(Copyright Nebraska Forest Service)

Chapter 1: Introduction

The *Nebraska Statewide Assessment and Strategy – 2010* provided the foundation and guidance for managing sustainable, healthy forests across the state. The *2015 Forest Action Plan* update built upon that work and identified gaps in the original planning document. It reflected new assessment information obtained after 2010 and provided an opportunity to re-engage NFS staff and partners in identifying new issues and opportunities. Much of the focus, organization, and direction of the original planning process remains the same; however, changes in circumstances and new information have illuminated assessment gaps that are addressed in this update.

The planning process for the *Nebraska Forest Action Plan – 2020* primarily focused on new and updated information. Management staff worked with local units and NFS forest districts to identify needs using a grassroots, bottom-up approach. This technique identified specific needs and issues with the assistance of foresters and other professionals familiar with each Priority Forest Landscape Area (PFL). This provided detailed information about the current threats, opportunities, strengths and weaknesses, and desired outcomes from stakeholders within each PFL. Members of the public in each landscape were also invited to participate through attending informational meetings, reviewing a draft of the publication, or submitting comments directly to the FAP planning committee.

National Priorities

The NFS provides over 250 workshop and outreach events to Nebraska's residents, reaching more than 200,000 people annually. All NFS program areas, discussed at length in Chapter 5, have components of education, outreach, and stewardship that meet the national priorities. The goals, objectives, strategies, and tactics in this Forest Action Plan (FAP) tie directly to the three nationally identified priorities of:

- Conserve and Manage Working Forest Landscapes for Multiple Values and Uses,
- Protect Forests from Threats, and
- Enhance Public Benefits from Trees and Forests.

These national priorities form the underpinning of this FAP. Matrixes and tables are present in Chapters 8-11 of this document to assist the reader in understanding the relationship of each topic to the national priorities. The following are brief examples that demonstrate how NFS programs achieve the national priorities in Nebraska.

National Priority: Conserve and Manage Working Forest Landscapes for Multiple Values and Uses

Nebraska's Forest Stewardship and Forest Legacy—functions of Rural Forestry Assistance—are programs that address this priority. Forest Stewardship Plans and management plans promote sustainable planning and active management to support multiple landowner objectives through voluntary BMPs (see Appendix C). The NFS develops over 300 forest plans annually and has implemented tree planting and forest improvement projects on over 25,000 acres over past 18 years.

Forest Legacy, for its part, protects working forests from conversion to other uses such as ranchette development and agricultural expansion. An example is maintaining a 461-acre Forest Legacy project, Chat Canyon, in north central Nebraska.

National Priority: Protect Forests from Threats

The NFS addresses this priority through collaborative efforts among the Rural Forestry, Community Forestry, Forest Health, and Rural Fire Protection and Control programs. Rural Fire Protection and Control efforts include fire training, fire prevention programs, building capacity, and forest fuels reduction. Additionally, this program helped acquire over 850 pieces of wildland firefighting equipment throughout the state for use by volunteer fire departments (VFDs). The Forest Health Program includes a strong detection and monitoring component to help detect and mitigate insect, disease, and invasive species outbreaks. Recent successes include the Nebraska Emerald Ash Borer Working Group and Tree Pest Detector Initiative, which set guidelines and provided training for participants to respond to pest outbreaks in their areas.

National Priority: Enhance Public Benefits from Trees and Forests

A wide range of NFS programs and projects address this priority. The Rural Forestry Assistance Program helps landowners manage their forests for multiple uses, including increased value and productivity, improved wildlife habitat, and enhanced forest health. These byproducts also create additional public benefits, such as improved water quality, that increase as more landowners recognize the value of sound forest management. Additionally, the NFS implements forest utilization programming that seeks to develop and promote new and innovative wood products. These efforts aim to bolster a growing forest products industry while increasing workforce and rural economic development.

The Community Forestry Program works closely with municipal staff, arborists, community tree advocates, and residents to promote and enable tree conservation and planting on both public and private properties in communities. The resulting tree inventories, management plans, and tree planting projects not only increase species diversity, but expand the community canopy and ecosystem services provided to residents. More than 300 communities have participated in community forest programs. This program also aims to continually enhance the value of community forests, helping certify over 90 communities as Tree City USA, four utility providers as Tree Line USA, and six campuses as Tree Campus USA.

Forest Action Plan

The United States Department of Agriculture (USDA), specifically the Farm Bill, requires State Forest Action Plans, including *Nebraska's Statewide Assessment and Strategy – 2010,* to be updated at least every ten years, with a review at year five of the plan. The plan guides the agency's efforts to promote sustainable management of Nebraska's nearly 1.5 million acres of forestland and 1.314 million acres of other land with trees (USDA Forest Service, 2018).

The *Nebraska Forest Action Plan – 2020* was reorganized in response to observed and perceived threats to the forest resource. These threats include a shifting climate with more flooding, winter storms, droughts, and wildfires; new-to-Nebraska invasive species such as the emerald ash borer; and, landscape fragmentation and land-use conversion. This plan includes newly collected data from sources such as the NFS' Nebraska Growth and Drain study and the Forest Inventory Analysis by the US Forest Service. It also details management guidelines, new initiatives, and a comprehensive guide to how the NFS will implement this latest version of the FAP.

Plan Components

The following list provides an at-a-glance overview of the chapters and the content one can anticipate finding in each section. For a comprehensive list with respective page locations, please refer to the table of contents found at the beginning of this document.

Statewide Forest Resource Assessment (Chapters 1-7)

- Introduction and document overview
- Nebraska forest facts and the planning process
  - Partner engagement
  - Public review process
- Identification of PFLs including:
  - Conditions and trends of forest resources
  - Threats to forestlands and resources
  - Consistency with national priorities
  - Desired outcomes
  - Local priorities
- Multi-state resources that are of regional priority
- Description of NFS programs and how each relates to this FAP.
- Other statewide concerns
  - Extreme weather events compounded by a changing climate
  - Threatened and endangered species
  - Invasive and aggressive native plant species

Statewide Forest Resource Strategy (Chapters 8-13)

- 2020 FAP: Goals and strategies
- 2020 FAP: Implementation approach
- Crosswalk of 2010/2015/2020 FAP goals
- 2015 FAP: Summary of implementation and challenges
- Funding and resources

Desired Outcomes

Desired outcomes are the conditions the NFS is striving to achieve over the next ten years for each of the PFL and issue areas outlined in this document. These are "stretch goals" for the agency and for the resource, crafted in a specific manner as to push the limits of what might ordinarily be achieved. The NFS will apply the principles of desired future condition at a landscape level, driving the direction of management within the priority landscapes and areas adjacent to these resources. A desired outcome will not necessarily apply to every acre within each priority landscape, nor will it cover all acres across every ownership type. Instead, it outlines an optimum overall condition for each landscape. Key elements of the desired outcomes are:

- Creating healthy, sustainable forests and landscapes;
- Increasing biological diversity within ecosystems;
- Ensuring productive forest systems contribute to economically healthy, vibrant communities and forest-related jobs; and
- Utilizing the agency's established BMPs, following individual site prescriptions.

Priority Forest Landscapes

According to the National Association of State Foresters (2019a), the Forest Stewardship Program is the primary private forest landowner assistance program in the U.S. It serves as a gateway through which landowners can access a variety of assistance programs including USDA cost-share, state tax abatement, and forest certification. State forestry agencies use the program to facilitate shared stewardship by working across landscapes and land ownerships to address key resource issues. The National Association of State Foresters (2018) endorsed the concept summarized below:

- States will identify geographic priority areas for delivering landowner assistance.
- States will strategically deploy federal assistance to address one or more of the following critical issues:
  - Reducing wildfire risk to communities,
  - Protecting water resources,
  - Enhancing wildlife habitat, and
  - Supporting jobs in the woods.
- All federal stewardship dollars will be spent within geographic priority areas.
  - Matching state funding can occur elsewhere.
- New performance measures will better communicate federal investment outcomes.

For states electing to identify their Forest Stewardship Program priority areas as part of the FAP revision process, the state/federal task force offers this guidance:

- Priority area(s) need to be specific geographic areas, not more than 50% of the total eligible lands for state forest stewardship.
- More than one priority area is acceptable, but collectively:
  - Areas must be of a reasonable size, reflecting that these are truly areas where focused attention should be dedicated.
  - These areas must be responsive to one or more of the National Association of State Foresters' list of critical issues.
- Area selection and delineation must show a clear strategy aimed at achieving progress on the identified issues within an area where this achievement is most needed and likely to occur.

Since FAPs are 10-year plans, a desirable outcome would be demonstrating measurable progress on key issues within critical locations during that timeframe. FAPs, and therefore PFL Areas, can be revised anytime there is a need because of significantly changed issues, opportunities, or resources. NFS staff will designate the Stewardship geographic priority areas with PFLs in mind.

Based on the aforementioned guidance, the NFS surveyed its foresters and field staff, who provided specific information pertinent to their area's PFLs. This information was compiled and assessed to examine related issues across forested landscapes. Chapter 3 reflects this exercise, where themes were developed to demonstrate how a cohesive strategy will be applied to move all treed and forested areas toward a desired future condition. The specific strategies that will be implemented to meet FAP goals can be found in Chapter 8.

Multistate Priorities

This FAP identifies six multistate priority areas where opportunities exist for interstate, landscape-level collaboration and management. These areas represent upstream and downstream components of riparian forest systems, and forests that occur on the eastern extent of their natural range. It also includes a metropolitan area that resides within an important forested area in Nebraska and Iowa.

These forest resources afford the NFS an opportunity to prioritize management activities that can positively influence outcomes regionally. Nebraska's multistate priority areas, detailed in Chapter 4, include:

- Niobrara River, shared with Wyoming and South Dakota
- Missouri River, shared with Iowa, Kansas, Missouri, and South Dakota
- Pine Ridge, shared with South Dakota and Wyoming
- Republican and Blue River systems, shared with Kansas
- South Platte and North Platte systems, shared with Colorado and Wyoming
- Omaha-Council Bluffs Metro, shared with Iowa

Forest Legacy

The Forest Legacy Program authorizes the USDA Forest Service or state governments to purchase critical forestlands to prevent conversion to a non-forest use. In Nebraska, priority is given to forestlands that contain important scenic, cultural, recreational, fish and wildlife habitats, water, or other ecological resources that support working forest uses. Lands purchased under this program will continue or become productive, working forestlands with active management plans. Nebraska's Forest Legacy Assessment of Need (AoN) can be found in Appendix A.

(Copyright NEBRASKAland Magazine, Nebraska Game and Parks Commission)

Chapter 2: Nebraska Forest Facts and the Planning Process

This chapter provides an overview of the planning process, including coordination with existing management plans across the state. Tables and graphs are grouped at the end of this chapter to outline trends for both forestlands and trees present throughout the state.

Stakeholder Participation

Protecting, enhancing, and utilizing the state's tree and forest resources is a large task that no one agency or organization can do independently. Partnerships with a diverse array of organizations are critical to meeting the National State and Private Forestry Priorities outlined in Chapter 1. The NFS works with a large number of partners, described in detail in Chapter 7. The FAP aligns with existing partners and their management activities, including, but not limited to:

- USDA Forest Service (USFS): Nebraska National Forest and Grasslands
- Nebraska Natural Resources Conservation Service (NRCS)
- Nebraska's 23 Natural Resources Districts (NRDs)
- Nebraska Game and Parks Commission (NGPC)
- Nebraska Department of Agriculture
- USDA Animal and Plant Health Inspection Service
- Nebraska's 481 rural fire districts
- Nebraska Emergency Management Agency
- Nebraska State Fire Marshal Agency

Aligning with Other Plans

This assessment also relies heavily on technical documents devised to better understand the state's forest resources. The NFS consulted previous documentation and requested feedback from the following technical committees including, but not limited to:

- Forest Legacy – AoN
- State Forestry Stewardship Coordinating Committee
- State Technical Committee (NRCS)
- Nebraska National Forests and Grasslands Resource Management Plan (USFS)
- Nebraska Natural Legacy Project (NGPC)
- Nebraska Community Wildfire Protection Plans

Table 1: Priority Forest Landscape Alignment with Other Management Plans				
PRIORITY FOREST LANDSCAPE	FOREST LEGACY ASSESSMENT OF NEED	NE NATIONAL FORESTS & GRASSLANDS PLAN	NE NATURAL LEGACY	COMMUNITY WILDFIRE PROTECTION PLANS
Pine Ridge	X	X	X	X
Wildcat Hills	X		X	X
Loess Canyons			X	X
Niobrara Valley	X	X	X	X
Missouri River	X		X	X
Nemaha River				X
Big Blue River			X	X
Little Blue River			X	X
Eastern Platte River	X		X	X
Western Platte River	X		X	X
Central Platte River	X		X	X
Republican River	X			X
Loup River	X		X	X
Elkhorn River	X		X	X

Public Comment and Informational Meetings

In line with guidance from the USDA Forest Service, the NFS solicited feedback from Nebraskans about trees and forestlands throughout the state. Eight informational meetings were held over the course of two weeks within or near each of the PFLs. To better address local issues and conditions, meetings consisted of an overview of the respective PFLs, analysis of conditions and threats, and review of adjacent multi-state priority areas. Questions were fielded from attendees, and an option to submit written feedback was provided. Additionally, a draft version of the plan was posted on the NFS website for review and the submission of comments. A series of press releases were circulated statewide announcing the informational meetings, the opening of a 45-day public commenting period, and detailed information on how the public and partners could participate.

Assessment Process

This assessment evaluates current, historical, and spatial data gathered for the *Nebraska Forest Action Plan 2020*. In order to present the most detailed and updated information, the NFS expounded on its existing forest resource data with publicly-available information from a variety of sources, including the National Land Cover Dataset, USFS Spatial Analysis Project, U.S. Census Bureau, NGPC, Nebraska Department of Transportation, Nebraska NRDs, USFS – Nebraska National Forest, among others. The richness of information provided additional insights about the nature, complexity, and value of Nebraska's forest resources. This increased the agency's ability to clearly define PFLs, current conditions, and the management actions needed to move toward the desired future condition.

The spatial analysis identified ecological units with like features for the purposes of mapping and delineating the PFLs. During this process,

the NFS compared the priority landscapes from the 2010 assessment to the 2008 Nebraska Natural Legacy Project's Biologically Unique Landscapes (BULs). Previously identified areas were adjusted to better reflect the presence of all forested acres within and adjacent to the defined area. Boundaries also closely adhere to the hydrology of the watershed, local and regional interests, as well as the goals defined by the Forest Legacy AoN.

Seven of the 11 PFL boundaries (Pine Ridge, Wildcat Hills, Niobrara Valley, Platte River, Republican River, Elkhorn River, and Missouri River) align with predefined Forest Legacy Area boundaries. Boundaries for three of the priority landscape areas (Loup, Nemaha, and Blue Rivers) were produced through extrapolation of existing Forest Legacy Area boundaries using a hydrologic unit code (HUC12) to determine the boundaries of the watershed. These were augmented to also include forestland in the drainage areas of the rivers. The Loess Canyons PFL boundary aligns with adjacent county boundaries. The Missouri River PFL boundary includes all areas within Douglas and Sarpy counties to account for forested areas in Omaha's surrounding populated areas.

Statewide Data and Trends

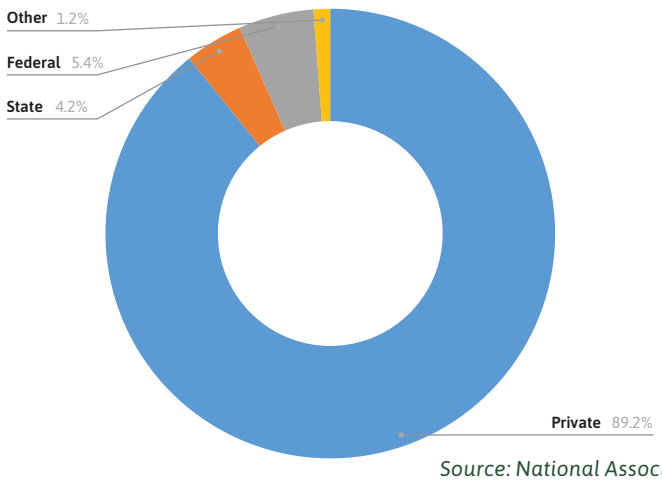
The following data was compiled from a variety of sources to demonstrate the condition of Nebraska's forestlands and other areas with trees. Nebraska is mostly privately owned, with approximately two percent of the total land area held by the public. Treed areas—including forestland and other areas with trees—follow a similar trend. Over 2.5 million acres are held privately and 278,000 acres fall within the public domain (National Association of State Foresters, 2019a).

Table 2: Nebraska's Land and Forest Ownership

	PERCENT OF AREA	LAND AREA (acres) [1]	FORESTLAND AND OTHER AREAS WITH TREES (acres) [2]
Public (state, federal, other)	2.4	1,180,000	278,000
Private and other	97.6	48,326,065	2,517,000
Total	100	49,506,065	2,795,000

Sources: [1]Nebraska Game and Parks Commission, 2020; [2]Meneguzzo, Lister, & Sullivan, 2018

Figure 1: Nebraska Forests by Ownership Type



Source: National Association of State Foresters, 2019a

Table 3: Forest Productivity Facts

TOTAL FOREST/ TREED AREA (acres)	2,795,000
Forestlands[1]	1,481,000
Land with trees[2]	1,314,000
TOTAL LAND AREA (acres)[3]	**49,506,065**
FORESTLAND OWNERSHIP[4]	
Private	89%
State	4%
Federal	5%
Other	1%
VOLUME (cubic feet)[1]	
Average annual gross growth (growth)	64,112,495
Average annual mortality (drain)	51,982,011
Average annual net growth	12,130,492
Average annual removals (including management and harvest removals)(drain)	15,407,190
Net growth/drain	-3,276,696
CONSERVATION LANDS (acres)	
Non-federal lands[3]	577,000
Forest Legacy (Chat Canyon WMA)	461
Federal lands[3]	601,000
NUMBER OF LIVE TREES	**502,438,892**
Forestland trees[1]	383,217,991
Non-forestland (trees in rural areas)[2]	106,161,897
Non-forestland (trees in urban areas)[2]	13,059,004

Sources: [1]USDA Forest Service, 2018; [2]Meneguzzo, Lister, & Sullivan, 2018; [3]Nebraska Game and Parks Commission, 2020; [4]National Association of State Foresters, 2019a

Forestlands

According to information from the USDA Forest Service (2018) and Meneguzzo, Lister, and Sullivan (2018), Nebraska has approximately 1.5 million acres of forestlands. These reports use an industry accepted definition that states forestland is:

> Land that has at least 10 percent crown cover by live tally trees of any size or has had at least 10 percent canopy cover of live tally species in the past, based on the presence of stumps, snags, or other evidence. To qualify, the area must be at least 1.0 acre in size and 120.0 feet wide. Forestland includes transition zones, such as areas between forest and non-forestlands that meet the minimal tree stocking/cover and forest areas adjacent to urban and built—up lands. Roadside, streamside, and shelterbelt strips of trees must have a width of at least 120 feet and continuous length of at least 363 feet

Table 4: Nebraska's Primary Forest Landscapes & Their Extent*

PRIMARY FOREST LANDSCAPES	ACRES
Pine Ridge	211,892
Wildcat Hills	52,114
Loess Canyons	111,715
Niobrara Valley	167,410
Missouri River	283,697
Nemaha River	48,109
Big and Little Blue River	68,456
Platte River	115,311
Republican River	94,236
Loup River	175,000
Elkhorn River	56,867
Non-forestland with trees	1,314,877
TOTAL	**2,699,684**

** These numbers reflect spatial analysis of forested acres with respective priority forest landscapes.*

Sources: USDA Forest Service, 2018; Meneguzzo, Lister, & Sullivan, 2018

to qualify as forestland. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if they are less than 120 feet wide or less than an acre in size. Tree-covered areas in agricultural production settings, such as fruit orchards, or tree–covered areas in urban settings, such as city parks, are not considered forestland.

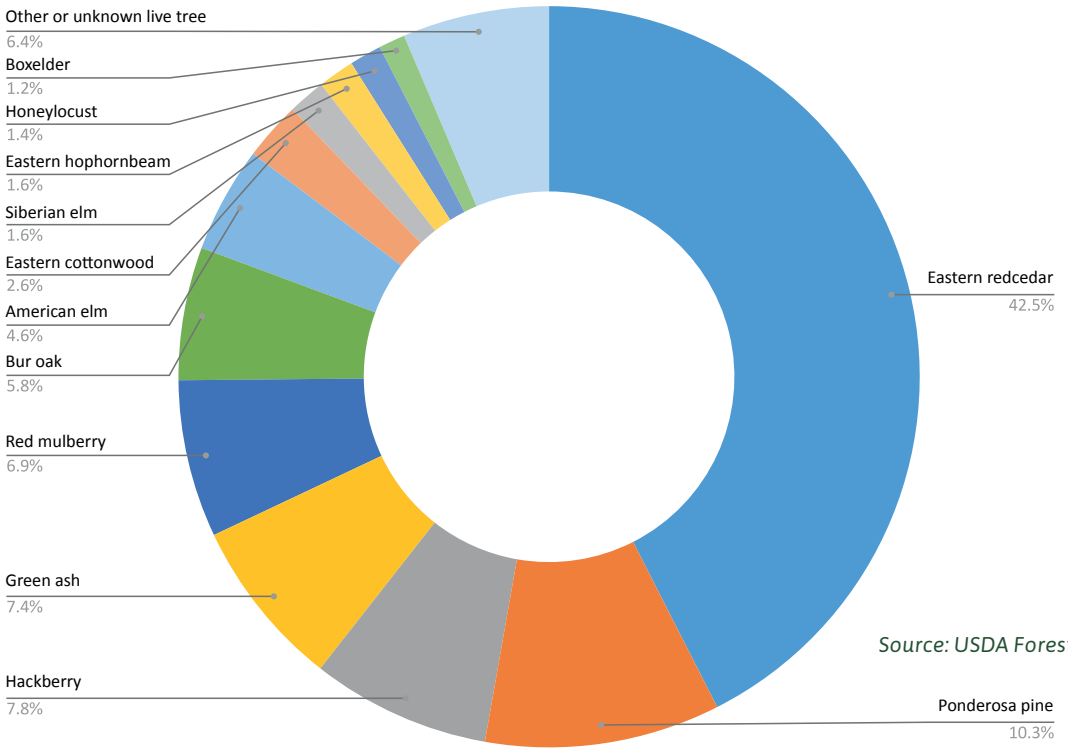
Nebraska's forestlands produce 64.1 million cubic feet of growth on an annual basis. Current natural mortality is 52.0 million cubic feet and removals (timber harvest plus other removals) is 15.4 million cubic feet, resulting in a net drain in the wood supply of 3.3 million cubic feet (USDA Forest Service, 2018). This leaves nearly 40 million cubic feet available for utilization. While there is a net loss in the available volume, this is mostly due to mortality in forests (see Table 3). The most abundant tree species in these forests are eastern redcedar with nearly 163 million trees and ponderosa pine with over 39 million trees.

Table 5: Total Live Trees of Common Tree Species in Forestlands

SPECIES	LIVE TREES
Eastern redcedar (*Juniperus virginiana*)	162,753,452
Ponderosa pine (*Pinus ponderosa*)	39,341,628
Hackberry (*Celtis occidentalis*)	29,925,071
Green ash (*Fraxinus pennsylvanica*)	28,367,724
Red mulberry (*Morus rubra*)	26,323,843
Bur oak (*Quercus macrocarpa*)	22,234,769
American elm (*Ulmus americana*)	17,709,887
Eastern cottonwood (*Populus deltoides*)	9,866,703
Siberian elm (*Ulmus pumila*)	6,235,265
Eastern hophornbeam (*Ostrya virginiana*)	6,090,186
Honeylocust (*Gleditsia triacanthos*)	5,358,773
Boxelder (*Acer negundo*)	4,439,062
Other or unknown live trees	24,571,628
TOTAL	383,217,991

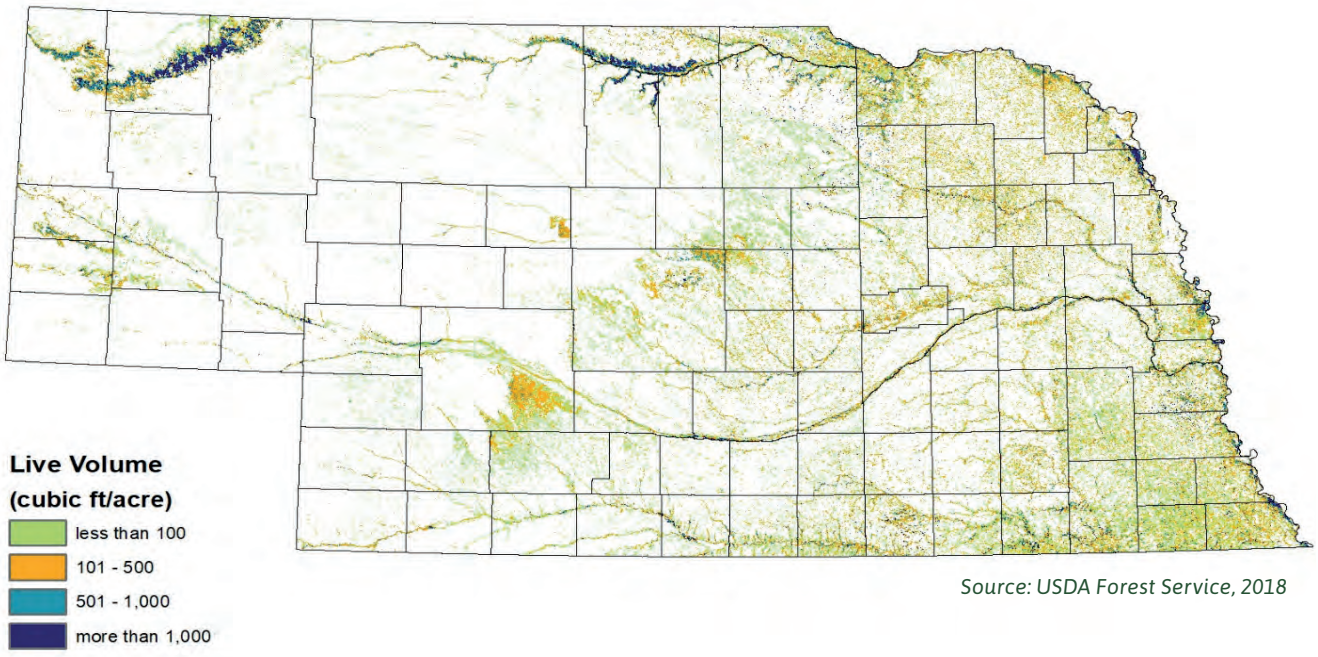
Source: USDA Forest Service, 2018

Figure 2: Tree Species Composition of Forestlands



Source: USDA Forest Service, 2018

Figure 3: Live Volume on Forestlands



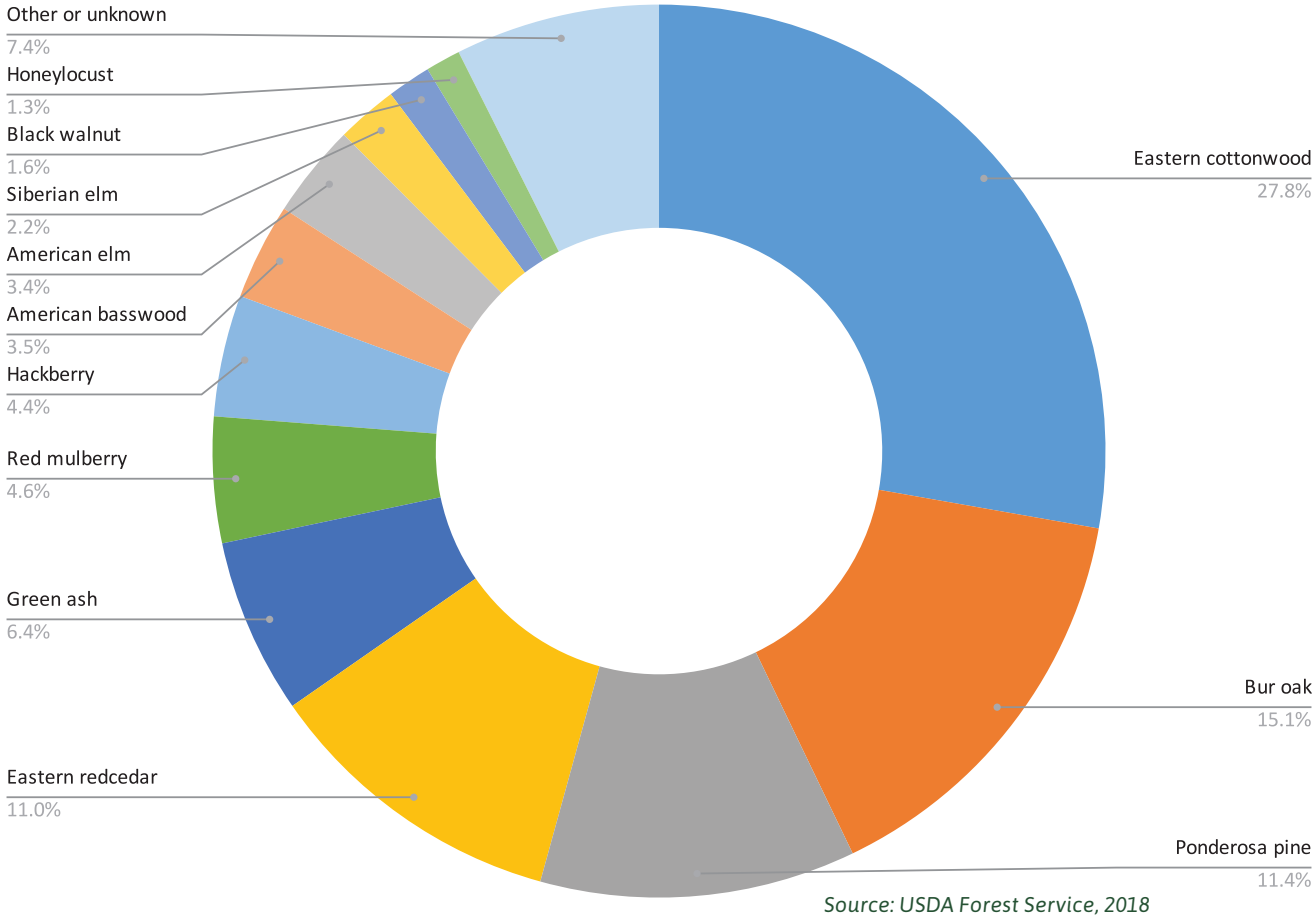
Source: USDA Forest Service, 2018

Table 6: Top 12 Species by Standing Cubic Foot Volume on Forestlands

SPECIES	VOLUME (cubic feet)
Eastern cottonwood (*Populus deltoides*)	588,912,284
Bur oak (*Quercus macrocarpa*)	319,875,750
Ponderosa pine (*Pinus ponderosa*)	242,247,819
Eastern redcedar (*Juniperus virginiana*)	234,269,157
Green ash (*Fraxinus pennsylvanica*)	134,674,516
Red mulberry (*Morus rubra*)	96,645,729
Hackberry (*Celtis occidentalis*)	93,312,463
American basswood (*Tilia americana*)	73,992,610
American elm (*Ulmus americana*)	72,057,711
Siberian elm (*Ulmus pumila*)	46,906,494
Black walnut (*Juglans nigra*)	33,578,799
Honeylocust (*Gleditsia triacanthos*)	26,844,342
Other or unknown live trees	157,099,468
TOTAL	**2,120,417,142**

Source: USDA Forest Service, 2018

Figure 4: Total Volume by Species in Forestlands



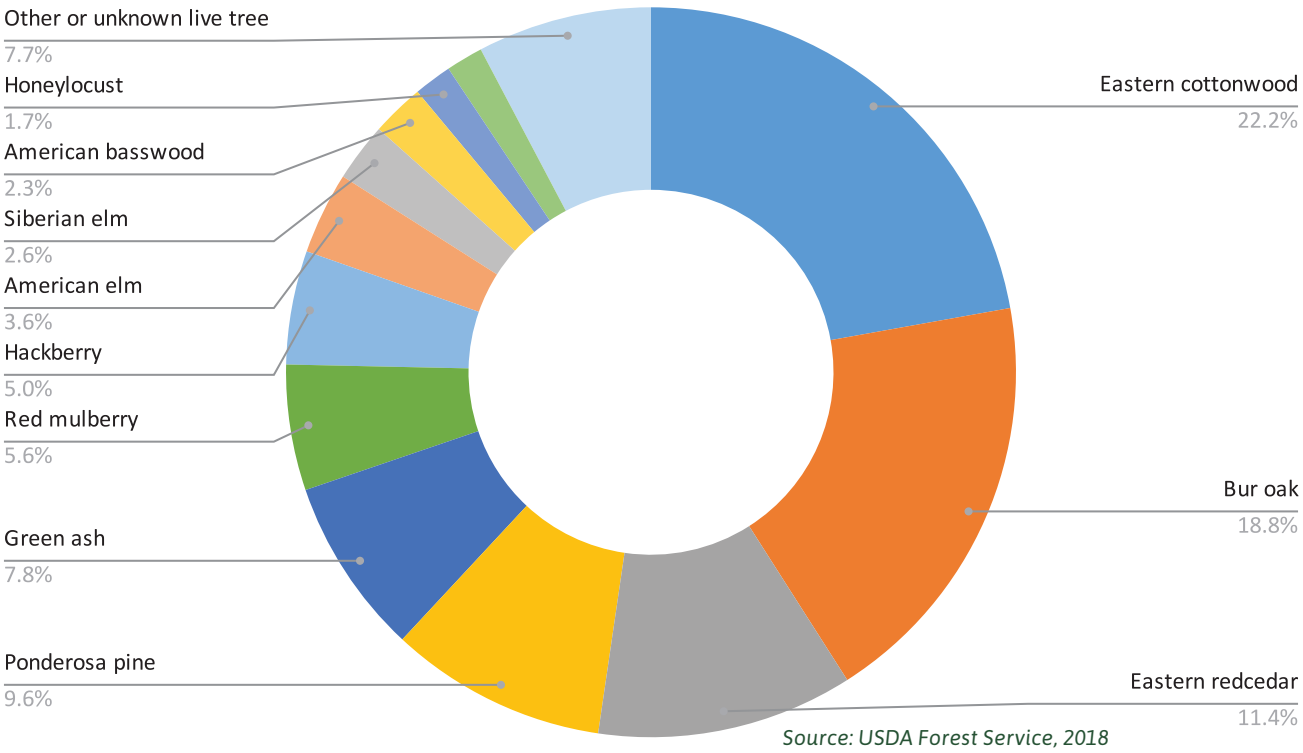
Source: USDA Forest Service, 2018

Table 7: Top 12 Species, Standing Dry Ton of Biomass on Forestlands

SPECIES	TOTAL (dry tons)
Eastern cottonwood (*Populus deltoides*)	10,143,913
Bur oak (*Quercus macrocarpa*)	8,588,809
Eastern redcedar (*Juniperus virginiana*)	5,191,042
Ponderosa pine (*Pinus ponderosa*)	4,397,081
Green ash (*Fraxinus pennsylvanica*)	3,585,573
Red mulberry (*Morus rubra*)	2,546,175
Hackberry (*Celtis occidentalis*)	2,302,177
American elm (*Ulmus americana*)	1,662,979
Siberian elm (*Ulmus pumila*)	1,186,140
American basswood (*Tilia americana*)	1,072,761
Honeylocust (*Gleditsia triacanthos*)	770,735
Black walnut (*Juglans nigra*)	749,752
Other or unknown live tree	3,533,175
TOTAL	**45,730,312**

Source: USDA Forest Service, 2018

Figure 5: Total Standing Biomass Available in Forestlands



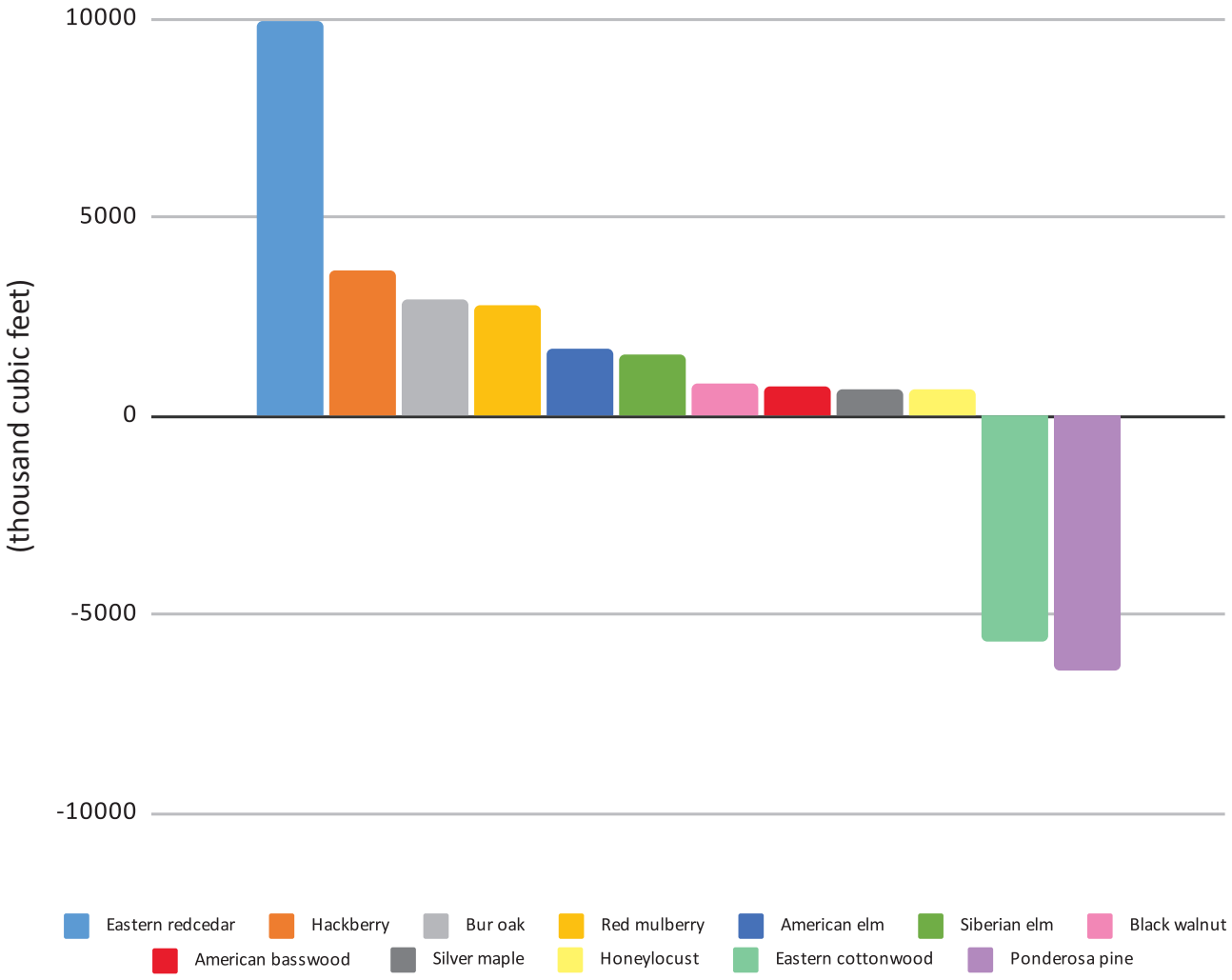
Source: USDA Forest Service, 2018

Table 8: Average Annual Net Growth of Dominant Tree Species on Forestlands

SPECIES	AVERAGE ANNUAL NET GROWTH (cubic feet)
Eastern redcedar (*Juniperus virginiana*)	9,983,758
Hackberry (*Celtis occidentalis*)	3,651,239
Bur oak (*Quercus macrocarpa*)	2,934,970
Red mulberry (*Morus rubra*)	2,826,122
American elm (*Ulmus americana*)	1,688,057
Siberian elm (*Ulmus pumila*)	1,577,468
Black walnut (*Juglans nigra*)	834,133
American basswood (*Tilia americana*)	759,436
Silver maple (*Acer saccharinum*)	684,582
Honeylocust (*Gleditsia triacanthos*)	654,473
Eastern cottonwood (*Populus deltoides*)	-5,713,447
Ponderosa pine (*Pinus ponderosa*)	-6,436,260

Source: USDA Forest Service, 2018

Figure 6: Average Annual Net Growth of Dominant Species on Forestlands



Source: USDA Forest Service, 2018

Non-Forestland

Non-forestland—commonly referred to as "other areas with trees"—is defined as the presence of trees on areas less than one acre in size, less than 120 feet wide, and less than 10 percent stocked (Meneguzzo, Lister, and Sullivan, 2018). The USDA (2018) expounds further by stating non-forestland is:

> "Land that does not support or has never supported, forests and lands formerly forested where use of timber management is precluded by development for other uses. Includes area used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining rights-of-way, powerline clearings of any width, and noncensus water."

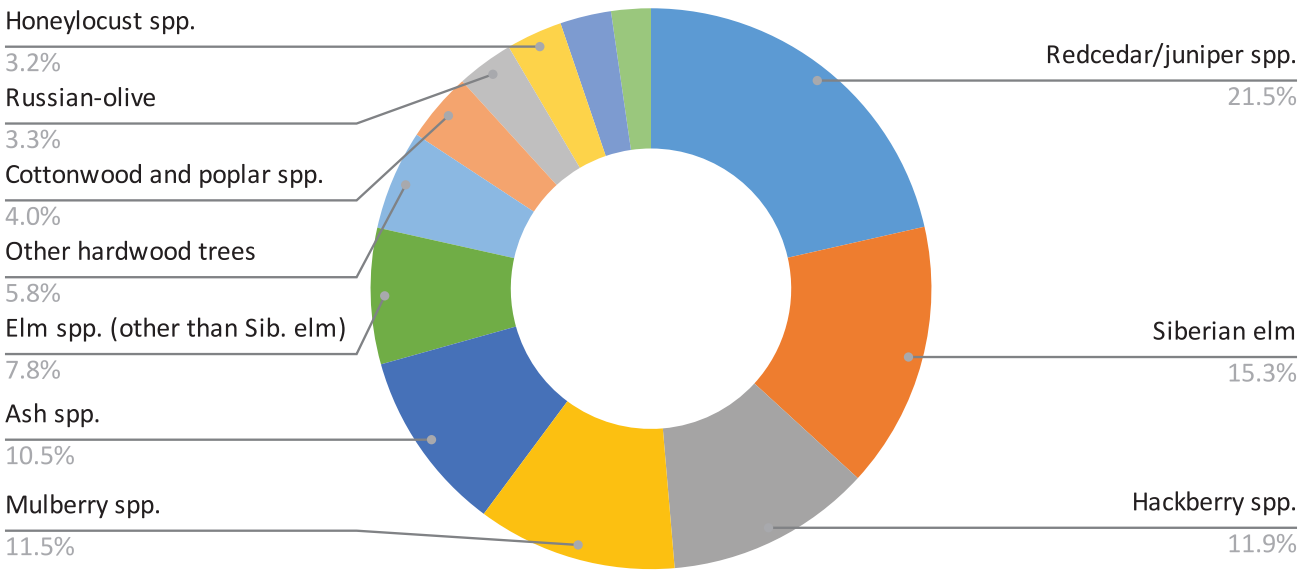
By this definition, Nebraska has an estimated 119 million trees, possessing over 1 billion cubic feet of volume, on 1.3 million acres in rural and urban areas statewide. As detailed in Table 9, eastern redcedar and Siberian elm constitute the largest number of individual trees, while cottonwood holds the most significant volume with more than 348 million cubic feet

Table 9: Estimated Live Trees by Species or Genus Growing on Non-forestland* in Nebraska

SPECIES	NUMBER OF TREES
Redcedar/juniper (*Juniperus* spp.)	24,184,273
Siberian elm (*Ulmus pumila*)	17,301,813
Hackberry (*Celtis* spp.)	13,361,994
Mulberry (*Morus* spp.)	12,976,368
Ash (*Fraxinus* spp.)	11,820,328
Elm (*Ulmus* spp.)	8,840,412
Other hardwood trees	6,491,168
Cottonwood/poplar (*Populus* spp.)	4,501,891
Russian olive (*Elaeagnus angustifolia*)	3,702,206
Honeylocust (*Gleditsia* spp.)	3,649,989
Willow (*Salix* spp.)	3,322,601
Boxelder (*Acer negundo*)	2,575,234

**Non-forestland is defined as less than one acre in size, less than 120 feet wide and less than 10% stocked. Source: Meneguzzo, Lister, & Sullivan, 2018*

Figure 7: Top 12 Species Growing in Non-forestland



Source: Meneguzzo, Lister, & Sullivan, 2018

Table 10: Number of Live Trees on Non-forestland*

SPECIES	RURAL	URBAN	TOTAL
Redcedar/juniper (*Juniperus* spp.)	23,108,069	1,076,204	24,184,273
Spruce (*Picea* spp.)	56,623	428,615	485,238
Pine (*Pinus* spp.)	20,887	52,180	73,067
Ponderosa pine (*Pinus ponderosa*)	147,793	19,755	167,548
Scotch pine (*Pinus sylvestris*)	499,441	352,297	851,738
Maple (*Acer* spp.)	199,121	230,974	430,095
Boxelder (*Acer negundo*)	2,433,327	141,907	2,575,234
Silver maple (*Acer saccharinum*)	919,362	221,119	1,140,481
Birch (*Betula* spp.)	-	105,245	105,245
Hackberry (*Celtis* spp.)	11,253,387	2,108,607	13,361,994
Ash (*Fraxinus* spp.)	10,808,630	1,011,698	11,820,328
Honeylocust (*Gleditsia* spp.)	3,405,525	244,463	3,649,988
Walnut (*Juglans* spp.)	252,690	464,392	717,082
Osage-orange (*Maclura pomifer*)	2,186,203	45,811	2,232,014
Apple (*Malus* spp.)	72,702	340,419	413,121
Mulberry (*Morus* spp.)	11,169,845	1,806,523	12,976,368
Cottonwood/poplar (*Populus* spp.)	4,203,611	298,279	4,501,890
Cherry/plum (*Prunus* spp.)	510,607	186,163	696,770
White oak (*Quercus alba*)	608,096	175,184	783,280
Northern red oak (*Quercus rubra*)	7,886	125,841	133,727
Willow (*Salix* spp.)	3,283,034	39,567	3,322,601
Basswood (*Tilia* spp.)	14,848	111,468	126,316
Elm (*Ulmus* spp.)	7,953,889	886,523	8,840,412
Siberian elm (*Ulmus pumila*)	15,619,792	1,682,022	17,301,814
Russian olive (*Elaeagnus angustifolia*)	3,700,401	1,805	3,702,206
Unknown hardwood	3,726,127	859,765	4,585,892
TOTALS	**106,161,896**	**13,016,826**	**119,178,722**

Non-forestland is defined as less than one acre in size, less than 120 feet wide and less than 10% stocked.
Source: Meneguzzo, Lister, & Sullivan, 2018

Table 11: Total Estimated Cubic Feet Volume by Species on Non-Forestland

SPECIES	RURAL NON-FORESTLAND	URBAN NON-FORESTLAND	TOTAL
Redcedar/juniper (*Juniperus* spp.)	99,922,733	4,756,338	104,679,072
Spruce (*Picea* spp.)	134,636	6,692,143	6,826,779
Pine (*Pinus* spp.)	2,832	1,146,544	1,149,376
Ponderosa pine (*Pinus ponderosa*)	15,676,071	679,444	16,355,515
Scotch pine (*Pinus sylvestris*)	8,662,964	4,821,685	13,484,649
Unknown conifer	-	899,170	899,170
Maple (*Acer* spp.)	37,874	2,453,105	2,490,979
Boxelder (*Acer negundo*)	18,815,638	865,727	19,681,365
Silver maple (*Acer saccharinum*)	14,144,474	22,370,608	36,515,083
Birch (*Betula* spp.)	-	691,002	691,002
Hackberry (*Celtis* spp.)	55,767,826	22,360,859	78,128,686
Ash (*Fraxinus* spp.)	122,485,896	11,915,734	134,401,630
Honeylocust (*Gleditsia* spp.)	24,681,327	6,295,273	30,976,600
Walnut (*Juglans* spp.)	1,124,073	2,525,193	3,649,265
Osage-orange (*Maclura pomifer*)	16,052,126	401,743	16,453,870
Apple (*Malus* spp.)	252,735	2,482,382	2,735,117
Mulberry (*Morus* spp.)	37,340,146	7,173,876	44,514,022
Cottonwood/poplar (*Populus* spp.)	331,651,606	16,421,939	348,073,545
Cherry/plum (*Prunus* spp.)	14,615,034	693,825	15,308,859
White oak (*Quercus alba*)	26,116,997	13,311,809	39,428,806
Northern red oak (*Quercus rubra*)	183,663	4,083,105	4,266,768
Willow (*Salix* spp.)	55,166,341	935,451	56,101,791
Basswood (*Tilia* spp.)	727,083	5,919,012	6,646,095
Elm (*Ulmus* spp.)	45,634,354	7,772,097	53,406,451
Siberian elm (*Ulmus pumila*)	120,601,811	16,145,402	136,747,213
Russian olive (*Elaeagnus angustifolia*)	8,551,995	79,559	8,631,554
Unknown hardwood	10,764,529	4,843,659	15,608,188
TOTALS	**1,029,114,765**	**168,736,686**	**1,197,851,451**

Source: Meneguzzo, Lister, & Sullivan, 2018