

# **NCRPIS 2009 Wisconsin – Illinois Germplasm Reconnaissance and Collection Trips**

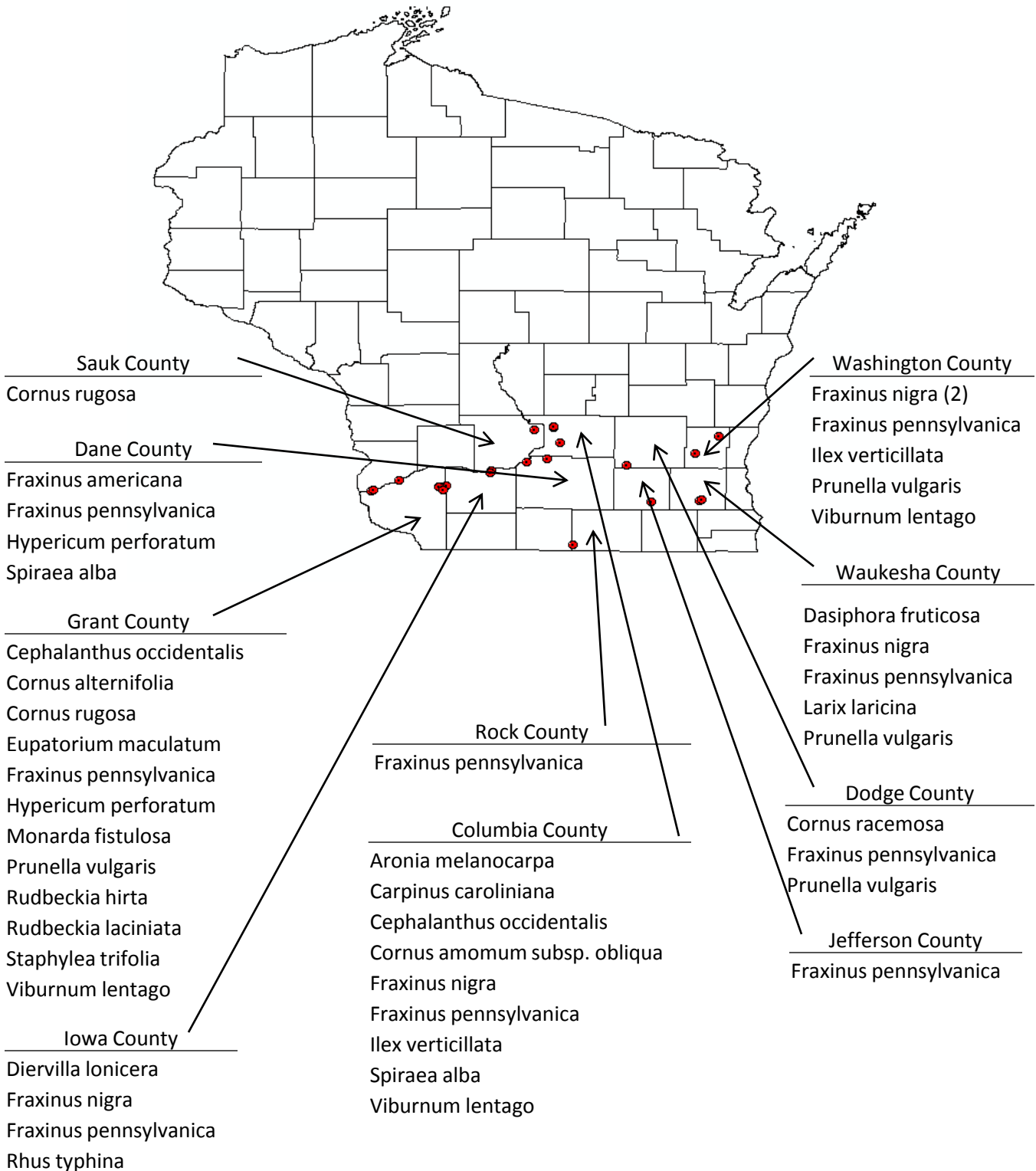
**August 3 – 8, 2009  
September 21 – 29, 2009**



United States Department of Agriculture

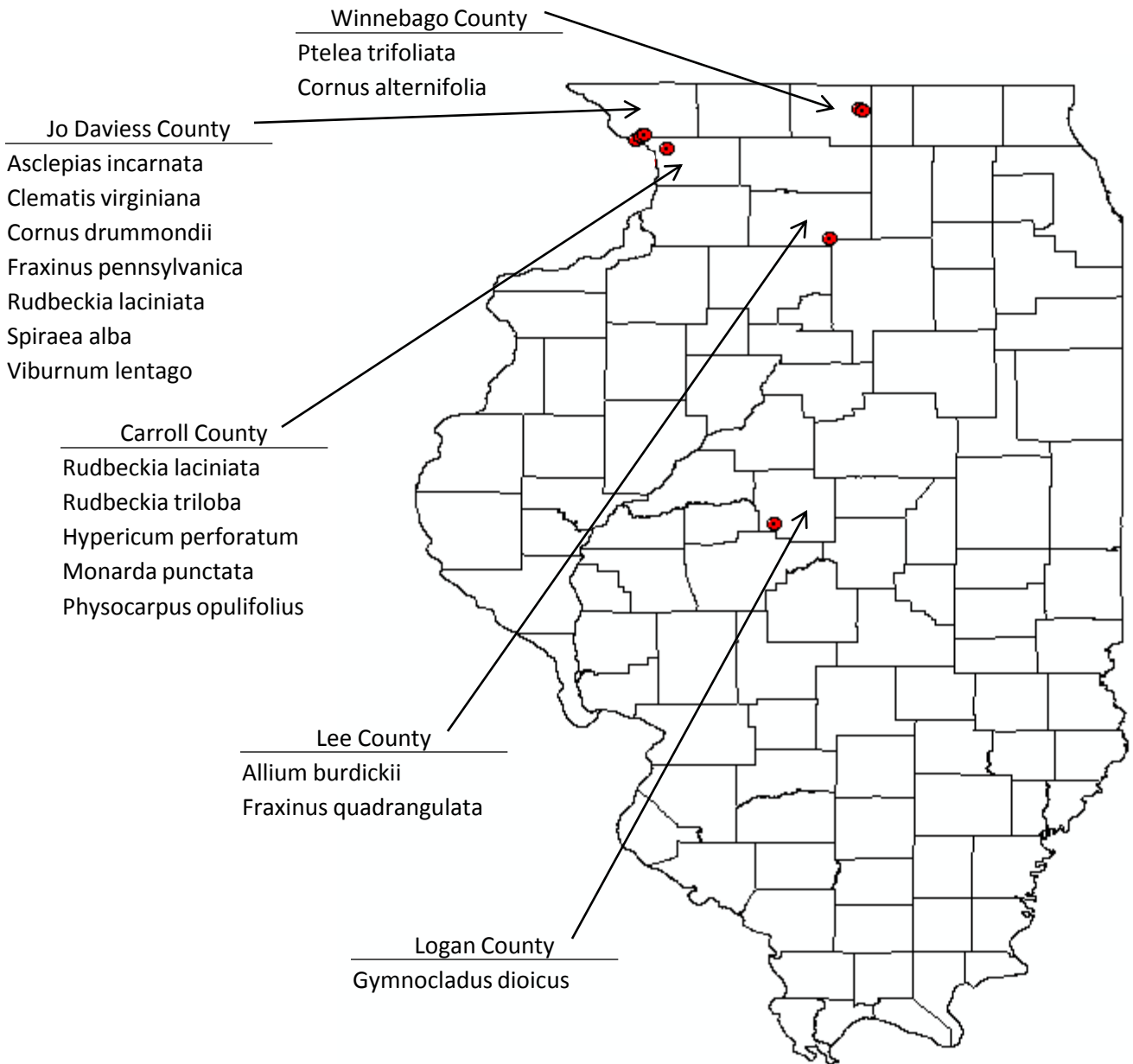
**North Central Regional Plant  
Introduction Station – Ames, IA**

# Wisconsin Germplasm Sites



**Map of locations where germplasm was collected**

# Illinois Germplasm Sites



Map of locations where germplasm was collected

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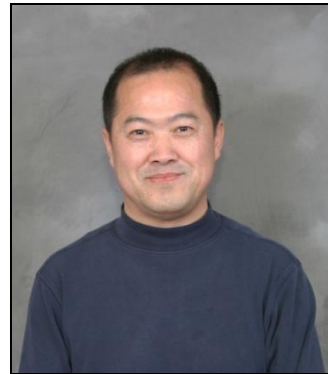
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# Introduction

The USDA-ARS Plant Introduction Station (Ames, IA) completed reconnaissance and collection trips to Wisconsin and Illinois in 2009. Funding was supported by the USDA Plant Exploration Program, which is coordinated by the Plant Exchange Office, National Germplasm Resources Laboratory, USDA-ARS, Beltsville, Maryland. Participants included:

- **Dr. Mark P. Widrechner**, Horticulturist, USDA-ARS Plant Introduction Station, Ames, IA (left)
- **Jeffrey D. Carstens**, Agricultural Science Research Technician, USDA-ARS Plant Introduction Station, Ames, IA (center)
- **Dr. Luping Qu**, Horticulturist, USDA-ARS Plant Introduction Station, Ames, IA (right)



The objectives were to:

- Identify and voucher *Fraxinus* populations and potentially other NPGS genera within Wisconsin and Illinois in 2009
- Collect *Fraxinus* germplasm not already represented at the USDA-ARS Plant Introduction Station in Ames, Iowa during the fall of 2009
- Store and backup collections at the USDA-ARS Plant Introduction Station and the National Center for Genetic Resources Preservation in Fort Collins, Colorado, respectively
- Ultimately conserve and preserve genetic diversity of North American *Fraxinus* germplasm in response to the threat of loss these species from their native range to the emerald ash borer, *Agrilus planipennis* Fairmaire

# Importance of *Fraxinus* Conservation

The emerald ash borer (EAB) was accidentally introduced to North America from Asia. North American *Fraxinus* species evidently have no resistance to this pest. Since its introduction in the vicinity of Detroit, it has devastated native *Fraxinus* populations in Michigan, Indiana, Ohio, and Ontario, and it continues to spread. The loss of these species has cultural, ecological, and economic implications that warrant preserving the genetic resources before too much is lost to the insect. Trees, as do all plants, must be adapted to their environment to thrive. Natural ash populations have adapted to their environments. Preserving a significant number of these populations is required for successful reintroduction of these species, once adequate environmental control measures for EAB are developed or trees resistant to the insect are bred and introduced. Breeding resistant ash trees for reintroduction will ultimately require an array of adapted parental populations. Given the projected degree of EAB destruction to native stands, only well-conserved ex situ germplasm collections will be able to provide this needed material. The easiest way to assemble such collections is to collect seeds from representative native stands following a systematic plan. The seeds will not transmit EAB to non-infested areas. Studies have shown no loss in viability over 7 years for green and European ash seeds stored at 5°C (Barton 1945). Seed regenerations at the Plant Introduction Station (Ames, Iowa) reported successful germination of 9-year old green ash seeds stored at -18°C. Therefore, when properly handled, seeds should survive well under medium and long-term storage conditions. Seeds can be easily distributed to scientists and growers to produce seedlings for EAB research, breeding, other scientific study, and future ecological restoration work. This report describes one component of a comprehensive plan to organize these seed collections.

# Reconnaissance Trip Plan

## **Monday, 3 August 2009**

Explore Wyalusing State Park near Wyalusing, WI; Lower Wisconsin State Riverway (Blue River Unit) along the Wisconsin River, Snow Bottoms State Natural Area near Montfort, WI

## **Tuesday, 4 August 2009**

Explore Love Creek Remnant Wildlife Area east of Dodgeville, WI; Tower Hill State Park near Spring Green, WI; additional area along the Lower Wisconsin State Riverway (Mazomanie Unit); Lodi Marsh near Lodi, WI; Baraboo River Floodplain along the Baraboo River; private ground identified by University of Wisconsin graduate student, Sarah Johnson

## **Wednesday, 5 August 2009**

Explore Waterloo Wildlife Area near Waterloo, WI; Jackson Marsh Wildlife Area near Jackson, WI; Lazy Days Campground – site identified by Sarah Johnson; possibly collect blue ash seeds in Muskego County park in Muskego, WI

## **Thursday, 6 August 2009**

Visit Vernon Wildlife Management Area near Big Bend, WI; check out areas around Kettle Moraine State Forest, Prince's Point Wildlife Area; head south towards Rockford, IL to look around Rock Cut State Park

## **Friday, 7 August 2009**

Investigate Knox Grove near Mendota, IL; Franklin Creek State Park; Castle Rock State Park, White Pines State Park

## **Saturday, 8 August 2009**

Explore areas in and around Mississippi Palisades State Park in Carroll County, IL; collect blue ash on private land near Sabula, IA owned by David and Nan Horst

# Reconnaissance Trip Daily Log

## Monday, 3 August 2009

Exploration at Wyalusing State Park identified numerous small seedlings of black ash along with a fair number of larger, reproductive individuals. Unfortunately, only one specimen (Voucher MPW#631) was identified with seeds. Besides black ash, a few, large specimens of *Fraxinus pennsylvanica* were identified, again with little to no seeds.

Shortly after leaving Wyalusing State Park, a quick trip to the Bridgeport Landing boat dock, near Bridgeport, turned up a small population of *Fraxinus pennsylvanica* (Voucher MPW#632), which were covered in seeds. A few nice native plant associates were noted including *Betula nigra*, *Quercus bicolor*, and *Cephalanthus occidentalis*.

Heading east along County Highway C from Bridgeport, a beautiful population of *Cornus rugosa* (Voucher MPW#633/photo right) was identified just west of Woodman. Fruits were ready to be harvested, so a seed harvest from 10 plants was made (JDC/CR/2009/011/141). During harvest, a couple hundred plants of *Staphylea trifolia* were noted with excellent seed production.



*Cornus rugosa* – near Woodman, WI

Within the same vicinity, we were also happy to find a small population of native Kentucky Coffeetree growing on the banks of the Wisconsin River.

Continuing west we explored additional area along the Wisconsin River. Surprisingly a majority of the area east of Woodman was not appropriate habitat for *Fraxinus*. This area would be considered oak barrens, made up of lower pH, sandy soils. The dominant woody species was black oak.

Our next visit to Snow Bottoms State Natural Area led us to a small population (12 plants) of *Viburnum lentago* which we marked for future collection. We considered Snow Bottoms State Natural Area as a high-quality natural area. Vouchers of *Prunella vulgaris* (Voucher MPW #634) and *Rudbeckia hirta* (Voucher MPW #635) were taken.



# Reconnaissance Trip Daily Log

## Monday, 3 August 2009 (cont'd)

While leaving Snow Bottoms State Natural Area, a very large population (75+ plants) of *Cornus alternifolia* was identified and six fruiting plants were harvested (JDC/CA/2009/012/162). The fruits were well past maturity, so it was hard to find the remaining seeds that had not been consumed by birds.

## Tuesday, 4 August 2009

Our first destination for our second day was at Love Creek Wildlife Management Area. Surprisingly not a single *Fraxinus* specimen was noted, so we headed north towards Tower Hill State Park.

Along the Wisconsin River at Tower Hill State Park, we were able to find both black and green ash growing in the north section of the park. Unfortunately, no seeds were noted on black ash, but we found a half dozen green ash (Voucher MPW #637) bearing seeds. Additional specimens containing seeds most likely exist, however, extremely wet conditions made exploration difficult. It was obvious that hip waders would be useful when harvesting seeds. Observations were made indicating that cultivated ash were planted near the park entrance and picnic areas. Due to the extreme topographic barrier between the planted ash and native ash, it was determined that a seed collection would be considered isolated and native. We were also able to find a small population of *Alnus incana* subsp. *rugosa* (Voucher MPW #636) growing amongst the red and black ash. Other interesting species worth mentioning included *Diervilla lonicera* and *Heuchera* sp.

Just down the road (one mile) from Tower Hill State Park was the Helena Unit of the Lower Wisconsin State Riverway where we discovered additional fruitful red ash (Voucher MPW# 638). Two interesting plant associates noted included *Lobelia cardinalis* and *Lysimachia ciliata* (Voucher MPW# 639 and MPW#640).

Throughout Wisconsin, green ash and red ash are commonly found growing together. We distinguish red from green ash by the presence of pubescence on terminal growth, undersides of leaves, and petioles.

# Reconnaissance Trip Daily Log

## Tuesday, 4 August 2009 (cont'd)

Continuing east, we were able to spot a nice red ash population (Voucher MPW# 640) with many seeds growing in the Mazomanie-Blackhawk Unit of the Lower Wisconsin State Riverway.

Our next efforts for the day were focused on Lodi Marsh. Lodi Marsh was apparently not suitable habitat for ash. The dominant woody plant in this area were dogwood and willow. Before leaving the area, a small localized population of *Fraxinus americana* (Voucher MPW# 641) was found on higher elevation along Lee Road south of Lodi Marsh. Unfortunately, only two specimens were noted with seeds out of a twenty plant population. Due to the rarity of white ash in south-central Wisconsin, we decided that a seed collection should be made.

Travel resumed heading towards the Baraboo Floodplain Forest near Portage, WI. It was decided that a few moments near a designated trout fishing location might be worth exploring. Our search lead us to a few plants of *Fraxinus nigra* bearing seeds. In addition, a population of *Aronia melanocarpa* (3 plants) bearing ripe fruits was harvested and vouchered (Voucher MPW#642). Beautiful specimens of *Carpinus caroliniana*, *Alnus incana* subsp. *rugosa*, *Fraxinus nigra* (Voucher MPW#643) and *Viburnum lentago* were noted. This area was a big surprise and deserves additional time spent on the September seed collecting trip.

Our final destination for the day was private property along the Baraboo River recommended by Sarah Johnson for its abundance of black ash. Unfortunately, only *Fraxinus pennsylvanica* (Voucher MPW#644) trees were noted among a dense canopy of *Acer saccharinum*. After returning to our vehicle, we realized we were slightly east from the coordinates that were provided. Time during collection in September will allow to collect for the red ash and also look further west for black ash. While leaving few specimens of *Morus rubra* and *Lindernia dubia* (Voucher MPW#645) were noted.

# Reconnaissance Trip Daily Log

## Tuesday, 4th August 2008 (cont'd)

Before dinner, time was spent looking around the Pine Island State Wildlife Area, just outside Portage, WI. Since, a potential collection of red ash was identified along the Baraboo River, it was decided that only green would be collected. In addition, to vouchering green ash (Voucher MPW#647), *Spiraea alba* (Voucher MPW #648) was also sampled. Nice populations of *Cornus amomum* subsp. *obliqua* and *Cephalantus occidentalis* were also noted.

Just before calling it a night, we were able to harvest seeds of *Cornus rugosa* (Voucher MPW#646) along a north-facing slope on Fairfield Road just northeast of Baraboo, WI.

## Wednesday, 5th August 2009

Initial exploration at Waterloo Wildlife Area resulted in finding too many ash of suspected cultivated origin. Therefore, we travelled a short distance to a worthy population of *Fraxinus pennsylvanica* (Voucher MPW#649) located on the south shores of Chub Lake. Both red and green ash were growing together. Surprisingly, three species of dogwood were noted, all exhibiting fruit. In addition, a huge population of *Asclepias incarnata* was noted. Before leaving a few plants of *Prunella vulgaris* were found growing in the parking lot.

On our way to Jackson Marsh, we stopped at the Pike Lake Unit of the Kettle Moraine State Forest. We easily found nice populations of black ash (Voucher MPW#650) and red ash (Voucher MPW#651) definitely worth collecting. Due to the discoveries at the Pike Lake Unit, we decided to skip Jackson Marsh.

Our next stop at Lazy Days Campground northeast of West Bend, WI was suggested by Sarah Johnson. It was very easy to find *Fraxinus nigra* (Voucher MPW#652), which seemed to be the dominant woody species. Skunk cabbage was noted as an associated species. *Prunella vulgaris* was also noted throughout some of the tent camping sites.

Historic herbarium specimens and communication with Ted Cochrane (University of Wisconsin Herbarium) led us to a potential *Fraxinus quadrangulata* site at Muskego County Park in Muskego, WI.

# Reconnaissance Trip Daily Log

## Wednesday, 5<sup>th</sup> August 2009 (cont'd)

Unfortunately, no seed production was noted on what seemed to be a very localized, well-established population. Blue ash is currently on Wisconsin's rare and endangered species list, which required extra paperwork to get permission if germplasm was going to be collected. Dan Treutelaar, park foreman, was very helpful in taking us directly to the population located northeast of picnic area 4 (Area B - Map 1.1 in the Appendix).

Mike Bourquin, Conservation Biologist, indicated the potential to collect small seedlings in the dormant season, but additional input and permission from Waukesha County board members would be required. It was interesting to note a few *Gymnocladus dioicus* growing among the blue ash.

## Thursday, 6<sup>th</sup> August 2009

Our first site for the day at Vernon Wildlife Area (black ash site identified by Sarah Johnson) was very exciting. Numerous unexpected species were noted including purple prairie fringed orchid, shrubby cinquefoil, poison sumac, tamarak, and common nine-bark. Both red and black ash were noted, but seed production was only noted on the red ash.



Vernon Wildlife Area – Vernon, WI

A short period of time spent checking out the Kettle Moraine State Forest Southern Unit allowed us to quickly determine that more suitable areas for collecting should be targeted.

Exploration at Prince's Point Wildlife Area resulted in identifying a very large population of red/green ash (Voucher MPW#653 and #654) in the Bark River floodplain. *Cornus amomum* subsp. *obliqua* was also vouchered (MPW#655) and marked for future seed collection. Dominant woody species included *Acer saccharinum*, *Quercus bicolor*, *Juglans nigra*, and *Acer negundo*. A few specimens of *Fraxinus nigra* were noted.

# Reconnaissance Trip Daily Log

## Thursday, 6<sup>th</sup> August 2009 (cont'd)

After crossing the state line, we shortly arrived at our first Illinois site located in Rock Cut State Park, where numerous specimens of *Fraxinus americana* were noted. However, we were unsure if some of the white ash were of cultivated origin, so vouchers were not taken. We were able to collect seeds from *Cornus alternifolia* (Voucher MPW#656) and mark a *Ptelea trifoliata* (Voucher MPW#657) population for future seed collection.

## Friday, 7<sup>th</sup> August 2009

Since we were collecting in a EAB quarantined area, a 540 permit for moving *Fraxinus* material out of quarantine was needed. With a 9:00a.m. meeting with APHIS, Jeff made a quick trip to Cedar Creek near Cedarville, IL where a herbarium specimen from the Illinois Natural History Survey documented *F. nigra* in 1960. Black ash (Voucher # not assigned) was found throughout the watershed, but seed production was absent.

Departing from Rockford shortly after 9:00a.m. with permit in hand, we ventured to Bartlett Woods where a steady rain continued throughout our exploration. *Fraxinus quadrangulata* was easily found throughout the area (Voucher MPW#658). Only two trees bearing seeds were sampled. Seeds were partly green and partly dried, so harvest timing was optimal. This site would be an easy site to resample as multiple (25+), very large specimens on the property boundary are exposed to ample amounts of sunlight, which would favor good seed production. Two *Allium* species, *A. tricoccum* and *A. burdickii*, were vouchered (Voucher MPW#660 and 659, respectively). Due to the interest by the *Allium* curator, Barbara Hellier, a seed sample from 50 plants of *A. burdickii* was collected and sent to Pullman, WA. Bartlett Woods would definitely be considered an oasis of a high quality, virgin, native woody and herbaceous habitat completely isolated and separated from other woodlands via agriculture.

Heavy rainfall at our next site, Franklin Creek State Park, slowed our efforts making it difficult to visually inspect trees for seed production. A large population (50+) of *Fraxinus nigra* was vouchered (MPW#661). This population had numerous, old specimens, some of which might be potential contenders as state champion trees. Again, seed production was absent.



# Reconnaissance Trip Daily Log

## Friday, 7<sup>th</sup> August 2009 (cont'd)

Heading north along IL Highway 2 towards White Pines Forest State Park, we discovered a relatively nice population of *F. americana* just off Penn Corner Road. Special attention was made concerning nearby acreages, but no cultivated ash were noted.

Shortly after arriving at White Pines Forest State Park, the rain ceased making exploration easier and more enjoyable. We were able to voucher *F. nigra* (Voucher MPW#662) growing along with *Cornus rugosa* and *F. americana*. As similarly seen throughout the southern populations of black ash, no seed.

Our night stay ended in Dixon, IL. Before checking in the hotel, we stopped at Lowell Park just north of Dixon. Lowell Park was purchased in the mid-1800s by Charles Lowell of Boston, who was later killed in the Civil War. His wife and daughter donated the 200-acre site as park in 1907. O.C. Simonds, in conjunction with the landscape firm of the Olmsted Brothers, designed the park layout and was responsible for some of the non-native plantings, such as the hemlock on north-facing slopes and the Pinetum at the entrance. Historical information for Lowell Park on what plantings were suggested and a 1907 bird survey documenting prairie chickens has been preserved. A small portion of Lowell Park has been designated as a Illinois Nature Preserve.

## Saturday, 8<sup>th</sup> August 2009

Saturday morning was spent traveling from Dixon, IL to the Mississippi Palisades State Park. As a result of taking a couple back roads, a population of *F. nigra* was vouchered (Voucher MPW#663) along Camp Creek and Messmer Road in Carroll County. Again, no seed production.

After making it through a few areas of the Mississippi Palisades State Park, it was obvious that numerous cultivated ash have been planted throughout the park. Therefore, time was spent looking elsewhere, which led us to a small population (15 trees) of green ash along Four Corners Road north of Savanna, IL. Specimens were very true to type for green ash. Vouchers were taken on *F. pennsylvanica* (MPW#664), *Cornus drummondii* (MPW#665), and *Spiraea alba* (MPW#666).

# Reconnaissance Trip Daily Log

## Saturday, 8<sup>th</sup> August 2009 (cont'd)

Continuing along Rush Road we identified a very large population of *Rudbeckia laciniata*, *Viburnum lentago*, *Cornus amomum* subsp. *obliqua*, and *Clematis virginiana*. Directly north along Story Brook and Gamble Hill Roads a very nice population of *F. americana* was noted for future seed collection.

Before heading back to Savanna, time was spent exploring near the army depot along the Mississippi River. Surprisingly, the habitat changed drastically to very sandy soils. *Fraxinus* was not found. Most of the trees observed were *Quercus velutina*. Before exiting the area, a nice population of *Monarda punctata* was noted for fall collection.

After eating lunch in Savanna, we visited David and Nan Horst (Sabula, IA) at their acreage. David is currently the horticulturist for the Bicklehaupt Arboretum in Clinton, IA. David informed us of blue ash growing on his property during the annual Shade Tree ShortCourse in Ames, IA. Within a few minutes it was obvious that his fairly steep (45%), east-facing slope supported a large population (70+) of blue ash (Voucher MPW#667) evenly mixed with Kentucky coffeetree and sugar maple. Due to the absence of seeds, rugged terrain, and extreme height of the trees, David suggested digging small seedlings and transporting them to Ames for a future seed increase. Thanks to David's suggestion and a couple of inches of rainfall the day before, 23 plants were successfully removed. These small seedlings (4-6" in height) were transferred with pots in moist field soil.

# Reconnaissance Trip Daily Log

## Saturday, 8<sup>th</sup> August 2009 (cont'd)

David then gave us a short tour of a former tree/shrub nursery located just northwest of Sabula, IA owned by Bill Giddings. The property was home to numerous trees that towered over everything in the area. Giant *Tsuga canadensis*, *Liriodendron tulipifera*, *Picea abies*, and *Fagus grandifolia* planted in the mid 1800's may serve as contenders as champion trees.

Upon returning to Ames the blue ash seedlings were successfully planted to the field under shade cloth and automatic irrigation.



Site of past Giddings Nursery – Sabula, IA

# Collection Trip Plan

## Day one – Monday - September 21<sup>st</sup>:

- Leave Ames, IA and initiate collecting near Bridgeport, WI along the Wisconsin River
- Eat lunch in Prairie du Chien, WI
- Collect along roadway heading towards Woodman, WI
- Snow Bottoms State Natural Area
- Spend the night in Dodgeville, WI

## Day two – Tuesday - September 22<sup>nd</sup>:

- Tower Hill State Park and Lower Wisconsin State Riverway –Helena Unit
- Mazomanie Blackhawk Unit
- Lunch in Lodi, WI
- Collect on private/Wisconsin DNR property near Lodi, WI
- Habitat along Kent Road - Hinkson Creek Watershed
- Baraboo River Floodplain
- Spend night in Portage, WI

## Day three – Wednesday - September 23<sup>rd</sup>:

- Pine Island State Wildlife Area just outside Portage, WI
- Chub Lake northeast of Waterloo, WI
- Lunch somewhere along the way or in Hartford, WI
- Kettle Moraine Forest Pike Unit near Hartford, WI
- Lazy Days Campground northwest of West Bend, WI
- Vernon Wildlife Area
- Spend night in near Mukwonago/Vernon, WI

# Collection Trip Plan

## Day four – Thursday - September 24<sup>h</sup>:

- Prince's Point Wildlife Area
- Explore Avon Bottoms State Wildlife Area, Colored Sands Forest Preserve, Sugar River Forest Preserve (Sugar River Watershed)
- Lunch in north Rockford, IL
- Rock Cut State Park
- Follow IL Highway 2 along Rock River to search for *Fraxinus pennsylvanica* and/or *Gymnocladus dioica*
- Spend the night in Fulton, IL

## Day five – Friday - September 25<sup>h</sup>:

- Head north towards Savanna, IL
- Palisades and Messmer Road near Mississippi Palisades State Park
- Four Corners Road north of Savanna, IL
- Military Base/Army Depot
- Lunch in Clinton, IA
- Head towards Ames, IA



# Collection Trip Daily Log

## Monday, September 21<sup>st</sup>, 2009

Jeff Carstens and Luping Qu made the first seed collection from *Fraxinus pennsylvanica* along the Wisconsin River near Bridgeport, WI. The collection site, Lower Wisconsin State Riverway, was predominantly made up of silver maple. Seeds were harvested from a total of seven specimens. Seed quality was below average due to the presence of ash seed weevils. Two trees were not added to the population harvest because of heavy weevil infestation. Similar observations were noted in 2008 with *Fraxinus americana* where slightly green seeds were of higher quality than dark brown seeds. Trees were showing signs of drought. Timing of harvest was otherwise optimal. Additional species collected included *Cephalanthus occidentalis* (10 plants sampled) and *Eutrochium maculatum* (10 plants sampled).

While enroute to Woodman, WI a nice population of *Staphylea trifolia* was harvested, but percent pod fill was very low. Approximately 100+ plants were noted on a north-facing slope (75%). *Fraxinus nigra* was noted as a plant associate exhibiting some yellow fall color on the very tops of the exposed canopy. Unfortunately, no seeds were noted. It is interesting to point out that these 20-25 black ash trees were not noted during the earlier reconnaissance trip.



Our next stop near Highland, WI was at Snow Bottoms State Natural Area. Shortly before arriving, 8 plants of *Viburnum lentago* were harvested along Bowers Road. Variation was noted in leaf size and thickness, fruit color (green, red, blue-black), and powdery mildew resistance. We sampled 8 plants. Once at Snow Bottoms, nice seed collections of *Monarda fistulosa*, *Rudbeckia hirta*, *Prunella vulgaris*, *Rudbeckia lacianata*, and *Hypericum perforatum* were made.

# Collection Trip Daily Log

## Tuesday, September 22<sup>nd</sup>, 2009

Tuesday morning greeted us with rain showers at our first stop, the Lower Wisconsin State Riverway (Helena Unit). Ash trees were fairly common in this area, but seed production was minimal. A combination of yellow fall color and necrosis from drought stress made it easy to spot *Fraxinus pennsylvanica*. We sampled nine trees. It was difficult to consistently harvest relatively similar amounts of seeds due to quality, accessibility, and mere presence. Through communications with a large group of horticulture professionals, 2009 was a poor seed production year, especially for white and blue ash. Before leaving the Helena Unit, one *Fraxinus nigra* was noted with seeds, so it was harvested.

Our next stop just down the road was at Tower Hill State Park. Thanks to the local Forester/Fire Control Director, we were able to access a service road that took us directly to the wetlands harboring many *Fraxinus* specimens. We were able to find a fair number of red ash bearing seeds. This area took very long to sample as approximately 2-12" of standing water was common along with 4' tall undergrowth of various dogwoods, cattails, and reed canary grass.



Tower Hill State Park – Spring Green, WI

Due to its close proximity (less than 2 miles) and similar habitat (Wisconsin River watershed), seed samples of *Fraxinus pennsylvanica* from Tower Hill State Park and the Helena Unit will be combined into one accession. While at Tower Hill State Park, Luping was able to successfully collect *Diervilla lonicera* seeds from 20 plants. We spent a few minutes checking *Alnus rugosa* for fruits, but very few were found.

Heading west following the Wisconsin River, we stopped at the Blackhawk Unit in the Mazomanie Wildlife Area. We were able to collect seeds from a very nice population of *Fraxinus pennsylvanica* (red ash) and from *Spiraea alba* and *Hypericum perforatum*. Thanks to a new piece of equipment, the pocket chainsaw, a new technique was utilized to bring down extremely high branches bearing seeds.

# Collection Trip Daily Log

## Tuesday, September 22<sup>nd</sup>, 2009 (cont'd)

Our next stop, near Lodi Marsh, allowed us only to collect seeds from two specimens of *Fraxinus americana*. This population should be targeted again for additional sampling.

Heading towards Poynette, WI, a stop along Hinkson Creek along Kent Road displayed probably one of the nicest native, woodland habitats supporting a large diversity of woody ornamental taxa. We were able to collect from seven specimens of *Fraxinus nigra*. It is very interesting to note the close association of this species with skunk cabbage, *Symplocarpus foetidus*, and soils that seem to be low in fertility and very wet. A small population of *Carpinus caroliniana* (8 plants) were harvested. This species was just starting to initiate fall color, but only showing signs of yellow and light orange. *Ilex verticillata* was also harvested. This species was exhibiting bright red fruits with very clean foliage. Plants seemed to be performing quite well under fairly shaded conditions. Additional species collected included *Viburnum lentago* and *Cornus amomum* subsp. *obliqua*. The most common species noted included *Alnus rugosa*, *Juglans nigra*, and *Cornus* spp. Private landowners that approved our collecting along Hinkson Creek included Lauren Knuteson, Charles Janisch, and Gerard Hogan.

Due to steady rainfall throughout the day, making collections took much longer than expected. Visually finding ash seeds was challenging and trying to harvest them was extremely difficult. Additional time was spent switching seeds from wet bags used to make the collection into dry bags before packing samples into boxes. In the interest of time/daylight, we decided to skip the Baraboo Floodplain collection site and collect the population of green/red ash in the Pine Island Wildlife Management Area. We were also able to collect seeds from a very large population of *Spiraea alba* and *Cephalanthus occidentalis*. We tried to find fruits on *Betula nigra*, as this species was fairly common, but no fruits were observed. Unfortunately, seeds of *Cornus amomum* subsp. *obliqua* were no longer present, most likely due to foraging birds.

# Collection Trip Daily Log

## Tuesday, September 22<sup>nd</sup>, 2009 (cont'd)

At the end of the day, it was clear that probably only 3-4 good collections of ash could be made in a day. Compared to ash collections made in 2007 and 2008, this year required additional time finding trees with seeds, locating those with good-quality seeds, and making the collections.

## Wednesday, September 23<sup>rd</sup>, 2009

Wednesday morning, although it wasn't raining, was just as wet as if it was raining because of fog and heavy dew. This limited our ability to take photographs as well as vouchers. These weather conditions were common throughout the collection trip.

Our first stop was at Chub Lake just northwest of Waterloo, WI. We collected from fruitful populations of *Fraxinus pennsylvanica* and *Cornus racemosa*.



*Cornus racemosa* – Chub Lake – Waterloo, WI

Luping was able to harvest from a couple *Prunella vulgaris* plants, but assigning an Ames number to this accession awaits an actual seed count and possible viability tests.

# Collection Trip Daily Log

## Wednesday, September 23<sup>rd</sup>, 2009 (cont'd)

Arriving in Hartford, WI, around 11:30a.m., we decided to complete all collections in Kettle Moraine State Forest (Pike Lake Unit) before eating lunch. While entering the Pike Lake area, numerous *Fraxinus nigra* could be noticed from a distance bearing seeds. It was also interesting to note that a few male trees still had persisting flowers, very dark in color. A very large population of *Viburnum lentago*, (100+) was noted throughout the park in both saturated and well-drained habitats. Seed collections of *Fraxinus pennsylvanica*, *Fraxinus nigra*, and *Viburnum lentago* were made.

Luping enjoyed collecting nannyberry (photo right) as he found them quite tasty to eat. This population exhibited a fair amount of variation in disease resistance to powdery mildew and also in the quality of fall foliage display, which may be related to the diversity of habitats that were harvested from.



*Viburnum lentago* – Kettle Moraine – Pike Lake Unit

Shifting north and east approximately 20 miles took us to Lazy Days Campground. A small drainage ditch runs from west to east into the southwest corner of Green Lake. This creates a habitat with soils described as boggy, soft, and low in nutrients. The majority of this area is inhabited by *F. nigra* along with *F. pennsylvanica* and *Ilex verticillata*. Seeds were collected from 9 trees of black ash and approximately 15 plants of winterberry. Luping was able to harvest from a very large population (100+) of *Prunella vulgaris* growing among openings by the tent camping sites. This population was very restricted, possibly due to the additional sun exposure at that specific site.



# Collection Trip Daily Log

## Wednesday, September 23<sup>rd</sup>, 2009 (cont'd)

Slowly starting to see the sun go down, we still had one more site that we wanted to explore. Vernon Wildlife Area, as previously described, is home to numerous native plant with ornamental potential not found at other Wisconsin sites visited. We were able to gain access to a road taking us to the western portion of Vernon Wildlife Area. We were able to find a few black ash and numerous, mature red ash. Both species were harvested. While exploring the eastern section, we were able to obtain seeds from *Dasiphora fruticosa*, *Prunella vulgaris*, and *Larix laricina*. We did find a fairly large population (100+ plants) of *Rudbeckia hirta*, but the area had been mowed mid-season leaving only immature seeds.

## Wednesday, September 24<sup>th</sup>, 2009

Our first location for the morning, again very wet due to heavy dew, was located at Prince's Point Wildlife Area. *Fraxinus pennsylvanica* (both red and green) was easily found throughout the area, but seed production was present on only about 10% of the specimens encountered. Due to the lack of seed production, the percent infestation via ash seed weevils was extremely high. Despite the odds, 12 specimens of *F. pennsylvanica* were harvested.

Continuing south to the Illinois border, we stopped just north of the border along the Sugar River to harvest a nice, isolated population of red ash. Specimens were easily found/accessible along the roadsides compared to other populations throughout our trip which had required lots of hiking to get to.

We then moved on to Rock Cut State Park to make a quick collection from a population of *Ptelea trifoliata* along Hart Road. Seed production was abundant and timing was perfect.

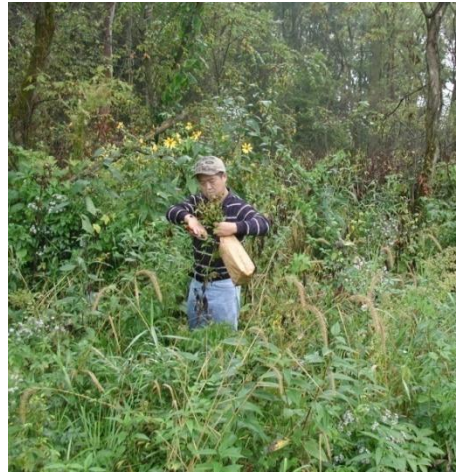
We continued to follow IL Highway 2 south along the Rock River, but failed to find an additional area from which to collect ash.

# Collection Trip Daily Log

## Friday, September 25<sup>th</sup>, 2009

Another rainy morning again continued to slow our efforts near Savanna, IL. We ventured first to the old Military Base and collected *Monarda punctata* from approximately 50 plants. While harvesting, *Hypericum perforatum* was noted and harvested as well. Since the population of *Monarda* was quite scattered, time was spent showing Luping how to sample broadly rather than locally. With a quick break in the rain, time was spent explaining how to properly fill out data collection forms.

Moving on to Four Corners Road north of IL Highway 84, we stopped to make seed collections from *Fraxinus pennsylvanica*, *Spiraea alba*, *Asclepias incarnata*, *Rudbeckia laciniata*, *Cornus drummondii*, *Viburnum lentago*, and *Clematis virginiana*. All were fairly easy collections to make as they were all located along the roadside.



*Rudbeckia laciniata* – Four Corners Road

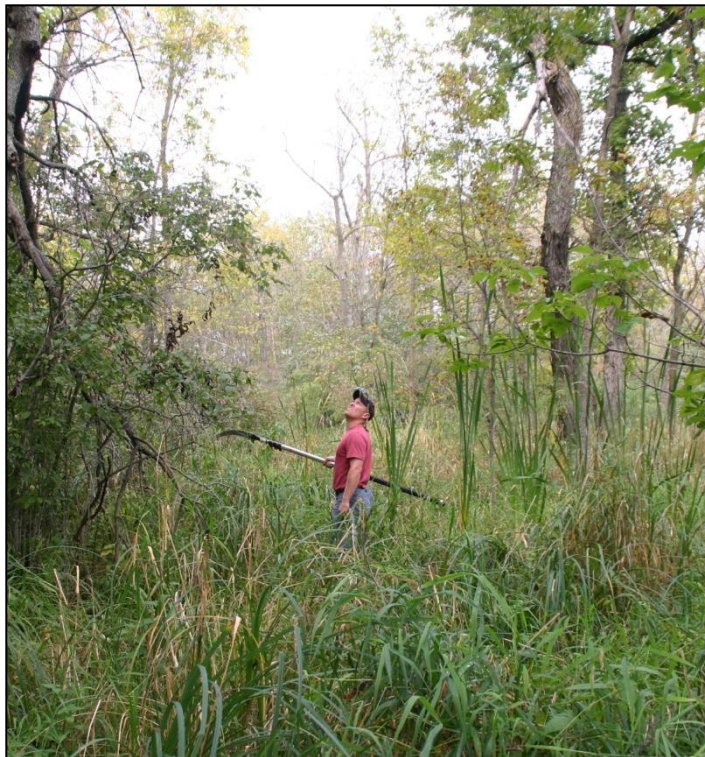
Our final destination was to simply harvest *Rudbeckia triloba* and *Rudbeckia laciniata* along Messmer Road, near Savanna, IL. Both species were easily found and harvested along the roadside. In addition, seeds were harvested from *Physocarpus opulifolius*. One plant of *Lonicera reticulata* was noted with red fruits. This species had not otherwise been observed throughout the trip.

With lots of wet material in the van, we grabbed a quick lunch and headed straight home in order to get material dried as quickly as possible.

# Trip Summary

In total, we obtained 18 *Fraxinus* accessions out of 63 accessions. (*F. americana* (1), *F. nigra* (5), *F. pennsylvanica* (10), and *F. quadrangulata* (2).

Other species collected on the two trips included: *Allium burdickii* (1), *Asclepias incarnata* (1), *Aronia melanocarpa* (1), *Carpinus caroliniana* (1), *Cephalanthus occidentalis* (2), *Clematis virginiana* (1), *Cornus* spp. (7), *Dasiphora fruticosa* (1), *Diervilla lonicera* (1), *Eutrochium maculatum* (1), *Hypericum perforatum* (3), *Ilex verticillata* (2), *Larix laricina* (1), *Monarda* spp. (2), *Physocarpus opulifolius* (1), *Prunella vulgaris* (4), *Ptelea trifoliata* (1), *Rhus typhina* (1), *Rudbeckia* spp. (5), *Staphylea trifolia* (1), *Spiraea alba* (3), and *Viburnum lentago* (4).



*Fraxinus nigra* habitat – Lazy Days Campground – Young America, WI

# Trip Summary

The hardest problems in obtaining ash seeds this year was minimal seed production, poor quality due to ash seed weevils, and time required to walk through thick, wet habitat. However, numerous populations of *Fraxinus* that were not sampled have been documented for potential future seed collections. It is interesting to note the close association of skunk cabbage and black ash. In the absence of information on black ash, one could target location information on skunk cabbage in order to find undocumented populations of black ash. It is also interesting to note although the typical habitat for *Fraxinus nigra* tends to be fairly wet, mucky soils, yet not necessarily standing water, specimens can be found at higher elevations with underground seeps.

Vernon Wildlife Area (Waukesha County) and Hinkson Creek Fishery Area (Columbia County) are two areas in Wisconsin that deserve additional attention due to the quality and diversity of flora they presented. The white ash population near Lodi Marsh (Dane County, WI) deserves to be recollected due to the lack of other *F. americana* seed collections from Wisconsin. Bartlett Woods (Lee County, IL) also deserves to be recollected due to the quality and quantity of blue ash at that site.

The use of the pocket chainsaw under the right situations can serve as an easy way to obtain seeds from very high branches.

It was interesting to note growth-habit differences in *Viburnum lentago*. It seems that specimens can be found growing in both wet and dry soils. Individuals growing in well-drained soils tend to sucker profusely, while those under saturated conditions tend to remain as single stemmed (tree-like) specimens. Regardless of habitat, fruit production was good and mildew resistance was variable.

# List of Vouchers and/or Germplasm Collected

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Collection Number: MPW#631  
Scientific Name: *Fraxinus nigra* Marshall  
Date: 3 August 2009  
County, State: GRANT COUNTY, WISCONSIN  
Elevation: 232m  
Latitude: 42.982667°N  
Longitude: 91.12697°W (NAD83)  
Locality: Wyalusing State Park – Wyalusing, WI  
Herbarium Specimen: yes  
Plant associates: *Cornus alternifolia*, *Fraxinus americana*, *Juglans nigra*, *Campanula americana*, *Alliaria petiolata*, *Quercus rubra*, and *Quercus alba*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#632  
Scientific Name: *Fraxinus pennsylvanica* Marshall  
Date: 3 August 2009  
County, State: GRANT COUNTY, WISCONSIN  
Elevation: 189m  
Latitude: 42.998233°N  
Longitude: 91.050517°W (NAD83)  
Locality: Lower Wisconsin State Riverway – Bridgeport, WI  
Herbarium Specimen: yes  
Plant associates: *Quercus bicolor*, *Cephalanthus occidentalis*, *Betula nigra*, *Urtica dioica*, and *Ulmus rubra*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#633  
Scientific Name: *Cornus rugosa* Lam.  
Date: 3 August 2009  
County, State: GRANT COUNTY, WISCONSIN  
Elevation: 201m  
Latitude: 43.085150°N  
Longitude: 90.816483°W (NAD83)  
Locality: WI Highway 133 – Woodman, WI  
Herbarium Specimen: yes  
Plant associates: *Staphylea trifolia*, *Smilacina racemosa*, *Prunus virginiana*, *Acer saccharinum*, *Veronicastrum virginicum*, *Cornus alternifolia*, *Parthenocissus vitacea*, and *Rubus idaeus* var. *strigosus*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#634  
Scientific Name: *Prunella vulgaris* L.  
Date: 3 August 2009  
County, State: GRANT COUNTY, WISCONSIN  
Elevation: 262m  
Latitude: 43.032883°N  
Longitude: 90.467667°W (NAD83)  
Locality: Snow Bottoms State Natural Area – Highland, WI  
Herbarium Specimen: yes  
Plant associates: *Trifolium pratense*, *Agrimonia* sp., *Rudbeckia hirta*, *Monarda fistulosa*, *Achillea millefolium*, and *Ulmus* sp.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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# List of Vouchers and/or Germplasm Collected

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Collection Number: not assigned  
Scientific Name: *Cornus alternifolia* L. f.  
Date: 3 August 2009  
County, State: GRANT COUNTY, WISCONSIN  
Elevation: 262m  
Latitude: 43.032883°N  
Longitude: 90.467667°W (NAD83)  
Locality: Snow Bottoms State Natural Area – Highland, WI  
Herbarium Specimen: yes  
Plant associates: *Trifolium pratense*, *Agrimonia* sp., *Rudbeckia hirta*, *Monarda fistulosa*, *Achillea millefolium*, and *Ulmus* sp.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#635  
Scientific Name: *Rudbeckia hirta* L.  
Date: 3 August 2009  
County, State: GRANT COUNTY, WISCONSIN  
Elevation: 262m  
Latitude: 43.036050°N  
Longitude: 90.46780°W (NAD83)  
Locality: Snow Bottoms State Natural Area – Highland, WI  
Herbarium Specimen: yes  
Plant associates: *Trifolium pratense*, *Agrimonia* sp., *Prunella vulgaris*, *Monarda fistulosa*, *Achillea millefolium*, and *Ulmus* sp.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: JDC/CA/2009/012/162  
Scientific Name: *Cornus alternifolia* L. f.  
Date: 3 August 2009  
County, State: GRANT COUNTY, WISCONSIN  
Elevation: 274m  
Latitude: 43.004722°N  
Longitude: 90.444722°W (NAD83)  
Locality: East of Bluff Road and Vavrika Road intersection – Montfort, WI  
Herbarium Specimen: no  
Plant associates: *Quercus* sp.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens

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Collection Number: MPW#636  
Scientific Name: *Alnus incana* (L.) Moench subsp. *rugosa* (Du Roi) R.T. Clausen.  
Date: 4 August 2009  
County, State: IOWA COUNTY, WISCONSIN  
Elevation: 237m  
Latitude: 43.150667°N  
Longitude: 90.041800°W (NAD83)  
Locality: Tower Hill State Park – Spring Green, WI  
Herbarium Specimen: yes  
Plant associates: *Eupatorium purpureum*, *Fraxinus nigra*, *Betula nigra*, *Acer saccharinum*, *Carya cordiformis*, *Rudbeckia laciniata*, *Fraxinus pennsylvanica*, and *Salix* spp.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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# List of Vouchers and/or Germplasm Collected

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Collection Number: MPW#637  
Scientific Name: *Fraxinus pennsylvanica* Marshall  
Date: 4 August 2009  
County, State: IOWA COUNTY, WISCONSIN  
Elevation: 237m  
Latitude: 43.150667°N  
Longitude: 90.041800°W (NAD83)  
Locality: Tower Hill State Park – Spring Green, WI  
Herbarium Specimen: yes  
Plant associates: *Eupatorium purpureum*, *Fraxinus nigra*, *Betula nigra*, *Acer saccharinum*, *Carya cordiformis*, *Rudbeckia laciniata*, *Alnus incana* subsp. *rugosa*, and *Salix* spp.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#638  
Scientific Name: *Fraxinus pennsylvanica* Marshall  
Date: 4 August 2009  
County, State: IOWA COUNTY, WISCONSIN  
Elevation: 216m  
Latitude: 43.168150°N  
Longitude: 90.039567°W (NAD83)  
Locality: Lower Wisconsin State Riverway – Helena Unit – Spring Green, WI  
Herbarium Specimen: yes  
Plant associates: *Lobelia cardinalis*, *Stachys* sp., *Lysimachia ciliata*, *Toxicodendron radicans*, *Vitis riparia*, *Fraxinus nigra*, *Quercus macrocarpa*, *Carya cordiformis*, and *Acer saccharinum*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#639  
Scientific Name: *Lysimachia ciliata* L.  
Date: 4 August 2009  
County, State: IOWA COUNTY, WISCONSIN  
Elevation: 216m  
Latitude: 43.168150°N  
Longitude: 90.039567°W (NAD83)  
Locality: Lower Wisconsin State Riverway – Helena Unit – Spring Green, WI  
Herbarium Specimen: yes  
Plant associates: *Lobelia cardinalis*, *Stachys* sp., *Fraxinus pennsylvanica*, *Toxicodendron radicans*, *Vitis riparia*, *Quercus macrocarpa*, *Fraxinus nigra*, *Carya cordiformis*, and *Acer saccharinum*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#640  
Scientific Name: *Fraxinus pennsylvanica* Marshall  
Date: 4 August 2009  
County, State: DANE COUNTY, WISCONSIN  
Elevation: 226m  
Latitude: 43.243700°N  
Longitude: 89.739833°W (NAD83)  
Locality: Lower Wisconsin State Riverway – Blackhawk Unit - Mazomanie, WI  
Herbarium Specimen: yes  
Plant associates: *Zanthoxylum americanum*, *Rhamnus cathartica*, *Saponaria officinalis*, *Vitis riparia*, *Amorpha canescens*, *Ulmus rubra*, *Spartina pectinata*, *Hypericum perforatum*, *Spiraea alba*, *Gentiana andrewsii*, and *Betula nigra*  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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# List of Vouchers and/or Germplasm Collected

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Collection Number: MPW#641  
Scientific Name: *Fraxinus americana* L.  
Date: 4 August 2009  
County, State: DANE COUNTY, WISCONSIN  
Elevation: 268m  
Latitude: 43.272767°N  
Longitude: 89.564900°W (NAD83)  
Locality: Lee Road near Lodi Marsh – Lodi, WI  
Herbarium Specimen: yes  
Plant associates: *Juglans nigra*, *Ulmus rubra*, *Lonicera tatarica*, *Cornus alternifolia*, and *Tilia americana*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#642  
Scientific Name: *Aronia melanocarpa* (Michx.) Elliot  
Date: 4 August 2009  
County, State: COLUMBIA COUNTY, WISCONSIN  
Elevation: 243m  
Latitude: 43.406500°N  
Longitude: 89.458733°W (NAD83)  
Locality: Hinkson Creek Watershed – Kent Road – Poynette, WI  
Herbarium Specimen: yes  
Plant associates: *Fraxinus nigra*, *Populus tremuloides*, *Juglans nigra*, *Amelanchier* sp., *Carpinus caroliniana*, *Helianthus strumosus*, *Acer negundo*, *Prunus virginiana*, *Ilex verticillata*, *Alnus incana* subsp. *rugosa*, and *Viburnum lentago*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#643  
Scientific Name: *Fraxinus nigra* Marshall  
Date: 4 August 2009  
County, State: COLUMBIA COUNTY, WISCONSIN  
Elevation: 216m  
Latitude: 43.403100°N  
Longitude: 89.464267°W (NAD83)  
Locality: Rowan Creek Watershed - Poynette, WI  
Herbarium Specimen: yes  
Plant associates: *Carya cordiformis*, *Fraxinus pennsylvanica*, *Acer negundo*, and *Rudbeckia laciniata*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#644  
Scientific Name: *Fraxinus pennsylvanica* Marshall  
Date: 4 August 2009  
County, State: COLUMBIA COUNTY, WISCONSIN  
Elevation: 237m  
Latitude: 43.498000°N  
Longitude: 89.450967°W (NAD83)  
Locality: Baraboo River Floodplain - Portage, WI  
Herbarium Specimen: yes  
Plant associates: *Acer saccharinum*, *Betula nigra*, *Carya cordiformis*, *Carex* spp., *Physostegia virginiana*, *Urtica dioica*, and *Phalaris arundinacea*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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# List of Vouchers and/or Germplasm Collected

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Collection Number: MPW#645  
Scientific Name: *Lindernia dubia*  
Date: 4 August 2009  
County, State: COLUMBIA COUNTY, WISCONSIN  
Elevation: 237m  
Latitude: 43.498000°N  
Longitude: 89.450967°W (NAD83)  
Locality: Baraboo River Floodplain - Portage, WI  
Herbarium Specimen: yes  
Plant associates: *Acer saccharinum*, *Mimulus ringens*, *Sagittaria*, and *Phalaris arundinacea*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#646  
Scientific Name: *Cornus rugosa* Lam.  
Date: 4 August 2009  
County, State: SAUK COUNTY, WISCONSIN  
Elevation: 259m  
Latitude: 43.510867°N  
Longitude: 89.675767°W (NAD83)  
Locality: Fairfield Road east of Paschen Road – Portage, WI  
Herbarium Specimen: yes  
Plant associates: *Veronicastrum virginicum*, *Vitis riparia*, *Quercus alba*, *Carya cordiformis*, and *Parthenocissus quinquefolia*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#647  
Scientific Name: *Fraxinus pennsylvanica* Marshall  
Date: 4 August 2009  
County, State: COLUMBIA COUNTY, WISCONSIN  
Elevation: 242m  
Latitude: 43.532600°N  
Longitude: 89.515617°W (NAD83)  
Locality: Pine Island State Wildlife Area – Portage, WI  
Herbarium Specimen: yes  
Plant associates: *Quercus bicolor*, *Acer saccharinum*, *Cornus amomum* subsp. *obliqua*, *Cephalanthus occidentalis*, and *Betula nigra*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#648  
Scientific Name: *Spiraea alba* Du Roi  
Date: 4 August 2009  
County, State: COLUMBIA COUNTY, WISCONSIN  
Elevation: 242m  
Latitude: 43.532600°N  
Longitude: 89.515617°W (NAD83)  
Locality: Pine Island State Wildlife Area – Portage, WI  
Herbarium Specimen: yes  
Plant associates: *Quercus velutina*, *Fraxinus pennsylvanica*, *Spartina pectinata*, and *Erigeron* sp.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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# List of Vouchers and/or Germplasm Collected

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Collection Number: MPW#649  
Scientific Name: *Fraxinus pennsylvanica* Marshall  
Date: 5 August 2009  
County, State: DODGE COUNTY, WISCONSIN  
Elevation: 239m  
Latitude: 43.219533°N  
Longitude: 88.893983°W (NAD83)  
Locality: Chub Lake - Waterloo, WI  
Herbarium Specimen: yes  
Plant associates: *Cornus sericea*, *Cornus amomum* subsp. *obliqua*, *Cornus racemosa*, *Acer negundo*, *Quercus macrocarpa*, *Salix exigua*, *Stachys* sp., *Physostegia virginianum*, *Toxicodendron radicans*, *Phalaris arundinacea*, *Asclepias incarnata*, and *Prunella vulgaris*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#650  
Scientific Name: *Fraxinus nigra* Marshall  
Date: 5 August 2009  
County, State: WASHINGTON COUNTY, WISCONSIN  
Elevation: 305m  
Latitude: 43.312217°N  
Longitude: 88.321900°W (NAD83)  
Locality: Kettle Moraine State Forest – Pike Lake - Hartford, WI  
Herbarium Specimen: yes  
Plant associates: *Viburnum lentago*, *Fraxinus pennsylvanica*, *Prunus virginiana*, *Monarda fistulosa*, *Symplocarpus foetidus*, *Acer negundo*, *Lonicera tartarica*, *Clematis virginiana*, and *Rhamnus frangula*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#651  
Scientific Name: *Fraxinus pennsylvanica* Marshall  
Date: 5 August 2009  
County, State: WASHINGTON COUNTY, WISCONSIN  
Elevation: 305m  
Latitude: 43.312217°N  
Longitude: 88.321900°W (NAD83)  
Locality: Kettle Moraine State Forest – Pike Lake - Hartford, WI  
Herbarium Specimen: yes  
Plant associates: *Viburnum lentago*, *Fraxinus nigra*, *Prunus virginiana*, *Monarda fistulosa*, *Symplocarpus foetidus*, *Acer negundo*, *Lonicera tartarica*, *Clematis virginiana*, and *Rhamnus frangula*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#652  
Scientific Name: *Fraxinus nigra* Marshall  
Date: 5 August 2009  
County, State: WASHINGTON COUNTY, WISCONSIN  
Elevation: 265m  
Latitude: 43.455617°N  
Longitude: 88.11415°W (NAD83)  
Locality: Lazy Days Campground – Green Lake – West Bend, WI  
Herbarium Specimen: yes  
Plant associates: *Prunella vulgaris*, *Acer saccharinum*, *Plantago* sp., *Fraxinus pennsylvanica*, and *Symplocarpus foetidus*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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# List of Vouchers and/or Germplasm Collected

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Collection Number: MPW#653  
Scientific Name: *Fraxinus pennsylvanica* Marshall  
Date: 6 August 2009  
County, State: DODGE COUNTY, WISCONSIN  
Elevation: 237m  
Latitude: 42.911667°N  
Longitude: 88.684900°W (NAD83)  
Locality: Prince's Point State Wildlife Area - Hebron, WI  
Herbarium Specimen: yes  
Plant associates: *Quercus bicolor*, *Prunus serotina*, *Acer saccharinum*, *Malus ioensis*, *Crataegus mollis*, *Acer negundo*, *Vitis riparia*, *Phalaris arundinacea*, *Echinocystis lobata*, *Ribes americanum*, and *Cornus amomum* subsp. *obliqua*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#654  
Scientific Name: *Fraxinus pennsylvanica* Marshall  
Date: 6 August 2009  
County, State: DODGE COUNTY, WISCONSIN  
Elevation: 237m  
Latitude: 42.911667°N  
Longitude: 88.684900°W (NAD83)  
Locality: Prince's Point State Wildlife Area - Hebron, WI  
Herbarium Specimen: yes  
Plant associates: *Quercus bicolor*, *Prunus serotina*, *Acer saccharinum*, *Malus ioensis*, *Crataegus mollis*, *Acer negundo*, *Vitis riparia*, *Phalaris arundinacea*, *Echinocystis lobata*, *Ribes americanum*, and *Cornus amomum* subsp. *obliqua*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#655  
Scientific Name: *Cornus amomum* Mill. subsp. *obliqua* (Raf.) J.S. Wilson  
Date: 6 August 2009  
County, State: JEFFERSON COUNTY, WISCONSIN  
Elevation: 237m  
Latitude: 42.911667°N  
Longitude: 88.684900°W (NAD83)  
Locality: Prince's Point State Wildlife Area - Hebron, WI  
Herbarium Specimen: yes  
Plant associates: *Quercus bicolor*, *Prunus serotina*, *Acer saccharinum*, *Malus ioensis*, *Crataegus mollis*, *Acer negundo*, *Vitis riparia*, *Phalaris arundinacea*, *Echinocystis lobata*, *Ribes americanum*, and *Fraxinus pennsylvanica*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#656  
Scientific Name: *Cornus alternifolia* L. f.  
Date: 6 August 2009  
County, State: WINNEBAGO COUNTY, ILLINOIS  
Elevation: 259m  
Latitude: 42.343350°N  
Longitude: 88.986517°W (NAD83)  
Locality: Rock Cut State Park – Rockford, IL  
Herbarium Specimen: yes  
Plant associates: *Fraxinus americana*, *Acer saccharum*, *Juglans nigra*, *Campanula americana*, *Lonicera maackii*, *Staphylea trifolia*, *Quercus alba*, *Tilia americana*, *Arisaema triphyllum*, and *Asarum canadense*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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# List of Vouchers and/or Germplasm Collected

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Collection Number: MPW#657  
Scientific Name: *Ptelea trifoliata* L.  
Date: 6 August 2009  
County, State: WINNEBAGO COUNTY, ILLINOIS  
Elevation: 254m  
Latitude: 42.355083°N  
Longitude: 89.000767°W (NAD83)  
Locality: Rock Cut State Park – Rockford, IL  
Herbarium Specimen: yes  
Plant associates: *Helianthus strumosus*, *Monarda fistulosa*, *Vitis riparia*, *Lonicera tatarica*, *Rhus glabra*, *Viburnum lentago*, *Melilotus alba*, and *Juglans nigra*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: not assigned  
Scientific Name: *Fraxinus nigra* Marshall  
Date: 8 August 2009  
County, State: STEPHENSON COUNTY, ILLINOIS  
Elevation: 252m  
Latitude: 42.3822°N  
Longitude: 89.6337°W (NAD83)  
Locality: Cedar Creek - Cedarville, IL  
Herbarium Specimen: yes  
Plant associates: *Cornus alternifolia*, *Rubus* sp., *Ulmus* sp., *Acer saccharinum*, and *Tilia americana*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS  
Collectors: Jeffrey D. Carstens

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Collection Number: MPW#658  
Scientific Name: *Fraxinus quadrangulata* Michx.  
Date: 7 August 2009  
County, State: LEE COUNTY, ILLINOIS  
Elevation: 259m  
Latitude: 41.622200°N  
Longitude: 89.1674°W (NAD83)  
Locality: Bartlett Woods – Mendota, IL  
Herbarium Specimen: yes  
Plant associates: *Acer saccharum*, *Tilia americana*, *Fraxinus pennsylvanica* (very large), *Staphylea trifolia*, *Allium burdickii*, *Allium tricoccum*, *Quercus alba*, *Quercus rubra*, *Juglans nigra*, *Arisaema triphyllum*, *Urtica dioica*, *Cornus alternifolia*, and *Prunus serotina*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: JDC/AT/2009/016/166 and MPW#659  
Scientific Name: *Allium burdickii* (Hanes) A.G. Jones  
Date: 7 August 2009  
County, State: LEE COUNTY, ILLINOIS  
Elevation: 259m  
Latitude: 41.620100°N  
Longitude: 89.1713°W (NAD83)  
Locality: Bartlett Woods – Mendota, IL  
Herbarium Specimen: yes  
Plant associates: *Acer saccharum*, *Tilia americana*, *Fraxinus pennsylvanica* (very large), *Staphylea trifolia*, *Allium tricoccum*, *Fraxinus quadrangulata*, *Quercus alba*, *Quercus rubra*, *Juglans nigra*, *Arisaema triphyllum*, *Urtica dioica*, *Cornus alternifolia*, and *Prunus serotina*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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# List of Vouchers and/or Germplasm Collected

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Collection Number: MPW#660  
Scientific Name: *Allium tricoccum* Aiton  
Date: 7 August 2009  
County, State: LEE COUNTY, ILLINOIS  
Elevation: 259m  
Latitude: 41.620100°N  
Longitude: 89.1713°W (NAD83)  
Locality: Bartlett Woods – Mendota, IL  
Herbarium Specimen: yes  
Plant associates: *Acer saccharum*, *Tilia americana*, *Fraxinus pennsylvanica* (very large), *Staphylea trifolia*, *Allium burdickii*, *Fraxinus quadrangulata*, *Quercus alba*, *Quercus rubra*, *Juglans nigra*, *Arisaema triphyllum*, *Urtica dioica*, *Cornus alternifolia*, and *Prunus serotina*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#661  
Scientific Name: *Fraxinus nigra* Marshall  
Date: 7 August 2009  
County, State: DODGE COUNTY, WISCONSIN  
Elevation: 220m  
Latitude: 41.851700°N  
Longitude: 89.348100°W (NAD83)  
Locality: Franklin Creek State Park – Franklin Grove, IL  
Herbarium Specimen: yes  
Plant associates: *Toxicodendron radicans*, *Symplocarpus foetidus*, *Urtica dioica*, *Verbesina alternifolia*, and *Juglans nigra*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#662  
Scientific Name: *Fraxinus nigra* Marshall  
Date: 7 August 2009  
County, State: LEE COUNTY, ILLINOIS  
Elevation: 235m  
Latitude: 41.996600°N  
Longitude: 89.464867°W (NAD83)  
Locality: White Pines Forest State Park – Oregon, IL  
Herbarium Specimen: yes  
Plant associates: *Pinus strobus*, *Tilia americana*, *Quercus rubra*, *Taxus canadensis*, *Lonicera dioica*, *Smilacina racemosa*, *Polemonium reptans*, *Fraxinus americana*, *Cornus rugosa*, *Cornus alternifolia*, and *Caulophyllum thalictroides*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#663  
Scientific Name: *Fraxinus nigra* Marshall  
Date: 8 August 2009  
County, State: CARROLL COUNTY, ILLINOIS  
Elevation: 185m  
Latitude: 42.133300°N  
Longitude: 90.092333°W (NAD83)  
Locality: Messmer Road west of Oakton Road (Camp Creek), Savanna, IL  
Herbarium Specimen: yes  
Plant associates: *Rudbeckia lacinata*, *Acer negundo*, *Juglans nigra*, *Angelica atropurpurea*, *Staphylea trifolia*, and *Ptelea trifoliata*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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# List of Vouchers and/or Germplasm Collected

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Collection Number: MPW#664  
Scientific Name: *Fraxinus pennsylvanica* Marshall  
Date: 8 August 2009  
County, State: JO DAVIESS COUNTY, ILLINOIS  
Elevation: 194m  
Latitude: 42.200217°N  
Longitude: 90.229400°W (NAD83)  
Locality: North on Four Corners Road from IL Highway 84 – Savanna, IL  
Herbarium Specimen: yes  
Plant associates: *Acer negundo*, *Quercus macrocarpa*, *Fraxinus americana*, *Prunus serotina*, *Rhus glabra*, *Prunus americana*, *Morus alba*, *Cornus drummondii*, *Celtis occidentalis*, and *Asclepias incarnata*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#665  
Scientific Name: *Cornus drummondii* C.A. Mey.  
Date: 8 August 2009  
County, State: JO DAVIESS COUNTY, ILLINOIS  
Elevation: 194m  
Latitude: 42.200217°N  
Longitude: 90.229400°W (NAD83)  
Locality: North on Four Corners Road from IL Highway 84 – Savanna, IL  
Herbarium Specimen: yes  
Plant associates: *Acer negundo*, *Quercus macrocarpa*, *Fraxinus americana*, *Prunus serotina*, *Rhus glabra*, *Prunus americana*, *Morus alba*, *Fraxinus pennsylvanica*, *Celtis occidentalis*, and *Asclepias incarnata*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#666  
Scientific Name: *Spiraea alba* Du Roi  
Date: 8 August 2009  
County, State: JO DAVIESS COUNTY, ILLINOIS  
Elevation: 192m  
Latitude: 42.205017°N  
Longitude: 90.229567°W (NAD83)  
Locality: North on Four Corners Road from IL Highway 84 – Savanna, IL  
Herbarium Specimen: yes  
Plant associates: *Toxicodendron radicans*, *Vitis riparia*, *Asclepias incarnata*, *Andropogon gerardii*, and *Convolvulus sepium*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and SD  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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Collection Number: MPW#667  
Scientific Name: *Fraxinus quadrangulata* Michx.  
Date: 8 August 2009  
County, State: JACKSON COUNTY, IOWA  
Elevation: 213m  
Latitude: 42.057833°N  
Longitude: 90.18295°W (NAD83)  
Locality: Bluffs along Mississippi River – Sabula, IA  
Herbarium Specimen: yes  
Plant associates: *Acer saccharum*, *Gymnocladus dioica*, *Prunus serotina*, *Fraxinus americana*, *Morus alba*, *Staphylea trifolia*, and *Toxicodendron radicans*.  
Biomass Type (seed, plant, cutting, herbarium specimen): HS and PL  
Collectors: Jeffrey D. Carstens and Mark P. Widrechner

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# List of Vouchers and/or Germplasm Collected

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Collection Number: JDC/EM/2009/020/170  
Scientific Name: *Eutrochium maculatum* (L.) E.E. Lamont var. *maculatum*  
Date: 21 September 2009  
County, State: GRANT COUNTY, WISCONSIN  
Elevation: 189m  
Latitude: 42.998233°N  
Longitude: 91.050517°W (NAD83)  
Locality: Lower Wisconsin State Riverway – Bridgeport, WI  
Herbarium Specimen: no  
Plant associates: *Quercus bicolor*, *Cephalanthus occidentalis*, *Betula nigra*, *Urtica dioica*, and *Ulmus rubra*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/CO/2009/021/171  
Scientific Name: *Cephalanthus occidentalis* L.  
Date: 21 September 2009  
County, State: GRANT COUNTY, WISCONSIN  
Elevation: 189m  
Latitude: 42.998233°N  
Longitude: 91.050517°W (NAD83)  
Locality: Lower Wisconsin State Riverway – Bridgeport, WI  
Herbarium Specimen: yes  
Plant associates: *Quercus bicolor*, *Eutrochium maculatum* var. *maculatum*, *Betula nigra*, *Urtica dioica*, and *Ulmus rubra*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD and HS  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/ST/2009/022/172  
Scientific Name: *Staphylea trifolia* L.  
Date: 21 September 2009  
County, State: GRANT COUNTY, WISCONSIN  
Elevation: 199m  
Latitude: 43.002983°N  
Longitude: 91.026333°W (NAD83)  
Locality: Along Route C/ Wisconsin River watershed east of Bridgeport, WI  
Herbarium Specimen: yes  
Plant associates: *Cornus rugosa*, *Smilacina racemosa*, *Prunus virginiana*, *Acer saccharinum*, *Veronicastrum virginicum*, *Cornus alternifolia*, *Parthenocissus vitacea*, and *Rubus idaeus* var. *strigosus*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD and HS  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/VL/2009/023/173  
Scientific Name: *Viburnum lentago* L.  
Date: 21 September 2009  
County, State: GRANT COUNTY, WISCONSIN  
Elevation: 267m  
Latitude: 43.032000°N  
Longitude: 90.476800°W (NAD83)  
Locality: Along Bowers Road west of Snow Bottoms State Natural Area, WI  
Herbarium Specimen: yes  
Plant associates: *Cornus racemosa*., *Ulmus* sp., *Quercus rubra*, *Celastrus scandens* and *Cornus alternifolia*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD and HS  
Collectors: Jeffrey D. Carstens and Luping Qu

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# List of Vouchers and/or Germplasm Collected

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Collection Number: LQ/HP/2009/002/002  
Scientific Name: *Hypericum perforatum* L.  
Date: 21 September 2009  
County, State: GRANT COUNTY, WISCONSIN  
Elevation: 262m  
Latitude: 43.032883°N  
Longitude: 90.467667°W (NAD83)  
Locality: Snow Bottoms State Natural Area – Highland, WI  
Herbarium Specimen: yes  
Plant associates: *Trifolium pratense*, *Agrimonia* sp., *Rudbeckia hirta*, *Monarda fistulosa*, *Achillea millefolium*, and *Ulmus* sp.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD and HS  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/MF/2009/027/177  
Scientific Name: *Monarda fistulosa* L.  
Date: 21 September 2009  
County, State: GRANT COUNTY, WISCONSIN  
Elevation: 262m  
Latitude: 43.032883°N  
Longitude: 90.467667°W (NAD83)  
Locality: Snow Bottoms State Natural Area – Highland, WI  
Herbarium Specimen: no  
Plant associates: *Trifolium pratense*, *Agrimonia* sp., *Rudbeckia hirta*, *Hypericum perforatum*, *Achillea millefolium*, and *Ulmus* sp.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/RL/2009/028/178  
Scientific Name: *Rudbeckia laciniata* L.  
Date: 21 September 2009  
County, State: GRANT COUNTY, WISCONSIN  
Elevation: 262m  
Latitude: 43.031800°N  
Longitude: 90.465100°W (NAD83)  
Locality: Snow Bottoms State Natural Area – Highland, WI  
Herbarium Specimen: no  
Plant associates: *Salix* sp. and *Acer negundo*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/RT/2009/029/179  
Scientific Name: *Rhus typhina* L.  
Date: 21 September 2009  
County, State: IOWA COUNTY, WISCONSIN  
Elevation: 289m  
Latitude: 43.041633°N  
Longitude: 90.417667°W (NAD83)  
Locality: Along Irish Hollow Road east of Snow Bottoms State Natural Area, WI  
Herbarium Specimen: no  
Plant associates:  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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# List of Vouchers and/or Germplasm Collected

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Collection Number: JDC/DL/2009/030/180  
Scientific Name: *Diervilla lonicera* Mill.  
Date: 22 September 2009  
County, State: IOWA COUNTY, WISCONSIN  
Elevation: 237m  
Latitude: 43.150667°N  
Longitude: 90.041800 °W (NAD83)  
Locality: Tower Hill State Park – Spring Green, WI  
Herbarium Specimen: no  
Plant associates: *Cornus rugosa*, *Celastrus scandens*, and various fern species.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/FN/2009/032/182  
Scientific Name: *Fraxinus nigra* Marshall  
Date: 22 September 2009  
County, State: IOWA COUNTY, WISCONSIN  
Elevation: 216m  
Latitude: 43.168150°N  
Longitude: 90.039567°W (NAD83)  
Locality: Lower Wisconsin State Riverway – Helena Unit – Spring Green, WI  
Herbarium Specimen: yes  
Plant associates: *Lobelia cardinalis*, *Stachys* sp., *Lysimachia ciliata*, *Toxicodendron radicans*, *Vitis riparia*, *Fraxinus nigra*, *Quercus macrocarpa*, *Carya cordiformis*, and *Acer saccharinum*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: LQ/HP/2009/003/003  
Scientific Name: *Hypericum perforatum* L.  
Date: 22 September 2009  
County, State: DANE COUNTY, WISCONSIN  
Elevation: 226m  
Latitude: 43.243700°N  
Longitude: 89.739833°W (NAD83)  
Locality: Lower Wisconsin State Riverway – Blackhawk Unit - Mazomanie, WI  
Herbarium Specimen: no  
Plant associates: *Zanthoxylum americanum*, *Rhamnus cathartica*, *Saponaria officinalis*, *Vitis riparia*, *Amorpha canescens*, *Ulmus rubra*, *Spartina pectinata*, *Hypericum perforatum*, *Spiraea alba*, *Gentiana andrewsii*, and *Betula nigra*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/SA/2009/034/184  
Scientific Name: *Spiraea alba* Du Roi  
Date: 22 September 2009  
County, State: DANE COUNTY, WISCONSIN  
Elevation: 226m  
Latitude: 43.243700°N  
Longitude: 89.739833°W (NAD83)  
Locality: Lower Wisconsin State Riverway – Blackhawk Unit - Mazomanie, WI  
Herbarium Specimen: no  
Plant associates: *Zanthoxylum americanum*, *Rhamnus cathartica*, *Saponaria officinalis*, *Vitis riparia*, *Amorpha canescens*, *Ulmus rubra*, *Spartina pectinata*, *Hypericum perforatum*, *Hypericum perforatum*, *Gentiana andrewsii*, and *Betula nigra*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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# List of Vouchers and/or Germplasm Collected

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Collection Number: JDC/CC/2009/038/188  
Scientific Name: *Carpinus caroliniana* Walter  
Date: 22 September 2009  
County, State: COLUMBIA COUNTY, WISCONSIN  
Elevation: 243m  
Latitude: 43.406500°N  
Longitude: 89.458733°W (NAD83)  
Locality: Hinkson Creek Watershed – Kent Road – Poynette, WI  
Herbarium Specimen: no  
Plant associates: *Fraxinus nigra*, *Populus tremuloides*, *Juglans nigra*, *Amelanchier* sp., *Helianthus strumosus*, *Acer negundo*, *Prunus virginiana*, *Ilex verticillata*, *Alnus incana* subsp. *rugosa*, and *Viburnum lentago*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/IV/2009/039189  
Scientific Name: *Ilex verticillata* (L.) A. Gray  
Date: 22 September 2009  
County, State: COLUMBIA COUNTY, WISCONSIN  
Elevation: 243m  
Latitude: 43.406500°N  
Longitude: 89.458733°W (NAD83)  
Locality: Hinkson Creek Watershed – Kent Road – Poynette, WI  
Herbarium Specimen: no  
Plant associates: *Fraxinus nigra*, *Populus tremuloides*, *Juglans nigra*, *Amelanchier* sp., *Helianthus strumosus*, *Acer negundo*, *Prunus virginiana*, *Carpinus caroliniana*, *Alnus incana* subsp. *rugosa*, and *Viburnum lentago*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/VL/2009/040/190  
Scientific Name: *Viburnum lentago* L.  
Date: 22 September 2009  
County, State: COLUMBIA COUNTY, WISCONSIN  
Elevation: 243m  
Latitude: 43.406500°N  
Longitude: 89.458733°W (NAD83)  
Locality: Hinkson Creek Watershed – Kent Road – Poynette, WI  
Herbarium Specimen: no  
Plant associates: *Fraxinus nigra*, *Populus tremuloides*, *Juglans nigra*, *Amelanchier* sp., *Helianthus strumosus*, *Acer negundo*, *Prunus virginiana*, *Carpinus caroliniana*, *Alnus incana* subsp. *rugosa*, and *Ilex verticillata*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/CA/2009/041/191  
Scientific Name: *Cornus amomum* Mill. subsp. *obliqua* (Raf.) J.S. Wilson  
Date: 22 September 2009  
County, State: COLUMBIA COUNTY, WISCONSIN  
Elevation: 243m  
Latitude: 43.406500°N  
Longitude: 89.458733°W (NAD83)  
Locality: Hinkson Creek Watershed – Kent Road – Poynette, WI  
Herbarium Specimen: no  
Plant associates: *Fraxinus nigra*, *Populus tremuloides*, *Juglans nigra*, *Amelanchier* sp., *Helianthus strumosus*, *Acer negundo*, *Prunus virginiana*, *Carpinus caroliniana*, *Alnus incana* subsp. *rugosa*, and *Ilex verticillata*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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# List of Vouchers and/or Germplasm Collected

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Collection Number: JDC/CO/2009/043/193  
Scientific Name: *Cephalanthus occidentalis* L.  
Date: 22 September 2009  
County, State: COLUMBIA COUNTY, WISCONSIN  
Elevation: 242m  
Latitude: 43.532600°N  
Longitude: 89.515617°W (NAD83)  
Locality: Pine Island State Wildlife Area – Portage, WI  
Herbarium Specimen: no  
Plant associates: *Quercus bicolor*, *Acer saccharinum*, *Cornus amomum* subsp. *obliqua*, *Fraxinus pennsylvanica*, and *Betula nigra*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: LQ/PV/2009/004/004  
Scientific Name: *Prunella vulgaris* L.  
Date: 23 September 2009  
County, State: DODGE COUNTY, WISCONSIN  
Elevation: 239m  
Latitude: 43.219533°N  
Longitude: 88.893983°W (NAD83)  
Locality: Chub Lake - Waterloo, WI  
Herbarium Specimen: no  
Plant associates: *Cornus sericea*, *Cornus amomum* subsp. *obliqua*, *Cornus racemosa*, *Acer negundo*, *Quercus macrocarpa*, *Salix exigua*, *Stachys* sp., *Physostegia virginianum*, *Toxicodendron radicans*, *Phalaris arundinacea*, and *Asclepias incarnata*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/CR/2009/046/196  
Scientific Name: *Cornus racemosa* Lam.  
Date: 23 September 2009  
County, State: DODGE COUNTY, WISCONSIN  
Elevation: 239m  
Latitude: 43.219533°N  
Longitude: 88.893983°W (NAD83)  
Locality: Chub Lake - Waterloo, WI  
Herbarium Specimen: no  
Plant associates: *Cornus sericea*, *Cornus amomum* subsp. *obliqua*, *Acer negundo*, *Quercus macrocarpa*, *Salix exigua*, *Stachys* sp., *Physostegia virginianum*, *Toxicodendron radicans*, *Phalaris arundinacea*, and *Asclepias incarnata*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/VL/2009/050/200  
Scientific Name: *Viburnum lentago* L.  
Date: 23 September 2009  
County, State: WASHINGTON COUNTY, WISCONSIN  
Elevation: 305m  
Latitude: 43.312217°N  
Longitude: 88.321900°W (NAD83)  
Locality: Kettle Moraine State Forest – Pike Lake - Hartford, WI  
Herbarium Specimen: no  
Plant associates: *Fraxinus pennsylvanica*, *Fraxinus nigra*, *Prunus virginiana*, *Monarda fistulosa*, *Symplocarpus foetidus*, *Acer negundo*, *Lonicera tartarica*, *Clematis virginiana*, and *Rhamnus frangula*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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# List of Vouchers and/or Germplasm Collected

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Collection Number: LQ/PV/2009/005/005  
Scientific Name: *Prunella vulgaris* L.  
Date: 23 September 2009  
County, State: WASHINGTON COUNTY, WISCONSIN  
Elevation: 265m  
Latitude: 43.455617°N  
Longitude: 88.11415°W (NAD83)  
Locality: Lazy Days Campground – Green Lake – West Bend, WI  
Herbarium Specimen: no  
Plant associates: *Ilex verticillata*, *Acer saccharinum*, *Plantago* sp., *Fraxinus pennsylvanica*, and *Symplocarpus foetidus*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/IV/2009/152/202  
Scientific Name: *Ilex verticillata* (L.) A. Gray  
Date: 23 September 2009  
County, State: WASHINGTON COUNTY, WISCONSIN  
Elevation: 265m  
Latitude: 43.455617°N  
Longitude: 88.11415°W (NAD83)  
Locality: Lazy Days Campground – Green Lake – West Bend, WI  
Herbarium Specimen: no  
Plant associates: *Fraxinus nigra*, *Acer saccharinum*, *Plantago* sp., *Fraxinus pennsylvanica*, and *Symplocarpus foetidus*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/FP/2009/154/204  
Scientific Name: *Fraxinus pennsylvanica* Marshall  
Date: 23 September 2009  
County, State: WAUKESHA COUNTY, WISCONSIN  
Elevation: 240m  
Latitude: 42.918400°N  
Longitude: 88.281300°W (NAD83)  
Locality: Vernon Wildlife Management Area – Vernon, WI  
Herbarium Specimen: no  
Plant associates: *Fraxinus nigra*, *Salix* sp., and *Alnus incana* subsp. *rugosa*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/FP/2009/155/205  
Scientific Name: *Fraxinus nigra* Marshall  
Date: 23 September 2009  
County, State: WAUKESHA COUNTY, WISCONSIN  
Elevation: 241m  
Latitude: 42.928100°N  
Longitude: 88.267200°W (NAD83)  
Locality: Vernon Wildlife Management Area – Vernon, WI  
Herbarium Specimen: no  
Plant associates: *Toxicodendron vernix*, *Dasiphora fruticosa*, *Prunella vulgaris*, *Cornus sericea*, *Physocarpus opulifolius*, *Larix laricina*, *Acer saccharinum*, *Symplocarpus foetidus*, *Platanthera psycodes*, *Cirsium muticum*, *Pedicularis lanceolata*, and *Angelica atropurpurea*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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# List of Vouchers and/or Germplasm Collected

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Collection Number: JDC/LL/2009/156/206  
Scientific Name: *Larix laricina* (Du Roi) K. Koch  
Date: 23 September 2009  
County, State: WAUKESHA COUNTY, WISCONSIN  
Elevation: 241m  
Latitude: 42.928100°N  
Longitude: 88.267200°W (NAD83)  
Locality: Vernon Wildlife Management Area – Vernon, WI  
Herbarium Specimen: no  
Plant associates: *Toxicodendron vernix*, *Dasiphora fruticosa*, *Prunella vulgaris*, *Cornus sericea*, *Physocarpus opulifolius*, *Fraxinus nigra*, *Acer saccharinum*, *Symplocarpus foetidus*, *Platanthera psycodes*, *Cirsium muticum*, *Pedicularis lanceolata*, and *Angelica atropurpurea*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: LQ/PV/2009/006/006  
Scientific Name: *Prunella vulgaris* L.  
Date: 23 September 2009  
County, State: WAUKESHA COUNTY, WISCONSIN  
Elevation: 241m  
Latitude: 42.928100°N  
Longitude: 88.267200°W (NAD83)  
Locality: Vernon Wildlife Management Area – Vernon, WI  
Herbarium Specimen: no  
Plant associates: *Toxicodendron vernix*, *Dasiphora fruticosa*, *Prunella vulgaris*, *Cornus sericea*, *Physocarpus opulifolius*, *Fraxinus nigra*, *Acer saccharinum*, *Symplocarpus foetidus*, *Platanthera psycodes*, *Cirsium muticum*, *Pedicularis lanceolata*, and *Angelica atropurpurea*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/DF/2009/158/208  
Scientific Name: *Dasiphora fruticosa* (L.) Rydb.  
Date: 23 September 2009  
County, State: WAUKESHA COUNTY, WISCONSIN  
Elevation: 241m  
Latitude: 42.928100°N  
Longitude: 88.267200°W (NAD83)  
Locality: Vernon Wildlife Management Area – Vernon, WI  
Herbarium Specimen: no  
Plant associates: *Toxicodendron vernix*, *Prunella vulgaris*, *Cornus sericea*, *Physocarpus opulifolius*, *Fraxinus nigra*, *Larix laricina*, *Acer saccharinum*, *Symplocarpus foetidus*, *Platanthera psycodes*, *Cirsium muticum*, *Pedicularis lanceolata*, and *Angelica atropurpurea*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/FP/2009/160/210  
Scientific Name: *Fraxinus pennsylvanica* Marshall  
Date: 24 September 2009  
County, State: WASHINGTON COUNTY, WISCONSIN  
Elevation: 235m  
Latitude: 42.542600°N  
Longitude: 89.347600°W (NAD83)  
Locality: Sugar River Watershed – Avon Bottoms State Wildlife Area west of Newark, WI  
Herbarium Specimen: no  
Plant associates: *Celtis occidentalis*, *Juglans nigra*, *Acer saccharinum*, *Acer negundo*, and *Vitis riparia*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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# List of Vouchers and/or Germplasm Collected

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Collection Number: JDC/AI/2009/165/215  
Scientific Name: *Asclepias incarnata* L.  
Date: 25 September 2009  
County, State: JO DAVIESS COUNTY, ILLINOIS  
Elevation: 192m  
Latitude: 42.205017°N  
Longitude: 90.229567°W (NAD83)  
Locality: North on Four Corners Road from IL Highway 84 – Savanna, IL  
Herbarium Specimen: no  
Plant associates: *Toxicodendron radicans*, *Vitis riparia*, *Spiraea alba*, *Andropogon gerardii*, and *Convolvulus sepium*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/VL/2009/166/216  
Scientific Name: *Viburnum lentago* L.  
Date: 25 September 2009  
County, State: JO DAVIESS COUNTY, ILLINOIS  
Elevation: 196m  
Latitude: 42.208217°N  
Longitude: 90.214967°W (NAD83)  
Locality: Along Airhart Road – Savanna, IL  
Herbarium Specimen: no  
Plant associates: *Cornus drummondii*, *Cornus amomum* subsp. *obliqua*, *Juglans nigra*, *Clematis virginiana* and *Rudbeckia laciniata*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/RL/2009/1667/217  
Scientific Name: *Rudbeckia laciniata* L.  
Date: 25 September 2009  
County, State: JO DAVIESS COUNTY, ILLINOIS  
Elevation: 196m  
Latitude: 42.210000°N  
Longitude: 90.224750°W (NAD83)  
Locality: Along Rush Road – Savanna, IL  
Herbarium Specimen: no  
Plant associates: *Cornus drummondii*, *Cornus amomum* subsp. *obliqua*, *Juglans nigra*, *Clematis virginiana* and *Viburnum lentago*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/VL/2009/168/218  
Scientific Name: *Clematis virginiana* L.  
Date: 25 September 2009  
County, State: JO DAVIESS COUNTY, ILLINOIS  
Elevation: 196m  
Latitude: 42.208217°N  
Longitude: 90.214967°W (NAD83)  
Locality: Along Airhart Road – Savanna, IL  
Herbarium Specimen: no  
Plant associates: *Cornus drummondii*, *Cornus amomum* subsp. *obliqua*, *Juglans nigra*, *Rudbeckia laciniata* and *Viburnum lentago*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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# List of Vouchers and/or Germplasm Collected

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Collection Number: JDC/PO/2009/169/219  
Scientific Name: *Physocarpus opulifolius* (L.) Maxim.  
Date: 25 September 2009  
County, State: CARROLL COUNTY, ILLINOIS  
Elevation: 204m  
Latitude: 42.128800°N  
Longitude: 90.084500°W (NAD83)  
Locality: Along Messmer Road – Savanna, IL  
Herbarium Specimen: no  
Plant associates: *Fraxinus americana*, *Rudbeckia* spp., and *Lonicera reticulata*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/RT/2009/170/220  
Scientific Name: *Rudbeckia triloba* L.  
Date: 25 September 2009  
County, State: CARROLL COUNTY, ILLINOIS  
Elevation: 204m  
Latitude: 42.128800°N  
Longitude: 90.084500°W (NAD83)  
Locality: Along Messmer Road – Savanna, IL  
Herbarium Specimen: no  
Plant Associates: *Fraxinus americana*, *Rudbeckia laciniata*, *Physocarpus opulifolius*, and *Lonicera reticulata*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/RL/2009/171/221  
Scientific Name: *Rudbeckia laciniata* L.  
Date: 25 September 2009  
County, State: CARROLL COUNTY, ILLINOIS  
Elevation: 204m  
Latitude: 42.128800°N  
Longitude: 90.084500°W (NAD83)  
Locality: Along Messmer Road – Savanna, IL  
Herbarium Specimen: no  
Plant Associates: *Fraxinus americana*, *Rudbeckia triloba*, *Physocarpus opulifolius*, and *Lonicera reticulata*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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Collection Number: JDC/MP/2009/172/222  
Scientific Name: *Monarda punctata* L.  
Date: 25 September 2009  
County, State: CARROLL COUNTY, ILLINOIS  
Elevation: 196m  
Latitude: 42.182900°N  
Longitude: 90.260617°W (NAD83)  
Locality: Savanna Army Depot – Savanna, IL  
Herbarium Specimen: no  
Plant Associates: *Hypericum perforatum*, *Quercus velutina*, *Chamaechrista fasciculata*, *Ulmus* sp., *Sorghastrum nutans*, *Solidago* sp., *Opuntia humifusa*, and *Verbascum thapsus*.  
Biomass Type (seed, plant, cutting, herbarium specimen): SD  
Collectors: Jeffrey D. Carstens and Luping Qu

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# List of Vouchers and/or Germplasm Collected

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Collection Number: LQ/HP/2009/007/007

Scientific Name: *Hypericum perforatum* L.

Date: 25 September 2009

County, State: CARROLL COUNTY, ILLINOIS

Elevation: 196m

Latitude: 42.182900°N

Longitude: 90.260617°W (NAD83)

Locality: Savanna Army Depot – Savanna, IL

Herbarium Specimen: no

Plant Associates: *Monarda punctata*, *Quercus velutina*, *Chamaechrista fasciculata*, *Ulmus* sp., *Sorghastrum nutans*, *Solidago* sp., *Opuntia humifusa*, and *Verbascum thapsus*.

Biomass Type (seed, plant, cutting, herbarium specimen): SD

Collectors: Jeffrey D. Carstens and Luping Qu

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# List of Vouchers and/or Germplasm Collected

Taxonomy	Seeds	Voucher	Ames #	Collection #	Voucher #
<i>Allium burdickii</i>	X	X	A 30058	JDC/AT/2009/016/166	MPW 659
<i>Allium tricoccum</i>		X			MPW 660
<i>Alnus incana</i> subsp. <i>rugosa</i>		X			MPW 636
<i>Aronia melanocarpa</i>	X	X	A 30059	JDC/AM/2009/013/163	MPW 642
<i>Asclepias incarnata</i>	X		A 30127	JDC/AI/2009/165/215	
<i>Carpinus caroliniana</i>	X		A 30128	JDC/CC/2009/038/188	
<i>Cephalanthus occidentalis</i>	X	X	A 30129	JDC/CO/2009/021/171	JDC/CO/2009/021/171
<i>Cephalanthus occidentalis</i>	X		A 30130	JDC/CO/2009/043/193	
<i>Clematis virginiana</i>	X		A 30131	JDC/CV/2009/168/218	
<i>Cornus alternifolia</i>		X		Snow Bottoms S.N.A.	not assigned
<i>Cornus alternifolia</i>	X		A 30060	JDC/CA/2009/012/162	
<i>Cornus alternifolia</i>	X	X	A 30061	JDC/CA/2009/015/165	MPW 656
<i>Cornus amomum</i>	X		A 30132	JDC/CA/2009/041/191	
<i>Cornus amomum</i>		X			MPW 655
<i>Cornus drummondii</i>	X	X	A 30133	JDC/CD/2009/163/213	MPW 665
<i>Cornus racemosa</i>	X		A 30134	JDC/CR/2009/046/196	
<i>Cornus rugosa</i>	X	X	A 30062	JDC/CR/2009/011/161	MPW 633
<i>Cornus rugosa</i>	X	X	A 30063	JDC/CR/2009/014/164	MPW 646
<i>Dasiphora fruticosa</i>	X		A 30135	JDC/DF/2009/158/208	
<i>Diervilla lonicera</i>	X		A 30136	JDC/DL/2009/030/180	
<i>Eutrochium maculatum</i>	X		A 30137	JDC/EM/2009/020/170	
<i>Fraxinus americana</i>	X	X	A 30138	JDC/FA/2009/036/186	MPW 641
<i>Fraxinus nigra</i>		X			MPW 631
<i>Fraxinus nigra</i>	X		A 30139	JDC/FN/2009/032/182	
<i>Fraxinus nigra</i>	X	X	A 30140	JDC/FN/2009/037/187	MPW 643
<i>Fraxinus nigra</i>	X	X	A 30141	JDC/FN/2009/048/198	MPW 650
<i>Fraxinus nigra</i>	X	X	A 30142	JDC/FN/2009/151/201	MPW 652
<i>Fraxinus nigra</i>	X		A 30143	JDC/FN/2009/155/205	
<i>Fraxinus nigra</i>		X		Cedarville, IL	not assigned
<i>Fraxinus nigra</i>		X			MPW 661
<i>Fraxinus nigra</i>		X			MPW 662
<i>Fraxinus nigra</i>		X			MPW 663
<i>Fraxinus pennsylvanica</i>	X	X	A 30144	JDC/FP/2009/019/169	MPW 632
<i>Fraxinus pennsylvanica</i>	X	X	A 30145	JDC/FP/2009/031/181	MPW 637
<i>Fraxinus pennsylvanica</i>	X	X	A 30145	JDC/FP/2009/031/181	MPW 638
<i>Fraxinus pennsylvanica</i>	X	X	A 30146	JDC/FP/2009/033/183	MPW 640
<i>Fraxinus pennsylvanica</i>		X			MPW 644
<i>Fraxinus pennsylvanica</i>	X	X	A 30147	JDC/FP/2009/042/192	MPW 647
<i>Fraxinus pennsylvanica</i>	X	X	A 30148	JDC/FP/2009/045/195	MPW 649
<i>Fraxinus pennsylvanica</i>	X	X	A 30149	JDC/FP/2009/049/199	MPW 651
<i>Fraxinus pennsylvanica</i>	X		A 30150	JDC/FP/2009/154/204	
<i>Fraxinus pennsylvanica</i>	X	X	A 30151	JDC/FP/2009/159/209	MPW 653
<i>Fraxinus pennsylvanica</i>	X	X	A 30151	JDC/FP/2009/159/209	MPW 654
<i>Fraxinus pennsylvanica</i>	X		A 30152	JDC/FP/2009/160/210	
<i>Fraxinus pennsylvanica</i>	X	X	A 30153	JDC/FP/2009/162/212	MPW 664



# List of Vouchers and/or Germplasm Collected

Taxonomy	Seeds	Voucher	Ames #	Collection #	Voucher #
<i>Fraxinus quadrangulata</i>	X	X	A 30064	JDC/FQ/2009/017/167	MPW 658
<i>Fraxinus quadrangulata</i>	X	X	A 30065	JDC/FQ/2009/018/168	MPW 667
<i>Hypericum perforatum</i>	X	X	A 30154	LQ/HP/2009/002/002	
<i>Hypericum perforatum</i>	X		A 30155	LQ/HP/2009/003/003	
<i>Hypericum perforatum</i>	X		A 30156	LQ/HP/2009/007/007	
<i>Ilex verticillata</i>	X		A 30157	JDC/IV/2009/039/189	
<i>Ilex verticillata</i>	X		A 30158	JDC/IV/2009/152/202	
<i>Larix laricina</i>	X		A 30159	JDC/LL/2009/156/206	
<i>Lindernia dubia</i>		X			MPW 645
<i>Lysimachia ciliata</i>		X			MPW 639
<i>Monarda fistulosa</i>	X		A 30160	JDC/MF/2009/027/177	
<i>Monarda punctata</i>	X		A 30161	JDC/MP/2009/172/222	
<i>Physocarpus opulifolius</i>	X		A 30162	JDC/PO/2009/169/219	
<i>Prunella vulgaris</i>	X	X	A 30163	LQ/PV/2009/001/001	MPW 634
<i>Prunella vulgaris</i>	X		A 30164	LQ/PV/2009/004/004	
<i>Prunella vulgaris</i>	X		A 30165	LQ/PV/2009/005/005	
<i>Prunella vulgaris</i>	X		A 30166	LQ/PV/2009/006/006	
<i>Ptelea trifoliata</i>	X	X	A 30167	JDC/PT/2009/161/211	MPW 657
<i>Rhus typhina</i>	X		A 30168	JDC/RT/2009/029/179	
<i>Rudbeckia hirta</i>	X	X	A 30169	JDC/RH/2009/025/175	MPW 635
<i>Rudbeckia laciniata</i>	X		A 30170	JDC/RL/2009/028/178	
<i>Rudbeckia laciniata</i>	X		A 30171	JDC/RL/2009/167/217	
<i>Rudbeckia laciniata</i>	X		A 30172	JDC/RL/2009/171/221	
<i>Rudbeckia triloba</i>	X		A 30173	JDC/RT/2009/170/220	
<i>Spiraea alba</i>	X	X	A 30174	JDC/SA/2009/034/184	
<i>Spiraea alba</i>	X	X	A 30175	JDC/SA/2009/044/194	MPW 648
<i>Spiraea alba</i>	X	X	A 30176	JDC/SA/2009/164/214	MPW 666
<i>Staphylea trifolia</i>	X	X	A 30177	JDC/ST/2009/022/172	JDC/ST/2009/022/172
<i>Viburnum lentago</i>	X	X	A 30178	JDC/VL/2009/023/173	
<i>Viburnum lentago</i>	X		A 30179	JDC/VL/2009/040/190	
<i>Viburnum lentago</i>	X		A 30180	JDC/VL/2009/050/200	
<i>Viburnum lentago</i>	X		A 30181	JDC/VL/2009/166/216	

# REFERENCES

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Barton LV. 1945. Viability of seeds of *Fraxinus* after storage. Contributions of the Boyce Thompson Institute 13: 427B432.

# APPENDIX

Appendix 1.0 – Map showing location of *Fraxinus quadrangulata* (location B) in Muskego County Park, Muskego, WI.

