Farming with Trees

Curriculum Guides for Community Tree Planting

Building Community Capacity to Increase Agroforestry Tree Planting through Participatory Listening Sessions, Training, and Peer-to-Peer Networks

Wellspring Forest Farm and Mycena Agroforestry Initiative · 2026
www.MycenaTrees.org

This material is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, through the Northeast Sustainable Agriculture Research and Education program under subaward number LNE23-466. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and should not be construed to represent any official USDA or U.S. Government determination or policy.

Contents

These guides were developed and field-tested with farmers between 2023 and 2026, from listening sessions to tree distribution days. Each can be used on its own or as part of a sequence: listen first, gather the community, then plant and grow trees together.

1. Farmer Tree Listening Sessions: Host & Facilitator Guide
How to prepare, host and run a two-hour listening session for 8 to 10 farmers: questions, activities, consent and notes.

2. Farmer Tree Listening Sessions: Conference Format Guide
A 90-minute version for 30 or more people at a conference, using interactive formats so a large group can share.

3. Farmer Tree Community Conversations: 3-Hour Format Guide
A regional gathering to surface values, preferred species and readiness to plant.

4. Farmer Tree Exchange Workshops: One-Day Format Guide
A one-day on-farm tree distribution: planting demonstration, group planting, shared lunch and an open tree market.

5. Basic Tree Care Handout
Planting, protection and first-years aftercare for farmers taking trees home.

6. Elements of an Agroforestry Tree Nursery
Propagation methods, infrastructure and planning for farm-based agroforestry nurseries.

Farmer Tree Listening Sessions:

Host & Facilitator Guide

Purpose

Listening sessions invite farmers and land stewards to share their life experiences with trees, how they see trees in agrarian landscapes, and what motivates or holds them back from planting trees on their land.

We will gather the themes that emerge across all sessions and share them with the wider agroforestry community, policymakers, and funders, so tree planting programs can better meet growers' needs. We also hope what your group shares will strengthen your own organizing work.

This guide covers how to prepare, how to run the session, the questions to ask, and what we need from you afterward.

Session at a glance

Element	**Guideline**
Participants	6 to 10 farmers and land stewards (10 max makes for good dialogue)
Length	1.5 to 2 hours
Facilitator	One dedicated facilitator to hold space
Tone	Open, honest sharing and conversation
Compensation	Every participant is fairly paid for their time
Results	Recorded, then combined across all sessions into a public report

Before the session

☐ Choose a facilitator and confirm the date, time, and place
☐ Invite 6 to 10 farmers and land stewards
☐ Confirm how and when participants will be paid
☐ Print sign-in and consent sheets, or set up the form
☐ Print the short survey, or share the Google Form link
☐ Set up two recorders, primary and backup (ask us if you need one mailed)
☐ Confirm whether a project organizer will attend in person, join by Zoom, or send a video
☐ Pick an icebreaker for the intro
☐ Schedule the debrief with project coordinators

Session agenda

The core session runs about 1 hour 45 minutes. Adjust timing to the group.

Arrival (10 min)

Participants sign in with name, email, farm or project name, and a signature consenting to participate.
Participants complete the intake short survey on paper or by Google Form.

Welcome (10 min)

Introduce the project and why it matters.
Explain what is recorded, how information is used and shared, and the public report.
Share where to learn more and get involved (mycenatrees.org)

Group connection (5 to 10 min)

An icebreaker chosen by the facilitator. Liberating Structures has good options.

Questions (60 min or more)

Four categories, up to 15 minutes each. See the facilitator question guide below.

Closing (5 to 10 min, suggested)

Thank participants, confirm how they will be paid, and remind them where the report will be shared.

Facilitator question guide

Spend up to 15 minutes per category; less is fine if the group is ready to move on. Follow the conversation rather than covering every question. Prompts in brackets are cues for the facilitator. Questions about racial identity are an open invitation; participants can share as much or as little as they choose.

A. Opening and reflection

What type of tree do you feel like, or identify with?
Growing up, and in your family, what stories can you tell about your relationship to trees? [positive or negative, creative or destructive]
What values or perceptions do you hold about trees? Where do they come from? [personal and cultural roots]
Why are you interested in growing trees? What matters most to you?
How has your racial identity influenced how you see the use of trees?

B. Messages

What messages have you received in your life about trees in farming or agriculture?
What have technical service providers (extension, government, universities) conveyed

about trees on farms?
What in these messages resonates with you?
What is missing from these messages for you?

C. Specific trees

Which tree species do you consider interesting, valuable, or "good"?
Which species do you consider invasive or "bad"?
Which species are you most interested in planting, and why?
Have you collected seeds or other plant material from trees to propagate? What have you learned?

D. Access to information and support

Where do you look for information to help you plant trees?
What are the key things to know for successful tree planting?
What mistakes have you made in tree planting?
Are you aware of funding available to help with tree planting?
What is one thing you want the government or the public to know about tree planting as part of farming?
What do you most need to help you plant trees?
How has your racial identity influenced your access to information on farming with trees?

After the session

Please send us these four items:

- ☐ **Sign-in and consent forms** from every participant
- ☐ **Survey responses** from every participant
- ☐ **Session recordings**, both primary and backup
- ☐ **Debrief** held with the facilitator and project coordinators

How we can support you

We want your group to connect authentically, in whatever way that looks for you. We are glad to step forward or back as needed: helping plan, attending sessions as support people, or mailing a recorder. Let us know what would help.

Farmer Tree Listening Sessions: Conference Format Guide

Purpose

This is the 90-minute conference version of the listening session, using interactive formats (a spectrum game, pairs, 1-2-4, trios, and sticker voting) so a larger group can share their experiences with trees, the messages they have received, the species they care about, and what they need to plant successfully.

Roles

Person	Role
Facilitator #1	Hands out and collects surveys at arrival; gives the welcome; lead facilitator for timing and transitions
Facilitator #2	Runs sign-in; welcomes latecomers; hangs spectrum signs and tallies positions; backup timer; lead note-taker and observer

Materials checklist

☐ Index cards, pre-labeled with titles
☐ Poster paper
☐ Markers
☐ Printed surveys (50 copies) and pens
☐ Sign-in and consent sheets
☐ Recorder and camera (plus a backup recorder)
☐ Timer with alarm
☐ Three spectrum signs: NOT IMPORTANT, SOMEWHAT IMPORTANT, VERY IMPORTANT
☐ Tape for hanging signs and poster paper
☐ Dot stickers for species voting (3 per person)

Time	Segment	Format	Lead
8:30	Arrival	Sign-in and paper survey	Facilitator 2 (sign-in), Facilitator 1 (surveys)
8:40	Welcome	Short talk	Facilitator 1; Facilitator 2 greets latecomers
8:50	Spectrum game: motivations	Whole room, standing	Facilitator 1 facilitates; Facilitator 2 tallies
9:00	A. Reflection	Pairs	Facilitator 1
9:10	B. Messages	1-2-4, then whole group	Facilitator 1

9:30	C. Specific trees	Large group brainstorm and sticker vote	Facilitator 1
9:45	D. Access to information and support	Trios, then whole group	Facilitator 1
10:00	End		

Session details

8:30 Arrival (10 min)

Facilitator 2, at the entrance: sign-in sheet with name, email, farm or project name, and signature consenting to participate.
Facilitator 1: hand out and collect the paper survey. Survey (Google Doc)

8:40 Welcome (10 min)

Facilitator 1 leads; Facilitator 2 welcomes latecomers and gets them signed in.

Introduce the project and why it matters.
Explain what is recorded, how information is used and shared, and the public report.
Share where to learn more and get involved: Farmer Tree Skills project.

8:50 Spectrum game: motivations for tree planting (10 min)

Facilitator 2 hangs three signs spaced apart along one side of the room: NOT IMPORTANT, SOMEWHAT IMPORTANT, VERY IMPORTANT.

Read each motivation aloud. People stand along the spectrum to show how important it is to them.
Facilitator 2 takes a rough tally of where people stand.
Ask a few people: "Why are you standing where you are?"
Move to the next motivation. Allow about 2 minutes per round.

Motivations, one per round:

Tree crops (fruit, nuts, medicine, etc.) and local food production
Shade, shelter, and fodder for livestock
Ecological restoration, biodiversity, reducing soil and water erosion, and weather buffers (wind, snow, fire, etc.)
Community, family legacy, and future generations

Tally sheet:

Motivation	**Not important**	**Somewhat important**	**Very important**
Tree crops and local food			
Livestock shade, shelter, fodder			

Ecological restoration and buffers			
Community and legacy			

9:00 A. Opening reflection, in pairs (10 min)

Growing up, and in your family, what stories can you tell about your relationship to trees? [positive or negative, creative or destructive]

9:10 B. Messages, 1-2-4 (20 min)

On your own (1): What messages have you received in your life about trees in farming or agriculture? Write on an index card.
In pairs (2): What messages have technical service providers (extension, government, universities) conveyed about trees on farms? Write on a shared index card.
In groups of four (4), on poster paper: What resonates in these messages for you? What is missing?
Whole group: Each group shares one message they discussed most: the message and where it came from, and what resonates or is missing. Run more rounds if time allows.

9:30 C. Specific trees, large group (15 min)

Brainstorm species on poster paper, one sheet per question.

5 min: Which tree species do you consider interesting, valuable, or "good"?
5 min: Which species do you consider invasive or "bad"?
5 min: Which species are you most interested in planting, and why?

Hand out stickers. Each person votes for the three species they are most interested in planting.

9:45 D. Access to information and support, in trios (15 min)

Write down: What are the key things to know for successful tree planting?
Share as a group: What mistakes have you made in tree planting?

After the session

- ☐ Collect all sign-in and consent sheets
- ☐ Collect all surveys
- ☐ Save recordings (primary and backup) and photos
- ☐ Photograph all index cards, poster paper, spectrum tallies, and sticker votes
- ☐ Debrief between Facilitator 1 and Facilitator 2 while it is fresh

Farmer Tree Community Conversations: 3-Hour Format Guide

Purpose

A community conversation is a 3-hour evening gathering with a regional farmer network. It builds clarity on shared values, the tree species people want to grow, the challenges in the way, and the support people need. It also invites farms into a next phase of planning, planting, and learning together. Tree planting is often a one-time event, done in isolation. We envision a practice done in community and cooperation that, like trees, grows slowly and adds rings of wisdom and experience each season. This format was piloted with the Catskill Agrarian Alliance at Bushel in Delhi, NY on April 4, 2025. Results from that session are at the end of this document.

Session at a glance

Element	Guideline
Length	3 hours
Cost to attendees	Free, with snacks or food
Breakout groups	Three groups, each with one facilitator and one note-taker
Outputs	Surveys, posted notes, a transcription of easel and sticky notes, and a list of farms interested in the next phase

Roles

Role	Responsibilities	Pilot example
Project leads	Present the project, funding, and next steps; overall facilitation	Steve and Jonathan, Farming with Trees
Nursery partner	Present on tree propagation and regional tree supply	Rhiannon and Cameron, The Forest Exchange
Network host	Welcome members, share network context, help recruit farms	Tianna, Catskill Agrarian Alliance
Breakout facilitators (3)	Guide one breakout question each	participants
Note-takers (3)	Capture each breakout on easel paper or sticky notes	participants

Before the session

☐ Confirm venue, date, and partners
☐ Send the invitation or flyer (template below) through the network
☐ Prepare the quick survey on paper (questions below)
☐ Choose the breakout method from Liberating Structures
☐ Recruit three breakout facilitators and three note-takers
☐ Arrange snacks and drinks
☐ Gather materials: sign-in sheets, printed surveys, pens, easel paper, sticky notes, markers, tape, timer
☐ Prepare an interest sign-up sheet for farms that want to join the next phase

Agenda

Time	Segment	Length
4:00	Arrival, sign-in, survey, snacks	15 min
4:15	Welcome and about the partners	25 min
4:40	Breakout conversations	30 min
5:10	Post up notes and share out	10 min
5:20	Support and cooperative tree work	30 min
5:50	Next steps	20 min
6:10	Open time: food, conversation, farm sign-ups (to confirm)	50 min
7:00	End	

Session details

4:00 Arrival (15 min)

Sign in and complete the quick survey.
Snacks and drinks available.

4:15 Welcome and about the partners (25 min)

Mycena / Farming with Trees project: purpose, the listening sessions, and grant funds for collective tree work.
Nursery partner: tree propagation and regional supply.
Farmer network: who the network is and what members are working on. Pilot: Catskill Agrarian Alliance

4:40 Breakout conversations (30 min)

Three groups, each with one facilitator and one note-taker. Method to be chosen from Liberating

Structures.

Group 1, Motivations: What do trees bring to your agrarian pursuits? Why do you want to plant trees?
Group 2, Species: What species of trees are you planting? What species do you want to plant and get to know?
Group 3, Challenges: What challenges stand in the way of planting and caring for trees?

5:10 Post up notes and share out (10 min)

Each group posts its notes on the wall and shares two or three highlights with the whole room.

5:20 Support and cooperative tree work (30 min)

Frame: tree planting is often a one-time event, done in isolation. We envision a practice done in community and cooperation that, like trees, grows slowly and adds rings of wisdom and experience each season.

What lessons from the network or other organizing apply to this?
What support do you need to increase tree planting activity and success?

5:50 Next steps (20 min)

Quick survey for farms

Name, email, and location
Current production practices
Motivations for planting trees
Experience with trees
What help is most needed?
Is your farm open to public access (for example, for workshops or tours)?

Invitation template

Trees are the anchor of healthy, thriving farm ecosystems, and we want to help more farms in the Catskill Agrarian Alliance plant them! Gather with us for a free event on April 4th from 4 to 7 pm at Bushel in Delhi, NY. Together we'll map the wealth of curiosity, knowledge, and experience in our community and identify what's needed to bring more trees into your farm landscapes. Hear from Rhiannon and Cameron of The Forest Exchange Nursery about tree propagation, and from Steve Gabriel of the Farming with Trees Collective about grant funds to organize and support collective efforts for trees and agroforestry in the alliance community. Food and drinks served.

After the session

☐ Collect sign-in sheets and surveys

☐ Photograph and transcribe all easel paper and sticky notes
☐ Follow up with farms that signed up for the next phase
☐ Debrief with partners and share the synthesis back with participants

Appendix: Results from the Catskill Agrarian Alliance meetup, April 4, 2025

Transcribed from participants' easel and sticky notes. Marks like "x2" or "+1" show repeated answers or votes.

Motivations: What motivates you to plant trees?

- Connections to ancestral foodways: food and medicine
- Kinship with trees
  - Long-term relationship, including phenology
  - Traditions with trees and intergenerational wisdom
  - Tree collaboration with infrastructure (tree houses)
  - Arts and sculpture, including basketry
  - Nostalgia: perennials mean home and putting down roots
  - Learning from trees and their durability (trial-and-error friendly)
  - Collecting data on trees and their relationships with the surrounding environment
  - A spiral of propagation, ever giving
- Trees as elders or guides to the land
  - Legacy of deforestation
  - Energetic charge
  - Forage and nitrogen fixing
  - Multigenerational (for the kids)
- Shade for people, animals, and creeks
- Resilience against drought, especially for livestock forage
- Soil health and carbon sequestration
- Firewood and lumber, including wood grain
- Fast-growing wood for firewood; coppicing willow and linden
- Cider
- Pollinators
- Agroecological reasons (x2)
- Funding opportunities
- Learning about trees
- Inspiration and beauty (+1000!)
- Fruit from neighbors and community sharing
  - Fruit: apples, cherries, plums, elder, pears, persimmons
  - Nuts: hazelnuts, chestnuts, heartnuts, hickory nuts
- A different type of labor than annuals, especially for aging bodies, and tree climbing for kids

Observing change and the gratification of watching things grow over longer time scales
Ecosystem logic includes perennials and diversity
Ornamental and flowering trees
Landscape: erosion, windbreaks, climate change, riparian buffers

Challenges: What feels challenging about planting trees?

Money and funds
    Lack of political will
    Cost relative to tree size
    Cost at scale
Site selection: emotions and "paralysis of analysis"
    Conflicting ideas
    Not making the perfect the enemy of the good
    Balancing purposes: for us, for the land, and more
Education
    Where to put energy?
    How to prune, how to plant, can I graft?
    Lack of education
    Tree ID ("who are you?")
    Who to ask about varieties and germplasm? Which ones to choose?
    Understanding relationships with other plants and the land: companion planting, learning the cycles, management, the "right" tree in the "right" place, spacing for flower production
Longer timescales
    Waiting for results
    Some trees live longer than we will
    Continued care of trees
    Succession of old trees
Time to plant and to manage
Permanence of planting
    On leased land
    Land access
    Planting trees on commonly held land
Protection from deer and sheep; fencing
Hard to dig holes: "two rocks for every dirt"
Open space versus canopy
Disease
Pests (x2)
Water
Pollination
"Plant and pray!"
Climate change and future conditions

Support needs: What support do you need to succeed at planting trees?

An accountability buddy
A Signal thread for hyper-local tree care and mutual aid
Trees for mutual aid: volunteer work brigades
Friends
Technical assistance with site planning; someone to help me design (x2)
Planting a tree with someone who knows what they're doing, to build courage to do it independently
"Just plant the trees" and "give me trees"
Knowledge on growing trees for floriculture
Education on pruning and grafting
Help with rocks and deer fencing

Species desired: What tree species excite or interest you?

Alphabetical. Votes noted where given.

Fruit and nut	**Timber, shade, and native**	**Other**
Apples (+2)	Alder	Baobab
Aronia	Ash	Cork
American chestnut	Aspen	Eucalyptus
Butternut	Black locust	Juniper
Cherry and black cherry	Bur oak	Lilacs
Chestnut	Cedar	Osage orange
Crab apple	Elm	Palm
Currants	Firs	Redbud
Elderberry	Hawthorn	Witch hazel
Haskap	Hemlock	
Hazelnut	Honey locust	
Hickory	Oak (noted for livestock deworming)	
Jujube	Paper birch	
Mulberry	Poplar	
Pawpaw (+1)	River locust	
Peach	Spruce	
Pears	Sugar maple	
Persimmon	White pine	
Plums	Willow	
Quince		
Walnut		

Farmer Tree Exchange Workshops: One-Day Format Guide

Purpose

A tree exchange workshop is a one-day, on-farm gathering that is part tree distribution, part hands-on working session, and part community building. Farms pick up trees, learn to plant and protect them by doing it together on the host farm, and organize work brigades to help plant on each other's farms before taking home trees they select from the open and free “market”..

This format was piloted in May 2026: two Catskills days distributing over 5,000 trees to the 18-farm cohort and others, and an Essex County day paired with a partner workshop.

Session at a glance

Element	**Guideline**
Length	Full day, 9:00 am to 4:00 pm
Location	A host farm with a planting site ready for the work of tree planting!
Who	Cohort farms first; other farms welcome when trees are available
Lunch	Potluck
Teaching tool	*Basic Tree Care for Farmers* handout (Mycena Agroforestry, April 2026) - see PDF
Outputs	Sign-in sheet, tree sign-out forms, trees planted on the host farm, and brigade dates for other farms

Roles

Role	**Responsibilities**
Project lead (Mycena)	Welcome, planting demo, tree distribution, aftercare talk, brigade organizing
Host farm	Site, parking, planting area prepared, introduces the farm and its goals for trees
Co-host, nursery, or other partner (optional)	Leads site observation or the planting demo
Sign-in and sign-out lead	Runs the sign-in sheet and records trees taken by each farm

Before the workshop

- ☐ Confirm host farm, date, and planting site with the host
- ☐ Share the available tree list and registration form with farms
- ☐ Sort trees by farm order; set aside extras for walk-ins
- ☐ Print sign-in sheets, tree sign-out forms, and handouts
- ☐ Bring sawdust, labels, and markers for packing trees
- ☐ Bring planting tools, tubes, stakes, and cages for the demo
- ☐ Lay out the host farm planting plan for the work brigade

What participants bring

Bags, bins, or containers for transporting trees
Tree digging tools
Extra packing materials (sawdust, labels, and markers are on hand)
A potluck dish
Questions, ideas, and a willingness to collaborate

Agenda

The day runs 9:00 am to 4:00 pm and ends with tree distribution and brigade organizing.

Schedule
9:00 Arrival and welcome
9:30 How to plant a tree, and protect it too (60 min)
10:30 Work brigade: layout and planting (90 min)
12:00 Potluck lunch (90 min)
1:30 Work brigade: planting (90 min)
3:00 Tree distribution and conversation (60 min)
4:00 End

Modules

Arrival and welcome (30 min)

Sign in (form below) and drop off potluck dishes.
Introduce the project, the host farm, and the day.

How to plant and care for trees (60 min)

A live demo that follows the handout from site prep through protection:

Site prep: loosen a row or section 2 to 3 ft wide; avoid augers in clay and working wet soil.

Planting: hole 2 to 3 times the root width; root flare just above soil; backfill with native soil; mulch 2 to 3 inches away from the trunk; water deeply.

Protection: compare tube and stake, wire cage, and 3D fence on cost and fit.

Work brigade (3 hours, before and after lunch)

Everyone lays out and plants trees on the host farm, practicing the demo steps with support. Stations work well for larger groups.

Tree distribution and conversation (60 min)

Farms pick up trees and record them on the sign-out form.
Aftercare: storing and heeling in trees until planting (handout page 1).
Organizing: schedule planting brigades at other farms.

Handout: Basic Tree Care for Farmers

Give every farm a copy at pickup. Sections and where they are used:

Handout section	**Used in**
Receiving trees and heeling them in; holding until fall	Distribution and aftercare
Right tree, right place; plan for the long term	Planting demo (choosing sites)
Site prep before planting; planting	Planting demo and work brigade
Species table (16 species)	Tree selection
Aftercare, first 2 to 3 years; observation	Planting demo (protection) and distribution

After the workshop

- ☐ Compile sign-in and sign-out forms
- ☐ Update the tree list with what went out and what remains
- ☐ Confirm brigade dates with farms
- ☐ Follow up with calls and collective office hours in May and June

Template Form: Sign-in

Location: _____ Date: _____

Name of contact	Email	Farm, org, or group	Number in group

Template Form: Tree sign-out

Location: _____ Date: _____

Use one block per farm.

Farm name		
Contact		
Species	Quantity	Notes
Desired trees for the future		

Basic Tree Care for Farmers

Mycena Agroforestry – mycenatrees.org

last updated: April 2026

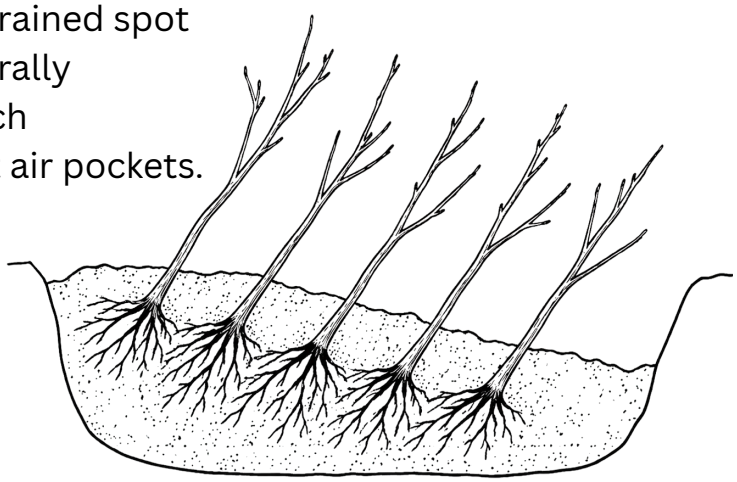
Receiving Trees & Heeling Them In

Roots should always stay damp; use moist burlap, paper, or sawdust to hold humidity around roots. Keep trees shaded and cool (ideally 34–45°F / 1–7°C) if planting is delayed a few days. Avoid any exposure to sun, wind, or prolonged freezing.

Short-Term Storage (Days to Weeks): "Heeling In"

a simple in-ground buffer against drying and temperature swings.

1. Dig a shallow trench in a shaded, well-drained spot
2. Lay trees at an angle, roots spread naturally
3. Cover roots fully with moist soil or mulch
4. Tamping in (with your heel!) to push out air pockets.
5. Water thoroughly to settle soil
6. Label if managing multiple lots



Holding Until Fall (Months)

This is no longer storage, but active management like a nursery. Trees will break dormancy and grow, so moisture, light, and spacing all matter. Cooling is less critical; consistent moisture and moderate light become the priority.

Bare-root systems heeled in act like a nursery bed; containers require ongoing watering and possible up-potting.

Expect root growth, so handle carefully when lifting and separating later for planting in fall. Summer planting is usually avoided unless temperatures are moderate, and moisture is high, or there is easy access to consistent irrigation.

Right Tree, Right Place

Soil: Know your pH, drainage, and texture (sand, loam, clay). Some species tolerate a range; others are more specific. (see pg 3)

Moisture: Wet feet vs. drought tolerance matters

Light: Full sun (6–8+ hrs) vs. partial shade vs. understory conditions.

Microclimate: Wind exposure, frost pockets, slope, and proximity to buildings or woods

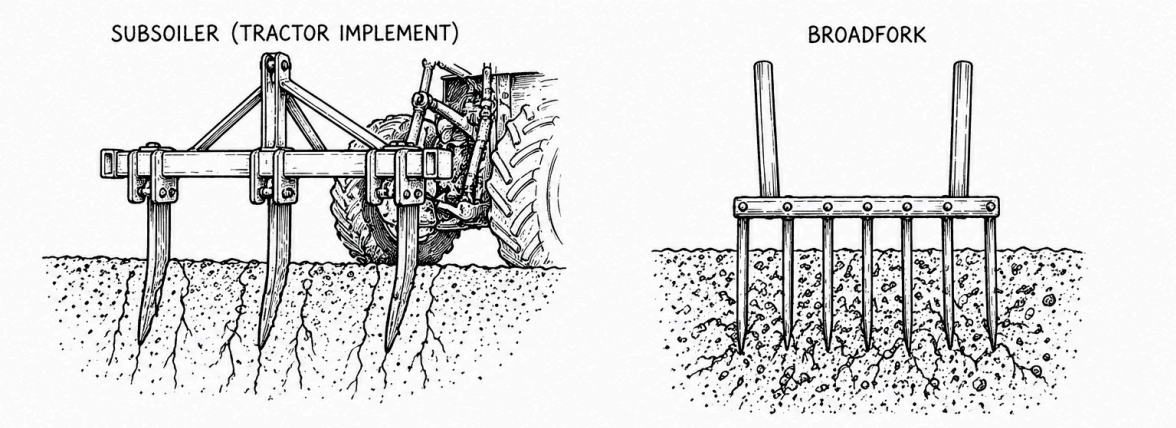
Plan for the long term

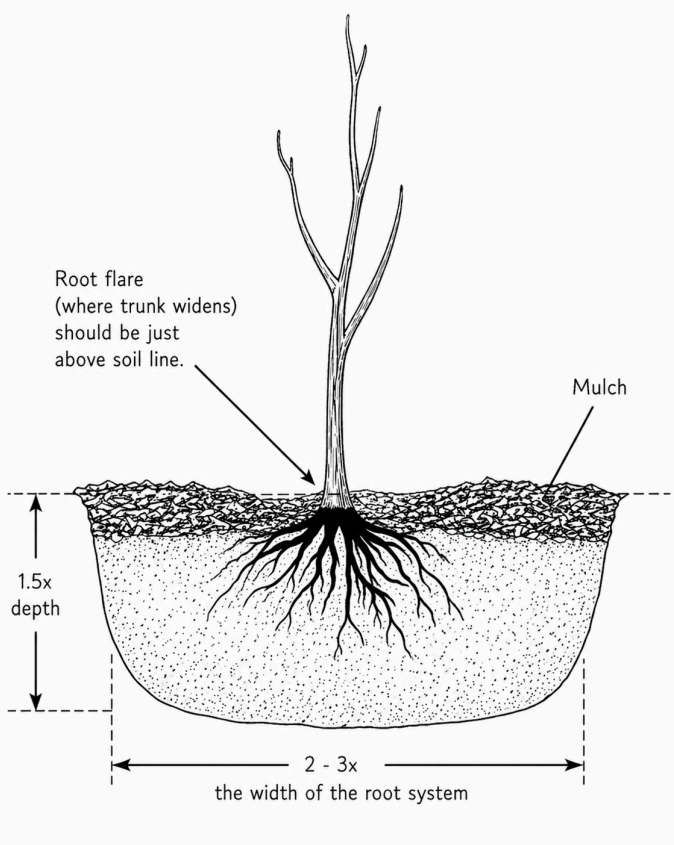
Often folks think they need to space trees out to their final size, but not all trees will survive! For crop trees (nuts, fruits), wider spacing and more tender care makes sense, while seedlings of support trees can be planted more densely, and thinned over time. Mother nature plants trees in communities, and denser plantings mimic that. Plan for thinning, coppicing, or succession over time, rather than assuming every tree stays forever.

Site Prep before Planting

Set trees up for success before they go in the ground. A single hole is ok, but better if a section or row can be disturbed (at least 2–3 ft wide). Think beyond planting individual trees, and aim to plant communities where clusters of trees and health soil biology go together.

Loosen compacted soil, especially in planting rows or heavy clay sites (avoid using auger in these situations) Don't work soil when wet or saturated (creates compaction). Some options for tools include a subsoiler (let soil settle before planting), BSC walk behind tractors that rip rows with rotary plow, shallow tillage, or a broadfork.





Planting

Width: 2–3× wider than the root system; 12" of loose soil around tree helps initial root growth

Depth: 1.5x of root height

Prep: Soak bareroot 1 – 2 hours before planting, for potted, loosen bound roots and prune to prevent self girdling.

1. Set tree with root flare just above soil line, mound soil under to support
2. Backfill with native soil , pack firmly with foot to remove air pockets
3. Apply 2 - 3" layer of mulch over root zone (Keep away from trunk!!)
4. Water deeply to settle soil around roots

Common Name(s)	Latin Name(s)	General Habitat	Exposure	Soil Moisture	Other Care Notes
Black Locust	*Robinia pseudoacacia*	Disturbed, dry to average soils	Full sun–partial	Low–medium	Nitrogen fixer; coppices well; really does not like wet feet!
Chestnut	*Castanea spp.*	Well-drained uplands	Full sun	Medium, well-drained	Needs excellent drainage; pH sensitive 4.5–6.5
Currants	*Ribes spp.*	Forest edge, understory	Full sun–partial	Medium, well-drained	Shade-tolerant; protect from intense sun; good for understory systems
Elderberry	*Sambucus canadensis*	Moist edges, riparian zones	Full sun–partial	Medium–wet	Prefers moist but not overly wet, high organic matter
Hazelnut	*Corylus spp.*	Woodland edges, hedgerows	Full sun–partial	Medium	Multi-stem shrub, needs high fertility to establish
Hickory	*Carya spp.*	hardwood forest / orchard	Full sun	Medium	Deep taproot, slow growth
Honey Locust	*Gleditsia triacanthos*	Bottomlands, open sites	Full sun	Low–medium	Nitrogen-associating; good fodder, pods
Mulberry	*Morus alba*, *M. rubra*	Disturbed sites, edges	Full sun–partial	Low–medium	Fast-growing; tolerant of poor soils, great fodder
Oaks	*Quercus spp.*	Upland forests, warm and dry	Full sun–partial	Medium, well-drained	Slow; long-lived canopy tree, many subspecies
Pawpaw	*Asimina triloba*	Rich forest understory	Full sun–partial	Medium–moist	Needs shade when young
Persimmon	*Diospyros virginiana*	Bottomlands, upland edges	Full sun–partial	Medium	Tolerates poor soils; dioecious (need male/female for fruit)
Poplar	*Populus spp.*	Riparian zones, disturbed soils	Full sun	Medium–wet	Very fast growth; short-lived, can root sucker
River Locust	*Amorpha fruticosa*	Disturbed soils, wet edges	Full sun	Low–medium	Nitrogen fixer, great companion shrub
Sycamore	*Platanus occidentalis*	Floodplains, streambanks	Full sun	Medium–wet	Tolerates flooding; large, fast-growing
Willow	*Salix spp.*	Wetlands, riparian zones	Full sun	Wet	Extremely easy to propagate; needs moisture
Walnut	*Juglans spp.*	Floodplains, streambanks	Full sun	Medium–wet	Great for wildlife, nutrious and prolific nuts, slow grower

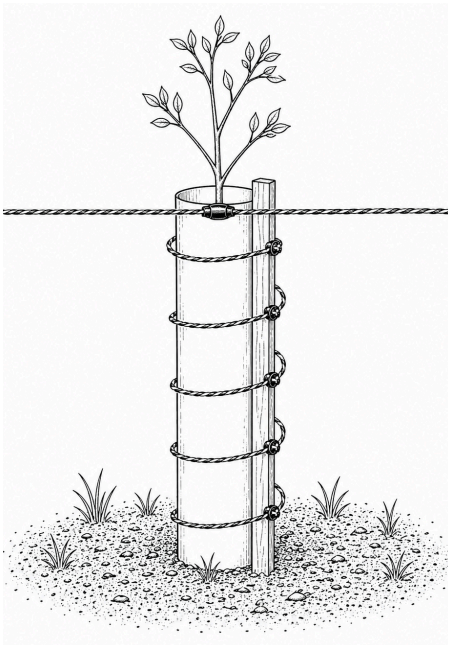
Aftercare (First 2–3 Years)

The key: Protect the **top growth** from browse (deer, livestock) and the **bottom** from girdling (rodents)

Tube + stake ($10+ per tree): A plastic tree tube secured to a stake creates a sheltered microclimate that can accelerate vertical growth, but requires monitoring to prevent overheating, weak stems, bird and wasp nests. For livestock systems, poly wire can be wrapped around the tube to increase protective qualities.

Wire cage ($20+ per tree): A cylinder of welded wire or fencing around the tree staked in with T-posts provides durable, reusable protection from deer and livestock, while allowing airflow and natural branching. Expensive at scale.

3D fence ($1-3+ per tree): A perimeter fence around a planting area spreads cost across many trees, offering broad protection but requiring maintenance and power to charge the fence.



Example of a tree tube system using electrified poly wire between staked and tubed trees that also protects each tube from livestock and deer.

Observation

Walk your trees often; most problems are easy to fix early, and hard to reverse later.

Water: Trees need ~1 inch of water per week, especially in May–June when active growth is highest; many Northeast sites get adequate rainfall, but dry spells happen, so have a backup plan to water or delay planting out trees if early season droughts occur.

Vegetation and Browse Pressure: One of the biggest challenges. Maintain mulch, plan layout so the trees can be mowed or weed whacked 2x per year (after spring grass flush, again in late summer). Check regularly for deer, rabbit, or vole damage; even protected trees can be breached. Look for tunneling or bark chewing at the base, especially under mulch in winter.

Pruning: Focus on removing dead, damaged, or crossing branches, and watch for strong central leader development in species where structure matters, remove split crotches the develop to support good form.



Like the mycelial threads connecting the trees and soil in a forest, we focus on bridging connections between farms, nurseries, and communities to create projects rooted in people and place. Learn more and join our email list for updates: **MycenaTrees.org**

This material is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, through the Northeast Sustainable Agriculture Research and Education program under subaward number LNE23-466. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not reflect the view of the USDA.

NORTHEAST SARE Sustainable Agriculture Research & Education

Elements of an Agroforestry Tree Nursery

About this document

This is the working template for how MYCENA and Farming with Trees teach and support farm-based agroforestry nurseries. It gathers what we have learned from the project as a whole, including the myriad of conversations, events, workshops, site visits, and brainstorming sessions. It has some potential use in the future as:

> **A training outline.** Each part maps to curriculum modules and can be lifted into a workshop, cohort session, or handout.
>
> **A planning checklist.** A farm starting a nursery can work top to bottom: why, where, what, how, and how it pays.

The core idea runs through every part: **we don't plant trees, we plant ecosystems**, along with the notion that a nursery is the place where trees, soil, skills, and relationships are grown together before they go out into the world.

Part 1: Philosophy, Context, Values

Agroforestry will not scale by counting trees in the ground; it scales out through many small, place-rooted nurseries and farms that grow trees, skills, and trust together over generations.

1.1 Why tree planting often fails

Large planting campaigns overwhelmingly fail, and rarely learn from it (From the Ground Up).

The recurring reasons:

> **Planting is treated as simple.** Right tree, right place, site prep, quality stock, protection, and water all matter — and are rarely budgeted.
> **Funding underestimates true cost.** Planting projects of a few hundred trees realistically run $10–30 per tree with materials and labor, and almost no funding covers the first 1–3 seasons of care, when survival is decided.
> **Success is measured in trees planted, not trees alive.** Headline numbers say little about survival or productivity decades later.

Money gets stuck upstream. Funds flow through understaffed agencies and institutions; little reaches the farms doing the work.
Tree crops are oversold. Chestnut and hazelnut are promising but not yet market-ready in the Northeast; meanwhile workhorse support species (willow, poplar, black locust) are overlooked.
Agroforestry assumes land ownership. That excludes many Black, Indigenous, and immigrant growers unless land trusts, long leases, and collective tenure are built in from the start.
There aren't enough trees — or the right ones. Seedling supply is short in both quantity and local adaptation (UVM).

1.2 Principles we work from

Listen first. Projects start with farmer and land-steward needs, and stay open to new information.
Plant ecosystems, not trees. Soil, water, animals, and people are designed together.
Move money to the land stewards. Simple access, long-term capacity over one-off planting events.
Decide in community. Local people choose priority species and tree economies that fit them.
Scale out, not up. Relationships, knowledge networks, and local genetic banks come before field-scale planting. Some places aren't "field ready" yet, and thats ok!

1.3 The community nursery as the starting point

A few hundred square feet of nursery can grow tens of thousands of trees; an acre of field holds a few hundred. Decentralized community nurseries, linked into a regional exchange of plant material and genetics, address the stock shortage while keeping wealth and decisions local. They borrow from seed-keeping movements: a sharing economy that leans toward the commons. Jonathan McRay of Silver Run Forest Farm frames this as a nursery theory of social change: a nursery both supports social change and models how change grows. In his framing, a nursery should:

Circulate fertility seasonally rather than hoard it — keep the gift moving.
Preserve old ways while experimenting with new ones.
Use a diversity of species, practices, and distribution methods instead of one model everywhere.
Act like a keystone species: influence well beyond its size, within its real sphere.
Balance how much we can sustain with how well we can sustain it.
Treat nursing — nourishing and nurturing life — as the base of every economy.
Be multifunctional like a tree, not multitasking: many benefits from simply being what it is.

Trust and trees grow at similar speeds: slow at first, fast once roots are down.

1.4 Why a farm or nursery grows trees:

Goal	What it looks like
Income generation	Retail, wholesale, and contract sales of stock and cuttings
Lower tree costs for farm projects	Growing your own silvopasture, windbreak, and alley planting stock
Genetic preservation	Selecting and propagating locally adapted, named, and wild trees
Education	Workshops, farm tours, cohort hosting, content
Community resilience	Trees shared through networks and solidarity distributions
Love	Fascination, a lifetime of learning, curiosity, and a desire to leave a legacy

1.5 What to know before you start

Soil health is the foundation. Akiva Silver: “be generous — if you have money, spend it on compost”
It's a long-term project. Trees take 1–3 seasons in the nursery; markets and skills take years to develop and mature.
You can't grow all the trees. Pick a focus you love. Akiva's question: “what sings to your heart?”
Scale changes everything. Retail vs. wholesale, mail-order vs. local pickup, and hand-powered vs. mechanized are different businesses.
You'll kill a lot and so you plant a lot. Dead plants are feedback, not failure (Edible Acres).
Hone the hard skills. If you're going to grow trees, you need to know how to plant them.

Part 2: Nursery Practices, Tools, and Propagation

A good nursery is based in fertile soil, reliable water, and a smooth path from propagation to the shipping table. Everything below supports those three.

2.1 Design phase: assess before you build

Work through these before buying anything:

Goals and audience. Your own farm plantings, local farmers, landscapers, conservation orgs, mail-order retail?
Climate and microclimate. Zone, frost pockets, sun and shade, prevailing wind, temperature swings.
Soils. Texture, drainage, pH, compaction, slope. In-ground beds live or die on this.

Water. Source, volume, pressure, gravity options, catchment.
Access and flow. Can you move from propagation → potting → hardening → storage → shipping without backtracking?
Biosecurity and rules. nursery licensing, quarantine zones, invasive pests (jumping worms, spotted lanternfly).
Tools. Google Earth, hand-drawn base maps, and the Scale of Permanence (climate → landform → water → access → structures → soil) to prioritize decisions.

2.2 Infrastructure

Element	Purpose	Notes from the field
In-ground beds	Lowest-cost production of bare-root stock	Deep, loose, compost-rich soil makes digging easy; top-dress generously
Air-prune beds	Fibrous roots, easy harvest, high density	Fluffy media deep enough for a 1-year taproot; mesh openings under ½" to stop rodents; modular, can be built at ergonomic height (Edible Acres)
Misting / propagation beds	Rooting softwood cuttings, germination	Needs humidity and temperature control; shade cloth or hoop/shade house
Containers / pot-in-pot	Holding stock through the season, retail sales	Dry out fastest; plan for up-potting and daily watering
Water	Irrigation, hand-watering, catchment	Gravity-fed IBC totes from uphill catchment; tubs on float valves for quick watering-can dipping (Edible Acres)
Potting space	Mixing media, potting, sticking cuttings	Covered, near media storage and water
Order prep space	Grading, bundling, packing	Shaded, cool, with water tubs for roots
Cold storage / holding	Keeping dormant stock between dig and ship	A cooler, or in-ground heeling-in beds with thick soil cover; no cooler needed for spring shipping
Tools	Digging, labeling, records	Sharp shovels, tree planting bar, durable tags (cut aluminum cans or old vinyl blinds)

2.3 Fertility

Be generous: the thicker the organic matter on top, the easier and healthier the dig.

Compost and compost teas or brews — the core input; bring it in if you need to. An exporting nursery is allowed to import fertility.

Ramial chips (e.g., willow) — young branch chips that feed fungal soil life. Use aged; fresh sawdust and chips can inhibit growth.
Indigenous microorganisms (IMOs) and fungi banks — cultivate local soil biology rather than buying inoculants.
Potting mix — aim for peat-free blends; generate on site with local materials
Green manures and cover crops — between bed rotations.
Dynamic accumulators — comfrey and mint around beds for mulch, teas, and pest confusion.
Animal + other integration — chicken-composting systems (Edible Acres), grazing nursery edges, grass clippings, composted mushroom blocks as added fertility.

2.4 Genetics

Source	Strength	Watch for
Local / wild seed	Adapted, diverse, cheap	Variable form and yield; needs selection
Selected seedlings	Diversity plus improved traits	Selection takes years of observation
Clones (cuttings, grafts)	True to type, earlier fruiting	Narrow genetics; disease risk in monoculture

Keep your eyes open: exceptional trees are everywhere once you learn to see them. Track source, lot, and parentage for every batch. Sometimes the best tree is in the ditch along the road!

2.5 Propagation methods

Method	Best for	Key practice
Seed	Nuts, oaks, persimmon, honey locust, most natives	Collect fresh; stratify per species; store chestnuts in moist sand near 33°F
Hardwood cuttings	Willow, poplar, elderberry, currant, buttonbush, mulberry	Stick dormant cuttings with all but one bud below ground — big roots, small tops
Softwood cuttings	Some shrubs, figs	Needs misting and humidity control
Layering / stooling	Hazelnut, currant, gooseberry	Mound soil on coppiced stools; dig rooted suckers (gooseberry roots poorly from cuttings)
Division / root suckers	Black locust, pawpaw, herbaceous perennials	Dig runners, separate, and grow out
Grafting	Named fruit and nut cultivars	Skips juvenility, moves straight to fruiting

2.6 Species selection and profiles

You can't grow every tree. Balance two groups based on site and goals:

> **Tree crops** (chestnut, hazelnut, persimmon, pawpaw, mulberry, fruits) — higher value, slower, more demanding.
>
> **Support trees** (willow, poplar, black locust, honey locust, alder, sycamore) — fast, easy to propagate, high ecological function, and steady demand for silvopasture and riparian work.

For each species you grow, keep a **propagation profile** and learn from the tree: habitat and site needs, seed or cutting source, dormancy and pretreatment, propagation method and timing, media and container, growth and spacing, pests and diseases, readiness and grading, storage and shipping, and customer care notes.

2.7 Seasonal workflows and SOPs

Season	Core work
Winter	Collect and store hardwood cuttings; plan orders and species; repair tools; make tags; graft
Early spring	Stick cuttings; sow stratified seed; dig, grade, rinse, and ship spring orders
Late spring – summer	Water (about 1" per week), weed, mulch, pot up, scout pests, softwood cuttings
Late summer – early fall	Collect seed; harden off; mow around beds; take inventory and open sales
Late fall	Strip leaves, dig, grade, heel in or cool-store; ship fall orders; finish by Thanksgiving (Akiva)

Core SOPs to write for your nursery:

> **Digging.** Use a sharp shovel; place it, then press — never stab or swing. If the tree lifts straight up, you're cutting soil; if it leans toward you, you're prying roots.
> **Root care.** Roots go straight from the ground into water tubs or wet burlap. Air exposure kills bare-root trees fast; don't dig in scorching or freezing air.
> **Grading.** A-grade and B-grade (small stock or damaged roots); define size thresholds per species.
> **Heeling in.** Thick soil, deeper than you think — it settles 30% or more. Soil thaws faster than woodchip mulch in spring.
> **Packing and shipping.** Rinse roots coming out of storage (removes jumping worm eggs), pack tight and moist, label with species, grade, and care instructions.
> **Records and labels.** Lot, source, date, location, and counts for every batch.

Part 3: Field Practices

Most tree losses are decided before and in the first three seasons after planting: placement, prep, protection, and early weed and browse control.

3.1 Site design: right tree, right place

Match site first. Soil pH, drainage, and texture; wet feet vs. drought tolerance; sun hours (full sun = 6–8+ hrs); wind, frost pockets, slope.
Plan for the long term. Mature height, canopy, and root zone; room for mowing, thinning, coppicing, and pollarding.
Plant communities, not single trees. Clusters and guilds with healthy soil biology establish better.
Plant dense, thin later. Expect some loss; early density gives early harvest and room to select.
Consider nursery-bed holding. Small stock grown 1–3 seasons in an on-farm nursery bed before transplanting survives better than going straight to the field.

3.2 Preparing to plant

Receiving and holding trees

Keep roots moist and cool (ideally 34–45°F); shade from sun and wind; never let roots sit in the air.
Hours to weeks: heel in — a shallow trench in shade, trees at an angle, roots covered in moist soil, heeled firm, watered, labeled.
Months: you're now running a nursery — expect growth, water consistently, give moderate light and spacing.

Site prep

Clear sod and weeds at least 2–3 ft around each spot, or prep whole rows.
Loosen compaction (subsoiler, walk-behind tractor with rotary plow, shallow tillage, broadfork); avoid augers in clay and never work saturated soil.
Pit-and-mound plantings mimic tree-fall pits and passively harvest water on low-maintenance sites.
Fall-loosened soil can frost-heave young roots; spring planting is more forgiving.

3.3 Planting and protection

Prepare the tree. Soak bare roots 1–2 hours; loosen circling roots on potted stock; prune roots to fit the hole and avoid J-roots.
Dig for root freedom. 2–3× as wide and about 1.5× as deep as the root system; the top 10–12" is where feeder roots live early on.
Set the height. Root flare just above grade, mounded soil beneath for support.
Backfill and firm. Native soil, packed to remove air pockets.
Mulch and water. 2–3" over the root zone, kept off the trunk; water deeply.

Use the two-person method when training: one person tends the tree (height, direction, roots),

the other backfills. Be generous with time while learning — you can speed up later.

Protection	Cost per tree	Pros	Cons
3D / perimeter electric fence	$1–3+	Cheapest at scale; protects a whole block	Needs maintenance and power
Tube + stake	$10+	Sheltered microclimate, faster vertical growth	Overheating, weak stems, nests; needs checking
Wire cage + T-posts	$20+	Durable, reusable; airflow and natural branching	Expensive at scale
Spiral wrap / window screen	Low	Stops vole, rabbit girdling	Remove in spring; only until bark toughens

3.4 Aftercare (first 2–3 years)

Walk your trees often. Problems are easy to fix early, hard to reverse later.
Water. About 1" per week, especially May–June; have a backup plan for early droughts.
Weeds and grass. The biggest challenge: maintain mulch and mow or trim twice a year (after the spring flush and late summer).
Browse and rodents. Check for deer, rabbit, and vole damage, including tunneling under mulch in winter; keep grass short in Sept–Oct.
Tubes. Vent or adjust for heat, mold, and weak stems.
Pruning. Minimal early: dead, damaged, crossing branches; encourage a central leader where form matters.
Pollards and grazing. Animals strip bark and sprouts unevenly; budget follow-up trimming and be realistic about labor.

Part 4: Economies of Exchange

A nursery pays best as one piece of a diversified farm or land project, with income from several channels and an honest count of what each stem costs to grow.

4.1 Markets and revenue streams

Retail — local pickup, farmers markets, plant sales; discounts for local buyers (Edible Acres).
Online / shipping — a simple storefront (e.g., Squarespace); sales open seasonally
Wholesale and contract growing — for farms, conservation groups, landscapers, and programs like MYCENA.
Cuttings and seed — low-risk to sell; fresh seed packed in damp sand or soil.
Education — workshops, tours, courses, video content and memberships.
Research and trials — paid variety trials and demonstration plots.
Design and install — planting services and aftercare contracts.

4.4 Community Solidarity Agroforestry

A CSA for trees: instead of community supported agriculture, community *solidarity* agroforestry. Silver Run Forest Farm started it in 2020 to move surplus dormant stock through trusted networks, treating it like a wholesale contract with crowdsourced funds so the growers help decide where trees go. They have since shared nearly 8,000 trees, shrubs, and cuttings with backyards, community farms, land trusts, and landback efforts (McRay).

Other shared-wealth models to draw on:

Profit sharing. Edible Acres splits nursery profits three ways among partners — hand-powered, people-centered, community farming.
Land-access partnerships. Managing a neighbor's field intensively and tidily builds trust and opens more land over time.
Regional exchange networks. Linked nurseries swapping genetics and filling each other's gaps — the seed of an Eastern Woodland Nursery Alliance.
Aggregation programs. MYCENA aggregates stock from partner nurseries and distributes to farm cohorts with multi-year aftercare.

4.5 Low-hanging fruit: easy first steps

- ☐ Stick a batch of willow, poplar, or elderberry hardwood cuttings this spring.
- ☐ Build one in-ground or air-prune bed near water and fill it with compost-rich soil.
- ☐ Collect local seed this fall (oak, hickory, persimmon, honey locust) and stratify it.
- ☐ Identify three exceptional trees near you to watch and propagate from.
- ☐ Grow out your own trees for one farm project before selling to others.
- ☐ Start a simple record: lot, source, date, count, survival.
- ☐ Visit or call one working nursery and ask what they wish they'd known.

Resources

Readings and context

From the Ground Up: Tree Planting Needs Local Roots — Steve Gabriel
A Nursery Theory of Social Change — Jonathan McRay, Silver Run Forest Farm
Plans to plant billions of trees threatened by massive undersupply of seedlings — UVM
Farming with Trees — MYCENA listening session report and project updates
Trees of Power — Akiva Silver

Nursery practice

Reforestation, Nurseries and Genetics Resources
Savanna Institute: Planting Tree Crops
Growing Media for Container Production — University of Arkansas Extension

Harvesting and Shipping Procedures — Geographic Consulting
Understanding Plant Labels — FAMU Extension
The Grazier's Guide to Trees
Willow and Poplar Propagation Manual (FAO) *[add link]*
Edible Acres videos on heeling in trees *[add links]*