THE HUNTINGTON
Library, Art Museum, and Botanical Gardens

Juglans major Collection Report

APGA-USFS Tree Gene Conservation Partnership

November 11, 2019

Submitted by:
Sarah T. Basile
Corporate and Foundation Relations Director
The Huntington Library, Art Museum, and Botanical Gardens
1151 Oxford Road
San Marino, California 91108
626.405.3484
sbasile@huntington.org

Table of Contents

Project Summary 2
List of Participants and Contact Information 2
Objectives and Outcomes 3
Daily Field Log 4
Conclusions and Future Opportunities 24
Collaborators and Contributions 24
Label Data for *Juglans* Collections 26
Permits 31

Project Summary

The Huntington, Peckerwood Garden, Morton arboretum and San Diego Botanic Garden collaborated to scout disjunct populations of *Juglans major* in Oklahoma and collect from populations on the Edwards Plateau of Texas and where Thibault had previous occurrence records for his collecting. Entomological samples were to be collected at the same time but were not due to a change in research focus. Field work began on 8 August 2019 and concluded on 12 September 2019. *Juglans major* was targeted because of concern over the new disease thousand cankers and its general scarcity in living collections.

List of Participants and Contact Information

The Huntington

Raquel Folgado (Primary Contact)
Cryopreservation Research Botanist
rfolgado@huntington.org
626.405.3523

Tim Thibault (Organizer and Senior Collector)
Curator, Woody Plant Materials
tthibault@huntington.org
626.405.3511

Alicia Baugh (Propagator)
Propagator/Nursery Assistant
abaugh@huntington.org
626.405.3571

Peckerwood Garden

Adam Black (Organizer and Associate Collector)
Director of Horticulture
adam@peckerwoodgarden.org

Morton Arboretum

Matt Lobdell (Organizer and Associate Collector)
Curator of Living Collections
mlobdell@mortonarb.org
630.719.2435

San Diego Botanic Garden
Tony Gurnoe (Associate Collector)
Director of Horticulture
tgurnoe@sdbgarden.org
760.436.3036 x211

Arizona Sonora Desert Museum
John F. Wiens (Senior Collector)
Nursery Horticulturist
jwiens@desertmuseum.org
520.883.1380 x7111

UC Davis Arboretum and Public Garden
Emily Griswold (Associate Collector)
Director of GATEways Horticulture and Teaching Gardens
ebgriswold@ucdavis.edu
530.754.8038

Objectives and Outcomes

1) **Scout disjunct populations in Oklahoma for presence of *Juglans major***
This was accomplished during August and September 2019. Despite herbarium records from respected collectors, only *Juglans nigra* was found in the easternmost populations. A plant that appeared to be *Juglans major* was seen in the Wichita Mountains Wildlife Refuge, and nuts were collected from several trees of *Juglans major* or hybrids adjacent to the refuge. Black Kettle National Grassland contained almost exclusively *Juglans nigra*, but a few plants with *Juglans major* characteristics were found on the western edge of the grassland.

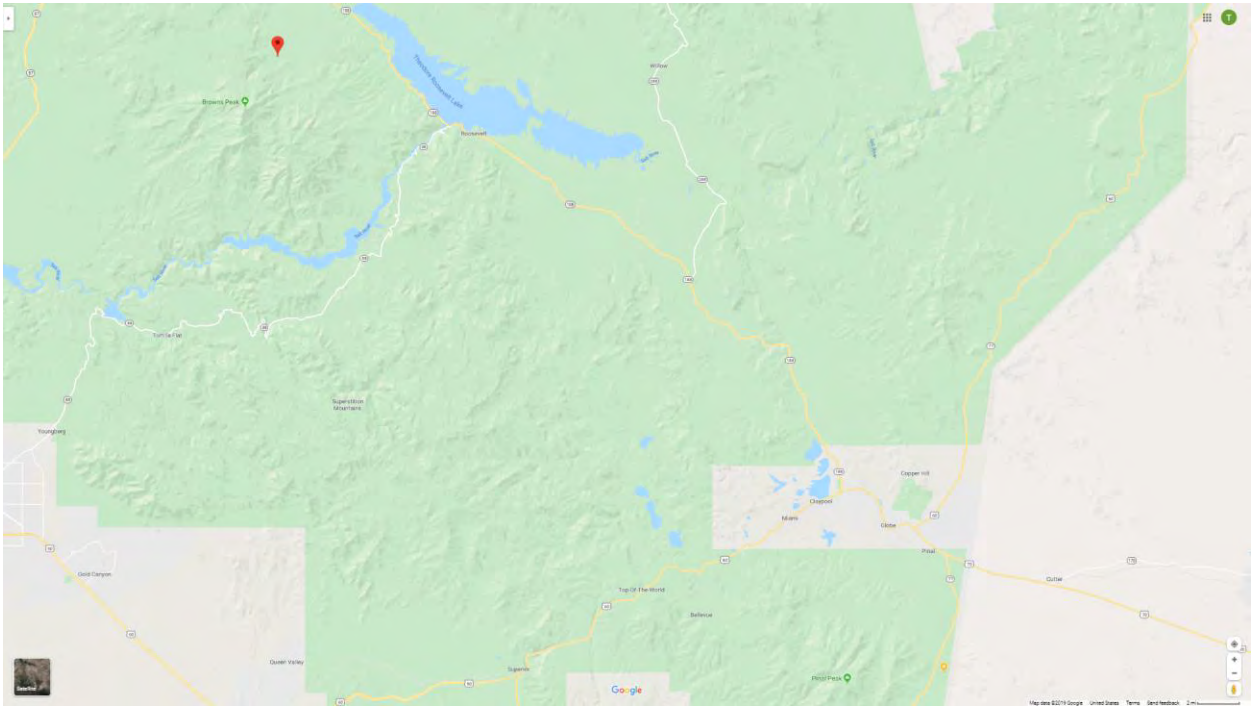
2) **Collect on Edwards Plateau**
This work occurred between 26 and 30 August. While there was no difficulty whatsoever in finding walnuts, this appears to be a zone of hybridization. This portion of the project accounted for 20 of the 29 total accessions.

3) **Revisit sites where Thibault had previously found *Juglans* in Arizona and New Mexico**
This happened between 3 and 12 September. All 15 sites were revisited. However, this proved less fruitful as it only produced four of the 29 total accessions. Although plants were located and none of the populations extirpated, ten of the populations had no nuts. The remaining population turned out to be *Juglans microcarpa* upon closer inspection.

Daily Field Log

8 August 2019

While conducting field for *Quercus palmeri*, the field team of John Wiens, Tim Thibault and Emily Griswold found and collected form a population of *Juglans major* growing in association at Arrastra Canyon. Additional *J. major* nuts were collected in the Mazatal Mountains while searching unsuccessfully for *Q. palmeri*.



Arrastra Canyon in orange (lower right), Mazatal Mountains in red (upper left).

26 August 2019

The field team of Carla Picinich, Tim Thibault, Adam Black and Matt Lobdell received permission to work in Fort Hood. Guided by Picinich they collected two probable hybrid accessions that could include *Juglans major*.

Fort Hood sites in red (bottom) and orange (upper right)

Carla Picinich (l), Matt Lobdell (c) and Tim Thibault (r) collects walnuts on Ft. Hood. Photo: Adam Black

27 August 2019

The field team of Tim Thibault, Adam Black and Matt Lobdell proceeded north into Oklahoma to check on the disjnunct populations. The team had hoped that Todd Lasseigne would be able to join them for the day, but a family emergency prevented that. After finding juvenile *Juglans nigra* at Lake Eufala, two accessions of *J. nigra* were collected outside Turner Falls. The final stop was outside Wichita Mountains Wildlife Refuge. As multiple species were in the area, the team collected from four trees as individual maternal lines out of concerns for potential hybridization.

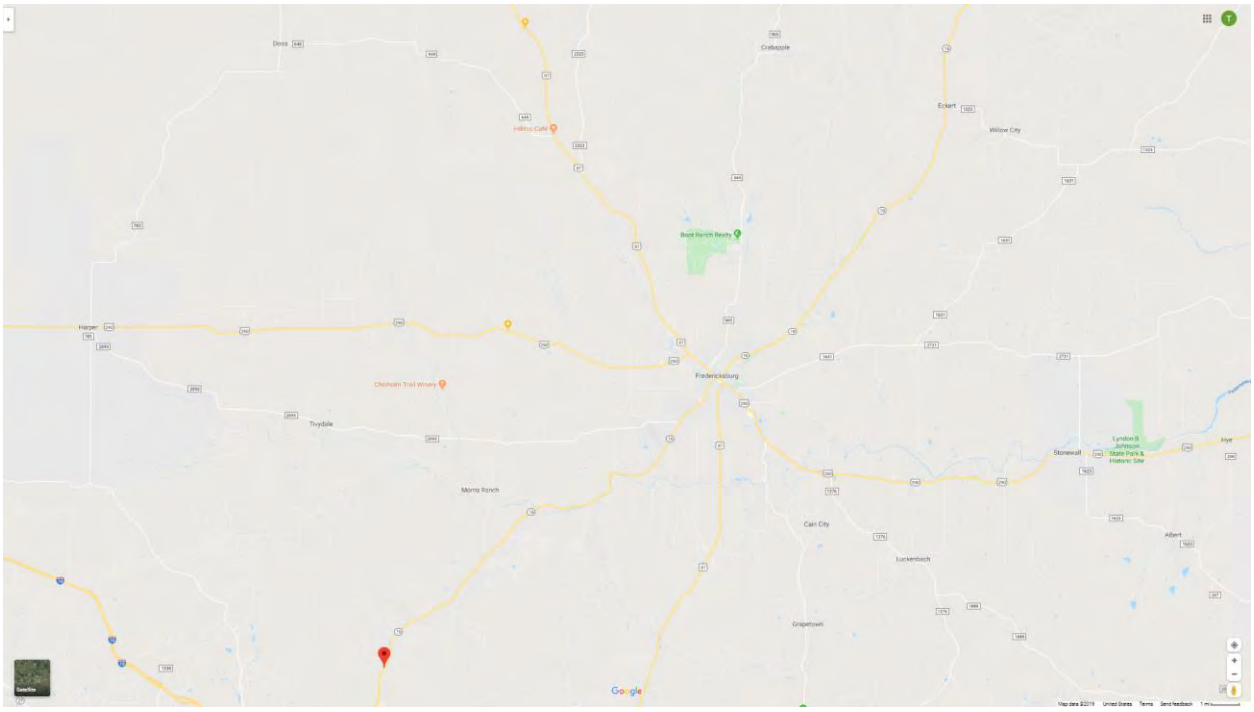
Collecting sites near Wichita Mountains Wildlife Refuge, single tree in orange, group of three in red.

Juglans nigra collected at Turner Falls. Photo: Matt Lobdell

A handful of walnuts just north of Wichita Mountains Wildlife Reserve. Photo: Adam Black

28 August 2019

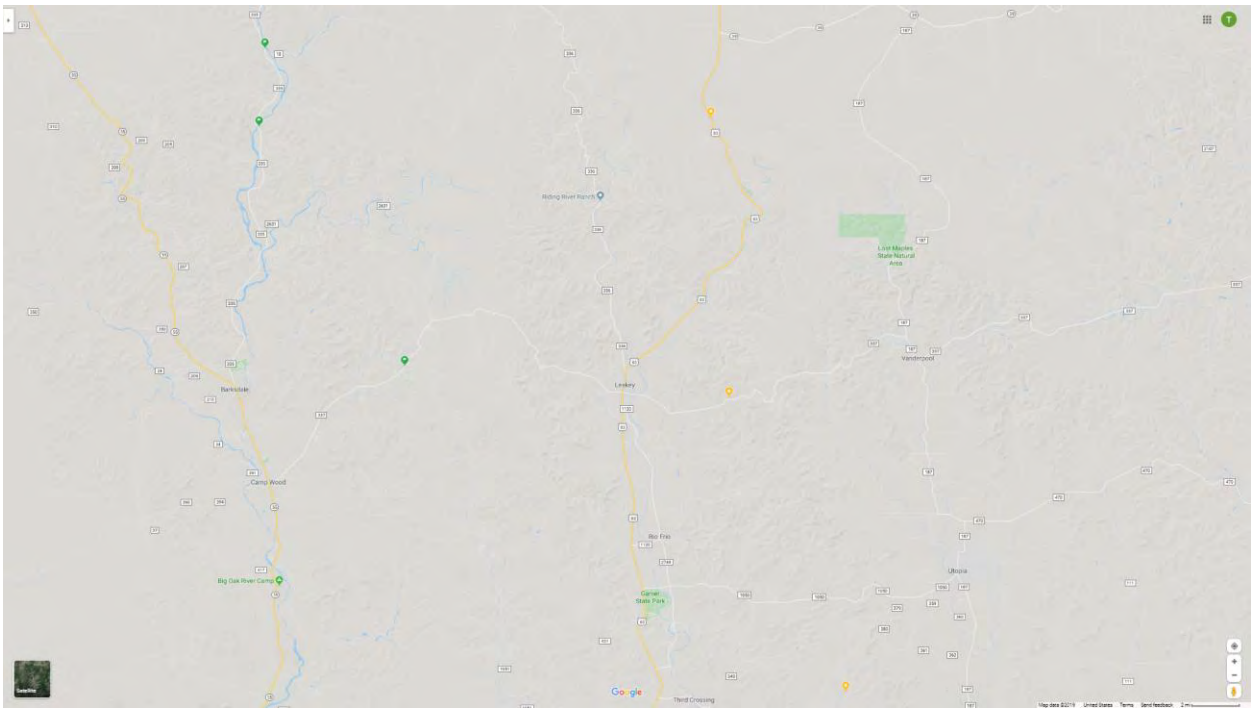
The field team of Tim Thibault, Adam Black and Matt Lobdell made three collections of *Juglans major* on the Edwards Plateau. The southernmost collection was an exceptionally large collection from six maternal lines. Enough nuts were collected to share with 11 institutions.



Two northern accessions in orange, broadly shared southern accession in red.

29 August 2019

The field team of Tim Thibault, Adam black and Matt Lobdell continued to the south and west. A total of six nut collections were made. The eastern three appear to be good *Juglans major*, but the western three may be hybrids involving *J. microcarpa*.

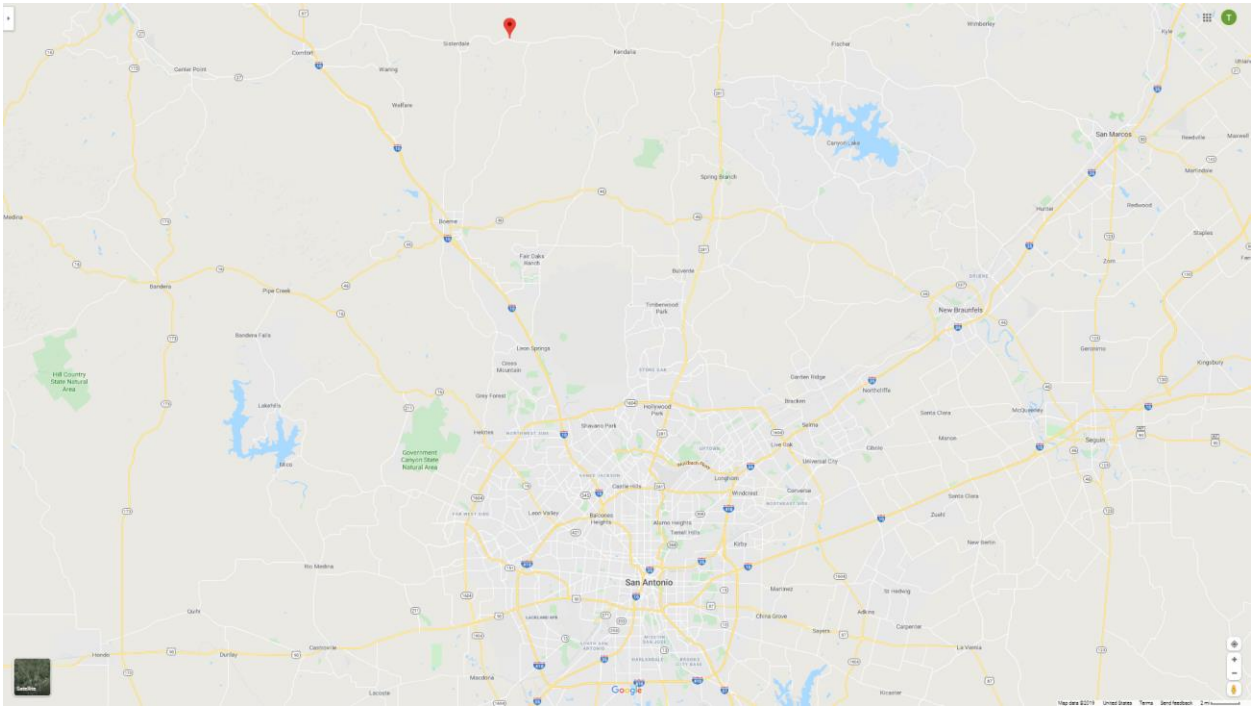


Juglans major in orange, potential *J. microcarpa* hybrids in green.

Juglans major in habitat at Grape Hollow. Photo: Matt Lobdell

30 August 2019

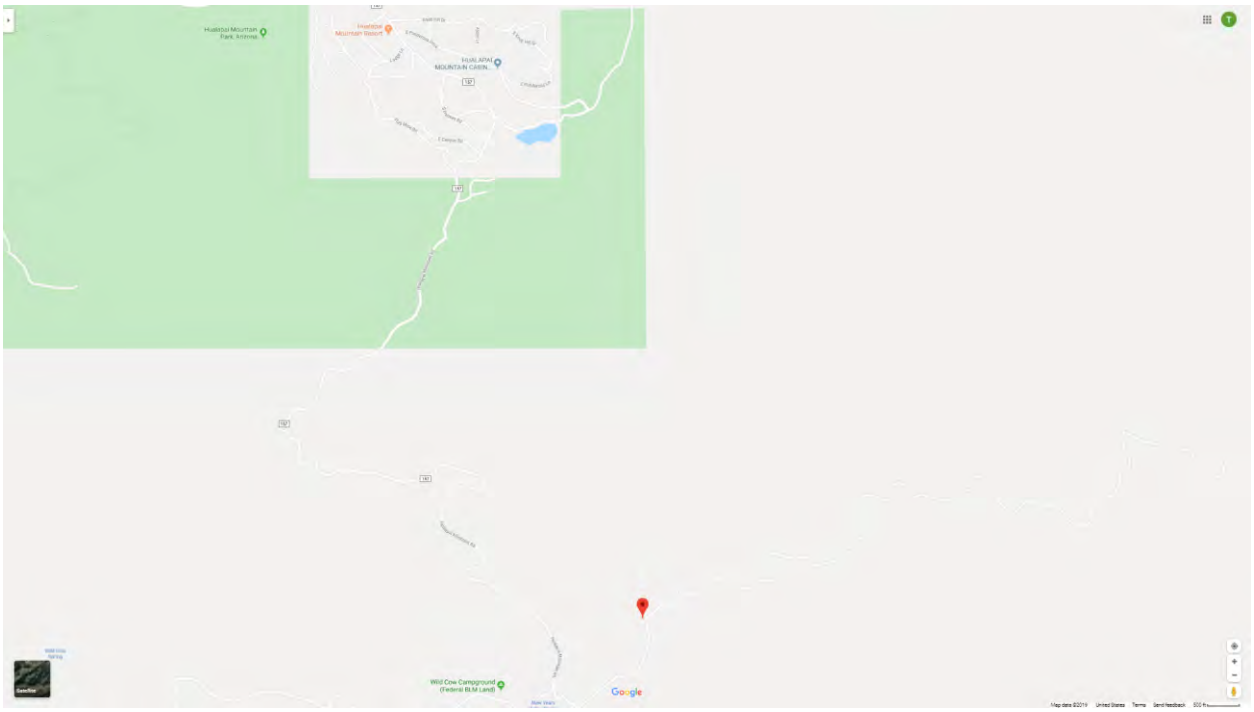
The field team of Tim Thibault, Adam Black and Matt Lobdell was able to make a single collection as they headed east to return to their respective homes. This may be a hybrid involving J. nigra, as Andrew McNeil-Marshall of Lady Bird Johnson Wildflower Center reports that is what is in the area.



Morton Arboretum's share of the first four days' haul. Photo: Matt Lobdell

3 September 2019

The field team of Tim Thibault and Tony Gurnoe headed into the field as soon as possible after arrival in Phoenix. They were able to make one collection on Hualapai Mountain as dusk and rain were both falling rapidly.



A still-clean field vehicle stops in the Hualapai Mountains. Photo: Tony Gurnoe

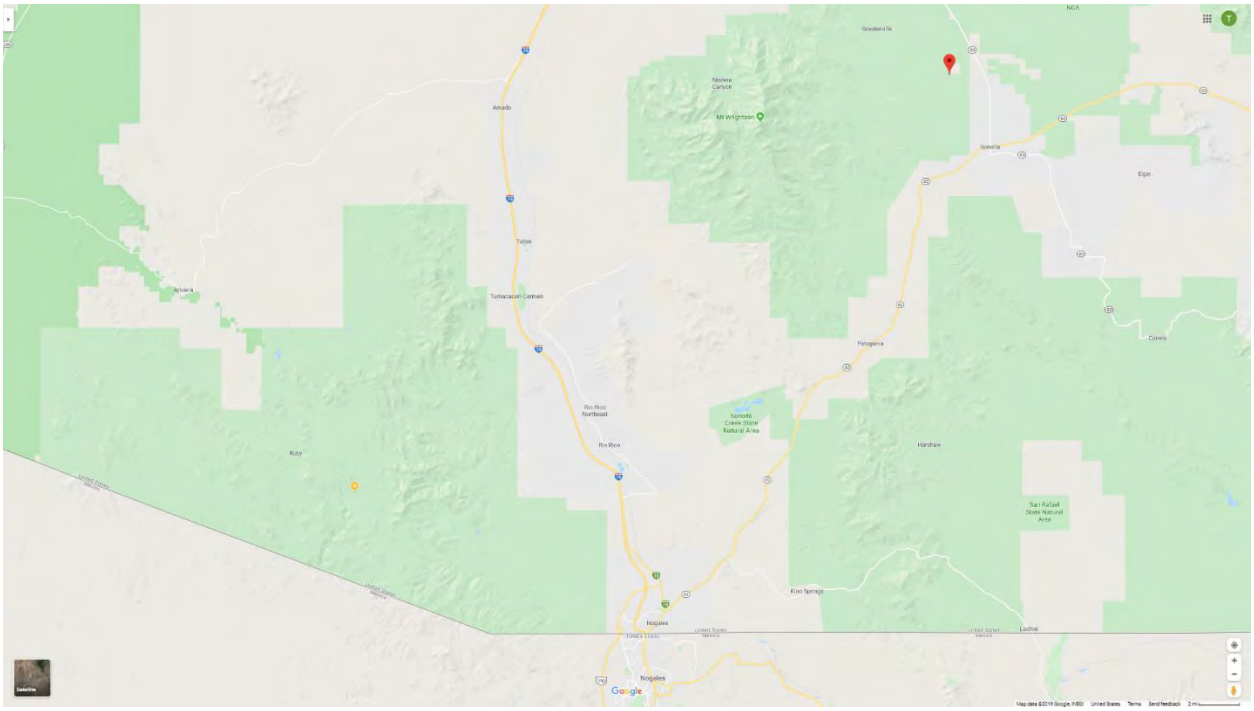
4 September 2019

The field team of Tim Thibault and Tony Gurnoe relocated walnuts on Goodwin Mesa and FS 231 in the Santa Rita Mountains. No nuts were noted on either population. The FS 231 population was in poor shape with the largest trees dead.

Tim Thibault inspects at dead walnut in the Santa Rita Mountains. Photo: Tony Gurnoe

5 September 2019

The field team of Tim Thibault and Tony Gurnoe found and successfully gathered nuts from Sycamore Canyon in the Pajarito Mountains and Gardner Canyon in the Santa Rita Mountains. The Gardner Canyon population was notable for the odd, beaked fruits.

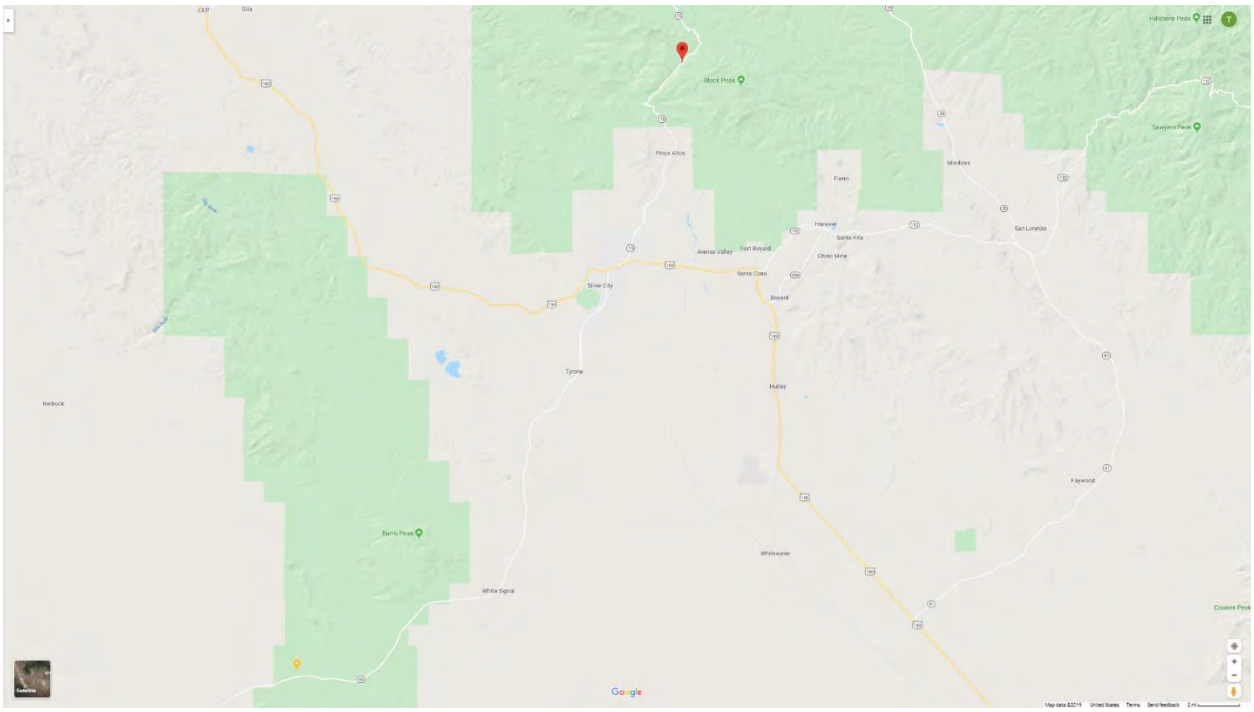


Sycamore Canyon in orange, Gardner Canyon in red.

Tony Gurnoe confirms ID of *Juglans major* with smooth nut. Photo: Tony Gurnoe

6 September 2019

The field team of Tim Thibault and Tony Gurnoe began the eastern march with stops in the Dragoon Mountains, AZ and Grant County, NM. A very sickly population off Grant 4-16 yielded a single nut. That same day they made a larger, high elevation collection near McMillen Campground in Gila National Forest.

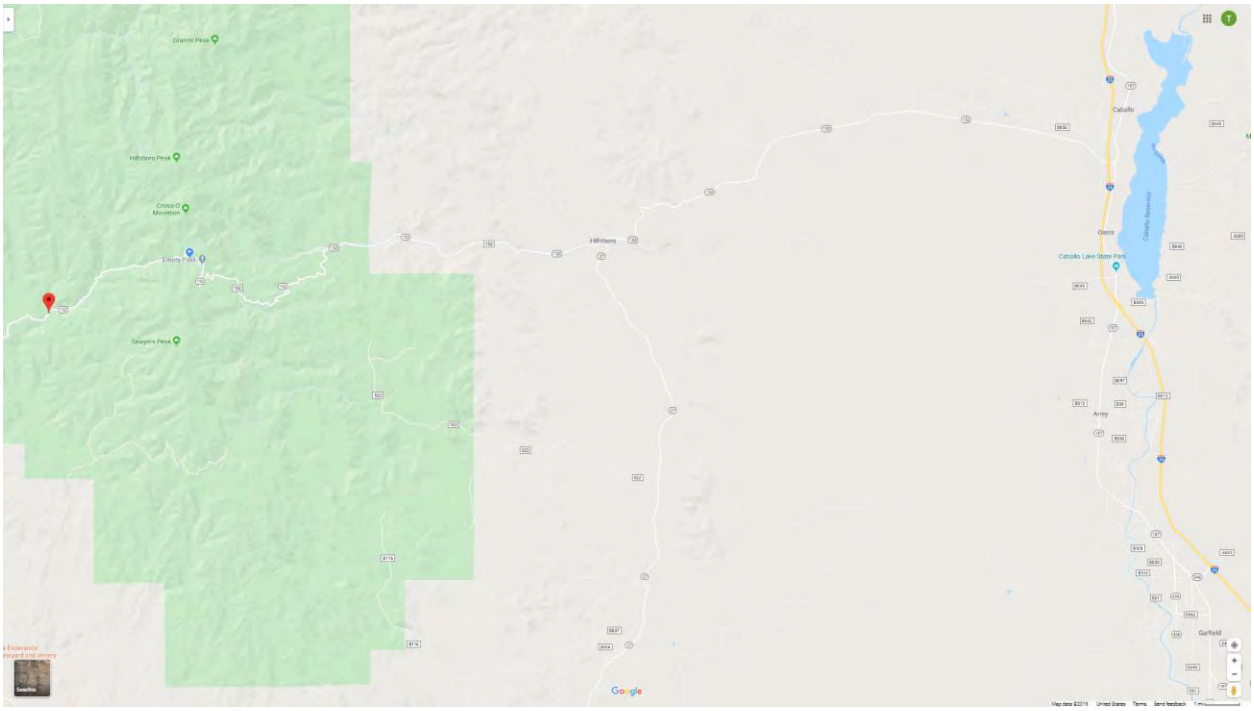


Grant 4-16 (bottom) in orange, McMillen Campground (top) in red.

Stressed population off Grant 4-16 flowering out of season. Photo: Tony Gurnoe

7 September 2019

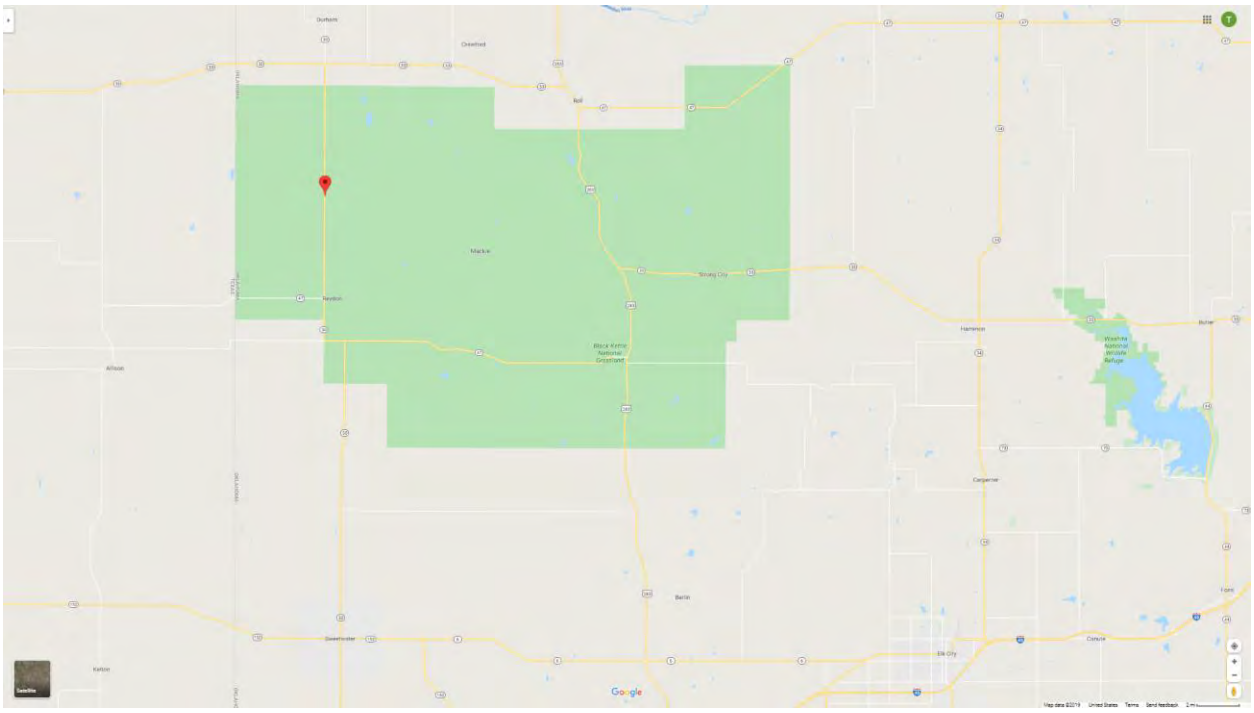
The field team of Tim Thibault and Tony Gurnoe continued east with a successful stop in Galinas Canyon. Turning north they chased a 2009 collection from Red Canyon but were unable to duplicate the find.



Tim Thibault contemplates collecting walnuts from population on steep slope in Galinas Canyon (note tent caterpillars). Photo: Tony Gurnoe

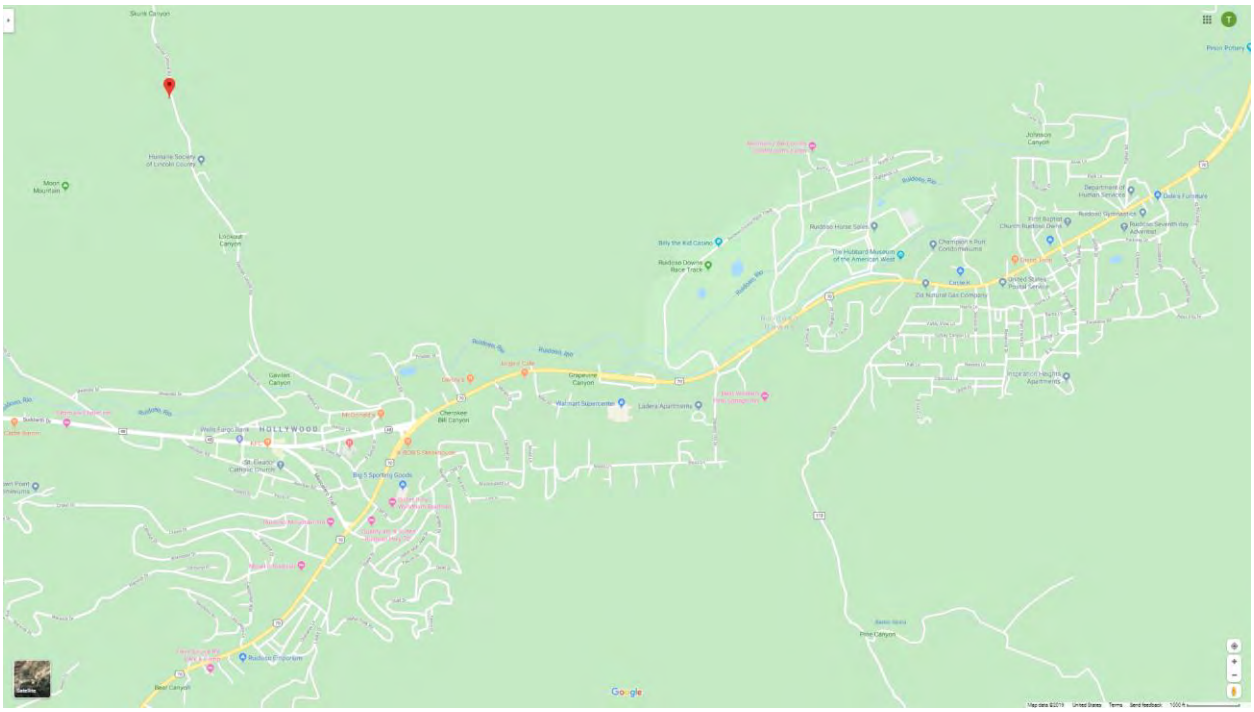
8 September 2019

The field team of Tim Thibault and Tony Gurnoe completed the Oklahoma disjunct populations with Black Kettle National Grassland. They vouchered *Juglans nigra* along Side Out Lake, then made a nut collection that is probably a hybrid involving *Juglans nigra* on the west side of the grassland.



9 September 2019

The field team of Tim Thibault and Tony Gurnoe headed south through eastern New Mexico finding a population of *Juglans major* on Rio Ruidoso. Continuing south they stopped to observe a population of *J. microcarpa* to fix that potential hybrid parent in their minds.


Skunk Canyon
Historic Society of Lincoln County
Moon Mountain
Lockout Canyon
Gavilan Canyon
HOLLYWOOD
Wells Fargo Bank
McDonald's
St. Eleanor Catholic Church
Big 5 Sporting Goods
Cherokee Bill Canyon
Grapevine Canyon
Walmart Supercenter
Ladera Apartments
Billy the Kid Casino
Ruidoso Downs Race Track
Ruidoso Horse Sales
Champion's Run Condominiums
The Hubbard Museum of the American West
Carlsbad
Oil Natural Gas Company
United States Postal Service
Johnson Canyon
Department of Human Services
Dale's Furniture
First Baptist Church Ruidoso Downs
Ruidoso Seventh-day Adventist
Prior and Heights Apartments
Ruidoso Emporium
Bear Canyon
Pine Canyon
Google

Tony Gurnoe with walnuts from Rio Ruidoso. Photo: Tony Gurnoe

Tony Gurnoe with *Juglans microcarpa*. Photo: Tim Thibault

10 September 2019

The field team of Tim Thibault and Tony Gurnoe relocated one of Thibault's observations in the Guadalupe Mountains. They were able to gain permission from the landowner of an inholding to access Lincoln National Forest land. The plants then turned out to be *Juglans microcarpa*.

Permission granted. Photo: Tim Thibault

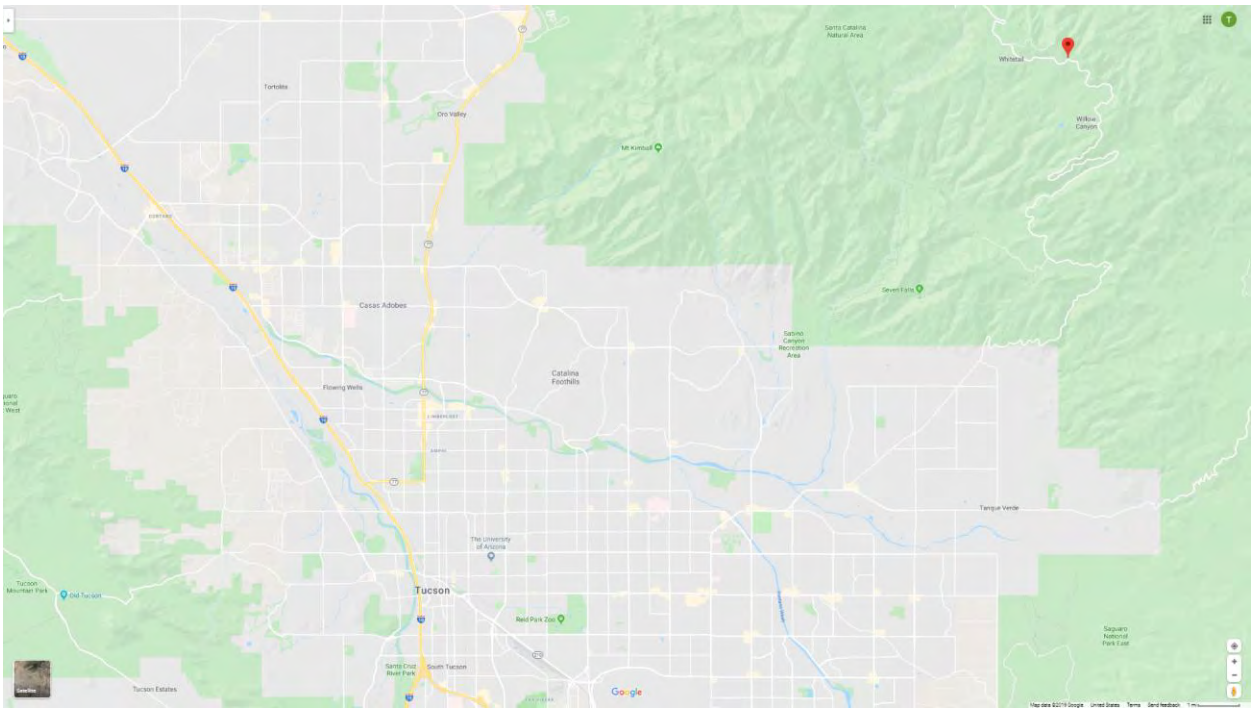
11 September 2019

Our heroes bravely scoured the Florida Mountains without success. They then duplicated Thibault's old finds in Tex Canyon and Geronimo Trail, along they found no nuts. They did however see the most impressive walnut tree of the trip along Geronimo Trail at the extreme eastern end of the Coronado National Forest.

Spectacular tree on Geronimo Trail. Photo: Tony Gurnoe

12 September 2019

The field team of Tim Thibault and Tony Gurnoe made the final nut collection of the trip along general Hitchcock Highway in the Santa Catalina Mountains. They also found a healthy population above grazing height in a cow pasture in the Rincon Mountains. If that population had any nuts, they had been eaten.



Tony Gurnoe notes large leaves of high elevation walnut. Photo: Tony Gurnoe

Conclusions and Future Opportunities

In his 1957 work "The Genus *Juglans* in Mexico and Central America" Wayne E. Manning states, "… *J. microcarpa* and *J. nigra* may hybridize in certain regions, such as Oklahoma, and the resulting hybrids appear to be *J. major*." Those of us who have now looked at walnuts in Oklahoma and Texas agree in a case of generational rediscovery. This trip was very successful at collecting walnuts, the remaining task is to figure out exactly which walnuts were collected. Thankfully, Alan Whittemore, co-author of *Juglans* in Flora of North America, works at NA and will receive a full set of specimens. Molecular work on this group may further elucidate relationships.

While taxonomic question linger, pathology questions take center stage. Two populations, one each in Arizona and New Mexico, that Thibault had seen recently had declined severely in just a few seasons. Although many populations are thriving, it is alarming at how quickly some populations are fading.

It is difficult to get to the entire range of a species and collect in an optimal window. The first week of collecting in late August was about as perfect as it could be in terms of ripeness. The final two weeks in September were getting late. Especially the southern populations, which had lower fruit set, could be repeated.

The work could also be expanded to Juglans microcarpa. While the populations observed were all healthy, it is a smaller tree in all respects that may be easier for public gardens to accommodate, especially those with a mandate to grow xeric climate plants.

Collection #	# Nuts
1789	12
1790	12
1793	16
1794	8
1795	4
1796	4
1797	65
1798	15
1800	35
1801	70
1804	168
1805	55
1812	40
1813	24
1814	25

1815	20
1816	145
1818	65
1819	28
1826	30
1827	88
1828	1
1830	48
1831	20
1833	28
1834	44
1841	30
606	15
615	40
Total collected:	**1155**

Collaborators and Contributions

Todd Lasseigne, Tulsa Botanic Garden, local contact for Oklahoma parks and serving as an additional site for distribution for several Oklahoma and Texas accessions.

Anita Merrell, Tulsa Botanic Garden, coordination with Oklahoma parks.

Andrew McNeil-Marshall, Lady Bird Johnson Wildflower Center, advice on walnuts of the Edwards Plateau.

Carla Picinich, Fort Hood, access to Ft. Hood and field assistance

The following additional institutions have agreed to receive nuts from Thibault et al 1804 for addition to their living collections.

- Atlanta Botanical Garden – Gainesville
- Bartlett Research Arboretum
- Hoyt Arboretum
- Missouri Botanical Garden
- Santa Fe Botanical Garden
- UC Davis Arboretum and Botanical Garden

Label Data for *Juglans* Collections

All data for specimens deposited at The Huntington Botanical Gardens Herbarium (HNT) is posted on SEINet at www.swbiodiversity.org.

Juglans major (Torr.) A. Heller. United States: Arizona: Gila: Pinal Moutnains: Arrastra Canyon. 4062 ft. 33.28958°N, 110.74049°W. Granite boulder strewn canyon bottom. In association with *Rhus aromatica, Chilopsis, Pinus monophylla, Fraxinus lowellii, Quercus turbinella*. Multitrunk tree, 5.5 m tall, bark tan and black vertical platey, twigs brownish green, leaflets adaxially shiny green with yellow veins, abaxially same, fruit yellow ripening to dark brown. John Wiens, Tim Thibault and Emily Griswold 607. 8 Aug 2019.s

Juglans major (Torr.) A. Heller. United States: Arizona: Gila: Mazatzal Mountains: Southeastern Mazatzal Mountains, Rock Creek Trail, Rd 445. 3380 ft. 33.72020°N, 111.29868°W. Edge of drainage in silt with granite boulders. In association with *Quercus emoryi, Celtis reticulata, Vitis arizonica, Platanus wrightii, Quercus turbinella.* Multi-trunk tree, 7.5 m tall, bark charcoal with vertical fissures, new twigs red-brown, leaves medium green and semi-glossy with a pale midrib on both sides, fruits yellow ripening to brown. John Wiens, Tim Thibault and Emily Griswold 615. 8 Aug 2019.

Juglans. United States: Texas: Bell: Fort Hood, East Range Range, ravine opposite milepost 4. 326 m. 31.16221°N, 97.68710°W. NW slope in association *with Ulmus crassifolia, Celtis, Cornus dummondii, Vitis, Baccharis. Rhus, Juniperus, Smilax*. Tree to 12 m. , bark gray-brown, twigs brown, petiole and veins yellow, fruits yellowish green. Tim Thibault, Carla Picinich, Adam Black and Matt Lobdell 1789. 26 Aug 2019.

Juglans. United States: Texas: Coryell: Fort Hood, south of Cold Springs Road on tributary of Owl Creek. 227 m. 31.23708°N, 97.60555°W. Recently burned thicket in association with *Quercus* spp., *Carya, Fraxinus, Rhus, Smilax, Ulmus, Rubus*. Tree to 7 m., bark gray brown, twigs gray, petiole and veins yellow, fruits yellowish green Tim Thibault, Carla Picinich, Adam Black and Matt Lobdell 1790. 26 Aug 2019.

Juglans nigra L. United States: Oklahoma: Murray: Hwy. 77 just N of Turner Falls. 247 m. 34.43642°N, 97.14140°W. Steep W bank in association with *Juniperus, Sapindus, Nandina, Cercis, Ulmus, Platanus, Clematis pitcheri.* Tree to10 m., bark brown, petiole and veins yellowish, developing fruits green, minty scented. Tim Thibault, Adam Black and Matt Lobdell 1794. 27 Aug 2019.

Juglans nigra L. United States: Oklahoma: Murray: Hwy. 77 just across from of Turner Falls Park exit. 227 m. 34.42928°N, 97.14368°W. Moderate - steep E slope, gravel, Coomes Ranch Conglomerate, in association with *Juniperus, Fraxinus, Cerciis, Parthenocissus, Smilax*. Tree to

11 m., bark brown, twigs grey brown. Petiole, veins and undersized of leaves yellowish, fruits minty scented. Tim Thibault, Adam Black and Matt Lobdell 1793. 27 Aug 2019.

Juglans. United States: Oklahoma: Comanche: Hwy 115 (Meers Road) just N of intersection with Chisin Road. 445 m. 34.76839°N, 98.58057°W. Roadside in association with *Juniperus, Smilax. Arundo donax, Celtis*. Tree resprouting to 3.5 m., bark brown, furrowed, twigs brown, petiole and midrib yellow, fruits yellow green. Tim Thibault, Adam Black and Matt Lobdell 1795. 27 Aug 2019.

Juglans. United States: Oklahoma: Comanche: Medicine Creek at Hwy 115. 403 m. 34.77181°N, 98.58013°W. Rocky creekside in association with *Cercis, Juniperus, Celtis. Ulmus, Prunus*. Tree to 3.5 m. Tim Thibault, Adam Black and Matt Lobdell 1796. 27 Aug 2019.

Juglans. United States: Oklahoma: Comanche: Medicine Creek at Hwy 115. 403 m. 34.77181°N, 98.58013°W. Rocky creekside in association with *Cercis, Juniperus, Celtis. Ulmus, Prunus*. Tree to 6 m. Tim Thibault, Adam Black and Matt Lobdell 1797. 27 Aug 2019.

Juglans. United States: Oklahoma: Comanche: Medicine Creek at Hwy 115. 403 m. 34.77181°N, 98.58013°W. Rocky creekside in association with *Cercis, Juniperus, Celtis. Ulmus, Prunus*. Tree to 3 m. Tim Thibault, Adam Black and Matt Lobdell 1798. 27 Aug 2019.

Juglans major (Torr.) A. Heller. United States: Texas: Gillespie: US 87, ca. 1.5 miles S of Cherry Spring. 561 m. 30.45189°N, 98.98546°W. Limestone, top of creek drainage in association with *Quercus fusiformis, Juniperus ashei, Celtis, Berberis, Forestiera, Vitis, Smilax, Muhlenbergia lindheimeri, Yucca, Sideroxylon lanuginosum, Diospyros texana*. Tree to 7 m., bark gray brownin strips, branches and twigs brown, petiole and midrib orangish, fruits yellow green. Tim Thibault, Adam Black and Matt Lobdell 1800. 28 Aug 2019.

Juglans major (Torr.) A. Heller. United States: Texas: Gillespie: Hwy 290 at Honey Creek. 539 m. 30.29774°N, 98.99562°W. Drainage above creek, gravelly limestone soil in association with *Quercus, Carya, Ulmus, Yucca, Juniperus, Rhus, Tillandsia recurvata, Cooperia pedunculata*. Tree to 8 m., twigs silvery, fruits yellow green, rosy in sun. Tim Thibault, Adam Black and Matt Lobdell 1801. 28 Aug 2019.

Juglans major (Torr.) A. Heller. United States: Texas: Kerr: Hwy. 16, 6.9 miles from Kerrville. 558 m. 30.12566°N, 99.06913°W. Top of drainage above creek with limestone bed in association with *Quercus buckleyi, Quercus fusiformis, Juniperus ashei, Rhamnus, Celtis, Smilax, Vitis*. Tree to 5.5 m, bark gray brown, in strips, fruits yellowish. Tim Thibault, Adam Black and Matt Lobdell 1804. 28 Aug 2019.

Juglans major (Torr.) A. Heller. United States: Texas: Uvalde: Little Blanco Creek, base of Grape Hollow on Gesundheit Ranch. 426 m. 29.54023°N, 99.60587°W. Gravelly to rocky limestone derived soil in association with *Quercus* spp., *Platanus, Juniperus ashei, Aesculus*

pavia var. flavescens, Sophora secundiflora, Diospyros texana, Berberis, Lycium, Asclepias, Clematis, Opuntia, Euphorbia. Tree to 6 m., bark brown, in strips, twigs gray brown, petioles yellowish, fruits yellowish to rosy. Tim Thibault, Adam Black and Matt Lobdell 1805. 29 Aug 2019.

Juglans. United States: Texas: Real: Ranch Road 337 near Teen Hollow. 520 m. 29.73911°N, 99.91639°W. Rocky limestone creek bottom in association with *Quercus, Juniperus, Pinus, Diospyros, Dermatophyllum, Berberis, Baccharis, Rhus.* (Tree to 3.5 m., bark gray brown, twigs yellow brown, fruits green with rosy cast Tim Thibault, Adam Black and Matt Lobdell 1812. 29 Aug 2019.

Juglans. United States: Texas: Real: Ranch Road 335 at Nueces River. 561 m. 29.88514°N, 100.01911°W. Gravelly limestone above creek bed in association *with Juniperus, Diospyros, Berberis, Platanus, Quercus, Senna.* Tree to 9 m., bark brown in long strips, twigs silvery brown, fruits green. Tim Thibault, Adam Black and Matt Lobdell 1813. 29 Aug 2019.

Juglans. United States: Texas: Edwards: Ranch Road 335 outside gate of Hackberry Ranch. 515 m. 29.93281°N, 100.01498°W. Gravelly to rocky drainage in association with *Carya, Quercus, Dermatophyllum, Diospyros, Juniperus, Berberis, Celtis*. Tree to 9 m., bark brown in long thin strips, fruits green. Tim Thibault, Adam Black and Matt Lobdell 1814. 29 Aug 2019.

Juglans major (Torr.) A. Heller. United States: Texas: Real: Hwy 83 N of Leakey. 670 m. 29.89071°N, 99.70100°W. Roadside drainage in association with *Rhus, Vitis, Smilax, Quercus, Celtis*. Tree to 8 m., bark brown, twigs gray, petiole and veins yellowish, fruits yellow green. Tim Thibault, Adam Black and Matt Lobdell 1815. 29 Aug 2019.

Juglans major (Torr.) A. Heller. United States: Texas: Real: Ranch Road 337 E of Leakey. 521 m. 29.72014°N, 99.68801°W. Gravelly bench above road in association with *Quercus, Juniperus, Rhus, Tillandsia.* Tree to 7 m., bark brown, twigs gray brown, petiole and midrib yellow, fruits yellow green. Tim Thibault, Adam Black and Matt Lobdell 1816. 29 Aug 2019.

Juglans. United States: Texas: Kendall: Limestone bench on Farm to Market 473 above Jacobs Creek. 378 m. 29.98208°N, 98.65971°W. In association with *Juniperus, Diospyros, Celtis, Euphorbia, Vitis, Yucca.* Tree to 5 m, bark brown, twigs gray brown, petiole and veins yellowish, fruits green. Tim Thibault, Adam Black and Matt Lobdell 1818. 30 Aug 2019.

Juglans major (Torr.) A. Heller. United States: Arizona: Mohave: Right angle turn on BLM 7192A below Wild Cow Recreation area. 5976 ft. 35.06841°N, 113.86337°W. Gravelly-rocky SE drainage in association with *Pinus* spp., *Quercus* spp., *Arctostaphylos* spp., *Ceanothus* spp. *Rhus, Baccharis, Robinia, Rosa, Ptelea.* Tree to 3.5 m., bark gray, petiole yellow, fruits brown. Tim Thibault and Tony Gurnoe 1819. 3 Sep 2019.

Juglans major (Torr.) A. Heller. United States: Arizona: Santa Cruz: Sycamore Canyon trailhead, terminus of FS 4181. 4016 ft. 31.43216°N, 111.18819°W. Flat gravelly bench above drainage in association with *Quercus emoryi, Populus fremontii, Toxicodendron*, grasses. Tree to 8 m., bark gray in thick plates, twigs silvery, petiole and midrib yellowish. Tim Thibault and Tony Gurnoe 1826. 5 Sep 2019.

Juglans major (Torr.) A. Heller. United States: Arizona: Santa Cruz: Gardner Canyon, FS 92 just W of Coronado NF boundary. 4766 ft. 31.73034°N, 110.68956°W. Gentle-moderate S slope, gravelly sand in association with *Prosopis, Chilopsis, Sapindus, Quercus emoryi*, grasses. Tree to 6.5 m., bark gray brown in long strips, twigs gray, petiole yellowish, fruits brown. Tim Thibault and Tony Gurnoe 1827. 5 Sep 2019.

Juglans major (Torr.) A. Heller. United States: New Mexico: Grant: Sandy wash on Grant 4-16. 5725 ft. 32.49827°N, 108.53446°W. In association with *Juniperus, Pinus, Chilopsis, Atriplex, Quercus* spp, *Argemone*. Multi-trunked tree to 4.5 m, bark gray brown in strips, twigs brown, flowers green, significant twig dieback. Tim Thibault and Tony Gurnoe 1828. 6 Sep 2019.

Juglans major (Torr.) A. Heller. United States: New Mexico: Grant: NM 15 N of McMillen Campground. 7007 ft. 32.92637°N, 108.21176°W. Rocky E slope between highway and creek in association with *Acer negundo, Alnus, Pinus*. Tree to 6.5 m., bark gray brown in long strips, twigs brownish, fruits yellowish green, strong mint and pine scented. Tim Thibault and Tony Gurnoe 1830. 6 Sep 2019.

Juglans major (Torr.) A. Heller. United States: New Mexico: Grant: Top of steep slope on Hwy 152 at Galinas Canyon. 6763 ft. 32.89029°N, 107.84307°W. Rocky SE slope in association with *Ailanthus, Pinus monophylla, Juniperus, Quercus grisea, Fallugia, Cercocarpus*. Tree to 7 m., bark brown, twigs gray brown, petiole and veins yellow, fruits light yellow. Tim Thibault and Tony Gurnoe 1831. 7 Sep 2019.

Juglans. United States: Oklahoma: Roger Mills: Hwy 30, western edge of Black Kettle National Grassland. 2368 ft. 35.72257°N, 99.92534°W. Top of sandy drainage in association with *Maclura, Chilopsis, Ulmus, Juniperus*. Tree to 10 m., bark gray brown, twigs brown, petiole and veins yellow, fruits green, minty scented. Tim Thibault and Tony Gurnoe 1833. 8 Sep 2019.

Juglans major (Torr.) A. Heller. United States: New Mexico: Lincoln: Rio Ruidoso W of Gavilan Canyon Road. 6724 ft. 33.34056°N, 105.64241°W. Steep, loamy slope above river in association with *Juniperus spp., Pinus, Salix, Quercus* spp., *Ulmus, Philadelphus, Ribes, Oenothera*. Tree to 15 m., bark gray brown in long strips twigs gray brown, petiole and veins yellow, fruits yellow-green. Tim Thibault and Tony Gurnoe 1834. 9 Sep 2019.

Juglans. United States: Arizona: Pima: Catalina Mountains: Drainage off General Hitchcock Highway below junction with Incinerator Ridge Road. 7866 ft. 32.41034°N, 110.70837°W. Steep rocky granitic S slope in association with *Pinus* spp., *Quercus* spp., *Alnus, Pseudotsuga, Crataegus, Brickellia*. Tree to 11 m., bark and twigs brown, fruits yellow green. Tim Thibault and Tony Gu

TEMPORARY VISITOR PASS

ISSUED: 2019/08/26 12:40:19 PM

IBA1027A0ZHIH

Ft HOOD

THIBAULT, TIM J
921 Summit Dr
S Pasadena, CA 91030
CAB7778429

Remarks: BOTANICAL COLLECTING VARIOUS LOCATIONS

9827

VALID THROUGH: *2019-08-27*

29

APPROVED BY: christian.sardi.reg

Special Instructions to Drivers

1. Report lost or stolen passes immediately to the visitor center.
2. Oversized vehicles or commercial trucks with tool box's, cargo vans, vehicle pulling a trailer, boat, or equipment must use marked entrance.
3. All personnel on this pass must maintain a valid driver's license and current insurance while operating a motor vehicle on Ft HOOD.
4. Cell phone usage is PROHIBITED while operating a motor vehicle on Ft HOOD. Violators will be fined.
5. All motorcycle operators are required to have the Motorcycle Safety Foundation card in their possession while operating on Ft HOOD.
6. Effective 14 Sept 2011: Motorcycle drivers must wear reflective fluorescent vests (Orange, Yellow, Pink or Green). No PT vests or PT belts are allowed.
7. All vehicles must stop and occupants must render honors to the flag during retreat.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Kingman Field Office
2755 Mission Boulevard
Kingman, Arizona 86401
www.az.blm.gov

In Reply Refer To:
6850 (C010)

AUG 0 5 2019

Mr. Tim Thibault
Curator of Woody Collections
The Huntington
1151 Oxford Road
San Marino, CA 91108

Dear Mr. Thibault:

The Kingman Field Office (KFO) received your request to collect plants on public lands. This letter authorizes you permission within the KFO's Resource Management Area in Arizona. You may collect from public lands and camp on public lands, administered by the Bureau of Land Management (BLM), KFO, except along Arizona Department of Transportation (ADOT) highway right-of-ways, BLM campgrounds, rehabilitation areas, or other closed areas. Camping is not authorized in riparian zones. Casual use collection of the following materials would be permitted.

1. Flowers, leaves and fruit (which include cones, nuts, berries and seeds), limited to 20 pounds per year.
2. Skeletons of cholla, saguaro, agave stalks and ocotillo, limited to 50 pounds per person per year, with proper state permits and BLM authorization.
3. Down and dead wood for campfire use; excluded is ironwood because of its limited distribution within the resource area.

Collections from Mount Wilson, Mount Tipton, Mount Nutt, Warm Springs Wabayuma Peak, Aubrey Peak, Arratstra Mountain, Tres Alamos and Upper Burro Creek Wilderness will be prohibited. Collections from Areas of Environmental Concern (ACEC) McCracken Desert Tortoise Habitat, Carrow-Stephens Ranches, Burro Creek Riparian and Cultural, Poachie Desert Tortoise Habitat, Three Rivers Riparian, Aubrey Peak, Hualapai Research Natural Area, Black Mountains Ecosystem Management, White-Margined Penstemon Reserve, Clay Hills Research Natural Area, Wright-Cottonwood Creeks Riparian and Cultural and Joshua Tree Forest-Grand Wash Cliffs are prohibited.

Collection of special status plants are not to be collected. This Letter does not grant you the right to remove seeds or vegetation from lands that are not public, such as state, private and tribal lands. It is your responsibility to know the land ownership status of the areas where collecting. Maps of land status can be viewed or purchased at the KFO. You are authorized to collect up to 20 pounds per person per year. Commercial harvest of any vegetative products would not be

permitted until an environmental analysis has been undertaken to determine suitability of low harvest activity demanded by the public.

1. While collecting, all vehicles must remain on existing roads and trails, no off-road travel is authorized.
2. Any trash generated from a collecting activity must be removed.
3. Removal of limbs and live vegetation to collect is NOT authorized.
4. Dogs must be on a leash and/or under control at all times.
5. Permit must be posted and/or in windshield of the vehicles..

Please keep this letter in your possession and visible while you are on public lands. If you have any questions, please call Wildlife Biologist Joelle Acton at 928-718-3727 or jacton@blm.gov.

Sincerely,

Amanda M. Dodson

Amanda M. Dodson
Field Manager

USDA Forest Service

Permit **FS-2400-008** (V. 04/2012)
OMB No. 0596-0085

Region: R3
National Forest: All
Ranger District: All

Forest Products Free Use Permit

PERSONAL USE ONLY (Not for Resale)
(Ref. FSM 2460 and FSH 2409.18)

Permittee's Name and Complete Address:		Permit No.		Preparation Date	
Name:	Tim Thibault	RO318		5-6-2019	
Address:	The Huntington	Effective Date	Termination Date	Load Ticket Numbers	
	1151 Oxford RD	5-6-2019	5-5-~~2019~~ 2020	From:	Thru:
City/State:	San Marino, CA	Product Plan		From:	Thru:
Zip Code:	91108	Number:	Name:		
Permittee Identification	Type	Permit Area Description:			
CA# 7778429	DL	All national forests and national grass lands in the Southwestern Region (Arizona, New Mexico, Oklahoma and Texas)			

Vehicle(s) Information			
Year:	1999	Year:	rental
Make:	Jeep	Make:	
Model:	Wrangler	Model:	
Color:	Gold	Color:	4GEU563
License:		License:	
State:		State:	

Remarks: Permittee shall contact the local Ranger District where collection is planned prior to beginning work for you safety and information on closed areas, special forest orders, etc.

Permittee shall acknowledge the cooperation of the USDA Forest Service in any publications, whenever possible

Permittee agrees to deposit the required voucher specimen in a recognized herbarium in either New Mexico or Arizona.

The Small Population Addendum (rev.6/2017) is included with this permit. The addendum defines additional terms and conditons for botanical collections from small populations. Permittee must carry the addendum at all times when collecting, and must be shown upon request to a Forest Service officer.

Permittee has been issued the Federal Threatened-Endangered Plant List of Arizona and New Mexico National Forests (undated) and the USFS R3 Regional Forester's Sensitive Species: Plants (2013). Permittee must carry both lists at all times when collecting, and must be shown upon request to a Forest Service officer.

Permittee is authorized to collect seeds, cuttings and herbarium samples from the above lists subject to all terms and conditions of the permit and small population addendum.

Name of Other Authorized Collector(s): Brian Dorsey, Raquel Folgado, John Wiens, Michael Denslow, Alicia Baugh, Taylor La Val, Sean Lahmeyer, John Trager, Karen Zimmerman, Massimo Boscolo, Mark Fleming, Matt Jevnikar, Erik Rakestraw, Julie Wiens, Jason Wiley, Peter Zale, Matt Lobdell, Adam Black, J. Travis Columbus, Jeremy Bugarich, Tony Gurnoe, Rachel Sadowski,
Mary Burke, Rachel Davis, Emily Griswold, Abbey Hart, Angelica Sauceda, Shannon Still, Andy Graves, Neil Gerlowski

For questions regarding the intent and use of collections authorized under this permit: Kathryn Kennedy (505) 842-3263
Issuing Forest Officer: Jason Zayatz (505) 842-3888

PRODUCT DESIGNATION

Product	Species	Unit of Measure (UOM)	Quantity	Rate per Products (UOM)	Total Value (Free)
				Total Permit Value $	

PRODUCT QUANTITY REMOVAL RECORD

Date	Time	Quantity Removed	Date	Time	Quantity Removed	Date	Time	Quantity Removed	Date	Time	Quantity Removed

Forest Products Free Use Permit

PERSONAL USE ONLY (Not for Resale)
U.S. Department Of Agriculture – Forest Service

Permit No: RO318

GENERAL CONDITIONS

Subject to, and in strict compliance with, all the following conditions (both General and Other) and those listed above, the Permittee named herein is authorized to harvest and remove the forest products described above.

1. Forest products obtained under "Free Use" are for personal use only and cannot be sold or exchanged (36 CFR 261.6(f)).
2. Permit must be in the Permittee's possession while harvesting and transporting products. Copies are not allowed.
3. This permit is nontransferable.
4. This permit and activities hereunder are subject to all applicable Federal statutes and regulations and State and local laws. In case of conflict, Federal statutes and regulations shall take precedence.
5. Motorized vehicles are not allowed off existing roads that are open to the public, unless otherwise specified within this permit. Permittee parking shall not block traffic or impede fire or emergency vehicles.
6. Permittee shall remove all trash and litter resulting from Permittee's activities.
7. Concurrent with forest product removal activities, slash and unused vegetative material resulting from Permittee's activities shall be removed from roads and ditches and scattered in the surrounding landscape.
8. Permittee shall comply with fire requirements and current restrictions to prevent forest fires.
9. Permittee shall pay for or repair all damage to natural features; riparian areas; other vegetation; and roads, trails, fences, ditches, telephone lines, or other improvements resulting from Permittee's activities under this permit.
10. The Forest Service reserves the right to unilaterally revoke this permit for Permittee's noncompliance with its terms and conditions or when revocation is in the public's interest.
11. Regardless of whether forest products are removed, this permit will terminate either at midnight of the termination date shown above, or when the quantity listed above is reached, whichever comes first.
12. None of the terms or conditions of this permit may be varied or modified, except for unilateral modifications by the Forest Service.
13. Permittee agrees to hold the Government harmless from any claim for damage or loss of property, personal injury, or death.
14. Collection of forest products is permitted only in the area(s) described by this permit.
15. Permittee shall complete the Product Quantity Removal Record in ink prior to transporting products. When load tickets are issued, the Permittee is required to complete load tickets when Permittee moves between collection sites or leaves a permit area. Load tickets must be securely attached to the load and clearly visible from the rear of the vehicle.

OTHER CONDITIONS