redlining Map https://dsl.richmond.edu/panorama/redlining/
    - Land Grab https://www.landgrabu.org/lands
    - Native Lands map https://native-land.ca/
    - Circa 1800 map https://mnfi.anr.msu.edu/resources/vegetation-circa-1800
    - bplant.org/region/1366
  - Weather (choose 1 or 2)
    - USDA Plant hardiness zones https://planthardiness.ars.usda.gov
    - Freeze Date and Growing season Tool - http:/mrcc.purdue.edu/freeze/freezedatetool quick demo for Wayne county
    - https://www.usclimatedata.com/
    - https://www.drought.gov/
    - https://enviroweather.msu.edu/

How do you do this? (cont.)

- If your site is hilly or in a low-lying area or flood zone….
  - Topography Map apps.nationalmap.gov/downloader/
  - Flood Map https://msc.fema.gov/portal/home
- Community
  - USDA Food Access Research Atlas https://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas/
  - Local Zoning
- Create a site plan!

THANK YOU!

- Charles Cross at the Detroit Collaborative Design Center and Jackqueline Lindsey of Imaginative Minds, LLC for sharing the plan for Jackie's original farmsite
- Nell Pratt of My Neighbor's Keeper for sharing her plan for her farmsite

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USDA Web Soil Survey https://websoilsurvey.nrcs.usda.gov/app/

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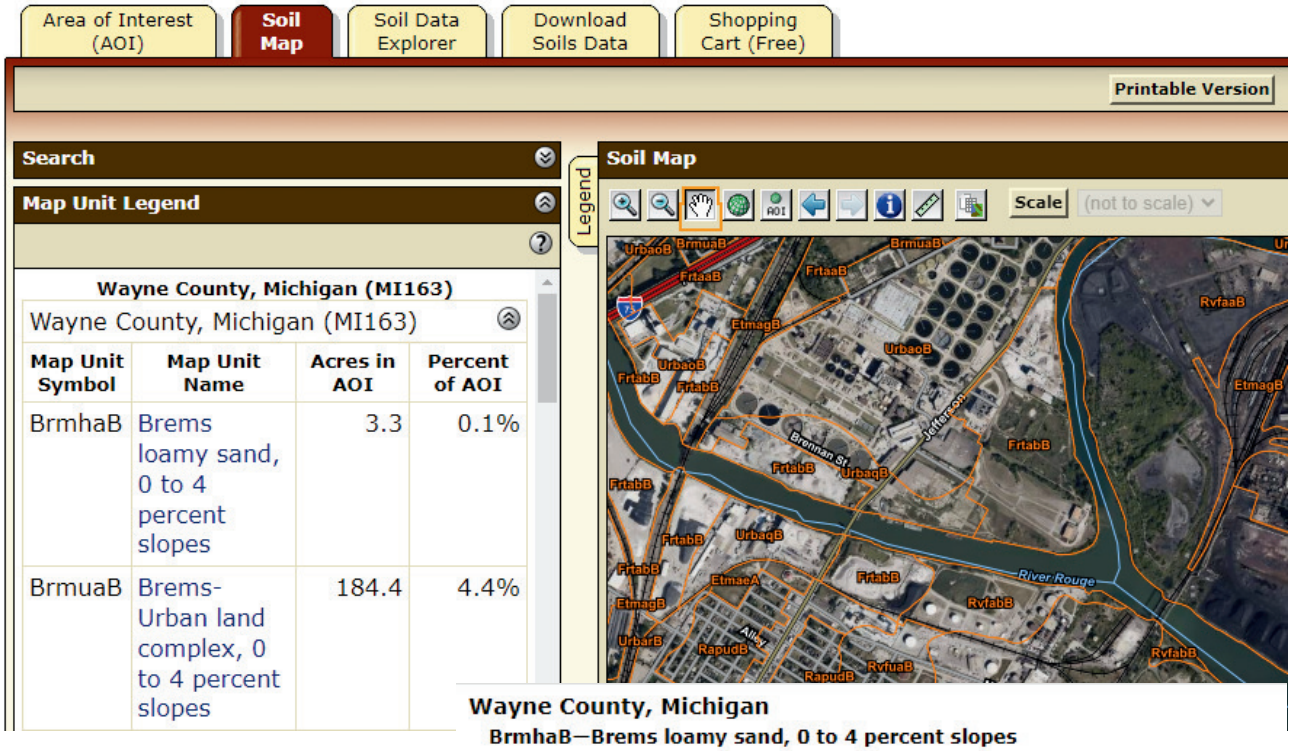

Wayne County, Michigan

BrmhaB—Brems loamy sand, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2whtd
Elevation: 570 to 680 feet
Mean annual precipitation: 28 to 38 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 135 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Brems, human transported surface, and similar soils: 85 percent
Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brems, Human Transported Surface

Setting

Landform: Deltas, drainageways, nearshore zones (relict)
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Sandy human-transported material over sandy glaciolacustrine deposits

Typical profile

^Au - 0 to 9 inches: loamy sand
^Cu - 9 to 12 inches: sand
Ab - 12 to 19 inches: loamy sand
Bwb - 19 to 42 inches: sand
C - 42 to 80 inches: sand

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ACTIVITY 5

THANK YOU to Charles Cross at the Detroit Collaborative Design Center and Jackqueline Lindsey of Imaginative Minds for sharing the plan for Jackie's original farmsite

Google maps https://maps.google.com/

Walk the site and observe plant and other features of the site. Ideally during the growing season, but any time of year can be helpful.

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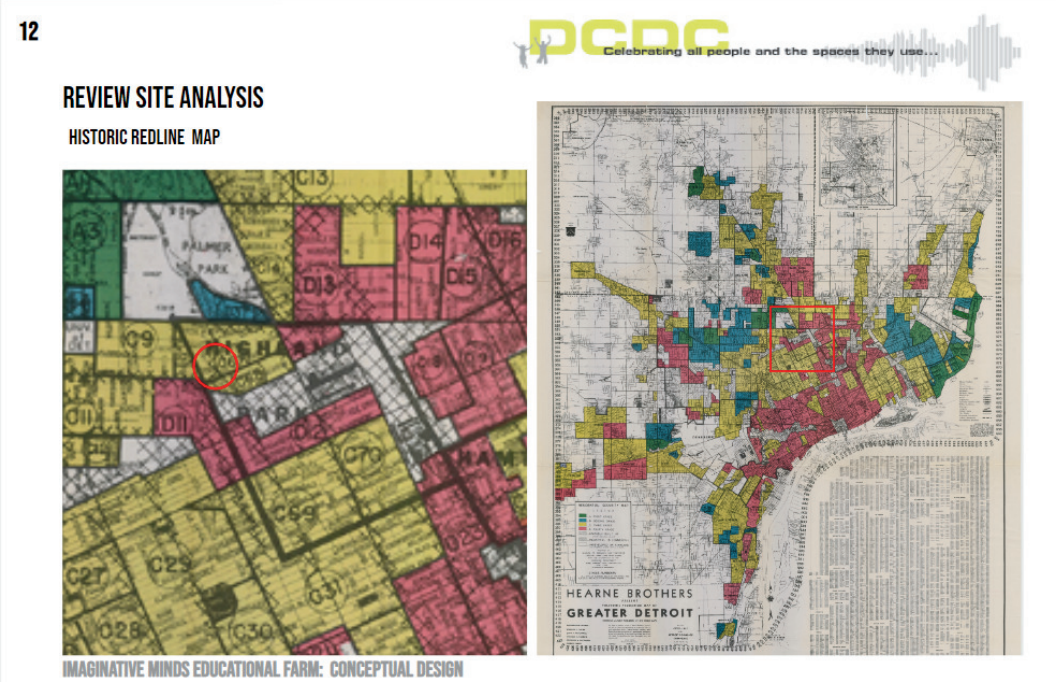
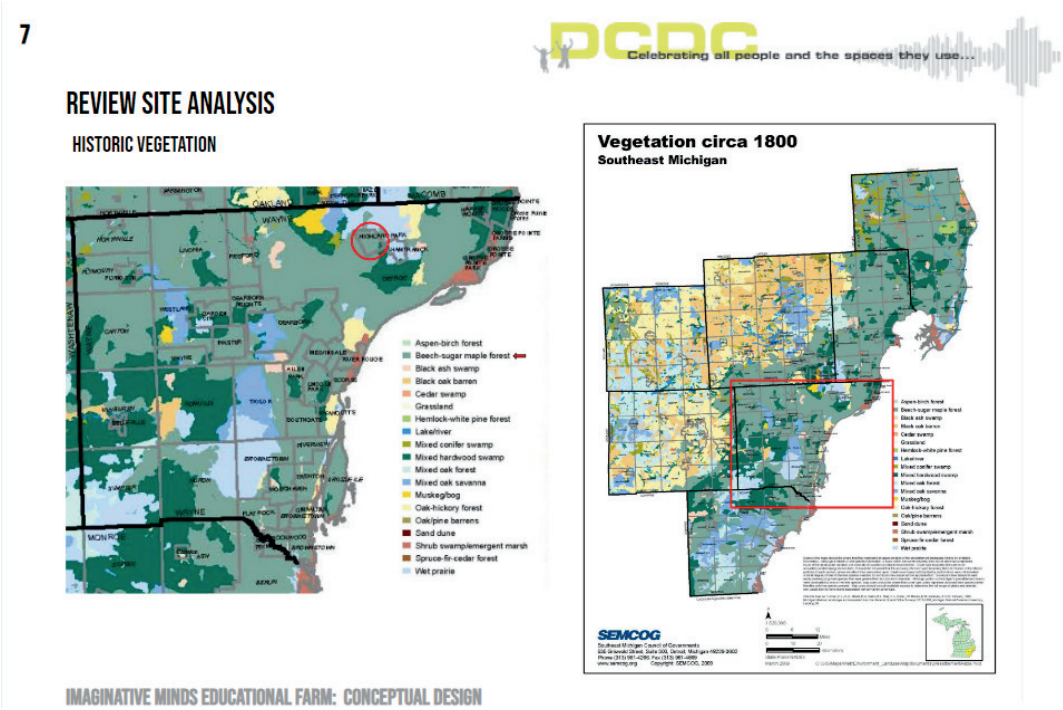
Redlining Map https://dsl.richmond.edu/panorama/redlining/



Circa 1800 map Slide 4: Google maps https://maps.google.com/



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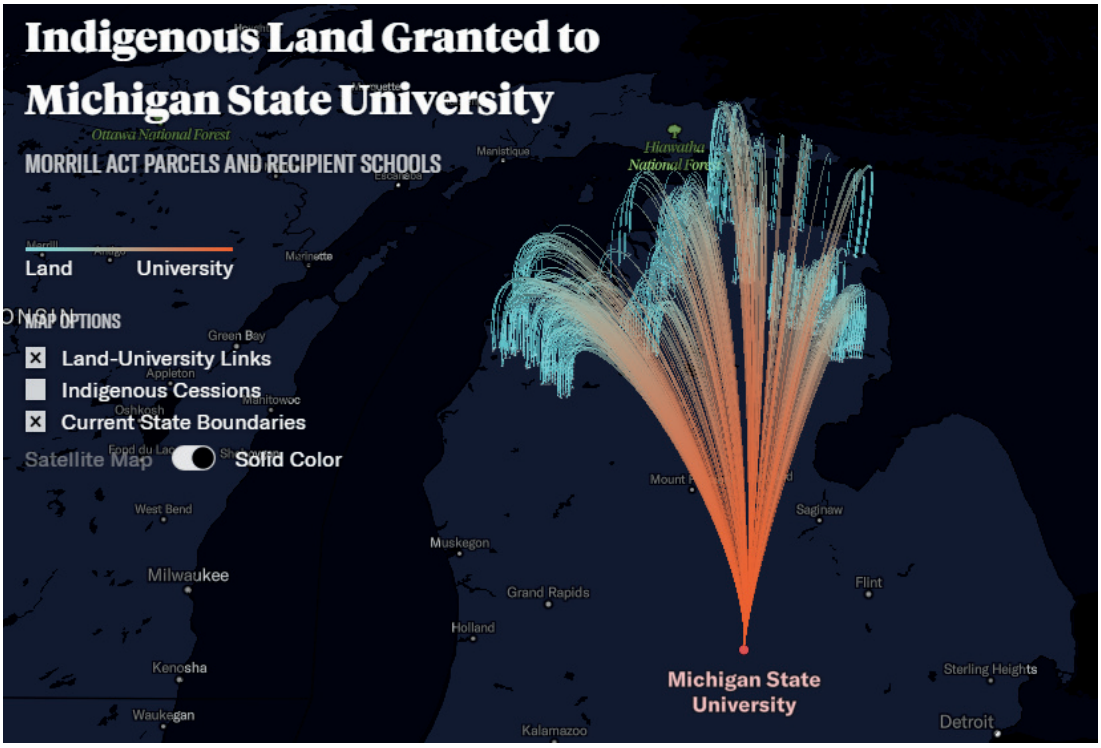
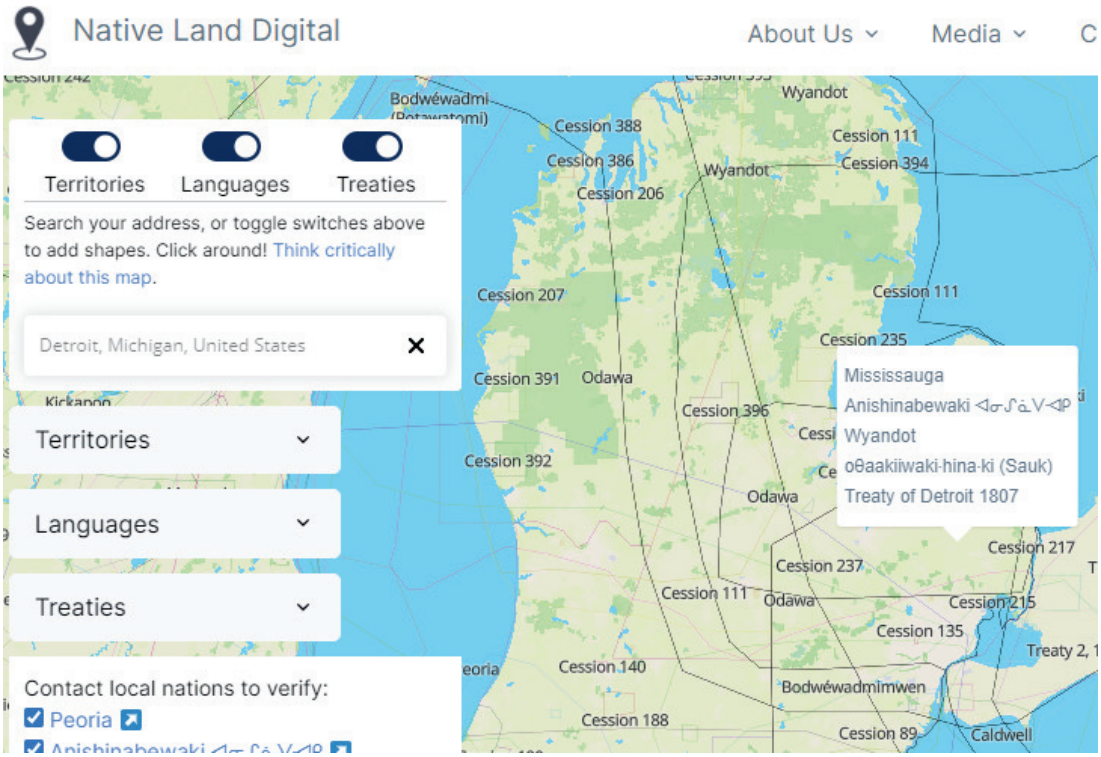
Land Grab https://www.landgrabu.org/lands
Zoom in to see if your land was taken from Indigenous people to fund University endowments



Native Lands map https://native-land.ca/



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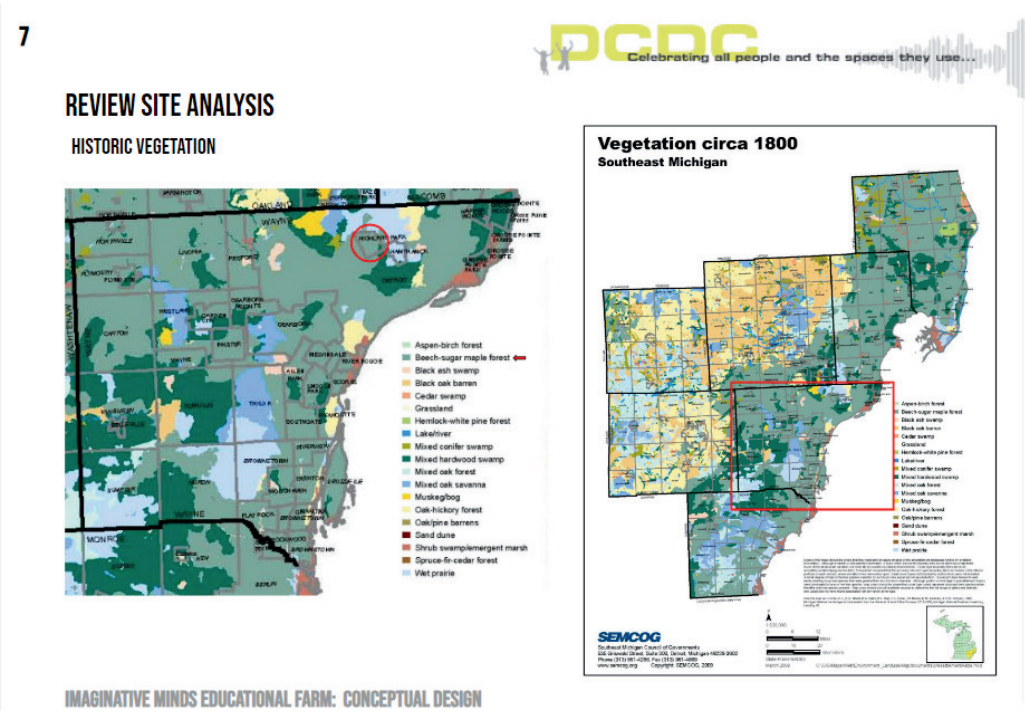


Mesic Southern Forest

All Communities > Terrestrial Class > Forest Group > Mesic Southern Forest

Overview

Mesic southern forest is an American beech- and sugar maple-dominated forest distributed south of the climatic tension zone and found on flat to rolling topography with predominantly loam soils. The natural disturbance regime is characterized by gap-phase dynamics; frequent, small windthrow gaps allow for the regeneration of shade-tolerant, canopy species. Historically, mesic southern forest occurred as a matrix system, dominating vast areas of rolling to level, loamy uplands of the Great Lakes region. These forests were multi-generational, with old-growth conditions lasting many centuries.

Photo by Bradford S. Slaughter

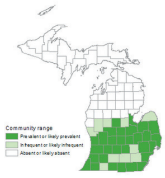
All Mesic Southern Forest Photos

Rank

Global Rank: G2G3 - Rank is uncertain, ranging from imperiled to vulnerable

State Rank: S3 - Vulnerable

County Distribution Map



Ecoregion distribution map (PDF)
County distribution map (PDF)

Landscape Context

Mesic southern forest is found principally on medium- or fine-textured ground moraine, medium- or fine-textured end moraine, and on silty/clayey glacial lakeplains. Sand dunes and sandy lakeplains can support these systems where proximity to the Great Lakes modifies the local climate. The community can also occur on ice-contact topography and coarse-textured end moraines, as well as floodplain terraces in a diversity of landforms. Prevalent topographic positions of this community are gentle to moderate slopes and low, level areas with moderate to good drainage.

Soils

The community occurs on a variety of soil types, but loam is the predominant texture. Soils supporting mesic southern forest include sand, sandy loam, loamy sand, loam, silt loam, silty clay loam, clay loam, and clay. Soils are typically well-drained with high water-holding capacity and high nutrient and soil organism content. High soil fertility is maintained by nutrient inputs from the decomposition of deciduous leaves and coarse woody debris. Where American beech is dominant in the canopy, its leaf litter can have a podzolizing effect on the soil, increasing the acidity. Soil pH ranges widely from slightly acidic to moderately alkaline.

Natural Processes

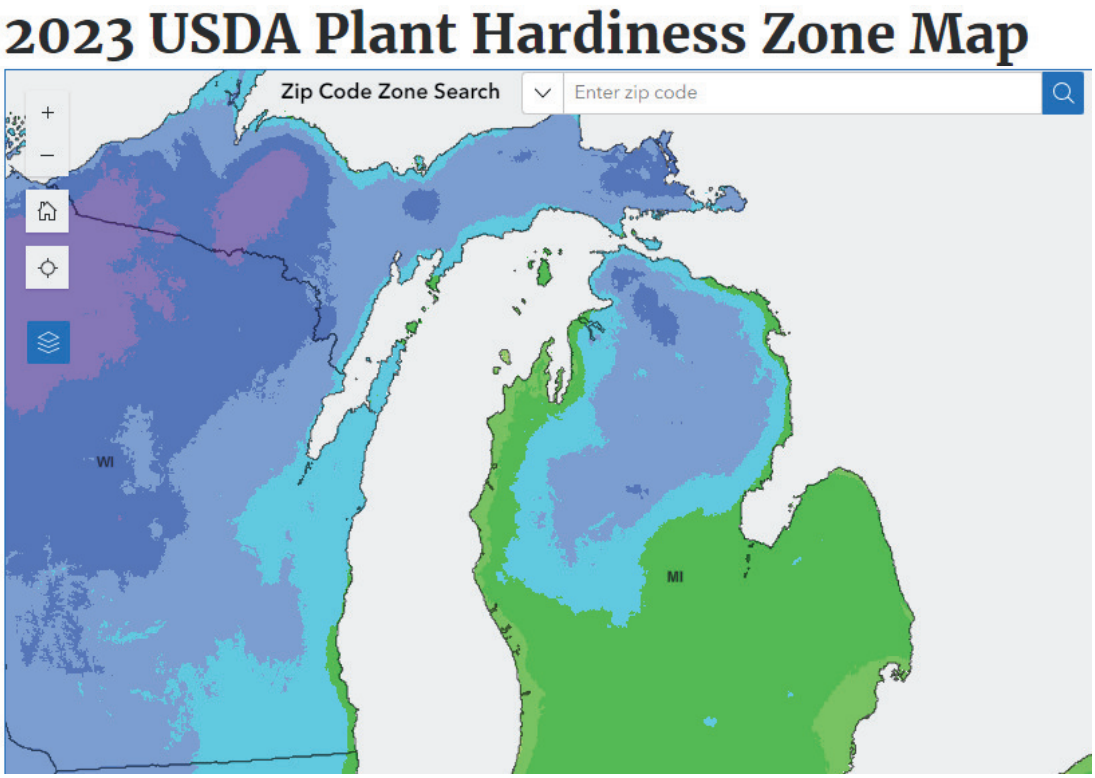
The natural disturbance regime of mesic southern forest is characterized by frequent small-scale wind disturbance or gap-phase dynamics and infrequent, intermediate- to large-scale wind events. Severe low pressure systems generate small-scale canopy gaps, while catastrophic windthrow associated with tornadoes and downbursts can impact large areas. In addition to wind disturbance, glaze or ice storms are a significant source of intermediate disturbance, thinning the canopy and promoting tree regeneration over hundreds to thousands of acres. Approximately 1% of the total area of mesic forest is within recent gap (less than one year old) and the average canopy residence time ranges between 50 and 200 years. Frequent small-scale disturbance events generate a forest mosaic of different-aged patches of gaps of a wide range of sizes; the majority of gaps are between 100 and 400 square meters. Small-scale disturbance events are the primary source of forest turnover. Recruitment of saplings within treefall gaps is typically by shade-tolerant species (primarily sugar maple and American beech) that can exist suppressed beneath the closed canopy for decades. Due to the long interval between large-scale disturbances, mesic southern forests tend to be multi-generational, with old-growth conditions lasting several centuries. Old-growth conditions include a high quantity of dead wood (snags, stumps, and fallen logs) in a diversity of ages, sizes, and stages of decomposition, high basal area, large diameter canopy dominants, multilayered canopies, numerous canopy gaps of diverse age and size, and pit and mound microtopography from continual, frequent windthrow. Historically, where mesic southern forest bordered fire-dependent prairie, savanna, and oak woodland systems, it is likely that low-intensity surface fires occasionally burned portions of the ground layer and helped promote diversity by releasing nutrients and exposing a mineral soil seedbed.

Vegetation

Principal dominants of the canopy are American beech (*Fagus grandifolia*) and sugar maple (*Acer saccharum*), which together often make up over 80% of the canopy composition. Canopy associates include bitternut hickory (*Carya cordiformis*), white ash (*Fraxinus americana*), tulip tree (*Liriodendron tulipifera*), white oak (*Quercus alba*), red oak (*Q. rubra*), and basswood (*Tilia americana*). American elm (*Ulmus americana*) and ironwood (*Ostrya virginiana*) are common in the subcanopy. Sugar maple is the overwhelming dominant within the understory layer and often the ground layer. American beech, elm, and ironwood are also common saplings. Common shrub species include pawpaw (*Asimina triloba*), musclewood (*Carpinus caroliniana*), alternate-leaved dogwood (*Cornus alternifolia*), flowering dogwood (*Cornus florida*), leatherwood (*Dirca palustris*), witch hazel (*Hamamelis virginiana*), spicebush (*Lindera benzoin*), American fly honeysuckle (*Lonicera canadensis*), prickly gooseberry (*Ribes cynosbati*), red elderberry (*Sambucus racemosa*), and maple-leaved arrow-wood (*Viburnum acerifolium*). Common vines include Virginia creeper (*Parthenocissus quinquefolia*), green briar (*Smilax* spp.), and poison ivy (*Toxicodendron radicans*). The ground flora is characterized by a prevalence of spring ephemerals, high diversity, and high degree of compositional similarity across its range. Common ground flora include spring beauty (*Claytonia virginica*), cut-leaved toothwort (*Cardamine concatenata*), squirrel corn (*Dicentra canadensis*), Dutchman's breeches (*D. cucullaria*), white trout lily (*Erythronium albidum*), yellow trout lily (*E. americanum*), false rue anemone (*Enemion biternatum*), doll's eyes (*Actaea pachypoda*), jack-in-the-pulpit (*Arisaema triphyllum*), wild ginger (*Asarum canadense*), blue cohosh (*Caulophyllum thalictroides*), wild geranium (*Geranium maculatum*), sharp-lobed hepatica (*Hepatica acutiloba*), Virginia waterleaf (*Hydrophyllum virginianum*), may apple (*Podophyllum peltatum*), bloodroot (*Sanguinaria canadensis*), common trillium (*Trillium grandiflorum*), large-flowered bellwort (*Uvularia grandiflora*), maidenhair fern (*Adiantum pedatum*), wild leek (*Allium tricoccum*), sedges (*Carex albursina* and *C. plantaginea*), enchanter's nightshade (*Circaea canadensis*), beech drops (*Epifagus virginiana*), and running strawberry bush (*Euonymus obovata*).

For information about plant species, visit the Michigan Flora website.

USDA Plant hardiness zones https://planthardiness.ars.usda.gov



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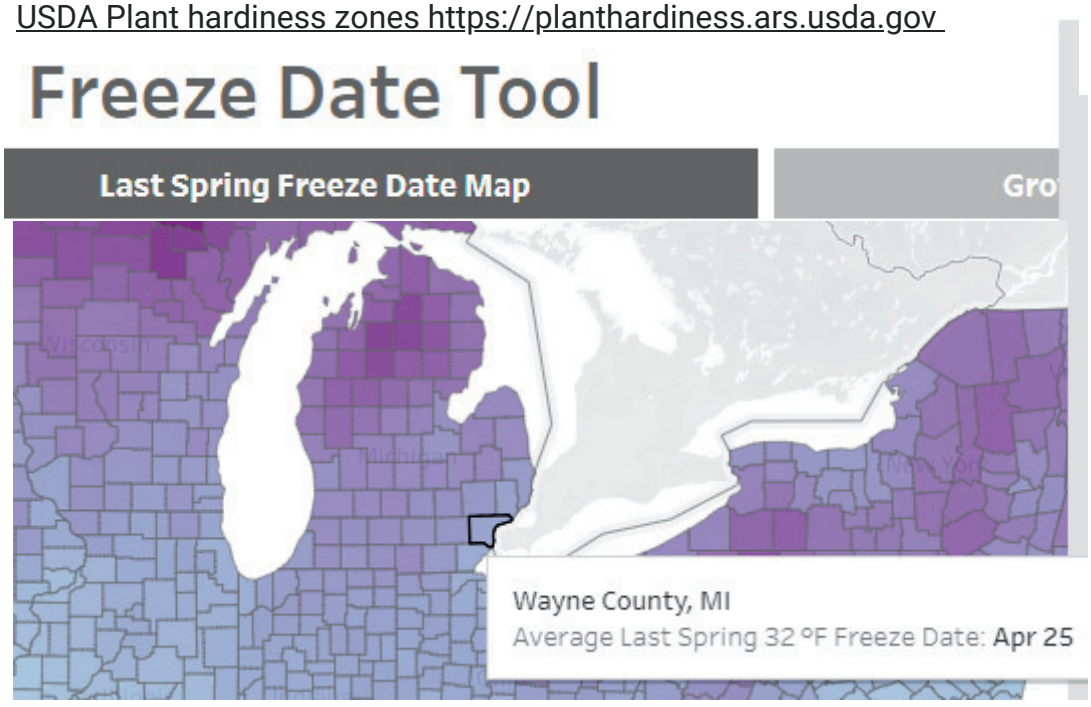
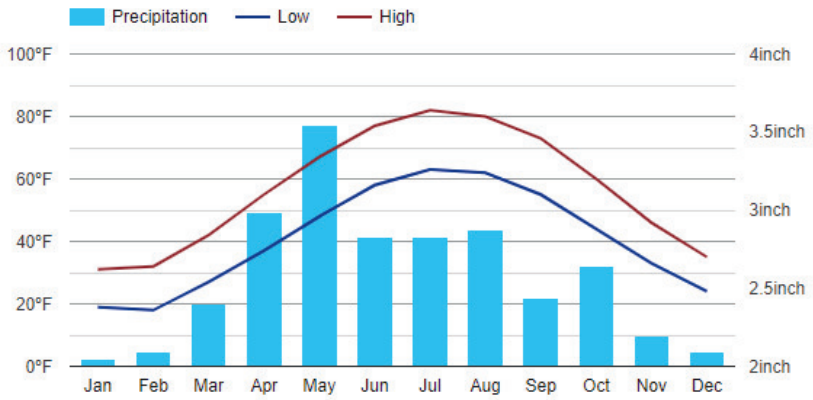
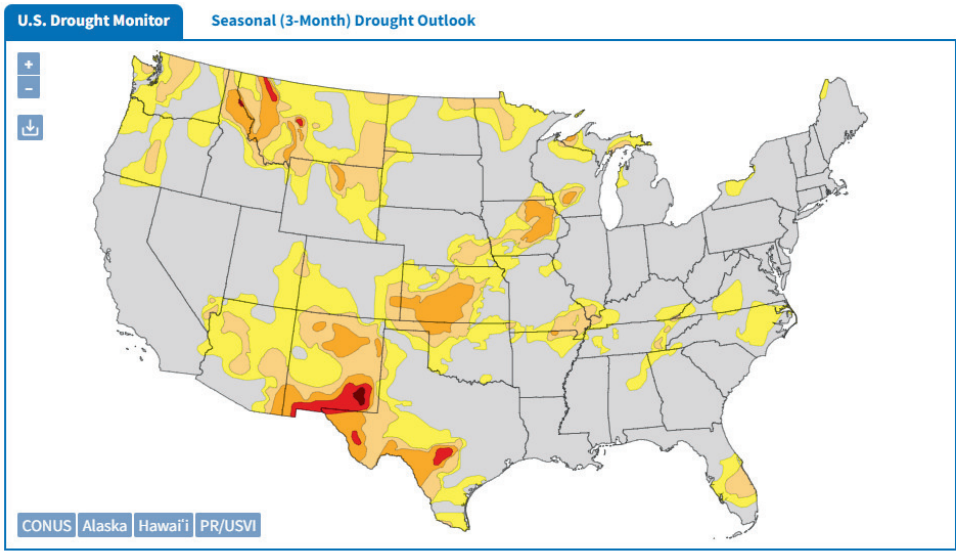


https://www.usclimatedata.com/

	Jul	Aug	Sep	Oct	Nov	Dec
Average high in °F	82	80	73	60	46	35
Average low in °F	63	62	55	44	33	24
Days with precipitation	9	8	9	9	12	13



https://www.drought.gov/



The U.S. Drought Monitor depicts the location and intensity of drought across the country using 5 classifications: Abnormally Dry (D0), showing areas that may be going into or are coming out of drought, and four levels of drought (D1–D4).

The U.S. Drought Monitor is a joint effort of the National Drought Mitigation Center, U.S. Department of Agriculture, and National Oceanic and Atmospheric Administration.

Source(s): NDMC, NOAA, USDA

Legend

U.S. Drought Monitor Category	% of U.S.
D0 - Abnormally Dry	16.8%
D1 - Moderate Drought	8.4%
D2 - Severe Drought	3.6%
D3 - Extreme Drought	0.6%
D4 - Exceptional Drought	0.1%
Total Area in Drought (D1–D4)	12.6%

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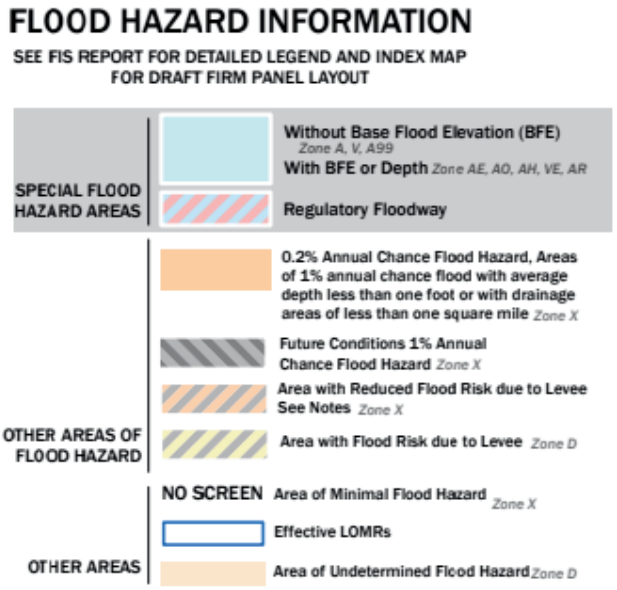
Topography Map This shows hills. Each thin brown line is a 5 or 10ft. difference in height.
apps.nationalmap.gov/downloader/

Flood Map Farms in flood zones are at risk for food safety issues and financial losses due to crop losses or damage to infrastructure. Crop insurance should still be available in flood zones, but loans for infrastructure, such as a Wash Pack Facility, may require expensive flood insurance.
https://msc.fema.gov/portal/home



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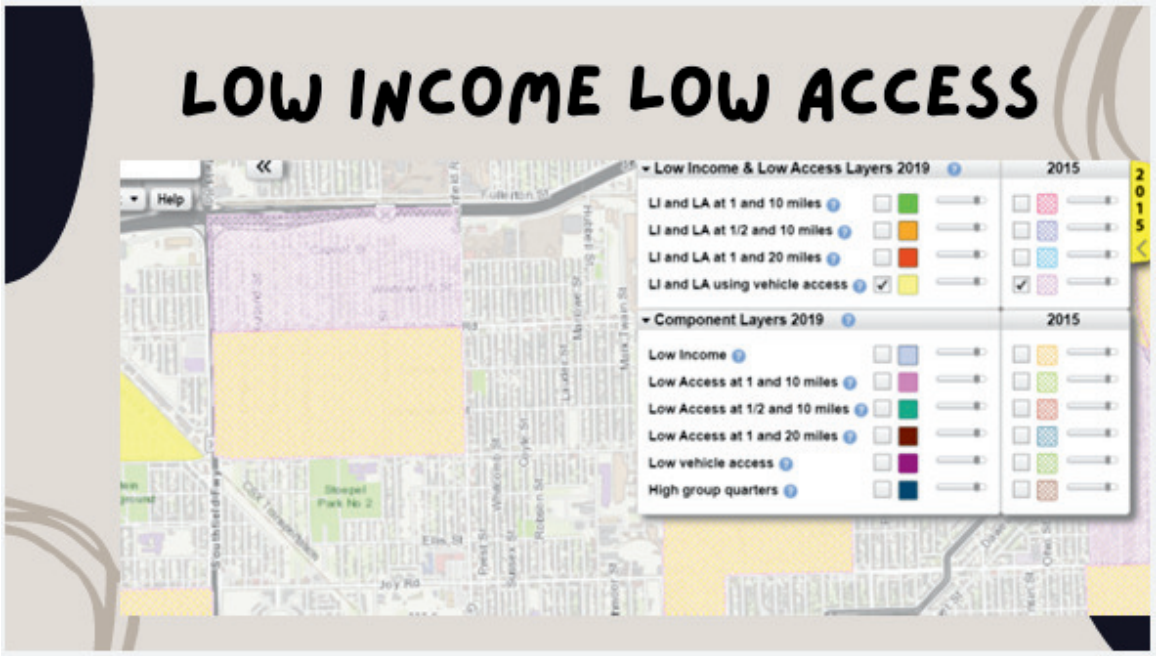
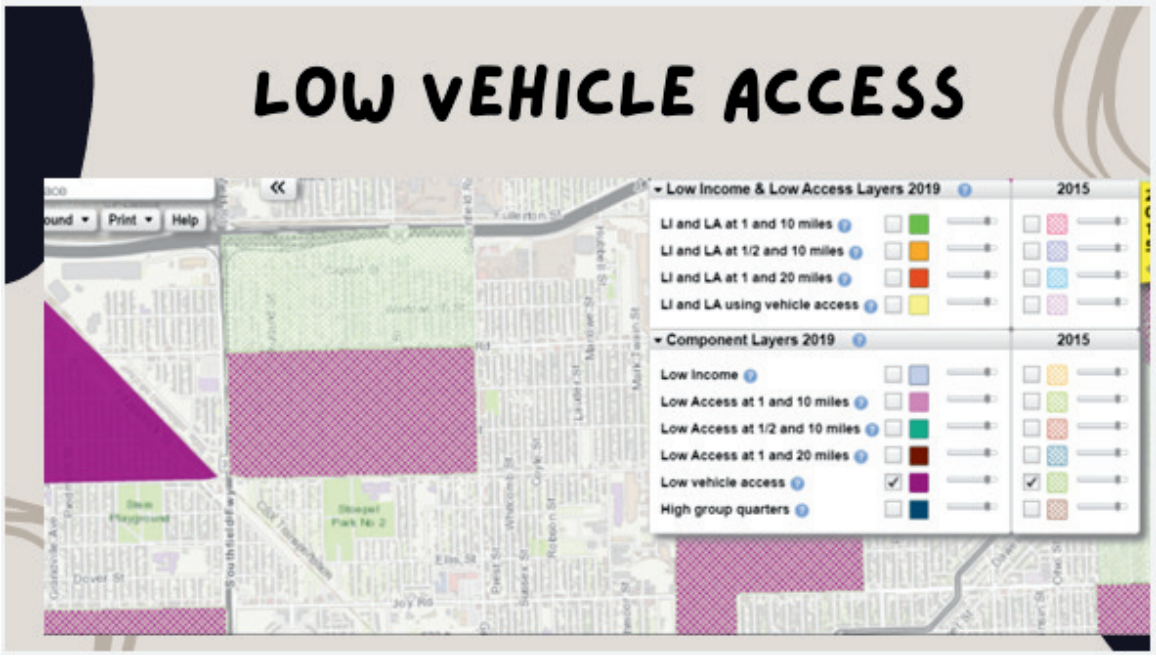
THANK YOU to Nell Pratt of My Neighbor's Keeper for sharing her plan for her farmsite

USDA Food Access Research Atlas
https://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas/





Land Access

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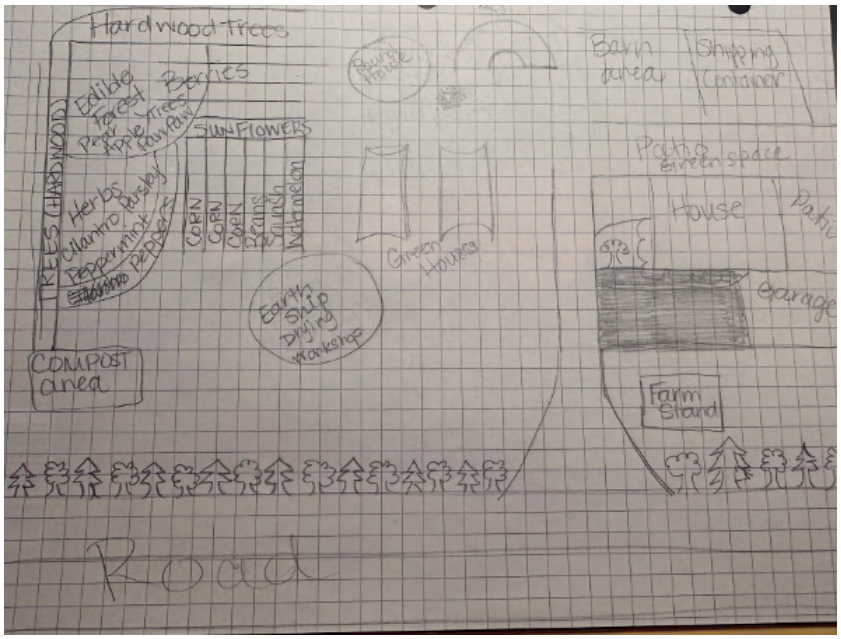
ACTIVITY 5

THANK YOU to Marie Schuyler Dreaver, Bee Queener and Angela Lugo-Thomas for sharing their site plans

Create a site plan!



Liberty Farm/Boricua Garden

Highland Park, MI

Will possibly farm 1.5 acres

Create a site map

Step 1: **Choose a google map, soil survey, an other land map or draw a map** of your farm site. If you don't have a farm site, you can use a possible site, your yard or make up a site.

Step 2: **Add buildings, hoophouses, fields, water lines, conservation projects** or other features of your current or future site. Get creative! These can be beautiful and practical.

Step 3: **Share your map with the group**. Ask them questions and get input on your plan.

Step 4: **Share your map with a farmer, friend, family member or farm ally.** Ask if they have any questions or suggestions.

Step 5. **Consider the map as a tool to plan your farm business.** Use it when deciding crops to grow, expansions of production, crop rotations, or locations for perennial crops or windbreaks.

What does this information mean for my farm?

Think about what you learned from mapping your farmsite. Can you answer 5 of the questions below?

- What soil type(s) are at your site? What did you learn about those soils from the soil survey? Does seeing the soil map help you in making your site plan?
- What did you learn about your neighborhood and community?
- What Native peoples are indigenous to your land?
- What ecosystem do you think would cover your site if it had not been disturbed by colonization, farming and other factors?
- What did you learn about your ecology, climate or topography?
- What is your growing zone? What does that mean for your production?
- What last frost date would you expect in spring? Or a first frost in the fall?
- Are you in a flood zone? What practices can you include to reduce this risk if yes?
- Is your region in a drought right now? What can you do to reduce this problem for your crops?
- Do people in your community have access to full service grocery stores or transportation to get to a grocery store in your area? Can you farm improve this situation?
- What else did you learn from these maps?

Share your **draft site plan** with a farmer, friend, family member, ally or someone in your land access group. Ask them questions. Do they have any suggestions for your site plan?