

Annual Report 2014

Nebraska FOREST SERVICE

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Enriching lives by protecting, restoring and utilizing Nebraska's tree and forest resources.



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Lincoln



Dawes County landowner Buff Tewahade prepares his chain saw for a thinning project. Tewahade discusses with NFS Forest Fuels Management Specialist Fred McCartney his plan to remove forest fuels from his property.

IN THIS ISSUE Annual Report 2014

2 Dedicated Stewards

Nearly 174,000 acres of existing farmstead and field windbreaks are estimated to be in fair or poor condition and need restoration.

4 Breaking Barriers

Nebraska facilities are investigating wood fuel as a viable and economic energy option.

6 Raising Awareness

Left unmanaged, emerald ash borer (EAB) can destroy a community's ash population within 15 years, overwhelming city budgets and personnel.

8 Forest Treasures

Remnant forest populations in Nebraska serve to remind us of the unique contribution woodlands make to our heritage.

10 Extreme Weather

Prolonged extreme weather conditions put pressure on Nebraska's community forest resources.

13 Uncovering History

Two projects set for 2015 publication: a general history of forestry in Nebraska and a particular history of the NFS.

14 Financial Assistance

Whether for forest thinning, tree planting or wood market development, NFS has a financial assistance program to fit.

15 Rising From the Ashes

Landowners in the Niobrara Valley and Pine Ridge make a difference by using cost-share funding.

16 State Forester's Award

Dianna Rodocker of Halsey, Conservation Tree Program Sales Manager at Bessey Nursery, received the State Forester's Award.

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On the Cover

The sun's rays streak through morning fog along the Niobrara River at Chat Canyon Wildlife Management Area on a September morning. This significant 420-acre property was purchased in 2013 in a joint effort with the University of Nebraska, Nebraska Forest Service, U.S. Forest Service, Nebraska Game and Parks Commission, Nebraska Environmental Trust, The Conservation Fund and the National Wild Turkey Federation. Located south of Nenzel, the property is bisected by the Niobrara River. Photo by Eric Fowler. Used by permission of NEBRASKAland magazine.

A Message from the Nebraska State Forester

Making a Difference

Change is inevitable. This surely is the case with trees and forests growing in Nebraska, where change is a constant. Forests, prairies, farms and ranches are in a continuous dance as they ebb and flow across the landscape, choreographed to the music of climate, land use, pests and fire.

Lately the pace of change has quickened. Increasingly severe fires, floods, storms, drought and pests have all recently left their mark on our forests—impacts potentially lasting for centuries. Our forests will be increasingly altered as they adapt (or not) to changes in climate, intensifying severe weather, and virulent new exotic pests that make their home in Nebraska.

The Nebraska Forest Service (NFS), hand-in-hand with many of our conservation partners, is working hard to stay ahead of these changes so that our trees and forests remain healthy and resilient. Our goal is to keep our forests as forest, and ensure that trees and forests continue to benefit everyone long into the future.

Unprecedented weather events are now costing Nebraska millions every year, and the threat of the emerald ash borer (EAB) will

certainly aggravate the havoc in our communities. EAB has been found within 65 miles of Nebraska, posing enormous challenges through the eventual loss of 54 million ash trees statewide, and costing communities alone almost \$1 billion to remove and replace nearly 1 million ash trees.

We believe that enhancing the resilience of both our urban and rural forests is critically important. Forest fuels reduction activities have thinned nearly 30,000 acres of overly dense pine and cedar forests, improving their health, reducing the risk of catastrophic fire and protecting lives and property. Single-engine air tankers (SEATs) now help protect our coniferous forests and adjacent communities from wildfire.

Providing westwide coverage in 2014, the SEAT helped volunteer firefighters quickly suppress fires in the Pine Ridge, keeping them small and minimizing damage and costs. Innovative efforts are underway to identify tougher tree species and cultivars that better tolerate the more stressful urban conditions expected under a changed and more demanding climate.



Dr. Scott J. Josiah

It has been said that waste is an indicator of a lack of imagination. Our Forest Products Utilization program is rapidly gaining steam, creating new models for market-driven conservation by converting wood waste (especially from cedar and pine forests) to valuable new uses and products. With the help of a wide array of NFS financial assistance programs, new projects utilizing wood are being lined up from Omaha to Chadron, and from Curtis to Valentine.

Trees and forests are a vital part of The Good Life in Nebraska. The Nebraska Forest Service is making an important and enduring difference in ensuring that these essential and renewable resources remain healthy and vibrant for the benefit of all.

Nebraska's windbreaks are disappearing at an alarming rate. Like many windbreaks affected by insects and disease, drought and extreme weather, winterkill took a toll on this windbreak in south central Nebraska.



Dedicated Stewards

Thirty-eight percent of the nearly 174,000 acres of Nebraska's existing farmstead and field windbreaks are estimated to be in fair or poor condition.

USEFUL SERVANTS STAND GUARD AGAINST THE wind in order to increase crop yields and protect farmsteads and fields. These long, linear strips of trees known as windbreaks are succumbing to age, drought, insects and disease. Many of our windbreaks need renovation; more have disappeared from the landscape.

Restoring Nebraska's windbreaks will take more than lip service. Nebraska's long history of planting and maintaining windbreaks to protect farms and fields needs a revival. Re-educating Nebraskans on the history and importance of these tree rows may need to play a role in the restoration process, along with a statewide replanting and restoration effort.

"Whatever the cause—land use change, drought, age—the need for planting new windbreaks or renovating established ones has never been greater," said Rich Woollen, NFS district forester.



A landowner in south central Nebraska surveys a windbreak damaged by hail.

Nebraska's foundation of stewardship and dedication to tree planting dates back to 1873, when U.S. Senator Phineas W. Hitchcock of Nebraska authored the Timber Culture Act. The Act allowed settlers to claim up to 160 acres of land by agreeing to plant 40 acres of trees (later reduced to 10 acres). Early settlers in the Nebraska Territory were accustomed to forested land and the associated benefits it provided.

The original state constitution provided that "improvements resulting from tree planting should not be included

Condition estimates for Nebraska's Conservation Trees - Great Plains Initiative 2010 Inventory Data			
Acre estimates of tree units providing a primary function, service or benefit and their condition estimates for Nebraska, 273 rural plots (isolated tree acres not included)	Acres of windbreak or tree unit	Condition	
		Good condition (acres)	Fair or Poor condition (acres)
I. Planted and/or managed tree unit providing a primary function, service or benefit	254,833	147,233	107,600
a. Farmstead windbreak	81,011	38,095	42,915
b. Field windbreak	92,739	70,195	22,544
c. Livestock windbreak	32,854	7,862	24,992
d. Living snowfence	0	0	0
e. Home acreage planting	12,214	1,157	11,057
f. Wildlife habitat planting	7,402	1,310	6,092
g. Abandoned farmstead	1,310	1,310	0
h. Planted riparian forest buffer	27,303	27,303	0
II. Natural or unmanaged tree unit providing a primary function, service or benefit	168,265	49,394	118,871
a. Natural riparian forest buffer	143,707	49,394	94,313
b. Narrow wooded strip	24,558	0	24,558

in assessment for tax purposes,” and in 1869, the law excluded \$100 worth of property from taxation for every acre of trees planted. In 1872, Arbor Day was enacted as a further encouragement for tree planting.

In *A Primer of Forestry*, written by Gifford Pinchot in 1905, he writes, “Next to the earth itself the forest is the most useful servant of man. Not only does it sustain and regulate the streams, moderate the winds, and beautify the land, but it also supplies wood, the most widely used of all materials. Its uses are numberless, and the demands which are made upon it by mankind are numberless also. It is essential to the well-being of mankind that these demands should be met.”

Tree planting continued as the Clarke-McNary Act of 1924 and the Prairie States Forestry Project ushered in conservation tree planting efforts that continue today. Eventually, Nebraskans became accustomed to the many benefits windbreaks provide.

But that has changed dramatically. According to recent condition estimates for Nebraska conservation trees, 38 percent of the 173,750 acres of farmstead and field windbreaks are estimated to be in fair or poor condition. And not addressing this issue could cause

significant financial and environmental consequences.

Wind protection from 92,739 acres of field windbreaks has been shown to increase crop yields by 10 percent in the protected zone (18 bushels per acre at \$4.50 per bushel of corn) provide an estimated \$78.8 million benefits per year, plus any associated environmental benefits.

Additionally, 81,011 acres of farmstead windbreaks provide an annual 20 percent heating cost reduction, saving homeowners \$23.5 million annually. The total annual gross financial impact from Nebraska farmstead and field windbreaks is \$102.4 million.

“You’ll never take a windbreak for

Nebraska farmstead and field windbreaks provide an annual gross financial impact of \$102.4 million.

granted after seeing the dust or snow blowing across a field or country road on a windy day, or facing into a cold winter wind,” Woollen said. “These are frequent reminders of the benefits of windbreaks.”

Applied properly, windbreak renovation techniques will help to bring these servants back to

life. Windbreaks near homes provide energy savings and help to control snow, improve working and recreational conditions, store carbon, enhance wildlife populations, provide visual screening and dust control, shelter livestock and improve the production of various crops.

Through species selection, multiple benefits from windbreaks may be realized in addition to those mentioned. For example, agroforestry crops generate economically valuable biomass, botanicals, woody florals, edible fruits and nuts that can be incorporated into a conservation tree and shrub planting design.



Windbreaks in Nebraska face a variety of challenges. This windbreak in Clay County was affected by exposure to extreme winter conditions known as winterkill.

Breaking Barriers

WITH UNPREDICTABLE propane prices and an increasing demand for natural gas, many facilities are already, or should be, investigating wood energy as a viable and economic energy option.

Wood energy is not new to Nebraska. Since 1991, Chadron State College has utilized wood fuel to provide heat to its campus. Arbor Day's Lied Lodge and Conference Center in Nebraska City has burned woodchips for heat and other uses since 1995.

Even more recently, the Nebraska College of Technical Agriculture in Curtis began utilizing wood heat in 2012. These systems are the result of much hard work and dedication from wood energy advocates to see their dreams of wood energy become a reality.

But should developing alternative energy, utilizing an overly abundant (and often considered waste) wood fuel resource, and realizing significant energy savings in often tight economic times, be such an uphill struggle? Recognizing the difficulties, the Nebraska Forest Service (NFS) developed the TREES Heat Nebraska program.

This new program breaks through the traditional technical and financial barriers that have kept numerous projects—small municipal buildings to entire college campuses—from gaining momentum.

TREES Heat Nebraska has the flexibility to work with facilities just beginning down the path to wood energy, as well as facilities that have completed engineering, design and wood-fuel sourcing.

Focused on promoting and developing wood energy systems across the state, this new

Program offers assistance to large campuses and hospitals, as well as small businesses and wood-fuel suppliers.

technical and financial assistance program helps schools, large campuses and hospitals, as well as smaller businesses and wood-fuel suppliers. Using a “concept through conversion” approach, the NFS Forest Products Utilization staff members are available to assist public, private and non-profit facility managers investigate and evaluate wood energy potential at their facility.

Technical assistance:

- Pre-feasibility economic analysis
- Wood resource analysis
- Fuel supply chain development
- Project partnership development

Financial assistance:

- Wood Energy Feasibility Grants – Cost-share for contracted services to complete technical, engineering feasibility study.
 - 100 percent cost-share up to \$20,000/project.
- Wood Energy Conversion Grants – Cost-share for contracted services for final system design, purchase of boiler system and equipment; construction and installation of wood energy systems.
 - 50 percent of the cost, up to an annually determined maximum (2015 maximum \$350,000/project).



Woodchips used in wood-fired boilers to heat municipal buildings and businesses is one way to utilize what was once considered wood waste.



Workers position a new wood-fired boiler for installation in a municipal building in Curtis.

Good candidates for wood energy:

- high heating and cooling needs or process steam
- currently using propane or other fossil fuels, and located near a Nebraska forest region or steady supply of waste wood (including large communities or wood products manufacturing facilities)

Potential users:

- agriculture and livestock operations
- warehouses
- correctional institutions
- wholesale nursery greenhouses
- municipal buildings
- hospitals
- schools, colleges and universities

TREES Heat Nebraska is a unique program that provides distinctive opportunities for Nebraska. The sole purpose of this program is to work with Nebraska facilities to remove traditional barriers to using wood energy and to provide the financial benefits for reducing expensive fossil fuel costs.

While many in the past have struggled through the wood energy development process, this program delivers—from concept through conversion.

Expanding Market Potential

Testing Uses for Wood

HAVE YOU EVER WONDERED HOW WELL A ROAD MADE OUT OF woodchips would work across sandy soils? Or maybe, if a woodchip and livestock manure mixture could fix grassland “blowout” issues in the Sandhills? How about combining community wood and food waste into a compost product? Or, applying a layer of woodchips as a clean animal bedding option in muddy livestock feedlots?

In an effort to expand market options for wood material, the Nebraska Forest Service (NFS) is working with partners to answer these and other questions. Demonstration sites and pilot projects are being established across the state to determine the effectiveness of many concepts thought to be a potential use for wood and to discover additional uses for wood.

These project sites will be used to test potential wood uses, evaluate their effectiveness, serve as tour stops during field tours and provide information that can be passed to Nebraskans through presentations and publications.

As a result of these demonstration sites, NFS will be able to provide valuable information to entrepreneurs, land-owners, agricultural producers and the general public about a variety of non-traditional uses for wood products.

With the potential to support business development and create new jobs, these important questions will finally have answers.



(Top) NFS Fire Management Specialist Seth Peterson examines a product created at the Sawle Mill operation in Springview for use as bedding for show cattle. (Above) A worker at the Sawle Mill prepares all natural redcedar lumber.

Emerald Ash Borer: Raising Community Awareness

EMERALD ASH BORER (EAB) IS ARGUABLY THE MOST serious pest of trees in the U.S. today. This invasive insect from Asia has been destroying ash trees since at least the mid-1990s, and many communities in eastern states are now completely devoid of ash trees.

*Is your
community
ready...*



Ash-lined street in Toledo, Ohio, 2006. Photo by Dan Herms, Ohio State University.

Little was known about EAB when it was first discovered near Detroit, Mich., in 2002, but the Nebraska Forest Service (NFS) recognized the enormous impact this pest would have on Nebraska and quickly began preparing for its eventual arrival in the state. Over the last 10 years NFS has prepared educational materials, conducted workshops, EAB surveys and ash tree inventories and worked with other governmental agencies and the green industry to develop the EAB state readiness plan. Educating communities about EAB has been an ongoing activity as well, but in 2014 NFS placed special focus on community awareness and readiness planning.

Because of the aggressive nature of EAB and the high susceptibility of ash trees, this pest can destroy a community's ash population in 15 years if not managed. This exponential tree death, illustrated by the "ash death curve," can overwhelm city budgets and personnel. In addition, standing dead ash trees quickly become dan-

... for this?

***Emerald ash borer (EAB) is
a pest of historic significance
that will change the face of the
landscape in many Nebraska
communities.***

gerously brittle and create liability issues. Early management, before EAB arrives in a community, is especially important in communities with large numbers of ash trees. Many communities in Nebraska have no idea how many ash trees they have.

Through a direct mailing, NFS shared this message of imminent destruction of ash by EAB and the importance of proactive management in 2014 with more than 500 Nebraska communities. This was followed by a session at the League of Nebraska Municipalities' annual conference in North Platte in September, where Eric Berg, community forestry and sustainable landscapes program leader, presented more detailed information.

"Decision makers in a community need to understand the potential impact EAB will have on their community and the importance of proactive management

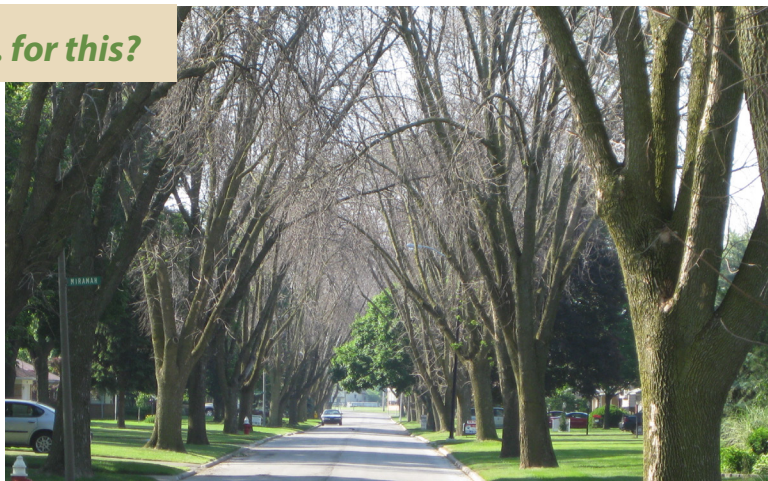
to spread out the cost of tree removal," Berg said.

NFS staff members met with many communities to give guidance in preparing for EAB. They also made presentations at several workshops, organized a bus tour for municipal decision makers to get a firsthand view of Kansas City's EAB infestations, developed materials to help identify the many pests and problems that occur on ash trees, created newspaper and magazine articles and posted social media messages about EAB.

In many ways, EAB will soon transform Nebraska community forests. NFS, along with the EAB working group and a number of other agencies, continues to effectively address this grave threat to our community tree and forest resources.

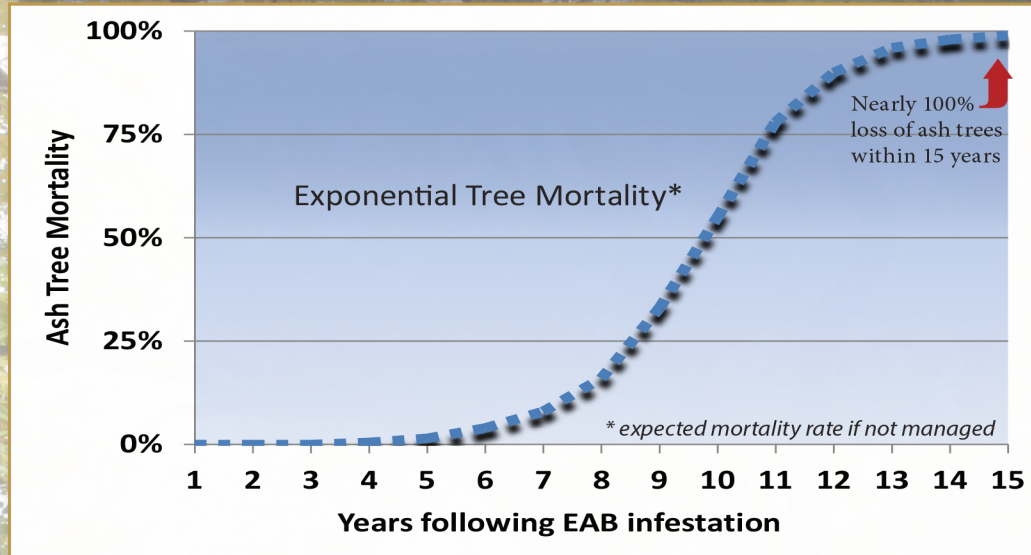


Adult emerald ash borer beetle. Photo by David Cappaert, Michigan State University. Bugwood.org



Same street in 2009—all ash trees dead. Photo by Dan Herms, Ohio State University.

Ash Death Curve



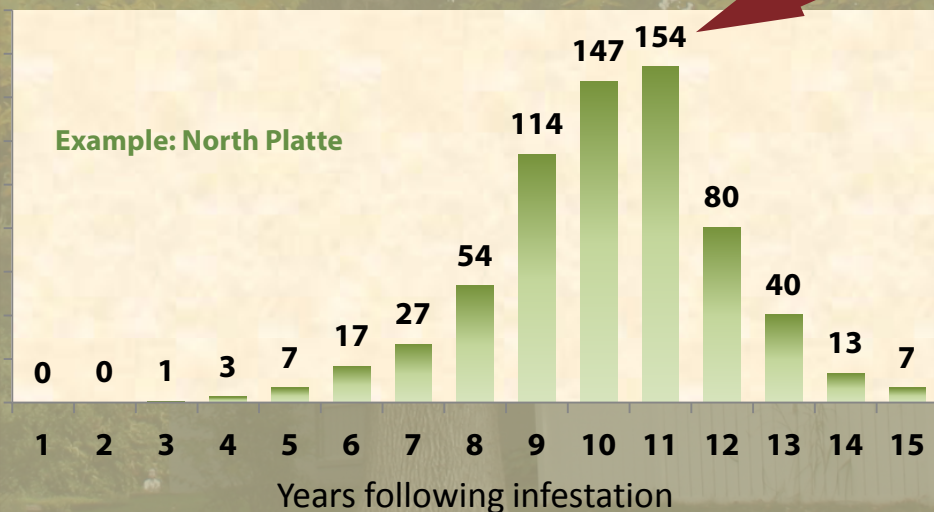
\$92,400 in removal and replacement costs during peak year

*North Platte public ash tree population: 670**

* Cost to remove and replace North Platte's 670 public ash trees: \$402,000, assuming a cost of \$600 per tree.

This represents only *public* trees. Most communities have multiple times as many *private* ash trees.

Dead Ash Trees by Year



Quaking aspen of the Pine Ridge are on the eastern edge of their range and therefore not abundant.



Forest Treasures

DECADES AGO, GLENN Viehmeyer proposed the controversial idea that Nebraska has forests that are remnant extensions of the flora of the Central Rocky Mountain Forests. Viehmeyer, a horticulturist at the West Central Research and Extension Center at North Platte, believed it was important to describe these areas and interpret their importance. Widely scattered over the western half of the state, Viehmeyer and others considered these forests unique stalwarts of the past.

Ponderosa Pine in Custer and Garfield Counties

Forest populations in north central Nebraska serve to remind us of the unique contribution woodlands make to our heritage—among them, the eastern most examples of ponderosa pine forests in Custer County's Pine Canyon and Garfield County's Jones Canyon. Associated with this native pine species, common juniper may be found sprawling across the gentle slopes.

Historical publications such as the *Trail of the Loup* describe these canyons as having a heavy growth of hard and softwood trees.

"The canyons were usually deep rifts

in the hills, running more or less at right angles to the river plain, with sides so steep and broken as to form an adequate protection against the annually recurring prairie fires. Here, a splendid growth of evergreens flourished. The really important forest growth of those times was the cedar canyons, now long ago despoiled of their giant cedars and pines. Yellow pine (*Pinus ponderosa*), a remnant of the great fir forests which at one time covered much of the sandhill region, and which may again (under government care) be made to flourish there. The red cedar (*Juniperus virginiana*) was the most important for all purposes. Out of them the best dwellings in the settlements were erected; and so sought after were they, that settlers would come from two and three days' journey to get the coveted timber."

Ponderosa pine dominates in the overstory of the ponderosa pine forest type and may be associated with hardwoods along drainages or in low-lying areas. On north and east facing slopes, protection from prevailing summer winds and intense sunlight produce somewhat dense stands. In contrast, the dry hilltops and south or west facing

slopes allow the development of only scattered, open stands of ponderosa pine in mixed-prairie grasslands.

Responding to interest from local residents with ties to Pine Canyon, a Nebraska Forest Service Forest Stewardship project was initiated in 2005 to help protect and restore this unique landscape. Cooperating with a local landowner, a local contractor, the U.S. Fish and Wildlife Service and the Nebraska Game and Parks Commission, approximately 18 acres of ponderosa pine forest was thinned to reduce the risk of wildfire and to help maintain a healthy forest stand condition. Removing ladder fuels that could convey a fire from the ground to the canopy of the ponderosa pine will help to insure this remnant forest continues to exist.

A native tree species of Nebraska, ponderosa pine is a common component of many windbreaks. Basic forest management recognizes the importance of using local seed sources when growing seedlings in a tree nursery for conservation tree plantings. Natural selection through time produces trees that are best adapted to local growing conditions. Producing seedlings from these

parent trees helps to enhance seedling survival, growth and health.

Eager to insure that the Pine Canyon seed source be further protected from possible damaging agents, a request for seedlings from this source was given to the U.S. Forest Service Bessey Nursery in Halsey. Container seedlings produced by the nursery were fall planted at a site managed by the Lower Loup Natural Resources District (NRD) in Ord. NRD and NFS staff planted the seedlings and are maintaining the site that will be a future alternative location for seed collection.

Quaking Aspen in Pine Ridge

In northwest Nebraska, native to the Pine Ridge, quaking aspen (*Populus tremuloides*) is a delightful white-barked tree with flat petiole leaves that tremble or “quake” in the slightest breeze. “Quakies” are disturbance dependent and propagate by both root suckers and by seed. The root masses (clones) can be acres in size and hundreds of years old. Due to the size of some clones, quaking aspen are considered the largest plant in North America.

In the Pine Ridge these trees are not abundant and are on the eastern edge of their range. They are heavily browsed by both wildlife and domestic livestock and require abundant sunlight and water. Closed canopy pine forests are not ideal conditions for this species. Disturbances such as thinning or fire are beneficial to aspen as both allow more sunlight and water to reach the forest floor.

Aspen may be a benefactor of the fires of 2006 and 2012, since fire created the conditions needed for this species to increase its numbers and range. In unburned areas some landowners are thinning the pine, again providing conditions favorable to aspen. Others are creating woody debris barriers, and/or fencing to protect trees from wildlife and livestock.

Aspen may never be a major component of the Pine Ridge, but with help it should maintain or increase its delightful presence.

Northern Boreal Forests

Located at the edge of the geographic range of several forest types, the Niobrara Valley hosts a unique mix of

ponderosa pine, eastern deciduous and remnants of northern boreal forests (paper birch and aspen). Most of the boreal forest remnants have clung precariously to the cool, moist south slopes of the Niobrara River—microclimates where they have for centuries been sheltered from the hot summer sun. In recent decades, however, these post-ice age relicts have been fading. Birch stands are dying due to changing freeze-thaw cycles, causing rootlet injury and crown dieback. Loss of the birch would eliminate the principal component of the boreal ecosystem in the Niobrara Valley.



(Top) Bur Oak Canyon in Hitchcock County is home to a unique stand of 400-plus individual trees situated in a rugged canyon less than two miles long. (Above) Near Valentine, the Niobrara Valley hosts a unique mix of trees, remnants of northern boreal forest, including paper birch and aspen.

The valley’s remnant aspen groves are a unique hybrid between big-tooth and quaking aspen. Threatened by browsing deer and encroaching eastern redcedar that shades the sun-loving trees and competes for moisture, these remnants are also at risk of disappearing. There are also disjunct aspen populations at several locations in the sandhills and in the mixed grass prairies north of the river.

Bur Oak Canyon

Bur Oak Canyon, located southwest of McCook in Hitchcock County, is home to what many consider a relict stand of bur oak (*Quercus macrocarpa*). This unique stand of 400-plus individual trees is situated in a rugged canyon less than two miles long. Many of the

trees are believed to be in excess of 200 years old and are considered a remnant population that has continued to survive in this unique microclimate since the end of the last ice age approximately 10,000 years ago. Following the retreat of the last ice age, oaks, as well as many other tree species, spread across the

Great Plains in what was once a much more temperate environment favorable for woody plant species. Beginning about 5,000 years ago, a hotter and drier climate trend caused the tree range to retreat and convert to the grasslands we know today on the Plains. The genetic heritage of these bur oak is also thought to be unique—they carry traits of gambel oaks (*Quercus gambelii*) native to the Rockies and post oak (*Quercus stellate*) native to the eastern U.S. Given there are no other native stands of bur oak within 200 miles of this site, hybridizing probably occurred between oak species thousands of years ago and remain unique today. Located on private property, this historic stand is not open to public access without prior permission.



Extreme Weather

WHILE THERE CONTINUES TO BE A GREAT DEAL of discussion on the impacts of a changing climate and the role of human activities, one thing seems to stand out relating to our Great Plains weather—it is one of extremes. This is not new to anyone who's lived there for any period of time, but there is a growing body of evidence that the frequency and severity of extreme weather events are worsening each year. Drought, flooding, high winds, tornadoes and unseasonal temperatures and shifts seem to be more the norm than the exception.

Nebraska is already a tough place for trees during normal climate conditions, due to late spring and early fall freezes, fluctuating rainfall and growing seasons, frequent heavy to severe winds and early snows and ice storms. These variable weather conditions are characteristic of Nebraska's interior Plains location as well as the impact of the Rocky Mountains, which block moisture from the Pacific Ocean.

However, extreme weather conditions, such as severe tornadoes, straight-line winds and hail storms that have increased in frequency, duration and measurable impact, are putting more pressure on Nebraska's community and rural forest resources. These storms damage the health, viability and safety of the community forest resource within Nebraska's 532 cities and villages.

This statewide resource, valued at \$9.8 billion, represents 13.3 million public and private trees with an average tree cover of 15 percent and provides extensive annual benefits and

cost-savings to municipalities and the general public:

- Removal of 6,714 tons of air pollution with a value of \$47 million annually
- Storage of 2.1 million tons of carbon valued at \$43 million annually
- Carbon sequestration of 84,500 tons/year valued at \$1.7 million annually
- Building energy reduction and savings valued at \$28.2 million annually
- Reduced carbon emissions valued at \$1 million annually

Increasing Frequency and Costly Impacts:

Large-scale disturbances from invasive species, catastrophic wildfire, severe storms and extreme weather combined with

development pressures and decreasing municipal budgets are eroding community forest resources across the state. Many communities have a documented loss of as much as 40 percent of their tree canopy. The loss of this essential green infrastructure greatly hampers a community's ability to meet environmental requirements, including EPA air and water quality standards. An increasing body of research is also documenting the direct and indirect negative impacts of tree canopy loss on human health and social benefits. Of greater concern is the public

safety and liability potential of a damaged forest resource and how the cost of managing storm and pest-damaged trees will impact limited municipal budgets.

During the 2012 calendar year alone, the 110 certified Tree



A blizzard that hit northwest Nebraska in October 2013, accumulating up to four feet in some places, killed livestock and destroyed 3,200 trees in Chadron.



Along with the destruction of the middle school in Pilger, more than 1,400 trees were destroyed when twin tornadoes cut a 23-mile path through the northeast Nebraska countryside in June.

City USA communities in the state reported the removal of over 5,500 trees statewide due to over-maturity, tree defects and declining condition. This loss represented a cost of \$2.7 million in removal and disposal and a loss of \$468,000 in annual benefits.

This past year was telling in terms of what the future may hold for the health and viability of Nebraska’s tree resources. The impacts and generational damage to life and property are profound when weather extremes range from early and heavy wet snows in early October to intense straight-line winds of early summer to numerous and extremely damaging tornadoes.

“Winter Storm Atlas in October 2013 brought it home to me how incredibly important it is to tend to our trees when they’re young, so they’ll have the strong structure they need to withstand our prairie snow events,” said Lucinda Mays of Chadron State College. “Most of our young trees (up to 15 years old) that had been pruned over the years for a strong central leader and strong branch unions came through with



The devastation from the October 2013 blizzard created a mountain of debris after Chadron residents and volunteers cleaned up the 3,200 trees lost in the storm. The loss is estimated near \$1 million.

very little damage, no matter what the tree species. Trees left unpruned were our primary complete losses.”

Unfortunately, the October storm was just the beginning of the extreme weather events that would impact more than a dozen communities in Nebraska throughout 2014. Summer tornadoes devastated many communities.

“Burwell lost over 50 large mature trees in the park alone,” said Matt Gideon. “These trees were not just damaged but a complete loss. Many other trees were injured, which resulted in more than 30,000 yards of trees, limbs and debris removed from the park and cemetery. A diverse number of species were lost.”

Sampling of extreme weather events and impacts

Date	Location	Event	Tree Loss	Benefits Lost	Replacement Value
October 2013	Cedar Co. (Laurel, Wayne, Stuart and Dakota City)	Tornadoes	1,150	\$842,000	345,000
October 2013	Chadron	Snow	3,200	\$1,250,000	\$960,000
June 2014	Beaver Crossing	Tornado	2,000	\$1,470,000	\$600,000
June 2014	Pilger	Tornado	1,400	1,029,000	\$420,000
June 2014	Omaha metro	Flooding	6,250	\$4,594,000	\$1,875,000
August 2014	Burwell	Tornado	100	\$73,500	\$30,000
		Total:	14,100	\$9,258,000	4,230,000

Extreme Weather

(Right) A number of severe thunderstorms struck portions of south central Nebraska in June 2014, creating damaging wind gusts of 60-80 mph. The next day an Aurora resident examines a tree damaged by the storms.

(Below) This shelter in Cottonwood Cove Park was destroyed when severe storms tore through Dakota City in September, knocking down trees, damaging homes and cutting power for many residents.



\$4.2 Million Toll



An EF-3 tornado that tore through Beaver Crossing on Mother's Day 2014, destroyed 2,000 trees and more than 30 homes and buildings. Cost to replace the trees is estimated at \$600,000.

Uncovering History

"IT IS TO BE," HE WROTE IN 1902, "the greatest undertaking in the tree planting line that was ever attempted in this country." Charles Bessey, professor of botany at the University of Nebraska, was referring to what today is called the Nebraska National Forest, the largest hand-planted forest in the world. This "greatest undertaking" serves as just one aspect of the unique and untold story of forestation activities in Nebraska.

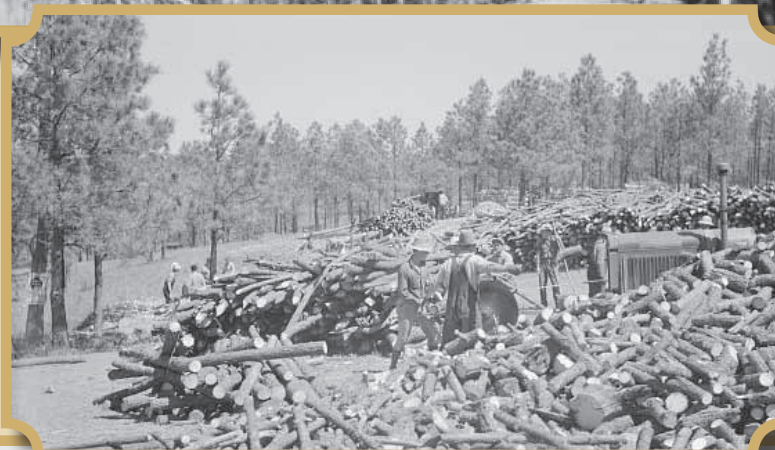
In the fall of 2014, work began on two projects set for 2015 publication: a general history of forestry in Nebraska, and a particular history of the Nebraska Forest Service (NFS).

Tony Foreman is a history graduate student and teaching assistant at the University of Nebraska-Lincoln. He focuses on German history and the German-American experience in the American Midwest. His experience researching in UNL, state and local archives is valuable to writing a comprehensive history of Nebraska forestry.

Through interviews with current and retired NFS employees, a deep dive through agency files, visits to state and homestead archives and reviews of academic works and historical newspapers and correspondence, these projects will generate comprehensive and engaging histories of an important part of Nebraska's past and present.

Readers will learn about the various incarnations of the NFS, its achievements in the face of natural and man-made obstacles and the passionate and dedicated employees who made it all possible.

Anyone with photos, documents, or artifacts they feel may contribute to these histories is encouraged to contact our consulting historian, Tony Foreman, at tonyforeman@rocketmail.com.



(Top) In the early 1900s, a crew uses horses to plow the land in preparation for planting seedlings at the Charles E. Bessey Nursery. Photo courtesy USDA. (Center) In 1944, workers in the Pine Ridge cut wood for fenceposts. Photo courtesy National Archives. (Bottom) Two workers plant shelterbelts in May 1941. Photo courtesy National Archives.

LEVERAGING A COMBINATION of state and federal funds, NFS cost-share funding programs have helped landowners thin nearly 30,000 acres of forested land since 2001 in order to promote more sustainable use of forest resources. These landowners know that Nebraska's 1.6 million acres of forests add to the environmental, social and economic vitality of our state.

Unfortunately, constant threats from wildfire, severe weather, invasive insects and diseases and inadequate management are taking a toll on our forests. Landowners, businesses and communities can address these threats using a wide range of Nebraska Forest Service (NFS) financial assistance programs designed to foster more resilient and healthy forests and to promote more sustainable use of our forest resources.

One NFS program, through the state Wildfire Control Act of 2013, along with federal funds, helps both private and non-federal public landowners thin forests and reduce forest fuels and the risk of catastrophic wildfire. Eligible landowners can qualify for up to 75 percent in cost-share funding to help reduce forest fuels on forested land. NFS also makes available more than \$1.5 million in cost-share funding for state and private forest landowners to:

- reduce hazardous forest fuels
- thin burned forest
- restore burned forest lands
- remove flammable trees and shrubs to create "defensible space" around homes/other buildings

Financial Assistance



A forest thinning project in the Pine Ridge helped to minimize damage and loss from wildfires. Cost-share funding assists both private and non-federal public landowners.

- manage coniferous forests statewide

NFS also is identifying uses for the woody biomass generated from forest thinning by finding markets for these materials. Two cost-share assistance grants available through the TREES Heat Nebraska program could help qualifying organizations save substantially on their energy costs.

NFS has a financial assistance program to fit your need:

1. Hazardous Fuels Reduction Grant - Thinning dense forests; removing ladder fuels IF on qualifying lands adjacent to Nebraska National Forest land
2. Forest Fuels Reduction Grant - Thinning dense forests; removing ladder fuels, if not adjacent to Nebraska National Forest land
3. Redcedar Forest Management - Thinning redcedar forest lands; a forest stand must remain
4. Burned Land Fuels Reduction Grant - Thinning burned forests by removing dead/damaged trees on lands that experienced wildfire
5. Forest Restoration Grants - Actions to stabilize, restore and replant burned forest areas around "islands" of unharmed trees. Removing dead and damaged trees, erosion control, tree planting and broadcast seeding, weed control, animal damage control and fencing
6. Firewise Defensible Space Grant - Removing flammable trees and shrubs to create "defensible space" around homes/other buildings

Quick Guide to State and Private Landowner Forest Management Financial Assistance Programs			
What Do You Want To Do?	Approved Locations	Grant Program	% NFS Cost-Share
Thin Unburned Forests	Pine Ridge Niobrara Valley Wildcat Hills	Hazardous Fuels Reduction Grants IF on qualifying lands adjacent to Nebraska National Forest land	100%
		Forest Fuels Reduction Grants if NOT adjacent to Nebraska National Forest land.	75%
	Statewide (Outside of Approved Locations)	Redcedar Forest Management Best if used in conjunction with NRCS EQIP Program	25%
Thin Burned Forests	Pine Ridge Niobrara Valley	Burned Land Fuels Reduction Grants	75%
Stabilize/Restore Burned Forests	Statewide	Forest Restoration Grants	75%
Create "Defensible Space" Around Buildings	Statewide	Firewise Defensible Space Grants	75%



As videographer Brian Kreikemeier prepares to mount a camera on the Bobcat to document the forestry mulching process, Sheridan County landowner Dave Kadlec and NFS Forest Fuels Management Specialist Fred McCartney discuss how the new mulching head works.

Reaping Forest Management Benefits

Rising from the Ashes

THE HEALING PROCESS continues despite sharp memories of the emotional impact on landowners and firefighters who experienced the fierce 2012 fires in the Niobrara Valley and Pine Ridge. Much of the support for this process comes from the Wildfire Control Act of 2013, which made cost-share funding available to landowners to help reduce the risk of catastrophic wildfire. Since then, dozens of projects have been funded.

In September, the Nebraska Forest Service (NFS) documented stories of successful forest management projects both before and after the fires. Landowners, firefighters and contractors eagerly shared their progress. One of the goals of filming their successes is to encourage more landowners to get involved in cost-share programs that assist landowners in managing their forested land.

Staff trekked the Niobrara Valley and Pine Ridge areas, along with a videographer, to capture successful projects completed prior to the fires, those completed since the fire and ongoing projects.

The common denominator for landowners, firefighters and contractors is their commitment to protecting and improving forested land in Nebraska. They

shared their team approach to successful forest management and provided their perspective on how projects completed since the 2012 fires benefit landowners and communities.

Sheridan County landowner Dave Kadlec is one whose property sustained damage in the 2012 fire. His family has been actively involved in the NFS timber management program for 25 years. He is proactively managing the forested area through appropriate thinning practices, managing the grass fuel component with appropriate grazing and maintains a system of forest roads to allow for management activities as well as access for emergency and fire suppression vehicles.

"We regularly thin big trees on the property, but also go back every year doing thinning of some kind or another to keep the property well managed," Kadlec said. "The trees in the areas where we thinned survived [the 2012 fire] better than where we didn't thin."

At Camp Norwesca in the Pine Ridge, a Methodist church camp that also sustained major fire damage in 2012, NFS foresters are helping staff put their remaining wood resources to use. They are utilizing damaged logs from the fire to rebuild cabins and other structures

on the property. And new planting techniques are starting to return the land to a productive state.

Forest management not only helps landowners, but also firefighters who volunteer to protect life and property. Firefighters explained how successful forest management helps them do their job when wildfire occurs.

Ann and Brad Fiala, firefighters for the Ainsworth Fire Department, know firsthand what it takes to fight wildfires in the Niobrara Valley and the Pine Ridge.

"In a populated area where people have their structures and their livelihoods, it's imperative that they try to take care of their property as best they can," Ann Fiala said.

Springview Fire Chief Scott Hallock agrees, "Forest fuels management keeps everything cleared back and gives firefighters a way to get around the property."

Contractors also play a major role by thinning forested land for landowners. Jim Clyde, a contractor from Wheatland, Wyo., is one of dozens who helps landowners complete projects.

NFS plans to use the video to explain how forest management can reduce the risk of catastrophic wildfire, through the eyes of those with firsthand experience.



On 46 acres of irrigated seedbeds, along with a controlled environment greenhouse, the U.S. Forest Service Bessey Nursery is capable of producing 4.5 million bareroot conifer and hardwood seedlings each year. (USFS)

Bessey Nursery's Rodocker Receives State Forester's Award

KNOWN BY MANY AS THE VOICE and face of the conservation tree program, Dianna Rodocker of Halsey, conservation tree program sales manager at U.S. Forest Service Bessey Nursery, received the State Forester's Award. Rodocker worked with the Nebraska Forest Service (NFS) conservation trees distribution for 24 years followed by 12 years with the U.S. Forest Service-Nebraska National Forests and Grasslands.

During her 36-year tenure, she coordinated tree sales for nearly 76 million seedlings, which converts to over 89,000 acres or 10,700 miles of wind-breaks.

She loaded 20 to 25 trailer loads of seedlings every year the old fashioned way—by hand—and conveyed a warm Sandhills welcome that was professional and garnered respect from the clientele she served. In the uncertain business of growing tree seedlings, Rodocker had a way of making “bad news seem not so bad.”

The nursery has a long-standing reputation for producing top-quality planting stock due to its deep sandy soils, abundant water and relatively long growing season. Production facilities and equipment are state-of-the-art.

On 46 acres of irrigated seedbeds, along with a controlled environment greenhouse, the nursery is capable of producing 4.5 million bareroot conifer and hardwood seedlings each year, serves as a seed bank for the Rocky Mountain Region and is a source of container-grown seedlings. A 4,000-square-

foot greenhouse provides an annual production capability of up to 380,000 seedlings.

Current production is 2.5 million seedlings. Seeds are used to grow seedlings for customers requesting seedlings or shipped to customers expecting to directly sow the seed.



Several NFS staff members were present for an award celebration to honor those dedicated to serving natural resource conservation in Nebraska. Beth Hiatt, NRCS Kearney; Dianna Rodocker, conservation tree program sales manager at U.S. Forest Service Bessey Nursery in Halsey; Jay Seaton, NFS Lower Platte South NRD forester; Constance Miller, Nebraska NRCS, who received an award for her years of dedicated service to the Charles E. Bessey Nursery Advisory and Tree Conservation Group, Nebraska NRCS Field Offices and the Nebraska Natural Resource Districts; NFS District Forester Rich Woollen; Troy Pabst, NFS forestry properties manager; Sandy Benson, forest fuels management specialist; District Forester Rachel Allison.

Grants/Cost-share Awarded to NFS Partners in 2014

County	Community	Organization/Project	Grant Amount	FEPP/FFP* Replacement Value
Adams	Ayr	Hastings Rural Fire District		2,900
Adams	Hastings	CFSL - Highland Park Arboretum & Adams Co. Fairground; Expanded Tree Planting - Hastings	2,000	
Adams	Hastings	CFSL - Good Samaritan Society, Hastings Village; Planting for the Future	9,750	
Adams	Holstein	Holstein Rural Fire District	3,500	587,000
Adams	Juniata	Juniata Fire Department	1,000	
Adams	Kenesaw	Kenesaw Fire Department	3,220	
Adams	Roseland	Roseland Rural Fire District		630,200
Adams Total			19,470	1,220,100
Antelope	Brunswick	Brunswick Rural Fire District	3,035	6,700
Antelope	Clearwater	Clearwater Rural Fire District		113,000
Antelope	Elgin	Elgin Rural Fire District		175,000
Antelope	Neligh	Neligh Rural Fire District	2,400	352,000
Antelope	Oakdale	Oakdale Rural Fire District		305,000
Antelope Total			5,435	951,700
Arthur	Arthur	Arthur Rural Fire District		230,000
Arthur Total			0	230,000
Banner	Harrisburg	Banner Rural Fire District		394,000
Banner Total			0	394,000
Blaine	Brewster	Brewster Rural Fire District	4,000	480,200
Blaine	Dunning	Dunning Rural Fire District		469,600
Blaine	Purdum	Purdum Rural Fire District		202,000
Blaine		Landowners**	1,242	
Blaine Total			5,242	1,151,800
Boone	Albion	Albion Rural Fire District		23,000
Boone	Cedar Rapids	Cedar Rapids Rural Fire Dist.	3,927	716,200
Boone	Petersburg	Petersburg Rural Fire District		21,000
Boone	Primrose	Primrose Rural Fire District	4,000	620,000
Boone	Saint Edward	Saint Edward Rural Fire Dist.	4,000	216,100
Boone Total			11,927	1,596,300
Box Butte	Alliance	Alliance Rural Fire District		343,000
Box Butte Total			0	343,000
Boyd	Lynch	Lynch Rural Fire District		88,000
Boyd	Spencer	Spencer Rural Fire District		395,000
Boyd Total			0	483,000
Brown	Ainsworth	Ainsworth Fire Department	2,400	
Brown	Ainsworth	Brown County Rural Fire District		474,300
Brown	Calamus	Brown County Rural Fire District		43,500
Brown	Johnstown	Johnstown Fire Department	1,400	
Brown	Long Pine	Brown County Rural Fire District		202,000
Brown	Long Pine	Long Pine Fire Department	1,590	
Brown		Landowners**	174,010	
Brown Total			179,400	719,800
Buffalo	Amherst	Amherst Rural Fire District		682,000
Buffalo	Elm Creek	Elk Creek Rural Fire District		335,000
Buffalo	Pleasanton	Pleasanton Rural Fire District		303,600
Buffalo Total			0	1,320,600
Burt	Craig	Craig Rural Fire District		6,700
Burt Total			0	6,700
Butler	Abie	Abie Fire Department	915	
Butler	Bellwood	Bellwood Fire Department	150	
Butler	Brainard	Butler Co. Fire Prev. Coop.	500	
Butler	Bruno	Bruno Rural Fire District	2,000	97,200
Butler	David City	David City Rural Fire District	1,000	1,900
Butler	Dwight	Dwight Rural Fire District	1,300	209,400
Butler	Linwood	East Central Prevention Coop.	150	
Butler	Linwood	Linwood Fire Department	2,600	

County	Community	Organization/Project	Grant Amount	FEPP/FFP* Replacement Value
Butler	Rising City	Rising City Rural Fire District		47,000
Butler	Surprise	Rising City Rural Fire District		80,000
Butler	Ulysses	Ulysses Rural Fire District		23,000
Butler Total			8,615	458,500
Cass	Alvo	Eagle/Alvo Rural Fire District		557,500
Cass	Avoca	Avoca Rural Fire District		1,086,450
Cass	Greenwood	Greenwood Rural Fire District		90,500
Cass	Nehawka	Nehawka Rural Fire District		48,500
Cass	Murdock	Murdock Rural Fire District		416,000
Cass	Plattsmouth	CFSL - POPS Foundation & PACK Cmte; PHS Walking Trail Tree Planting	7,000	
Cass	Plattsmouth	Plattsmouth Rural Fire District		43,500
Cass	Union	Union Rural Fire District		132,500
Cass	Weeping Water	Manley Rural Fire District		222,000
Cass	Weeping Water	Weeping Water Fire Dept.	2,800	
Cass Total			9,800	2,596,950
Cedar	Belden	Belden Rural Fire District		314,600
Cedar	Hartington	CFSL - Hartington Tree Board; Hartington's Entryway Tree Enhancement	3,000	
Cedar	Hartington	CFSL - City of Hartington, Hartington Tree Board; Entryway Tree Enhancement, Phase 2	3,000	
Cedar	Randolph	Randolph Rural Fire District		43,500
Cedar	Wynot	Wynot Fire Department	2,100	
Cedar Total			8,100	358,100
Chase	Imperial	Imperial Rural Fire District		222,000
Chase	Wauneta	Wauneta Rural Fire District		113,000
Chase Total			0	335,000
Cherry	Cody	Barley Rural Fire District		178,000
Cherry	Cody	Cody Rural Fire District		693,400
Cherry	Kilgore	Kilgore Rural Fire District		126,100
Cherry	Merriman	Merriman Rural Fire District	700	735,000
Cherry	Nenzel	Mid-Cherry Rural Fire District		1,384,000
Cherry	Valentine	Valentine Rural Fire District		204,000
Cherry	Wood Lake	Wood Lake Rural Fire District		188,000
Cherry		Landowners**	100,258	
Cherry Total			100,958	3,508,500
Cheyenne	Dalton	Dalton-Gurley Rural Fire District		632,500
Cheyenne	Potter	Potter Rural Fire District	2,700	588,000
Cheyenne	Sidney	CFSL - City of Sidney & South Platte NRD; ReTree Sidney 2014	13,500	
Cheyenne	Sidney	Sidney Rural Fire District		372,000
Cheyenne Total			16,200	1,592,500
Clay	Clay Center	Clay Center Rural Fire District	4,000	114,000
Clay		Clay County Emergency Mgmt		56,000
Clay	Edgar	Edgar Rural Fire District		43,500
Clay Total			4,000	213,500
Colfax	Clarkson	Clarkson Rural Fire District	1,946	13,000
Colfax	Leigh	Leigh Rural Fire District		113,000
Colfax Total			1,946	126,000
Cuming	Bancroft	Bancroft Fire Department	4,000	
Cuming	Beemer	Beemer Fire Department	1,000	
Cuming Total			5,000	0
Custer	Anselmo	Anselmo Rural Fire District		903,900
Custer	Ansley	Ansley Rural Fire District		389,000
Custer	Comstock	Comstock Rural Fire District		230,000
Custer	Sargent	Sargent Rural Fire District		85,000
Custer Total			0	1,607,900

*FEPP/FFP = Federal Excess Personal Property/Federal Firefighter Property currently loaned to Rural Fire District

** = Landowners receiving cost-share funds for forest fuels treatment and/or forest management activities

CFSL = Community Forestry Sustainable Landscapes - Community granting efforts made possible in collaboration with the Nebraska Forest Service, Nebraska Statewide Arboretum, with funding from the Nebraska Environmental Trust.

Grants/Cost-share Awarded to NFS Partners in 2014

County	Community	Organization/Project	Grant Amount	FEPP/FFP* Replacement Value
Dakota	Homer	Homer Fire Department	900	
Dakota	S.Sioux City	CFSL - City of S.Sioux City; S.Sioux City Community Trees	20,000	
Dakota Total			20,900	0
Dawes	Chadron	Chadron Rural Fire District		111,000
Dawes		Landowners**	211,974	
Dawes Total			211,974	111,000
Dawson	Cozad	CFSL - City of Cozad; ReTree Cozad	7,600	
Dawson	Eddyville	Eddyville Rural Fire District		156,500
Dawson	Farnam	Farnam Rural Fire District		208,200
Dawson	Lexington	CFSL - City of Lexington, Lexington TNT	7,649	
Dawson	Sumner	Sumner Rural Fire District		305,000
Dawson Total			15,249	669,700
Deuel	Chappell	Chappell Rural Fire District		222,000
Deuel Total			0	222,000
Dixon	Dixon	Dixon Rural Fire District		398,950
Dixon	Martinsburg	Martinsburg Rural Fire Dist.		158,000
Dixon	Newcastle	Newcastle Rural Fire District	1,000	285,000
Dixon	Ponca	Ponca Rural Fire District	250	113,000
Dixon	Wakefield	CFSL - City of Wakefield, Wakefield Tree Board; Wakefield Tree Project	5,350	
Dixon	Wakefield	Northeast Nebraska Fire Prevention Coop.	141	
Dixon	Wakefield	Wakefield Fire Department	253	
Dixon Total			6,994	954,950
Dodge	Fremont	Fremont Fire Department	3,348	
Dodge	Hooper	Hooper Rural Fire District		305,000
Dodge	Inglewood	Fremont Rural Fire District		533,700
Dodge	Nickerson	Nickerson Rural Fire District		222,000
Dodge	North Bend	North Bend Rural Fire District	4,000	265,500
Dodge	Scribner	Scribner Rural Fire District		325,500
Dodge	Snyder	Snyder Rural Fire District		15,900
Dodge	Snyder	Dodge County Firefighters	1,000	
Dodge	Uehling	Uehling Rural Fire District		285,000
Dodge	Winslow	Winslow Rural Fire District		658,850
Dodge Total			8,348	2,611,450
Douglas	Omaha	CFSL - College of St. Mary; Heritage Park Walkway	6,500	
Douglas	Omaha	CFSL - Douglas County Environmental Services; Health Center Landscape		
Douglas	Omaha	Improvements-Phase VIII	1,365	
Douglas	Omaha	CFSL - Lauritzen Gardens; Lauritzen Gardens Tree Canopy Enhancement	16,500	
Douglas	Omaha	CFSL - Midtown Neighborhood Alliance, Dundee-Memorial Park; California, Cass/Chicago Streets	5,000	
Douglas	Omaha	CFSL - SID 444, Bridlewood/ Carriage Hill; 2014 Park Improvements	14,000	
Douglas	Valley	Valley Rural Fire District		1,300,000
Douglas	Yutan	Yutan Rural Fire District		197,000
Douglas Total			43,365	1,497,000
Dundy	Benkelman	Benkelman Rural Fire District		178,000
Dundy Total			0	178,000

County	Community	Organization/Project	Grant Amount	FEPP/FFP* Replacement Value
Fillmore	Exeter	CFSL - Camp Kateri Tekakwitha; Trees for Camp Kateri	8,550	
Fillmore	Milligan	Milligan Rural Fire District		111,000
Fillmore	Ohioa	Ohioa Rural Fire District	4,000	205,000
Fillmore	Shickley	Shickley Rural Fire District		282,000
Fillmore Total			12,550	598,000
Franklin	Campbell	Campbell Rural Fire District		613,900
Franklin	Hildreth	Hildreth Rural Fire District		121,300
Franklin	Naponee	Naponee Rural Fire District		43,500
Franklin	Riverton	Riverton Rural Fire District		245,500
Franklin	Upland	Upland Rural Fire District		280,000
Franklin Total			0	1,304,200
Frontier	Curtis	Curtis Fire Department		47,000
Frontier	Eustis	Eustis Rural Fire District		781,000
Frontier	Maywood	Maywood-Wellfleet Rural Fire District		345,000
Frontier Total			0	1,173,000
Furnas	Arapahoe	Holbrook-Edison-Arapahoe Rural Fire District	500	226,000
Furnas	Arapahoe	Arapahoe Fire Department	1,800	
Furnas	Cambridge	Cambridge Rural Fire District		47,000
Furnas	Oxford	Oxford Rural Fire District	3,500	296,000
Furnas	Wilsonville	Wilsonville-Hendley Rural Fire District		43,500
Furnas Total			5,800	612,500
Gage	Adams	Adams Rural Fire District	1,125	75,400
Gage	Barneston	Barneston Rural Fire District		16,000
Gage	Blue Springs	Blue Springs Rural Fire District	2,100	87,000
Gage	Clatonia	Clatonia Rural Fire District		35,700
Gage	Cortland	Cortland Rural Fire District		6,700
Gage	Odell	Odell Rural Fire District		13,000
Gage	Wymore	Wymore Rural Fire District		13,000
Gage Total			3,225	246,800
Garden	Lewellen	Blue Creek Rural Fire District		132,500
Garden	Oshkosh	Garden County Rural Fire District		463,000
Garden		Rackett Rural Fire District		245,500
Garden Total			0	841,000
Garfield	Burwell	Burwell Rural Fire District		273,500
Garfield Total			0	273,500
Gosper	Elwood	Gosper County Rural Fire District		608,000
Gosper Total			0	608,000
Grant	Hyannis	Sandhills Rural Fire District	1,250	622,000
Grant Total			1,250	622,000
Greeley	Greeley	Greeley Rural Fire District	4,000	132,500
Greeley	Scotia	Scotia Rural Fire District		43,500
Greeley	Spalding	Spalding Rural Fire District	2,200	113,000
Greeley	Wolbach	Wolbach Rural Fire District		113,000
Greeley Total			6,200	402,000
Hall	Cairo	Cairo Rural Fire District		167,000
Hall	Doniphan	CFSL - Doniphan Economic Development Corp.; Doniphan Area Events Ctr.	3,000	
Hall	Doniphan	Doniphan Rural Fire District		305,000
Hall	Grand Island	CFSL - Central Community College; ReTree Grand Island	5,000	
Hall	Grand Island	CFSL - Grand Island Sr. High	20,000	
Hall Total			28,000	472,000
Hamilton	Giltner	Giltner Fire Department	2,000	
Hamilton	Marquette	Marquette Rural Fire District		528,500
Hamilton	Phillips	Phillips Rural Fire District	450	305,000
Hamilton Total			2,450	833,500

*FEPP/FFP = Federal Excess Personal Property/Federal Firefighter Property currently loaned to Rural Fire District

** = Landowners receiving cost-share funds for forest fuels treatment and/or forest management activities

CFSL = Community Forestry Sustainable Landscapes - Community granting efforts made possible in collaboration with the Nebraska Forest Service, Nebraska Statewide Arboretum, with funding from the Nebraska Environmental Trust.

Grants/Cost-share Awarded to NFS Partners in 2014

County	Community	Organization/Project	Grant Amount	FEPP/FFP* Replacement Value
Harlan	Alma	Alma Rural Fire District		230,000
Harlan	Alma	CFSL - City of Alma; Alma Storm Damage Replanting	3,300	
Harlan	Orleans	Orleans Rural Fire District	1,400	812,000
Harlan	Stamford	Stamford Rural Fire District		633,500
Harlan Total			4,700	1,675,500
Hayes	Hayes Center	Hayes County Rural Fire Dist.		156,500
Hayes Total			0	156,500
Hitchcock	Palisade	Palisade Rural Fire District		136,000
Hitchcock	Stratton	Stratton Rural Fire District		239,600
Hitchcock Total			0	375,600
Holt	Atkinson	Atkinson Fire Department	4,000	
Holt	Chambers	Chambers Rural Fire District		43,500
Holt	Ewing	Ewing Rural Fire District		230,000
Holt	O'Neill	O'Neill Rural Fire District		255,000
Holt	Page	Page Rural Fire District		239,000
Holt	Stuart	Stuart Rural Fire District	1,880	156,500
Holt Total			5,880	924,000
Hooker	Mullen	Mullen Rural Fire District		226,000
Hooker Total			0	226,000
Howard	Boelus	Boelus Rural Fire District		490,500
Howard	Dannebrog	Dannebrog Rural Fire District		112,000
Howard	Elba	Elba Rural Fire District		115,500
Howard	Farwell	Farwell Rural Fire District		211,700
Howard Total			0	929,700
Jefferson	Daykin	Daykin Rural Fire District	600	113,000
Jefferson	Diller	Diller Rural Fire District		113,000
Jefferson	Fairbury	Fairbury Fire Department	4,000	
Jefferson	Plymouth	Plymouth Rural Fire District		113,000
Jefferson	Steele City	Steele City Rural Fire District		305,000
Jefferson Total			4,600	644,000
Johnson	Cook	Cook Rural Fire District		43,500
Johnson	Elk Creek	Elk Creek Fire Department	2,047	
Johnson	Sterling	Sterling Rural Fire District		113,000
Johnson Total			2,047	156,500
Kearney	Axtell	Axtell Rural Fire District		113,000
Kearney	Minden	CFSL - Minden Tree Board; Street & Memorial Trees	5,000	
Kearney	Ragan	Wilcox Rural Fire District		132,500
Kearney	Wilcox	Wilcox Fire Department	250	
Kearney Total			5,250	245,500
Keith	Brule	Brule Rural Fire District		89,000
Keith	Keystone	Ogallala Rural Fire District		362,500
Keith	Ogallala	CFSL - Ogallala Tree Board; Ogallala Downtown Revitalization	1,200	
Keith	Paxton	Paxton Rural Fire District		168,500
Keith Total			1,200	620,000
Keya Paha	Springview	Keya Paha Rural Fire District		386,500
Keya Paha	Landowners**		112,520	
Keya Paha Total			112,520	386,500
Kimball	Bushnell	Bushnell-Johnson Rural Fire District		134,500
Kimball	Dix	Dix Rural Fire District		56,000
Kimball	Landowners**		161	
Kimball Total			161	190,500
Knox	Creighton	Creighton Fire Department	150	
Knox	Crofton	Crofton Rural Fire District		140,500
Knox	Niobrara	Niobrara Rural Fire District		23,000
Knox	Verdigre	Verdigre Fire Department	1,903	
Knox Total			2,053	163,500

County	Community	Organization/Project	Grant Amount	FEPP/FFP* Replacement Value
Lancaster	Bennet	CFSL - Bennet Cemetery Assn.; Bennet Cemetery	1,700	
Lancaster	Firth	Firth Rural Fire District		90,500
Lancaster	Hickman	Hickman Rural Fire District		305,000
Lancaster	Lincoln	CFSL - Lincoln Christian School	20,000	
Lancaster	Lincoln	CFSL - Lincoln Parks and Rec. Dept.; Lincoln Street Tree	20,000	
Lancaster	Lincoln	CFSL - Nebraska Department of Correctional Services; LCC Tree Replacement	3,000	
Lancaster	Lincoln	CFSL - Prescott Elementary School	20,000	
Lancaster	Lincoln	Southeast Rural Fire District		293,000
Lancaster	Raymond	Raymond Fire Department	3,000	
Lancaster	Waverly	CFSL - City of Waverly; Waverly's Community Arboretum	15,750	
Lancaster	Waverly	Waverly Rural Fire District		473,000
Lancaster Total			83,450	1,161,500
Lincoln	Hershey	Hershey Rural Fire District		29,000
Lincoln	Maxwell	Maxwell Rural Fire District		410,250
Lincoln	North Platte	CFSL - Platte Valley Christian Academy	20,000	
Lincoln	Sutherland	Sutherland Rural Fire District	2,697	232,000
Lincoln	Wallace	Wallace Rural Fire District		527,000
Lincoln Total			22,697	1,198,250
Logan	Stapleton	Stapleton Rural Fire District		563,700
Logan Total			0	563,700
Loup	Taylor	Loup County Rural Fire District	250	157,500
Loup Total			250	157,500
Madison	Battle Creek	Battle Creek Fire Department	1,404	
Madison Total			1,404	0
McPherson	Tryon	McPherson County Rural Fire District		129,000
McPherson Total			0	129,000
Merrick	Chapman	Chapman Rural Fire District		200,000
Merrick	Silver Creek	Silver Creek Rural Fire District		43,500
Merrick Total			0	243,500
Morrill	Bridgeport	Bridgeport Rural Fire District		319,000
Morrill	Broadwater	Broadwater Rural Fire District		343,000
Morrill Total			0	662,000
Nance	Belgrade	Belgrade Rural Fire District		89,000
Nance	Genoa	Genoa Fire Department	4,000	
Nance Total			4,000	89,000
Nemaha	Julian	Brock-Julian Rural Fire District		248,500
Nemaha	Nemaha	Nemaha Rural Fire District	1,600	362,500
Nemaha	Peru	Peru Fire Department	3,000	
Nemaha Total			4,600	611,000
Nuckolls	Hardy	Hardy Rural Fire District		305,000
Nuckolls	Lawrence	Lawrence Rural Fire District		113,600
Nuckolls	Ruskin	Ruskin Rural Fire District		89,000
Nuckolls	Superior	Superior Rural Fire District		150,000
Nuckolls Total			0	657,600
Otoe	Douglas	Douglas Fire Department	3,000	
Otoe	Dunbar	Dunbar Rural Fire District		113,000
Otoe	Syracuse	Syracuse Rural Fire District		192,000
Otoe	Unadilla	Unadilla Rural Fire District		47,000
Otoe Total			3,000	352,000

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Grants/Cost-share Awarded to NFS Partners in 2014

County	Community	Organization/Project	Grant Amount	FEPP/FFP* Replacement Value
Pawnee	Burchard	Burchard Rural Fire District		205,000
Pawnee	DuBois	DuBois Rural Fire District		723,600
Pawnee	Pawnee City	Pawnee City Rural Fire District		224,000
Pawnee Total			0	1,152,600
Perkins	Madrid	Madrid Rural Fire District		230,000
Perkins	Venango	Venango Rural Fire District		124,700
Perkins Total			0	354,700
Phelps	Funk	Funk Rural Fire District		113,300
Phelps	Holdrege	Holdrege Rural Fire District		2,900
Phelps Total			0	116,200
Pierce	Hadar	Hadar Rural Fire District		179,500
Pierce	Osmond	Osmond Fire Department	1,530	
Pierce Total			1,530	179,500
Platte	Columbus	Platte Co. Emergency Mgmt.		142,000
Platte	Monroe	Monroe Rural Fire District		256,000
Platte	Platte Center	Platte Center Rural Fire District		222,000
Platte Total			0	620,000
Polk	Osceola	Osceola Rural Fire District		327,000
Polk	Polk	Polk Rural Fire District		230,000
Polk	Stromsburg	Stromsburg Rural Fire District		512,000
Polk Total			0	1,069,000
Red Willow	Indianola	Indianola Rural Fire District		113,000
Red Willow	Lebanon	Beaver Valley Rural Fire Dist.	1,245	44,500
Red Willow	McCook	CFSL - St. Patrick's Parrish; Calvary Cemetery Improvement	4,650	
Red Willow	McCook	Red Willow Western Rural Fire District	4,000	505,400
Red Willow Total			9,895	662,900
Richardson	Falls City	Falls City Rural Fire District		130,500
Richardson	Salem	CFSL - Village of Salem; Maple Cemetery Tree Project	10,000	
Richardson Total			10,000	130,500
Rock	Bassett	Gracy Rural Fire District		314,000
Rock	Bassett	Rock County Rural Fire District		627,500
Rock	Newport	Newport Rural Fire District		577,450
Rock		Landowners**	38,541	
Rock Total			38,541	1,518,950
Saline	DeWitt	Saline County Rural Fire District		461,500
Saline	Dorchester	Saline County Rural Fire District		258,000
Saline	Friend	Friend Fire Department	4,000	
Saline	Tobias	Saline County Rural Fire District		205,000
Saline	Western	Saline County Rural Fire District		205,000
Saline	Wilber	Saline County Rural Fire District		478,000
Saline Total			4,000	1,607,500
Saunders	Ashland	Ashland Rural Fire District		1,032,000
Saunders	Cedar Bluffs	Cedar Bluffs Rural Fire Dist.	4,000	703,350
Saunders	Ceresco	Ceresco Rural Fire District		23,000
Saunders	Colon	Colon Rural Fire District	2,493	305,000
Saunders	Ithaca	Ithaca Rural Fire District		128,500
Saunders	Malmo	Malmo Rural Fire District	4,000	260,000
Saunders	Mead	Mead Rural Fire District	4,000	638,500
Saunders	Prague	Prague Rural Fire District		273,500
Saunders	Valparaiso	Valparaiso Rural Fire District		93,700
Saunders	Weston	Weston Rural Fire District		200,000
Saunders	Yutan	Yutan Rural Fire District	3,000	118,000
Saunders Total			17,493	3,775,550
Sarpy	Bellevue	CFSL - City of Bellevue; Haworth Park Replanting	2,500	
Sarpy	LaVista	CFSL - City of LaVista Parks Dept.; LaVista Central Right-of-Way	5,000	

County	Community	Organization/Project	Grant Amount	FEPP/FFP* Replacement Value
Sarpy	LaVista	CFSL - City of LaVista Parks Dept.; Jaycee and South Wind Parks	5,000	
Sarpy Total			12,500	0
Scotts Bluff	Gering	Gering Valley Rural Fire District	461	121,000
Scotts Bluff	Henry	Henry Fire Department		132,800
Scotts Bluff	Lyman	Lyman Fire Department	2,000	
Scotts Bluff	Lyman	Lyman-Kiowa Rural Fire District		132,500
Scotts Bluff	Minatare	Minatare-Melbeta Rural Fire District	2,180	89,000
Scotts Bluff	Mitchell	Mitchell Rural Fire District		89,000
Scotts Bluff	Morrill	Morrill Fire Department	2,000	
Scotts Bluff	Scottsbluff	CFSL - City of Scottsbluff, NP NRD; Riverside Pond	5,000	
Scotts Bluff	Scottsbluff	Scottsbluff Rural Fire District		178,000
Scotts Bluff		Landowners**	25,530	
Scotts Bluff Total			37,171	742,300
Seward	Bee	Seward County Rural Fire Dist.		16,000
Seward	Cordova	Cordova Fire Department	755	
Seward	Cordova	Seward County Rural Fire Dist.		89,000
Seward	Goehner	Seward County Rural Fire Dist.		205,000
Seward	Milford	CFSL - Milford Public Schools	20,000	
Seward	Pleasant Dale	Seward County Rural Fire Dist.		21,000
Seward	Staplehurst	Staplehurst Rural Fire District		67,500
Seward	Tamora	Seward County Rural Fire Dist.		16,000
Seward	Utica	Seward County Rural Fire Dist.		113,000
Seward Total			20,755	527,500
Sheridan	Gordon	Gordon Rural Fire District		87,000
Sheridan	Hay Springs	Hay Springs Rural Fire Dist.	1,350	662,000
Sheridan	Lakeside	Heart of the Hills Rural Fire Dist.		460,000
Sheridan	Rushville	Rushville Rural Fire District		346,000
Sheridan		Landowners**	311,614	
Sheridan Total			312,964	1,555,000
Sherman	Ashton	Ashton Rural Fire District		128,000
Sherman Total			0	128,000
Sioux	Harrison	Harrison Rural Fire District		531,600
Sioux		Landowners**	17,492	
Sioux Total			17,492	531,600
Stanton	Pilger	Pilger Fire Department	4,000	
Stanton	Stanton	Stanton Rural Fire District		156,500
Stanton Total			4,000	156,500
Thayer	Chester	Chester Rural Fire District		40,000
Thayer	Deshler	Deshler Rural Fire District		394,000
Thayer	Hebron	Hebron Rural Fire District		596,500
Thayer	Hubbell	Hubbell Rural Fire District		371,500
Thayer Total			0	1,402,000
Thomas	Halsey	Halsey Rural Fire District		282,000
Thomas	Thedford	Thedford Rural Fire District		296,500
Thomas Total			0	578,500
Thurston	Pender	CFSL - Village of Pender, Pender Tree Board; Pender Community Street Tree Revitalization	1,920	
Thurston	Thurston	Thurston Rural Fire District		113,000
Thurston	Walthill	Walthill Fire Department	1,070	
Thurston	Winnebago	Winnebago Area Emergency Management		185,000
Thurston Total			2,990	298,000
Valley	Arcadia	Arcadia Rural Fire District		132,500
Valley	Ord	North Loup Rural Fire District	3,800	
Valley Total			3,800	132,500

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Grants/Cost-share Awarded to NFS Partners in 2014

County	Community	Organization/Project	Grant Amount	FEPP/FFP* Replacement Value
Washington	Arlington	Arlington Rural Fire District		305,000
Washington	Blair	Blair Fire Department	886	
Washington	Herman	Herman Rural Fire District		113,000
Washington Total			886	418,000
Webster	Bladen	Bladen Rural Fire District		487,000
Webster	Blue Hill	Blue Hill Rural Fire District		343,000
Webster	Guide Rock	Guide Rock Rural Fire District		305,000
Webster	Red Cloud	Red Cloud Rural Fire District		460,000
Webster Total			0	1,595,000
Wheeler	Bartlett	Wheeler County Rural Fire Dist.	995	249,000
Wheeler	Ericson	Wheeler County Rural Fire Dist.		113,000
Wheeler Total			995	362,000
York	Benedict	Benedict Rural Fire District		636,000
York	York	CFSL - Holthus Convention Ctr. Foundation; Holthus Convention Center	19,500	
York	York	CFSL - York High School; York High School District office	1,935	
York Total			21,435	636,000

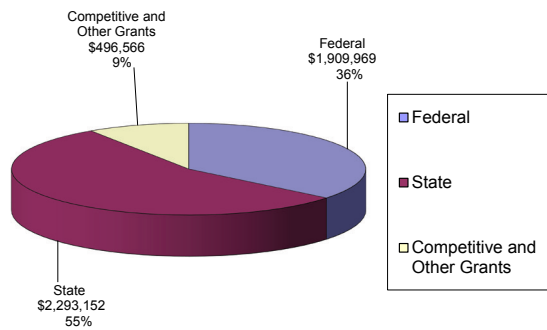
Organization/Project	Grant Amount	FEPP/FFP* Replacement Value
Nebraska Department of Health and Human Services		255,000
Nebraska Game and Parks Commission		217,500
Region 21 Emergency Management		185,000
Region 26 Emergency Management		142,000
State Fire Marshal Training Division	5,000	3,000
Nebraska Firefighters Museum and Education Center	750	
Nebraska State Volunteer Firefighters Association	5,750	7,600
Grand Total	1,528,157	67,023,800

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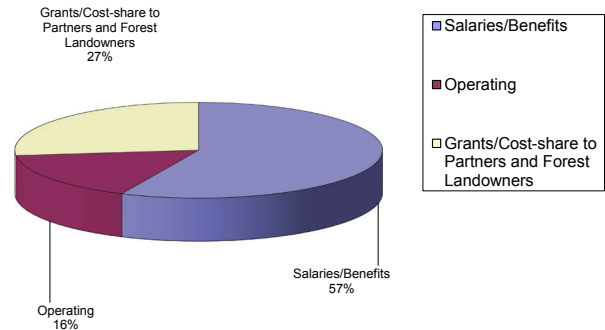
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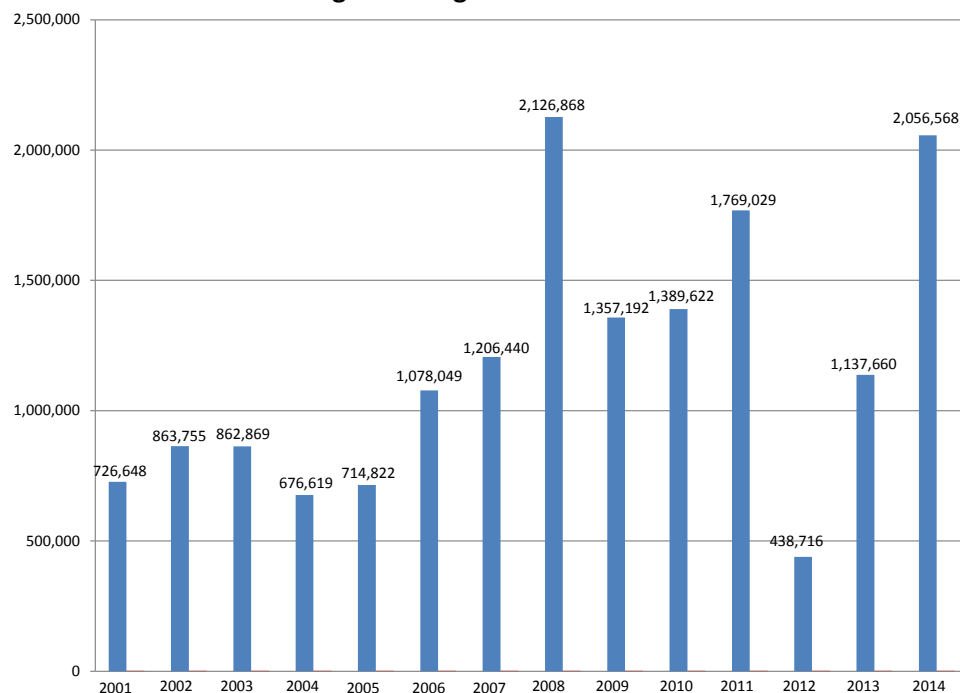
NFS Funding Sources 2014



NFS Expenditures 2014



Passthrough Funding Awarded 2001-2014



Nebraska FOREST SERVICE

Children walk through their family's Pine Ridge property located east of Chadron.

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