DEAD RIVER COMMUNITY FOREST

GATHERING SPACE & EARLY SUCCESSIONAL FOREST RESTORATION

Prepared for the Upper Peninsula Land Conservancy - Dead River Community Forest
Bayous Parcel - Brickyard Road, Marquette County
Prepared by Grace Carbeck
August 2024

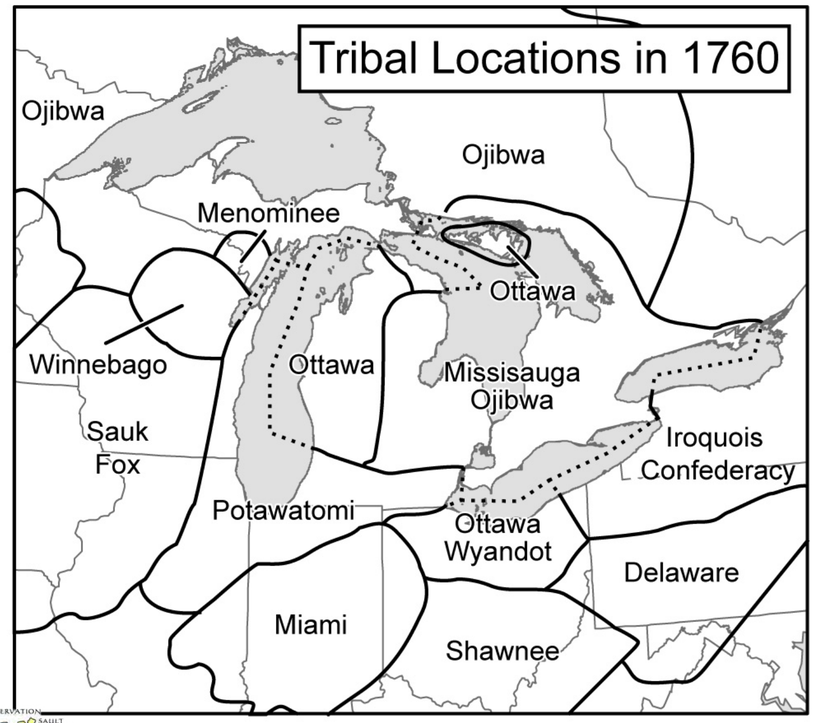
THE DEAD RIVER: PRESETTLEMENT

THE PEOPLE

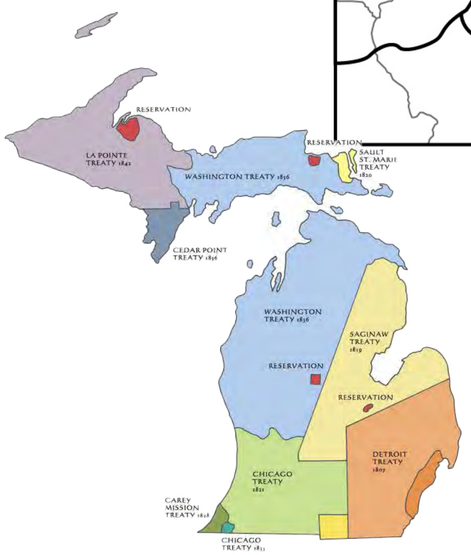
Evidence exists of both the Ojibwe and the Noquet having lived and used the land the Dead River runs through.

Jiibay-Manidoo-Ziibi: an early Ojibwe name for the Dead River meaning the river of spirits or the river of ghosts.

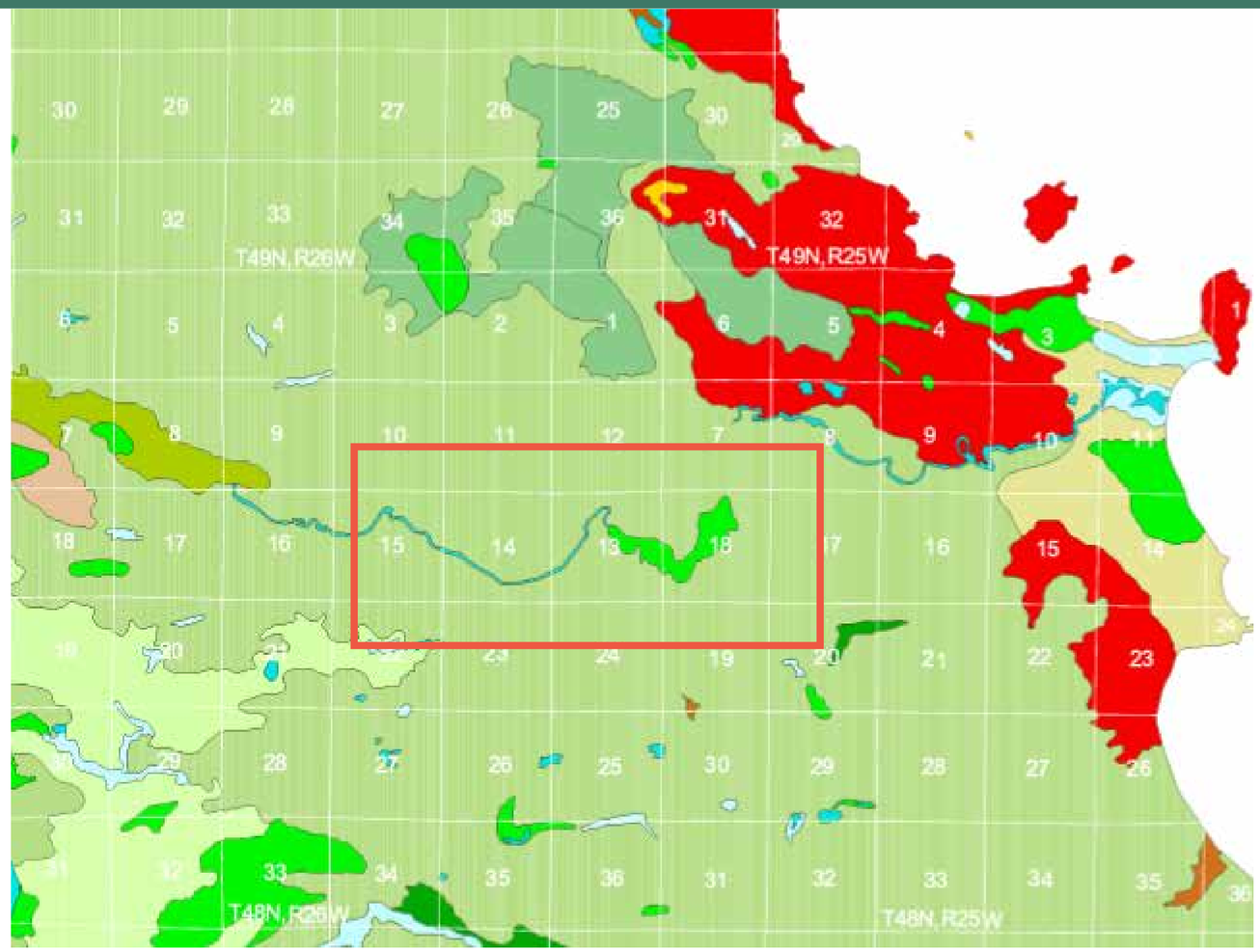
Noquemenon-Ziibi: or river of the berry patch of the Noque people



Map of approximate tribal locations in the Great Lakes Region in 1760.



Map of Michigan Treaties.



THE LAND

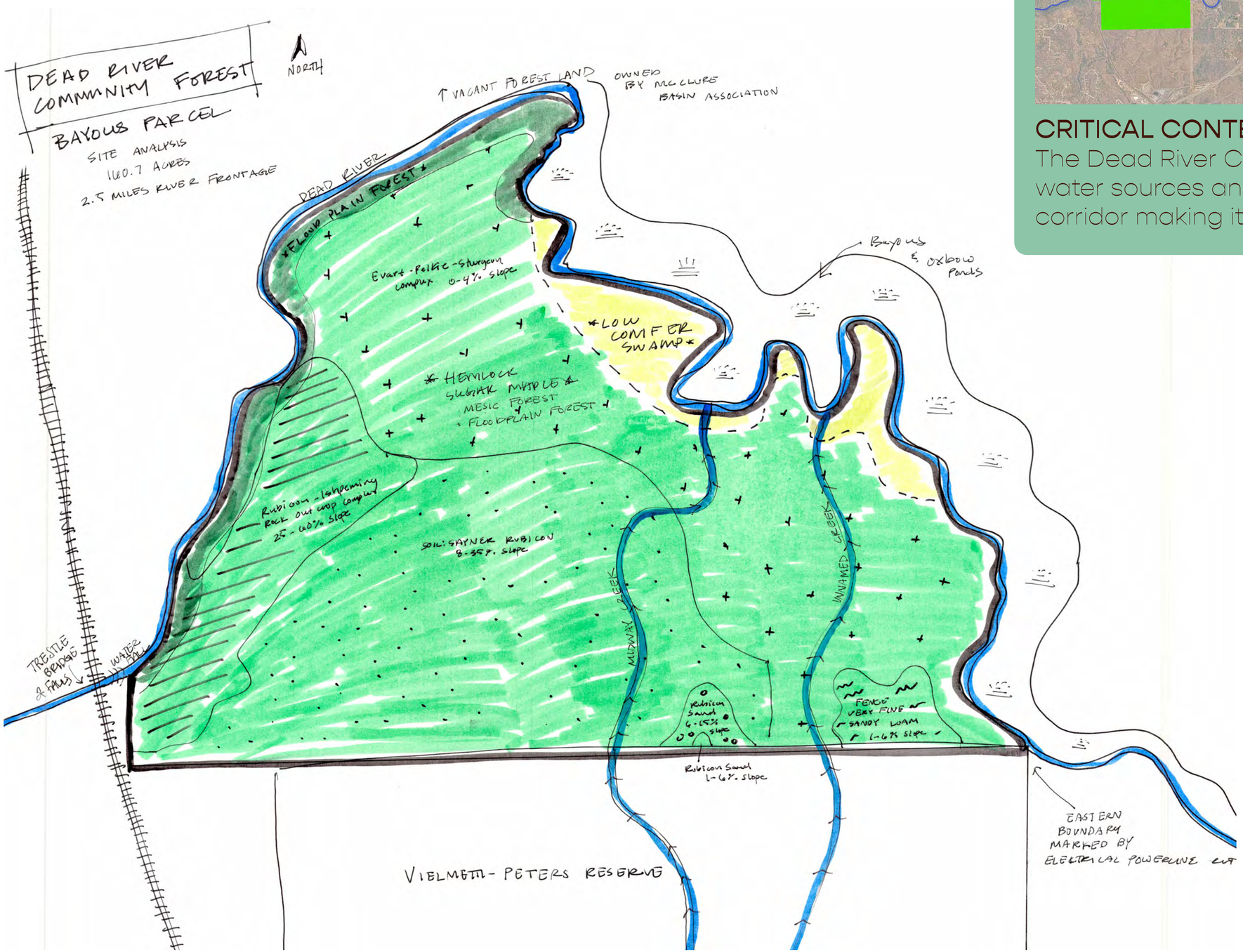
According to the circa-1800 land survey, the Bayous parcel was primarily part of the Beech-Sugar Maple-Hemlock matrix with patches of Mixed Conifer Swamp. The land has been logged over several times and is reaching maturity again.

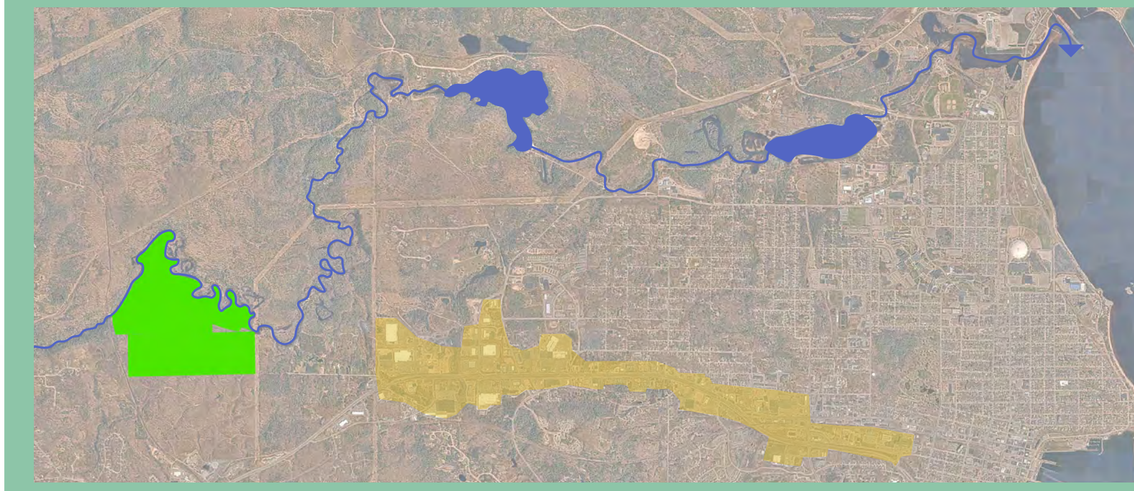
Legend

- ASPEN-BIRCH FOREST
- BEECH-SUGAR MAPLE-HEMLOCK FOREST
- BLACK ASH SWAMP
- CEDAR SWAMP
- EXPOSED BEDROCK
- HEMLOCK-WHITE PINE FOREST
- HEMLOCK-YELLOW BIRCH FOREST
- JACK PINE-RED PINE FOREST
- LAKE/RIVER
- MIXED CONIFER SWAMP
- MIXED HARDWOOD SWAMP
- MIXED PINE-OAK FOREST
- MUSKEG/BOG
- SAND DUNE
- SHRUB SWAMP/EMERGENT MARSH
- SPRUCE-FIR-CEDAR FOREST
- SUGAR MAPLE-BASSWOOD FOREST
- SUGAR MAPLE-YELLOW BIRCH FOREST
- WHITE PINE-RED PINE FOREST

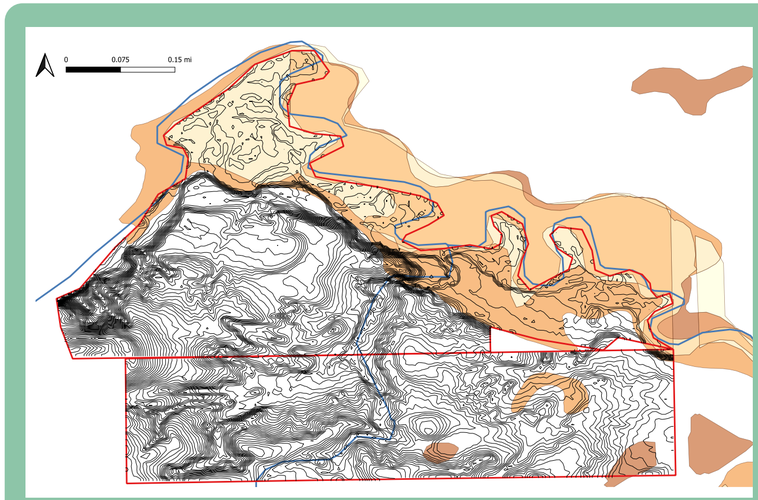
DEAD RIVER IN CONTEXT

DESIGN SITE: The design site is located within the larger Dead River Community Forest property. The Dead River runs through the forest and is surrounded by wetlands along the northeast border.





CRITICAL CONTEXT:
The Dead River Community Forest is located near both drink water sources and an expanding commercial development corridor making it a key area to preserve



WETLANDS & TOPOGRAPHY: The design site is located within the hillier southeast corner of the property. Wetlands border the northeast edge following the northern river bank.

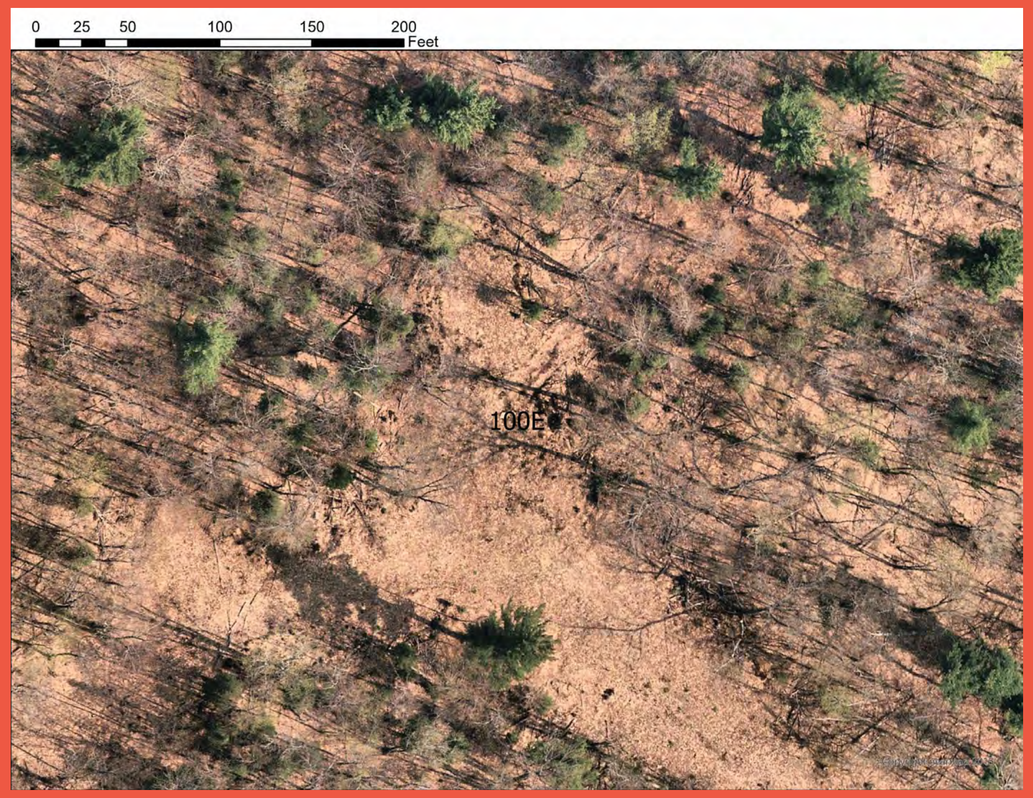
DESIGN GOALS & INTENT

PROJECT GOALS:

- Create habitat for target bird species based on list compiled by crossing American Bird Conservancy target species and species seen on site in the Dead River.
- Implement climate change mitigation strategies in site development through thinking about soil stabilization and increase carbon capture via fast growing trees.
- Maintain and create a diverse structural profile by tending to older trees and introducing shrubs and small trees to generate an understory.
- Plan to plant appropriate tree species including masting trees, fruiting trees, and others that will thrive on site.
- Introduce coarse woody debris to the area while simlataneously opening up the canopy to allow for more light in the clearing.
- Maintain and accentuate the forest opening as a feature of the Dead River Community Forest.
- Increase accessibility by creating a gathering space and directing pedestrian traffic through the area.
- Create and maintain edges along the clearing.

DESIGN INTENT:

THIS PROJECT AIMS TO RESTORE AN AREA OF THE DEAD RIVER COMMUNITY FOREST THAT HAS BEEN DISTURBED BY PAST LOGGING OPERATIONS. THE GOAL IS TO PROVIDE AND ACCENTUATE POSSIBLE BIRD HABITAT IN THE SOUTHWEST CORNER OF THE PROPERTY.



BIRDS OF THE DEAD RIVER

RESTORATION EFFORTS AIM TO ATTRACT AND PROVIDE FOR BIRDS ACROSS FOREST AGE CLASSES

YOUNG FOREST

INTERMEDIATE FOREST

MATURE FOREST

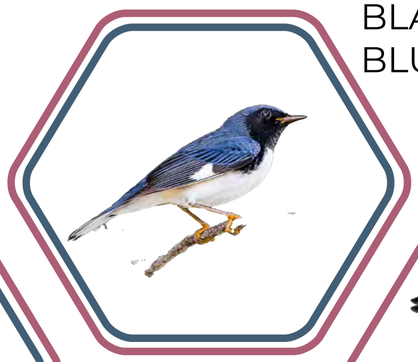
CHESTNUT-SIDED WARBLER

YELLOW-BELLIED SAPSUCKER

CANADA WARBLER

BLACKBURNIAN WARBLER

OVENBIRD



BLACK-THROATED BLUE WARBLER

BROAD-WINGED HAWK

AMERICAN WOODCOCK

BROWN THRASHER

WOOD THRUSH

LEAST FLYCATCHER

EASTERN WHIP-POOR-WILL

BLACK-THROATED GREEN WARBLER

NORTHERN GOSHAWK

Addressing Target Species Habitat Needs:

Applied management strategies to address the diverse range of local bird needs

0 200 400 800 1,200 1,600 Feet

Maintain Matrix of mature soft & hardwood forest

Maintain forested riparian buffers

Create coarse woody debris

Soften edges of disturbed area by feathering edges of mature forest

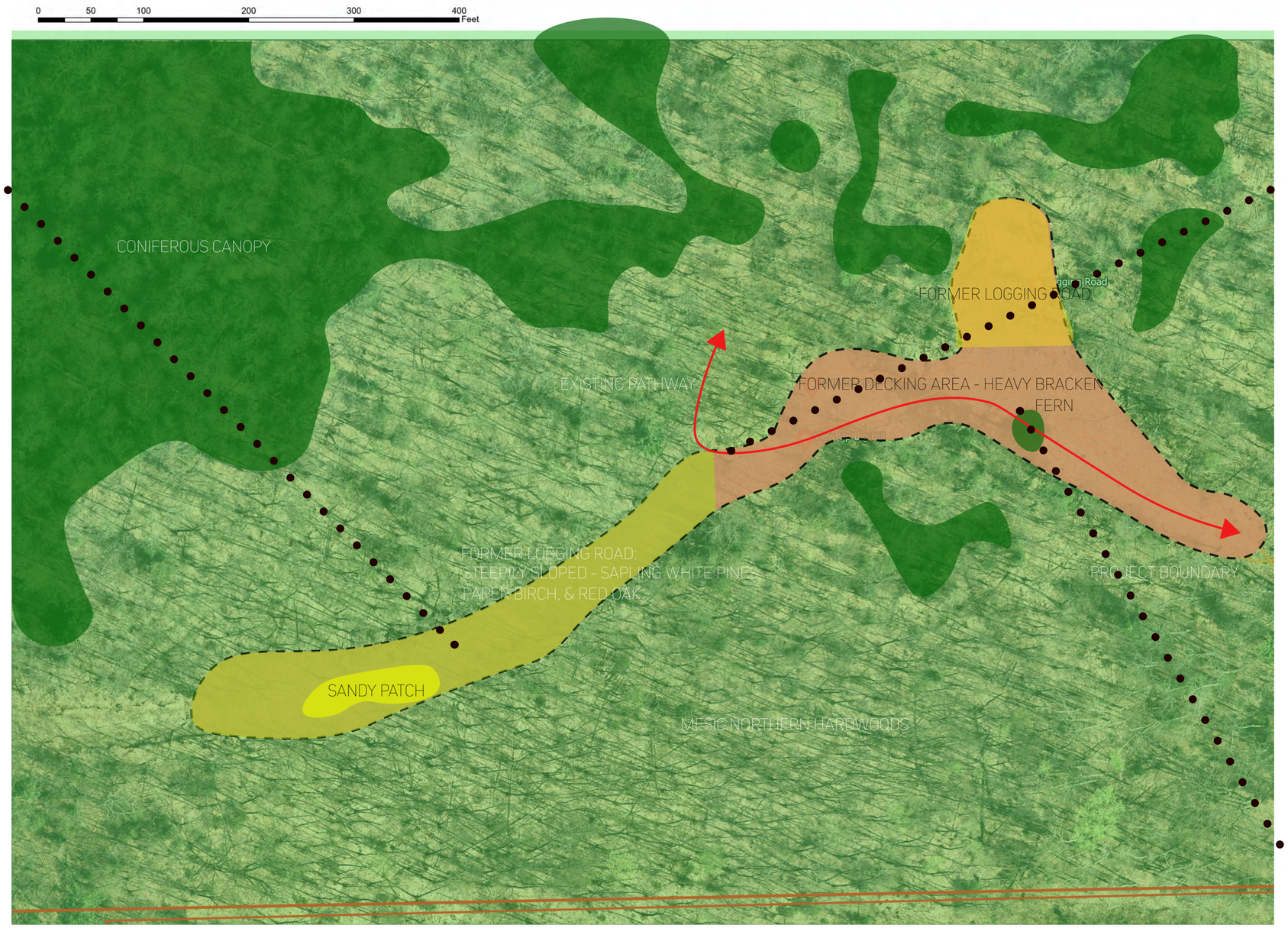
Create early sucessional forest complex

Consider preserving stand of Alders to age to maturity

Maintain young Alder stands.

EXISTING CONDITIONS

FORMER LOGGING ROAD:
- STEEP SLOPE NEEDS EROSION CONTROL
- SAPLING WHITE PINE, PAPER BIRCH, & RED OAK
- SANDY PATCH WASHING OUT

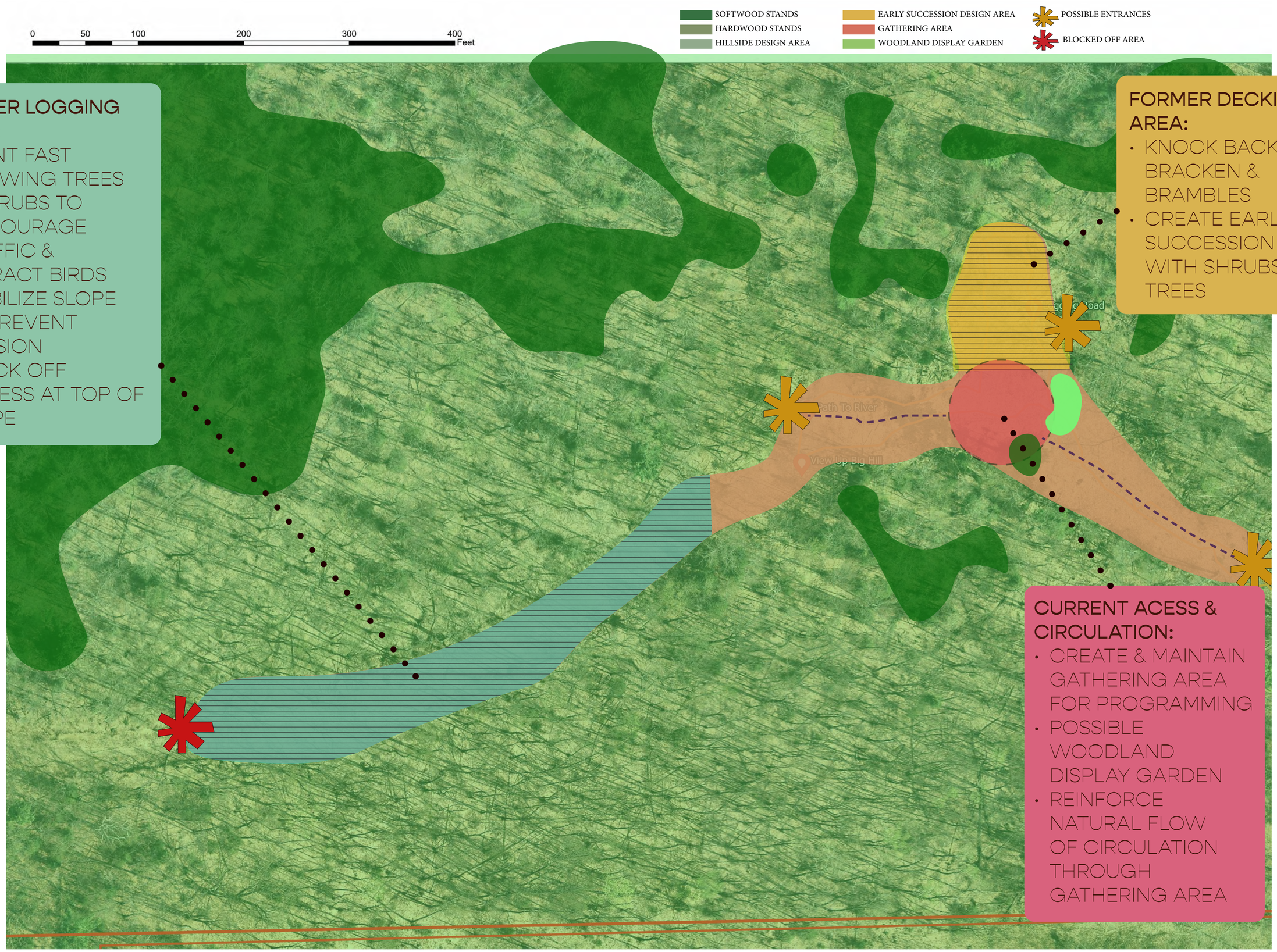


CURRENT ACESS & CIRCULATION:
- NATURAL ENTRY WAY FROM VPR TO OPENING
- CONSIDER USING CRUDE CUT PATHWAY TO RIVER

DEAD RIVER GATHERING & EARLY FOREST PLOTS:
The design area is located in the southwest corner of the Dead River Community Forest Preserve. The area was formerly used for logging operations on the property for access and staging. More recently, it has been used for hunting and recreation purposes. Evidence of past activity exists in the form of a disturbed forest clearing full of Bracken Fern and brambles. There is much potential in the clearing: the opening is light filled, the organic shape of the clearing naturally showcases some of the exisiting large trees, and a good space to develop the early succesional forest habitat many birds require.

FORMER DECKING AREA:
- THICK COVER OF BRACKEN FERN & RASPBERRY BRAMBLES
- SURROUNDED BY MIX OF CONIFEROUS & DECIDUOUS CANOPY
- GOOD SUNLIGHT

CONCEPTUAL DESIGN: OVERVIEW OF USE



FORMER LOGGING ROAD:

- PLANT FAST GROWING TREES & SHRUBS TO DISCOURAGE TRAFFIC & ATTRACT BIRDS
- STABILIZE SLOPE TO PREVENT EROSION
- BLOCK OFF ACCESS AT TOP OF SLOPE

FORMER DECKING AREA:

- KNOCK BACK BRACKEN & BRAMBLES
- CREATE EARLY SUCCESSION PLOT WITH SHRUBS & TREES

CURRENT ACESS & CIRCULATION:

- CREATE & MAINTAIN GATHERING AREA FOR PROGRAMMING
- POSSIBLE WOODLAND DISPLAY GARDEN
- REINFORCE NATURAL FLOW OF CIRCULATION THROUGH GATHERING AREA

PLANT PALETTE & STRUCTURAL INDEX

GRASS LAYER

BOTTLE BRUSH GRASS

LONG-STALKED SEDGE

CANADA WILD RYE

DROOPING WOODLAND SEDGE

SHRUB LAYER

SERVICEBERRY

RED OSIER DOGWOOD

THIMBLEBERRY

MAPLE LEAF VIBURNUM

LOWBUSH BLUEBERRY

NEW JERSEY TEA

ELDERBERRY

TREE LAYER

MOUNTAIN ASH

PAPER BIRCH

YELLOW BIRCH

STRIPED MAPLE

BALSAM FIR

RED OAK

WITCH-HAZEL

WILD BLACK CHERRY

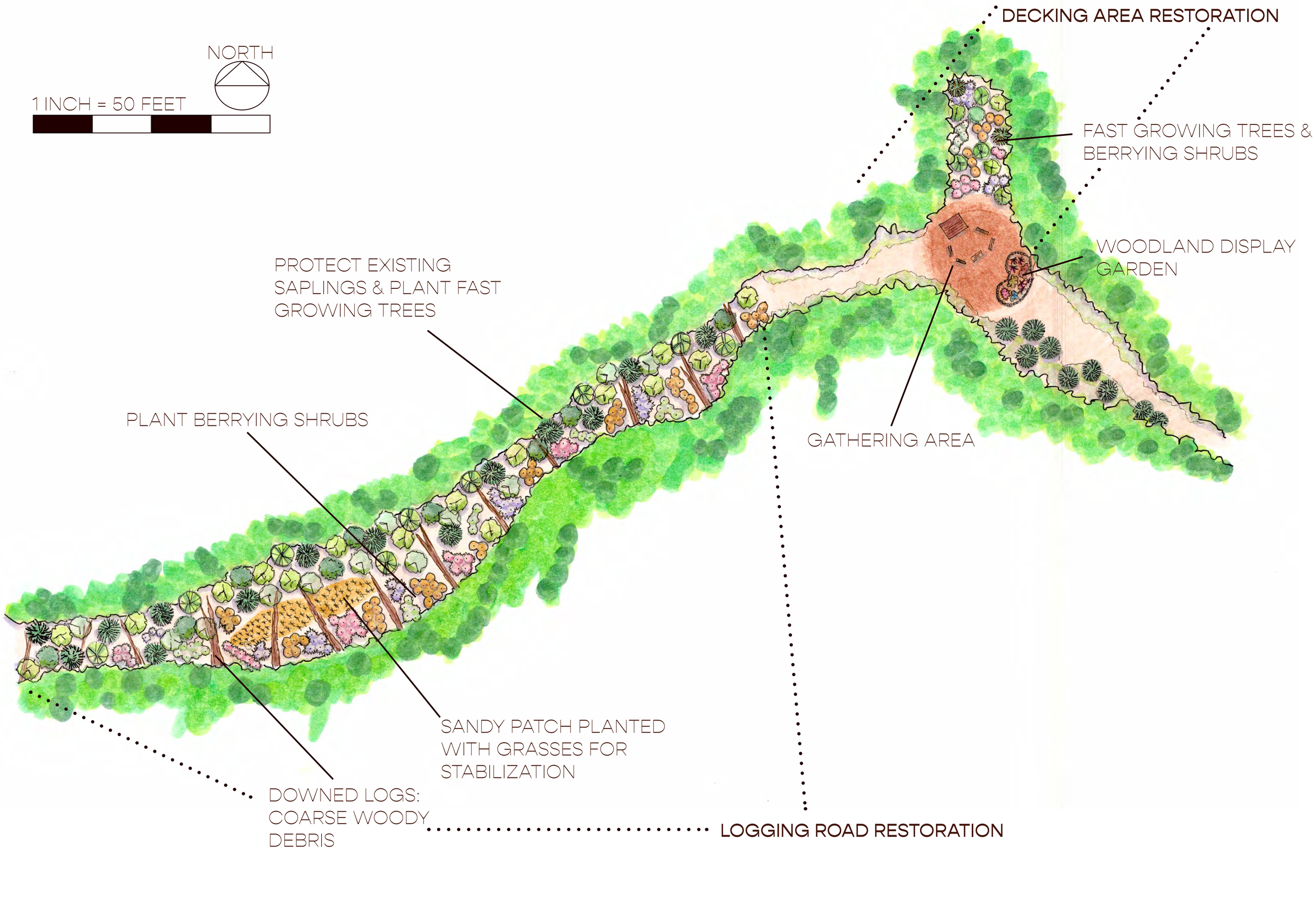
EASTERN WHITE PINE

IRONWOOD

DEAD RIVER RESTORATION AREA

NORTH

1 INCH = 50 FEET



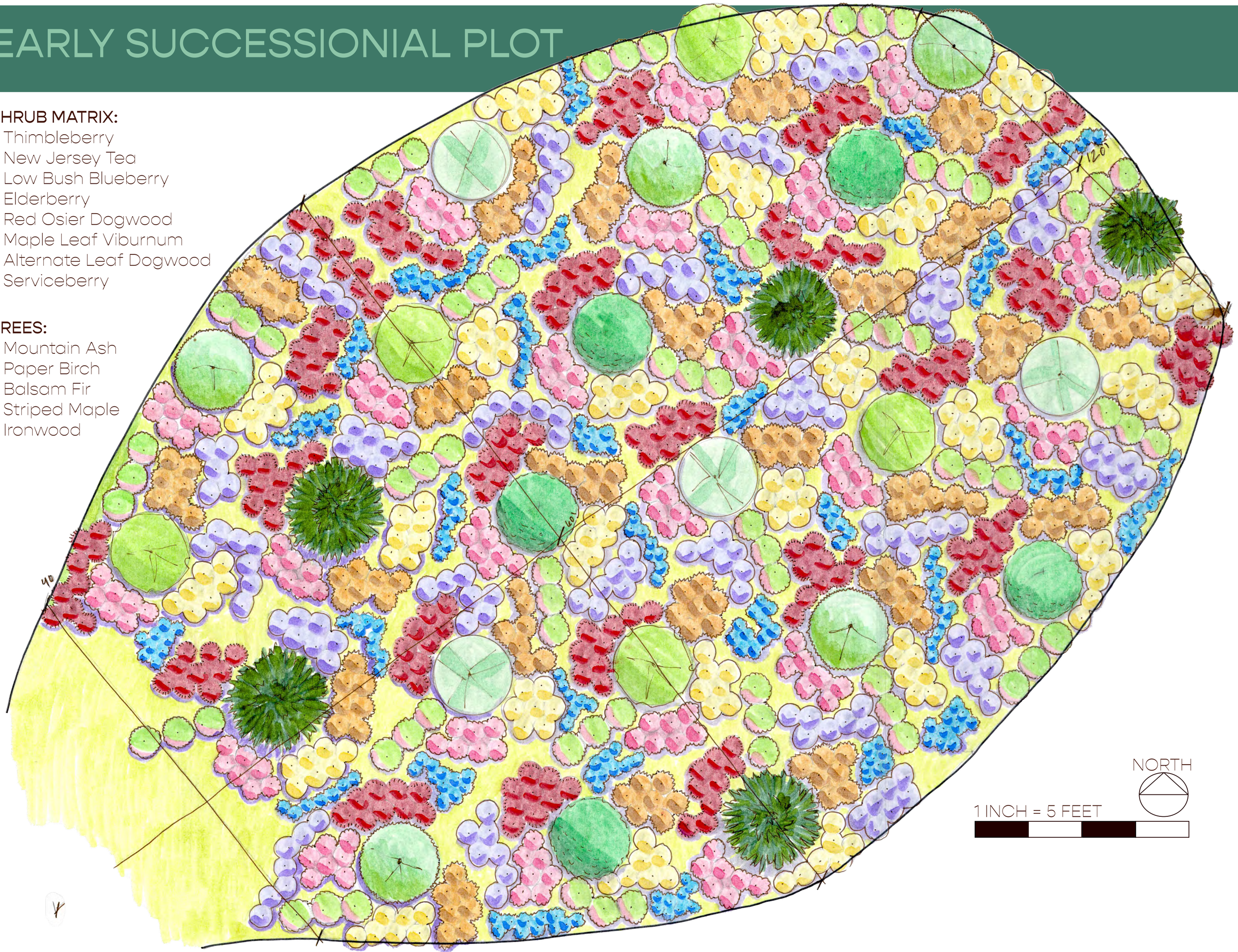
EARLY SUCCESSIONIAL PLOT

SHRUB MATRIX:

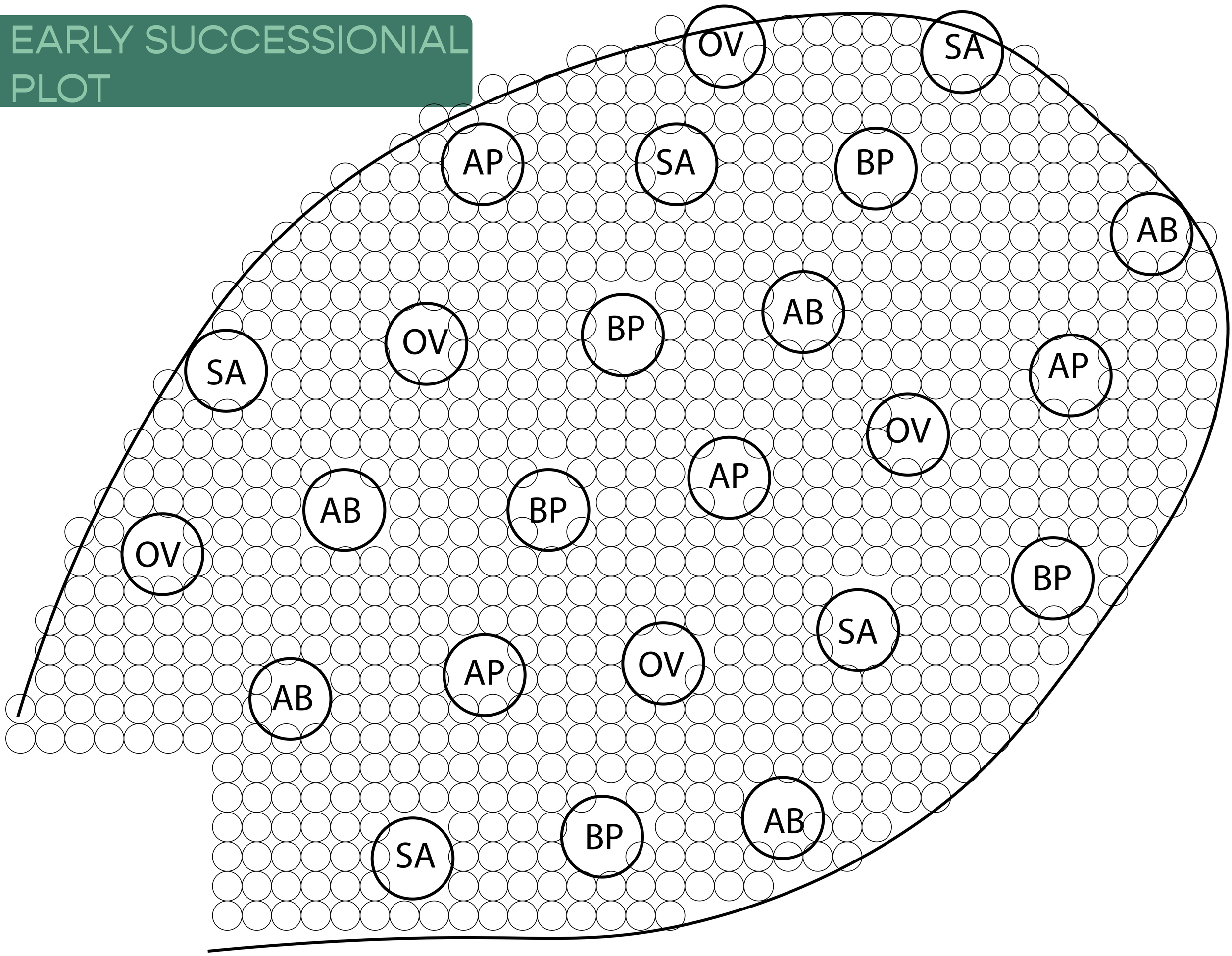
- Thimbleberry
- New Jersey Tea
- Low Bush Blueberry
- Elderberry
- Red Osier Dogwood
- Maple Leaf Viburnum
- Alternate Leaf Dogwood
- Serviceberry

TREES:

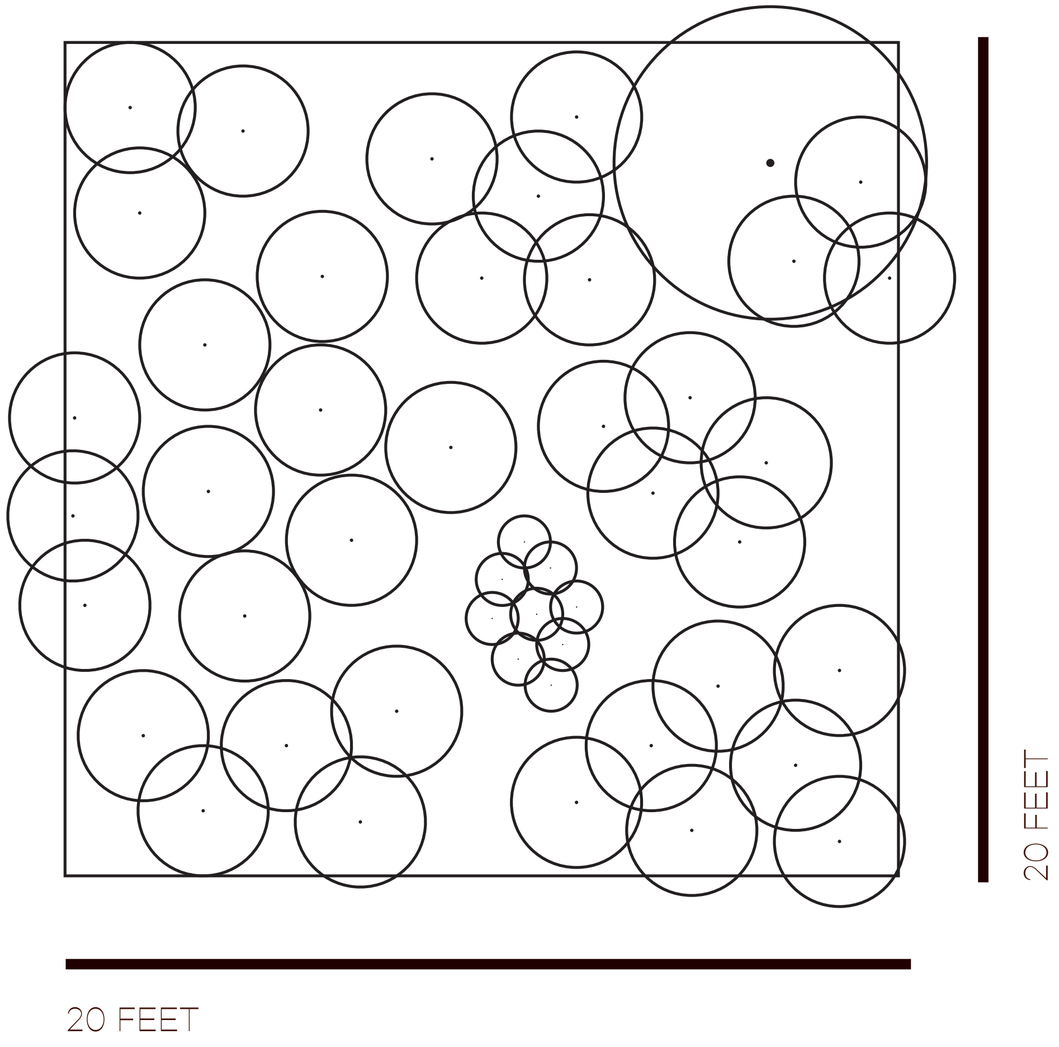
- Mountain Ash
- Paper Birch
- Balsam Fir
- Striped Maple
- Ironwood



EARLY SUCCESSIONIAL PLOT



PLANTING STRATEGY: EARLY SUCCESSIONAL



PLANTING PROCESS:

20’ x 20’ plots are marked out and volunteers can plant shrubs in drifts with creative license within each plot. Each plot would radiate from a central tree planted ~15 feet apart.

Each Plot would contain:

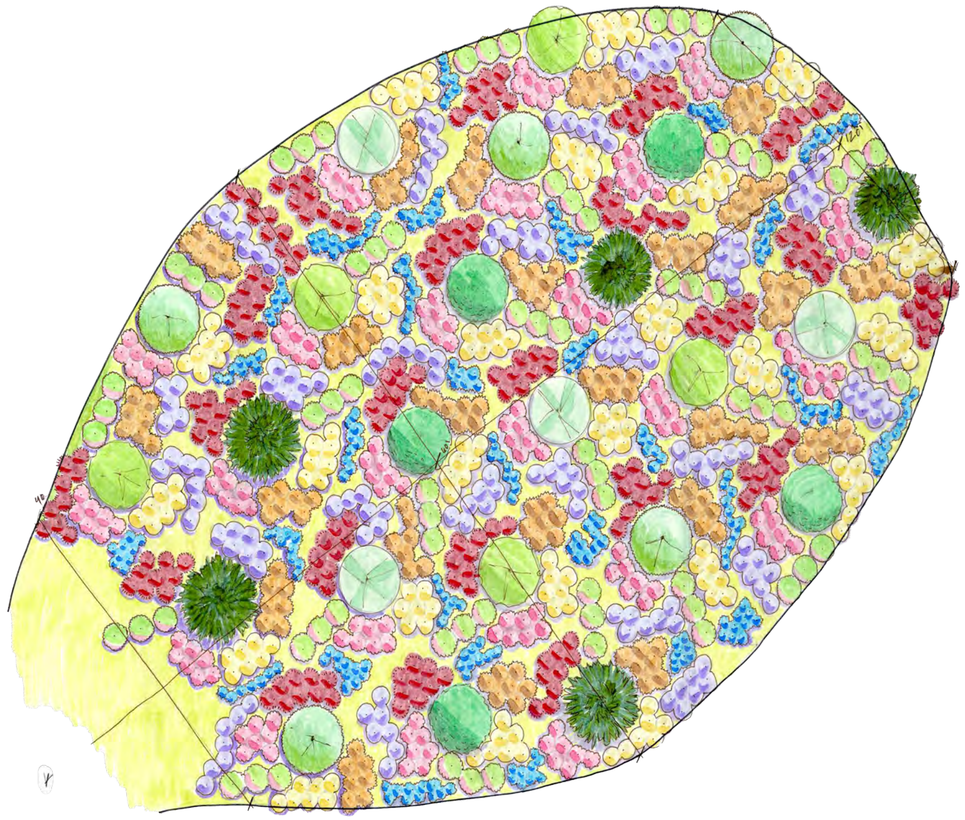
- ~40-50 Shrubs planted 2-3 feet apart from one another
- One central tree planted ~15-20 feet from any other central tree

PLANTING SCHEDULE: SUCCESSIONAL PLOT

Succession Plot Planting

Trees

Name / Code	Latin	Size/Container	Spacing	QTY
Balsam Fir - AB	*Abies Balsamea*	Plug or 3-5 Gallon Container	10-15 feet	5
Paper Birch - BP	*Betula papyrifera*	Plug or 3-5 Gallon Container	10-15 feet	5
Mountain Ash - SA	*Sorbus americana*	Plug or 3-5 Gallon Container	10-15 feet	5
Striped Maple - AP	*Acer penslyvanicum*	Plug or 3-5 Gallon Container	10-15 feet	5
Ironwood - OV	*Ostrya virginiana*	Plug or 3-5 Gallon Container	10-15 feet	5

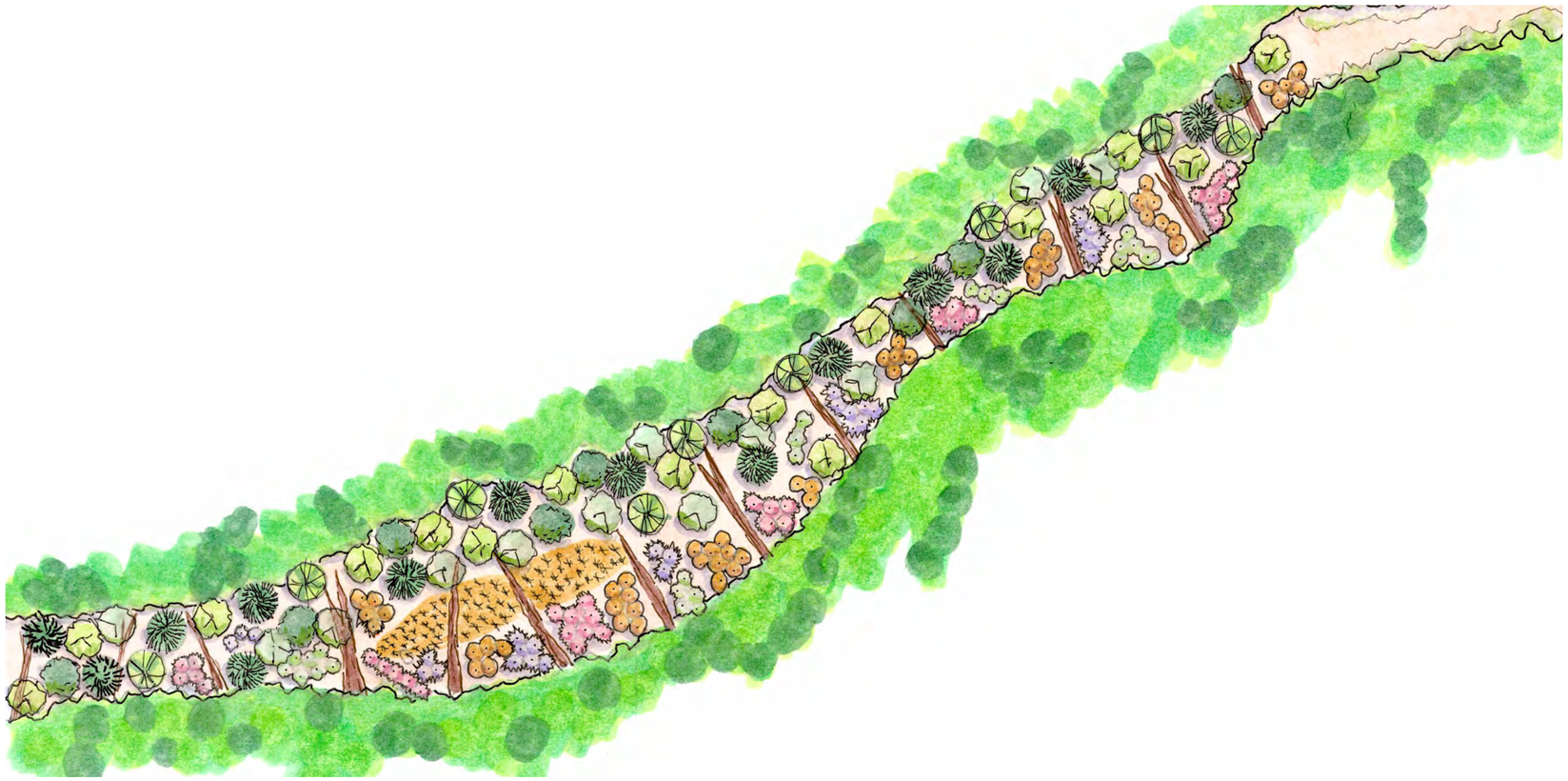


Shrubs

Total needed: 1,000. Numbers can vary between species depending on price and availability.

Name / Code	Latin	Size/Container	Spacing	Quantity
Red Osier Dogwood	*Cornus sericea*	Plug	2-3 feet	130
Elderberry	*Sambucus canadensis*	Plug	2-3 feet	130
Lowbush Blueberry	*Vaccinium angustifolium*	Plug	2-3 feet	130
New Jersey Tea	*Ceanothus americanus*	Plug	2-3 feet	130
Thimbleberry	*Rubus parviflorus*	Plug	2-3 feet	130
Maple Leaf Viburnum	*Viburnum acerifolium*	Plug	2-3 feet	130
Alternate Leaf Dogwood	*Cornus alternifolia*	Plug	2-3 feet	130
Serviceberry	*Amelanchier arborea*	Plug	2-3 feet	100

PLANTING SCHEDULE: HILLSIDE AREA



PLANTING PROCESS:

Planting placement will depend on final downed tree placement and exisiting sapling locations.

Trees will be planted ~8 feet apart from one another.

Shrubs will be planted ~2-3 feet from one another.

Grasses will be plated to stabilized the sandy patch.

Hillside Planting Area

Trees

Name / Code	Latin	Size/Container	Spacing	Quantity
Yellow Birch	*Betula alleghaniensis*	Plug or 3-5 Gallon Container	8-10 feet	55
Wild Black Cherry	*Prunus serotina*	Plug or 3-5 Gallon Container	8-10 feet	55
Northern Red Oak	*Quercus Rubra*	Plug or 3-5 Gallon Container	8-10 feet	55
Eastern White Pine	*Pinus strobus*	Plug or 3-5 Gallon Container	8-10 feet	55
Witch-hazel	*Hamamelis virginiana*	Plug or 3-5 Gallon Container	8-10 feet	55
Balsam Fir	*Abies Balsamea*	Plug or 3-5 Gallon Container	8-10 feet	55
Paper Birch	*Betula papyrifera*	Plug or 3-5 Gallon Container	8-10 feet	55
Mountain Ash	*Sorbus americana*	Plug or 3-5 Gallon Container	8-10 feet	55
Striped Maple	*Acer penslyvanicum*	Plug or 3-5 Gallon Container	8-10 feet	55
Ironwood	*Ostrya virginiana*	Plug or 3-5 Gallon Container	8-10 feet	55

PLANTING SCHEDULE: HILLSIDE AREA

Shrubs

Name / Code	Latin	Size/Container	Spacing	Quantity
Serviceberry	*Amelanchier arborea*	Plug	2-3 feet	26
Thimbleberry	*Rubus parviflorus*	Plug	2-3 feet	26
Maple Leaf Viburnum	*Viburnum acerifolium*	Plug	2-3 feet	26
New Jersey Tea	*Ceanothus americanus*	Plug	2-3 feet	26
Lowbush Blueberry	*Vaccinium angustifolium*	Plug	2-3 feet	26

Grasses & Sedges

Name / Code	Latin	Size/Container	Spacing	Quantity
Canada Wild Rye	*Elymus canadensis*	Plug	1-2 feet	25
Bottlebrush Grass	*Elymus hystrix*	Plug	1-2 feet	25
Long-stalked Sedge	*Carex pedunculata*	Plug	1-2 feet	25
Drooping Woodland Sedge	*Carex arctata*	Plug	1-2 feet	25

INSTALLATION & MANAGEMENT PLAN

SUMMER 2024

- **Design Process**: Site analysis, planting design, and installation & management plan
- **Plant sourcing**: researching and sourcing through local nurseries and conservation district
- **Site Preparation**: herbicide application with conservation district

FALL/WINTER 2024

- **Widen canopy gap on logging road**: mark and cut down trees on the south edge of the forest road

SPRING/SUMMER 2024

Hillside Plot
- **Mark existing saplings to keep**: Red Oak, White Pine, Paper Birch
- **Clear the planting area:** Pull sapling maples
- **Plant out new shrubs & trees**
  Patterned layout:
  10’x10’ spacing between trees
  2-3’x2-3’ spacing between shrubs

Succession Plot
- **Mark existing saplings to keep**
- **Mark out planting plots** ~20’x20’
- **Plant out:** Trees spaced 10-15’ apart, fill in with shrubs 2-3’ apart in odd numbered clumps
- **Planting structures put in place**: tree tubes, caging, etc.
- Gathering Area
- **Mow Down Bracken Fern** if it returns, keep mowed down, add benches, signs, etc.

Woodland Display Garden
(could wait until 2026 to get a sense of use of the area before deciding on location)
- **Mark out outline of display garden**, make fieldstone border (?)
- **Smother existing vegetation**
- **Plant Plugs**