IDNR Nursery Program

Nurseries were constructed and have been in operation since the 1930s.

 Originally, the Civilian Conservation Corps built and operated the Nurseries in both Mason and Union County.



- The Nursery Program mainly produces bare-root nursery stock, 1-2 years in age from seed in outdoor field "seedbeds".
- The Nursery stock is mainly used for conservation and reforestation purposes.



- During the 1930s and into the 1940s, nursery produced seedling were used for planting surface mined lands, Department of Conservation properties and Soil Conservation service projects.
- Of the plants produced, less than 20 percent were used on private beds.
- In the late 1940s and into the 1960s, demand shifted from governmental lands to about 85 percent private lands.
- This change was due mainly to the Federal Soil Bank Program.
- Annual nursery production peaked at about 12 million seedlings in 1957.

In 1957, 72 percent of the production was coniferous species.

Shrubs accounted for 23 percent of production and less than 5 percent of the seedlings were hardwoods.







In 1983, production shifted to native hardwoods and non-native plant material production was discontinued.





The 1980s also saw the Mason Nursery begin producing native prairie wildflowers and grass plants and seeds.



➢In 1987, the Illinois legislature passed the Forestry Development Act. This Act had language that allowed Illinois landowners to obtain planting stock at no cost if they had a management plan that was approved by IDNR.

➤The majority of the tree and shrub seedlings distributed by the Nursery Program in the 1990s and beyond were at no cost to private landowners with approved management plans.

- The last two employees of the Union Nursery retired in 2012, and the facility is no longer being utilized.
- This has left the Mason State Tree Nursery as the only plant material production facility in the Illinois Department of Natural Resources.



2015 Production

IDNR Mason State Nursery Program is currently producing:

37 species of trees and shrubs

24 species of containerized prairie plant material

30 species of prairie forb seed

8 species of prairie grass seed

The following is the approximate current inventory of the items listed above:

2 Million bare root trees and shrubs in the ground for harvest in 2015/2016

30,000 containerized prairie plants for distribution in 2015/2016

1,500 pounds of cleaned prairie forb seed ready for 2015/2016

5,500 pounds of cleaned prairie grass seed ready for 2015/2016

			2016 Con	servation Pla	nting Stock	
Species Code	Species	min. size	ave. size	Price/100	#/100's wanted	Total Price
102	Shagbark Hickory	3″	4"	\$50.00		
103	Hackberry	8″	24"	\$50.00		
104	Black Walnut	8″	22"	\$50.00		
106	Red Pine	6″	10"	\$35.00		
108	Bur Oak	8″	24"	\$50.00		
109	Black Cherry	6″	26"	\$50.00	Limited supply	
113	Red Oak	8"	24"	\$50.00	v - 20	
123	Hazelnut	6"	24"	\$35.00		
127	American Plum	6"	22"	\$35.00		
130	Elderberry	6″	34"	\$35.00		
133	Black Chokeberry	6"	20"	\$35.00	Limited supply	
137	Staghorn Sumac	6"	22"	\$35.00		
161	Bald Cypress	10"	24"	\$50.00		
176	Grey Dogwood	10"	30"	\$35.00		
177	Red Osier Dogwood	10"	30"	\$35.00		
178	Silky Dogwood	10"	28"	\$35.00		
201	Pecan	6″	10"	\$50.00		
211	White Pine	6"		\$35.00	Not available	
212	White Oak	4"	8"	\$50.00		
214	Black Oak	6″	22"	\$50.00		
216	Shellbark Hickory	3″	8"	\$50.00		
218	Pin Oak	8″	16"	\$50.00		
220	Persimmon	6″	18"	\$50.00		
223	Sycamore	6″	30"	\$50.00	1	
254	Swamp White Oak	8"	12"	\$50.00		
260	Shingle Oak	8"	20"	\$50.00		
261	Cherrybark Oak	8"	20"	\$50.00		
262	Shumard Oak	8"	20"	\$50.00		
266	Overcup Oak	8″	18"	\$50.00		
		-			UPS @ \$25.00/100*	

FORMERLY KNOWN AS THE "PRAIRIE PROGRAM"



Pollinator populations have been struggling the last several years.

- Production of native forbs and grasses began in 1978.
- Program started from collections made from remnant populations of plants occurring in the central Illinois area.





Propagating the material in greenhouses and transplanting outside to seedbeds allowed increases to be made over time.

Seed was collected from these seedbeds and the process repeated until enough excess seed and plants were produced to allow distribution to individuals and entities outside of the Nursery.





Current Annual Production of Pollinator Plants:

- 1,000 pounds of cleaned forb seed
- ► 50,000 greenhouse plugs
- 20,000 one gallon containers
- 35 different species of prairie forbs and 5 different species of prairie grass

Container Production at Mason Nursery





Wildflower Pollinator Species

Species	Scientific Name	Species	Scientific Name
Black-eyed Susan	Rudbeckia hirta	Pale Purple Coneflower	Echinacea pullida
Partridge Pea	Chamaecrista fasiculata	New England Aster	Aster novae-angliae
Spike Blazing Star	Liatris spicata	Spiderwort	Tradescantia ohiensis
Butterfly Weed	Asclepias tuberosa	Oxeye Sunflower	Heliopsis helianthoides
Lance Leaf Coreopsis	Coreopsis lanceolata	Royal Catchfly	Silene regia
Lead Plant	Amorpha canescens	Western Sunflower	Helianthus occidentalis
Obedient Plant	Physostegia virginiana	Compass Plant	Silphium laciniatum
Smooth Aster	Aster laevis	Rosin Weed	Silphium integrifolium
Purple Prairie Clover	Dalea purpurea	Alum Root	Heuchera richardsonii
White Prairie Clover Dalea candida		Prairie Dock	Silphium
Purple Coneflower	Echinacea purpurea		terebinthinaceum
Stiff Tickseed	Coreopsis palmata	Round Headed	Lespedeza capitata
Tall Gayfeather	Liatris pycnostachya	Lespedeza	
Grav Headed	Ratibida pinnata	Illinois Mimosa	Desmanthus illinoensis
Coneflower		Indigo Bush	Amorpha fruticosa
Rough Blazing Star	Liatris aspera	New Jersey Tea	Ceanothus americanus
Rough blazing star		Wild Blue Iris	Iris shrevei

Prairie Grass Species

Species	Scientific Name
Northern Dropseed	Sporobolis heterolepis
Big Bluestem	Andropogon gerardii
Little Bluestem	Schizachryium scoparium
Sand Love Grass	Eragrostis trichodes
Side Oats	Boutilou acurtipendula
Indian Grass	Sorghastrum nutans

Spike Blazing Star



Royal Catch Fly







Lead Plant





Purple Prairie Clover



White Prairie Clover



- Mason Nursery has 10 acres of wildflower seed collection areas and 30 acres of prairie grass collection areas.
- Wildflower species are kept separate in 4 foot wide rows or seedbeds.
 - This keeps identification mistakes to a minimum when harvesting.





- The wildflower seed is mostly hand harvested while the prairie grass is machine harvested.
- Hand collection allows for cleaner seed with less stems and allows for harvesting of only ripe seed.
- Machine harvesting is indiscriminate as to seed ripeness and also brings in much more stem and plant material.

Seed goes into drying bins to completely dry before cleaning and processing.







Seed Drying Building



Metal Drying Bins



Metal Drying Bins





Open air seed drying in screens.

- Seed harvested in clusters or seed with awns go through a process which breaks up the clusters and stems and/or removes the awns.
- Equipment used to do this include:
 - Dybvig type macerators
 - Plot threshers
 - Brush de-bearders



Westrup HA-400 Brush De-Bearders

.....



Final cleaning of wildflower and grass seed down to pure live seed is done with the Crippen Fanning Mill or the Jesse Aspirator.





Seed is bagged, weighted and put in cold storage in fiber drums.





- To date, seed has been distributed on a pound measurement basis.
- Smaller quantities down to tenths of an ounce and seed mixes are planned for future distribution.



For most of the Mason Nursery prairie material propagation protocols, please visit the Native Plant Network at <u>www.nativeplantnetwork.org</u>.



Mason State Tree Nursery Container Production

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Original 3000 Square Foot Greenhouse



Additional Polyhouses and Potting Shed



Forbs (30+ Species)				
Species	Scientific Name	Species	Scientific Name	
Black-eyed Susan	Rudbeckia hirta	Pale Purple Coneflor	wer Echinacea pullida	
Partridge Pea	Chamaecrista	New England Aster	Aster novae-angliae	
	fasiculata	Spiderwort	Tradescantia ohiensis	
Spike Blazing Star	Liatris spicata	Oxeye Sunflower	Heliopsis helianthoides	
Butterfly Weed	Asclepias tuberosa	Royal Catchfly	Silene regia	
Lance Leaf Coreopsis	Coreopsis lanceolata	Western Sunflower	Helianthus occidentalis	
Lead Plant	Amorpha canescens	Compass Plant	Silphium laciniatum	
Obedient Plant	Physostegia virginiana	Rosin Weed	Silphium integrifolium	
Smooth Aster	Aster laevis	Alum Root	Heuchera richardsonii	
Purple Prairie Clover	Dalea purpurea	Prairie Dock	Silphium	
White Prairie Clover	Dalea candida		terebinthinaceum	
Purple Coneflower	Echinacea purpurea	Round Headed	Lespedeza capitata	
Stiff Tickseed	Coreopsis palmata	Lespedeza		
Tall Gayfeather	Liatris pycnostachya	Illinois Mimosa	Desmanthus illinoensis	
Gray Headed	Ratibida pinnata	Indigo Bush	Amorpha fruticosa	
Coneflower		New Jersey Tea	Ceanothus americanus	
Rough Blazing Star	Liatris aspera	Wild Blue Iris	Iris shrevei	

Grasses (6 Species)

Species	Scientific Name
Northern Dropseed	Sporobolis heterolepis
Big Bluestem	Andropogon gerardii
Little Bluestem	Schizachryium scoparium
Sand Love Grass	Eragrostis trichodes
Side Oats	Boutilou acurtipendula
Indian Grass	Sorghastrum nutans

Trees (15+ Species)			
Species	Scientific Name		
Hackberry	Celtis occidentalis		
Bur Oak	Quercus macrocarpa		
Shumard Oak	Quercus shumardii		
Pin Oak	Quercus palustris		
Shingle Oak	Quercus imbricaria		
Bald Cypress	Taxodium distichum		
Northern White Cedar	Thuja occidentalis		
White Pine	Pinus strobus		
Cherrybark Oak	Quercus falcata		
Norway Spruce	Picea abies		
Chinkapin Oak	Quercus muehlenbergii		
Pecan	Carya illinoensis		

Used for Forbs and Grasses

► Used to carry plugs over winter



Multi Pots are hand seeded





Multi Pots are used because a slow release fertilizer can be added to the mix





Spike Blazing Star







Forbs in Multi Pots

 Used for germinating forbs and grasses and transplanting into pots



- With Jiffy Pellets, fertilizer has to be applied through irrigation water
- Water soluble fertilizer must be used with a fertilizer injector system
- Over winter storage is not feasible with Jiffy Pellets



Butterfly Weed





Growing in Jiffy Forestry Pellets Tall Gayfeather







Royal Catchfly 36x75mm 84 per tray



Bluestem 50x100mm 36 per tray

Growing with Gallon Containers



- Bulk planting media
- ▶ Used for gallon pots or larger





June

Winter

Spring

Seed into Plug Trays

- Transplant Jiffy Pellets to Gallon Containers
 - Grow in Gallon Containers throughout Summer
 - Dormant Plants are put in Cold Storage over Winter
 - Distribute in the Container in the Spring

Growing with Gallon Containers





Growing with Gallon Containers





Growing with 2 and 5 Gallon Containers Hardwoods and Shrubs

Seed germinated in Flats

Germinated Seed transferred to Sleeves, Small Containers or Large Jiffys

Seedlings allowed to grow and develop a Root Mass

Seedlings transplanted into Two and Five Gallon Containers

Growing with 2 and 5 Gallon Containers Hardwoods and Shrubs



Black Oak germinated in Flats



Sycamore germinated in Flats

Growing with 2 and 5 Gallon Containers Hardwoods and Shrubs



Hackberry

Black Oak

Growing with Gallon Containers



 Cold frames for winter storage of 2 to 5 gallon containers













Shade Structure



- Used for summer growing
- Plants moved from greenhouse to shade structure in June



2014 Summer Growing





2014 Summer Growing



Container Material for Distribution from Mason Nursery in the Spring of 2014

Forbs and Grasses,1 gallon containers for distribution	20,000
Trees and Shrubs, 2 and 5 gallon containers for distribution	3,000
Greenhouse plugs from 45 cell multi- pot for distribution	40,000