



# ANNUAL REPORT 2022



# A MESSAGE FROM THE NEBRASKA STATE FORESTER

## Our Mission

***To enrich the lives of all Nebraskans by protecting, restoring,  
and utilizing Nebraska's tree and forest resources***

Those words carried weight this year.

Nebraska's trees and natural resources faced multiple threats and challenges through the course of 2022.

The portents of global changes in climate have not skipped our state, as we witnessed unprecedented wildfires and expanding damage to green infrastructure.

Communities are turning to the Nebraska Forest Service (NFS) for guidance and assistance, now more than ever before, and our staff has been steadfast in its resolve to be wherever we are needed across the state.

Together with agency partners, NFS was able to respond quickly and effectively to some of

2022's most significant fires and help local volunteer firefighters protect their homes and neighbors. Our forest health specialist sought innovative ways to restore our tree and forest resources in the face of extreme weather behaviors, and our foresters worked to utilize the opportunities Nebraska's forested areas present for economic development while protecting sustainability.

This report elaborates on each of our mission's three elements. There has never been a more compelling time than now for our staff to help address many of the state's most pressing concerns. I hope you'll enjoy reading about the issues facing our tree and forest resources, and how NFS and our many partners are leading efforts to find and create impactful solutions.

John A. Erixson, Nebraska State Forester

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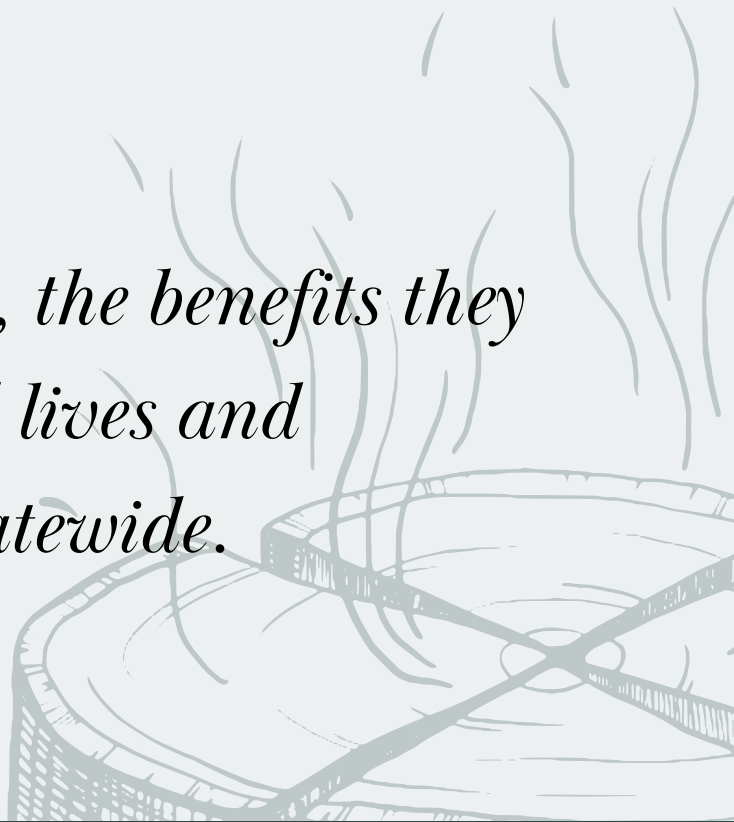
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# PROTECT

*. . . trees and forests, the benefits they provide, and lives and property statewide.*



NFS is assisting Nebraska communities and landowners to plant thousands of trees, cleaning the air and water, saving energy, and making our cities and towns and forests better places to live, work and play. NFS also provides quality fire and incident management training.

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A dramatic landscape photograph of a field with a fence in the foreground and a mountain in the background under a dark, stormy sky with a rainbow. The scene is captured in a cinematic style with a dark, moody color palette. The foreground shows a wooden fence and tall grasses. The middle ground is a vast, open field leading to a range of mountains. The sky is filled with dark, heavy clouds, with a faint rainbow visible on the left side. The overall atmosphere is somber and powerful.

“Our crews were already worn down from the 739 fire when the 702 hit . . . The Nebraska Type 3 team was wonderful in the process of helping with logistics and leadership. It was everything.”

WESLEY HOCK, HOLBROOK FIRE CHIEF

# ONE FOR THE BOOKS

A typical fire season in Nebraska runs from June to September.

2022 must not have gotten the memo.

"Honestly, we've been noticing that lately, we're not getting wildfire seasons, we're having wildfire years," said Nebraska Forest Service (NFS) Wildland Fire Training Coordinator Eric Moul. "Our fire season has not stopped since 2020."

2022 is on pace to be the second-worst fire season in Nebraska's recorded history, with over 200,000 acres burned.

The wind was up; precipitation down. Record-breaking heat and drought conditions persisted, causing soil moisture to hold fast at all-time lows. When the rain did occur, it came at the cost of accompanying lightning.

The 2022 fire season marked several firsts for the agency, including the use of a very large air tanker to help contain several fires. With Governor Pete Ricketts' approval, NFS also worked to bring a new Single Engine Air Tanker (SEAT) base online; existing SEAT planes were activated earlier. More resources meant greater success and interagency cooperation in dealing with Nebraska's growing wildfire problem.

"We've had an effective partnership with the Nebraska Forest Service on wildfire response," said Nebraska Emergency Management Agency (NEMA) Assistant Director Erv Portis. "We look forward to continuing to work with them."

Together with its partners—NEMA, the State Fire Marshall's Office, Nebraska National Guard, and local fire departments—NFS responded quickly and effectively to some of 2022's most significant fires.

## VOTAW ROAD FIRE

For nearly a week in early March, a small army of volunteer firefighters, NFS-managed aircraft, and National Guard helicopters fought a blaze in the hills and forested gorges of southern Lincoln County.

The Votaw Road Fire started with a lightning strike and reached just over a thousand acres before being completely contained. The Wildland Incident Response and Assistance Team, which includes NFS staff, was called to assist local responding volunteer fire departments with logistics and fire containment. The team activated Nebraska's Single Engine Air Tanker early to help battle the blaze.

The Votaw Road Fire turned out to be just a preview of a busy season.



# ROAD 732 & 702 FIRES

Only a few short weeks later, two major wildfires rocked South Central Nebraska and pushed local firefighting resources to the brink. The Road 739 and Road 702 fires occurred within several weeks of each other and overlapped throughout April. Together, they burned nearly 80,000 acres.

In this "all-hands on deck" situation, NFS staff collaborated with Kansas and South Dakota to establish an interstate compact for wildland firefighting resources. NFS Type 3 Incident Management Team staff also played a key role in coordinating aerial suppression flights out of McCook Airport, assisting local response efforts by providing incident command and administrative staff for the Complex Incident Management Team and working with area businesses to supply the latest situational updates to residents and communities affected by the fires.



"We needed all the resources we could get," said Holbrook Fire Chief Wesley Hock. "Our crews were already worn down from the 739 fire when the 702 hit . . . The Nebraska Type 3 team was wonderful in the process of helping with logistics and leadership. It was everything."

# CARTER CANYON FIRE

In July, NFS staff responded to a large wildfire south of Gering that destroyed three homes and damaged several others as it spread rapidly through the dry vegetation in Nebraska's Wildcat Hills.

Aerial surveillance showed the Carter Canyon Fire to be at roughly 16,000 acres, largely due to significant wind-driven runs.

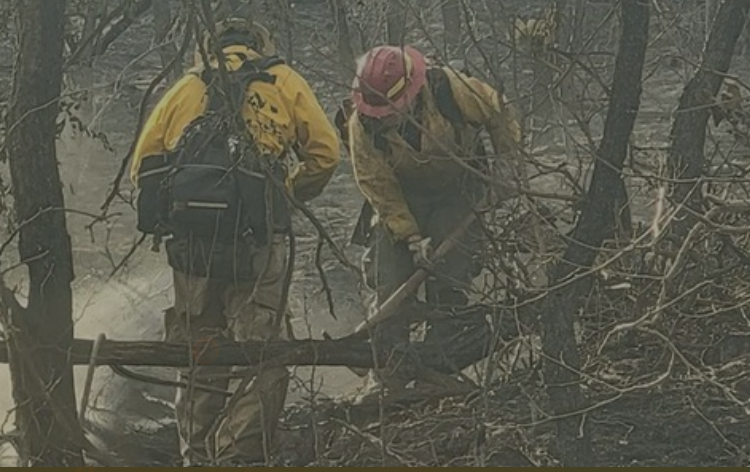
Passing aircraft reportedly witnessed the fires igniting due to lightning strikes. First responders reported two separate fires in the Cedar Canyon Wildlife Management Area and Carter Canyon public lands. Firefighters engaged immediately but were hampered by heavy timber, rough terrain, and wind-driven runs. Within hours, both fires had substantially increased in size and merged. Fire managers recognized that structures were in danger and began establishing protection along Cedar Canyon Road. The fire made a significant run through the Cedar Canyon Estates, destroying three primary residences, damaging other outbuildings, and agricultural assets.

The Gering Fire Department requested assistance from the Wildland Incident Response and Assistance Team, comprised of NFS, the Nebraska Emergency Management Agency, and the State Fire Marshall's Office.

After five days, the fire was declared 100 percent contained by Incident Commander and Gering Fire Department Chief, Nathan Flowers. He acknowledged NFS staff for playing a key role in assisting with the fire.

"This region holds a special place among our firefighters," Flowers said. "Throughout the entire Carter Canyon Fire, NFS personnel treated the area as if it was their backyard. They displayed true stewardship of Nebraska lands and worked side by side with firefighters and landowners creating a plan to minimize the impact this devastating fire had on our region."

# BOVEE FIRE



Continuing an extreme fire season, the Bovee Fire in early October prompted the temporary closure of State Highway 2 and the evacuation of the Village of Halsey in central Nebraska. The blaze killed one firefighter and blackened 18,932 acres in Thomas and southern Cherry Counties.

Started by a UTV on a trail in the Bessey Ranger District of the Nebraska National Forest, the fire spread rapidly, consuming the historic Scott Lookout Tower and most of the Nebraska State 4-H Camp, including Eppley Lodge and all of the cabins. The adjacent Charles E. Bessey Tree Nursery and the original Civilian Conservation Corps campground were saved.



Local responders called in a Type 1 Rocky Mountain Complex Incident Management Team, and over 220 firefighters from Nebraska, Colorado, Kansas, Wyoming, and South Dakota arrived to help. Five NFS staff members also assisted. During the first day of the fire, the Single Engine Air Tanker stationed in Valentine flew several missions and dropped four loads of retardant.

"The Nebraska Forest Service was instrumental in collecting names and contact information of local partners and agencies that had an interest in the fire and communicating concerns to the team," said Bessey District Ranger Julie Bain. "We're looking forward to working with them on possible salvage operations."



*Ten cabins, Eppley Lodge, and the Scott Lookout Tower were destroyed in the fire (photo courtesy of Carson Vaughn).*



# FOREST FUELS PROGRAM EXPANDS



As 2022 turned out to be a major wildfire year in Nebraska, public awareness has steadily expanded statewide.

Managing forest fuels across the state continues to be a major focus for Nebraska Forest Service (NFS) foresters, who have been implementing grant-funded landowner cost-share programs in the western and northern parts of the state.

"Large wildfires across the west have increased over the last five years, and several large fires in western and southwest Nebraska this year have led people to be more proactive in reducing their exposure to wildland fire risk," said NFS Forestry and Fire Bureau Chief Adam Smith. "The NFS fuels reduction cost-share program continues to expand across the state, increasing the availability of funding to more Nebraskans and reducing the risk to life and property."

Anticipating greater demand for cost-share fuels treatment assistance in normally high-risk areas, as well as new demand in parts of the state where wildfires were traditionally smaller and less frequent, NFS established a statewide network of Community Wildfire Protection Plans (CWPPs). Having a CWPP in place is needed for an area to qualify for US Forest Service fuels reduction cost-share funds.

Since 2018, NFS has prepared new CWPPs for the Central Platte, Central Sandhills, Middle Northeast, Missouri River East, South Central East, South Central West, Southeast, Southwest, and Western Sandhills regions of Nebraska, and we have updated the existing plans in the Loess Canyons, North Central, Missouri River Northeast, Pine Ridge, and Wildcat Hills regions of the state. Staff wrapped up that project in 2022, with 92 of Nebraska's 93 counties participating.

## REPLANTING AND REFORESTING



Last year, in the Pine Ridge, we reported nearly 425,000 ponderosa pine seedlings had been planted to help restore pines after the catastrophic Region 23 Complex wildfires of 2012. In 2022, that number has increased by another 44,000 seedlings in the Pine Ridge. In the North Central part of the state, where the Region 24 Complex burned that same year, 44,000 seedlings were planted in 2022, bringing the total reforestation effort to 513,000 seedlings.

NFS Northwest District Forester Doak Nickerson is pleased with progress. "Since the Pine Reforestation Project began in 2017, the Upper Niobrara-White NRD, Middle Niobrara NRD, and NFS have solved the pine seedling survival mystery in Nebraska. The key to increased survival starts with state-of-the-art tree growing technology developed at the US Forest Service Bessey Nursery in Halsey, Nebraska."

He added, "We've discovered that the containerized pine seedlings are performing well and are a huge improvement over traditional bare-root stock . . . which is a huge step forward in better serving our clientele who have been impacted by past wildfires."

# A DECADE IN THE MAKING

"We have vastly increased our readiness . . ."

In the decade since the Region 24 Complex burned, wildfires throughout the state have increased in size and frequency. The Nebraska Forest Service (NFS) has responded to this in several ways.

As a direct result of both the Region 24 Complex and the Region 23 Complex in the Panhandle in 2012, the Nebraska Legislature passed the Wildfire Control Act of 2013. This enabled the establishment of Single Engine Air Tanker (SEAT) bases across Nebraska, including one in Valentine. These aircraft can act as support. They are ideal for wildfires in lighter fuels like grasses and sagebrush. SEAT bases are staffed during the fire season by NFS personnel, working with a SEAT on contract with the Nebraska Emergency Management Agency.



The SEAT provides critical observation and access for remote areas. Tanker support is vital for locations away from towns and for wildfires located in difficult terrain or spreading quickly. Having a SEAT dedicated strictly to wildfire suppression provides nearby resources for quick initial attack on small fires, particularly those in rough country, keeping them from growing into large, catastrophic wildfires.

"That legislation also increased our ability to provide training to first responders, and increased our capacity to provide response equipment from our fire shop to volunteer fire departments," said NFS Forestry and Fire Bureau Chief Adam Smith.

# WILDFIRE INCIDENT RESPONSE

"Overhead teams can provide rapid support . . ."



In major wildfire situations, overhead teams can be called in to support volunteer fire departments. State assistance starts with the Wildfire Incident Response Assistance Team.

When an Incident Commander orders the team, the four closest members will respond and assist. This could include scouting the fire, ordering additional resources, establishing a communication plan, operations, communicating with aircraft, or reloading aircraft.



"We have implemented a Type 3 Incident Management Team for larger fires," said NFS Fire Operations Program Leader Matt Holte, "and we have vastly increased our training and the number of qualified individuals throughout the state."

The NFS has also received increased funding to help landowners manage fuels in areas where buildings and critical access routes are located adjacent to the wildland. The NFS manages several federal and state grants to provide cost-share to landowners for reducing vegetative fuels on private lands most at-risk from wildfire. Since 2012 these funds have been used to treat thousands of acres of hazardous woody fuels in the state.






# RESTORE

*... trees and forests to mitigate and adapt to evolving threats and global changes in climate*



A healthy forest landscape has the capacity for renewal and recovery from a wide range of disturbances while continuing to provide public benefits and ecosystem services. NFS is working to restore ailing forests by targeting management to areas where actions are most likely to prevent or mitigate negative impacts.

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“Without the program I don't know how I would financially manage to remove it. I was attached to my tree. It made my house more a home. The shade kept me much cooler. I'm anxious to plant a new tree. I may not watch it grow to maturity, but it'll be here for future families to enjoy.”

CECILIA, LINCOLN HOMEOWNER

# ANOTHER CHALLENGING YEAR FOR TREES ON THE PLAINS



***Severe weather conditions are a way of life on the Great Plains, and Nebraskans are familiar with how such conditions impact our crops, livestock, and gardens. But what about trees? The extremes of our climate negatively impact tree health, although the symptoms are not always easy to recognize and sometimes take a while to appear.***

Take drought, for example. 2022 turned out to be one of the driest on record for Nebraska. Obvious symptoms of drought include leaf scorch, leaf drop, and tree death, especially on young, recently planted trees, which have limited root systems. Long term effects of drought are more subtle. Shorter twig growth and smaller leaves result in thinner canopies. More importantly, water stress lowers the resistance of trees to attacks by insect pests and pathogens.

"Some drought-induced pests take months or even years to cause significant, noticeable damage to trees," said Laurie Stepanek, Forest Health Specialist with the Nebraska Forest Service. "By that time, the drought may be over and forgotten." Recognizing the important role drought plays and providing supplemental water during dry conditions is the best way to manage many of these pests.

Untimely freezes also impact trees. Extremely low temperatures in autumn can catch trees before they have hardened off for winter, directly damaging tree tissues. Early deep freezes also often trigger the development of cankers, which are diseases affecting the branches or trunks of trees.

A freeze-induced canker is thought to be the cause behind widespread dieback and mortality of young eastern redcedar windbreaks in recent years. Stepanek has examined many dying trees in windbreaks throughout eastern Nebraska.

"When I excavated the roots and cut into the bark, I found that the lower trunk and roots were healthy," said Stepanek. "But just a few inches up the trunk, the bark was brown and dead—typical symptoms of a canker disease." When she checked historical weather data, Stepanek found that in recent years, autumn temperatures had on some days dipped to the single digits—extremely cold for so early in the season.



Late spring freezes, such as the one that affected much of western Nebraska in May 2022, are also damaging. Chrissy Land, Western Community Forester, noted that the freeze was preceded by several weeks of unusually warm weather, which pushed a lot of new growth on trees.

"This new growth is very susceptible to freeze," said Land. "I noticed damage on a wide range of trees: oak, ginkgo, Kentucky coffeetree, honeylocust, catalpa, redbud, and ash."

With the growing frequency of extreme weather events, the challenge is finding ways to keep our tree and forest resources healthy. NFS staff continue to promote best management practices such as proper watering and protection of the root zone, which can help offset some of the effects of stressful weather. They also are working to identify and test underutilized tree species and seed sources that may be better adapted to climate extremes. The goal is to ultimately improve the resiliency of Nebraska forests well into the future.



*Day after freeze: Drooping foliage*



*A few days later: Browning*

# AT-RISK TREE REMOVAL AND REPLANTING



Grant funding from the Nebraska Forest Service to help low- to moderate- income homeowners pay for the removal of dead or dying trees and plant new trees AT NO COST.

The NFS recently received a Sustainable Urban Forest Resilience grant for \$483,000 to extend the current hazardous tree program in Lincoln. This project engages the City of Lincoln in a collaborative effort to respond to Emerald Ash Borer's (EAB) impacts within the community.

"After providing proof of concept with a pilot, we are now taking this to the next level," said State Forester and Director John Erixson. "Christina Hoyt, Community Landscape and Forest Health Bureau Chief, worked with the City of Lincoln on developing this next phase."

A holistic approach addresses the challenge of EAB, particularly in Low- and Moderate-Income (LMI) neighborhoods and among underserved residents. The At-Risk Tree Removal and Replanting Grant Program is available citywide and is free for residents who meet income requirements. This project will remove and replace ash trees; implement a treatment program to retain high-quality ash trees growing on private LMI properties; and plant/establish street trees to increase canopy in LMI neighborhoods.

The pilot generated enthusiastic response from residents. Cecilia L. said, "Without the program I don't know how I would financially manage to remove it. I was attached to my tree. It made my house more a home. The shade kept me much cooler. I'm anxious to plant a new tree. I may not watch it grow to maturity, but it'll be here for future families to enjoy."

There are currently 47 approved applications, meaning assessment is complete and removal is done or in progress. City of Lincoln forestry staff is helping with tree selection and location for fall planting with local staff and volunteers. There are 19 new applications on a waiting list. All the pilot funding has been expended.



- **ALL PARTICIPANTS ARE FROM LOW AND MODERATE-INCOME LEVELS AS DEFINED BY HUD**
- **18% OF PARTICIPANTS ARE FROM MINORITY COMMUNITIES**
- **38% OF PARTICIPANTS ARE CONSIDERED VULNERABLE PEOPLE**



# URBAN TREE IMPROVEMENT PROGRAM

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The search is on for the best genetic formula to be adapted to our climate-shifting future.

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With the threat of climate change, as well as emerging insects and diseases, it's vitally important that we identify more tree species that can survive these threats and help expand the species diversity of Nebraska's community forests.

In 2020, NFS joined with forestry organizations in several Great Plains and Southwestern states to help expand the awareness and availability of under-utilized, climate-adapted tree species in the region through a program titled Urban Tree Improvement: Climate-resilient Trees for the Arid Urban Landscape, or UTIP for short (Urban Tree Improvement Program). The program is funded via Landscape Scale Restoration funds from the US Forest Service.

UTIP is modeled on a long-standing program in Texas, which has identified several tree species tolerant of hot and dry conditions of the southern Great Plains. These Texas trees are being distributed to other state participants for trialing, including Oklahoma, New Mexico, Arizona, Kansas, and Arkansas. Nebraska is the most northern state in this consortium, and we're far enough north that many of the Texas trees would likely not be cold hardy here. Because of this, we have chosen to travel a different path; instead of using the Texas trees, we are seeking trees that will likely have the cold tolerance necessary to survive in Nebraska.

In the spring of 2022, NFS obtained a variety of tree seedlings and small nursery trees from Forrest Keeling Nursery in Missouri and the Kansas Forest Service, to be distributed for trialing across Nebraska.



Species included southwestern white pine, lacebark elm, desert willow (*Chilopsis*), American Smoketree, thorn-less Osage orange, several oaks, and a loblolly/pitch pine hybrid. Over 310 seedlings were then distributed to 12 trial sites across the state at parks and NSA arboretum affiliates. We'll be tracking the survivability and suitability of these trees going forward and, if they prove adaptable, we'll work with nurseries to make them more commercially available in Nebraska.

Recently, NFS staff worked with a city forester in Colorado, to collect acorns from a variety of Gambel oaks and Gambel oak hybrids growing in Colorado. We brought them back to Nebraska to be grown by the Nebraska Statewide Arboretum and distributed to our trial sites in the coming years. Gambel oak can be a somewhat shrubby tree, but it has good heat and drought tolerance and can grow into a nice shade tree over time. These trees can be expected to be especially well-adapted to western and southwest Nebraska.

In the coming years, we anticipate targeting additional tree species from surrounding states, especially looking south and southwest to Kansas, Oklahoma, Colorado, and New Mexico. We will seek soapberry, netleaf hackberry, pinyon pine, limber pine, Shumard oak, Buckley's oak, pecan, and other species. We are concentrating mostly on regionally native species, but we'll also have our eyes out for uncommon urban survivors already growing in our communities.

# A GIFT THAT KEEPS GIVING

*"He knew NFS would have the knowledge. He was happy to see John and university students out there, hand-planting trees."*

Doug Carr, NU Foundation

He had only just graduated from the University of Nebraska, but when William "Buck" Gabelman heard news of the attacks on Pearl Harbor, he immediately enlisted in Midshipmen's School at Notre Dame University. For the next several years, he served on the USS Nicholas as a communications assistant, and then officer, in the Pacific Ocean Theater during World War II.

Several years following the war's conclusion, Gabelman once again found himself in the Far East. This time, however, it was to help Japan's Ministry of Agriculture deal with the country's worst onion blight in years. His research developing hybrid germplasm in onions would almost single-handedly save the country's crop industry. Now, if you eat an onion exported from Japan (which is likely), it almost certainly descended from his hybrid. His work later extended to several other countries, and virtually every consumer of beets, carrots, and onions has benefited from his breeding program.

That's not his only gift that has kept on giving.



After a storied career in academia and research at the University of Wisconsin-Madison, Gabelman returned to his and his wife Alberta's home state of Nebraska and became a major donor to the University of Nebraska. One of those donations included Timmas State Farm Ecological Preserve, located on 120 acres adjacent to the Missouri River's bluffs. Following the historic flooding of the river in 2011, Gabelman asked Nebraska Forest Service (NFS) staff to look at the property.

"It had just flooded and was somewhat in disrepair," recalled Doug Carr, Development Director for the Institute of Agriculture and Natural Resources and NU Foundation. "It was overgrown with invasive reed canary grass."

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But where there was a problem, Buck was keen to find a solution.

He and NFS staff set out on an ambitious plan to not just remove the grass, but to revive native species that once flourished in the area. A landscape restoration grant awarded by the USDA helped set the wheels in motion.


“He knew NFS would have the knowledge. He was happy to see John Erixson and university students out there, hand-planting trees and spending a lot of time there . . . He had seen what good his own research in the past had done for people. He wanted this place to be no different.”

NFS staff began eliminating the invasive grass, prepping it for re-planting in 2015. Over 28,000 willows and 6,000 cottonwood and sycamore trees—once abundant in the area—were reintroduced in the spring. In 2016, NFS foresters found nearly 85% survival of the cottonwood and sycamore trees and greater than 85% survival of the willows.

Since management efforts began, nearly 90% of the reed canary grass has been eradicated.

“So often, pesticides and mechanical control methods are the means to control invasive species,” said Andrew Zahn, NFS Forest Properties Supervisor. “While at times effective, these methods can leave a wake of disturbance to the natural environment, leading to other invasive species filling the void. The use of native tree species to act as a biological control, mainly through shading out the reed canary grass, serves as a useful example of how unconventional ideas can sometimes be the best solution to an invasive species problem.”

Gabelman passed away this year on June 11, at 101 years old. And, although his legacy reaches far beyond Nebraska, his impact certainly still resonates at Timmas Farm today.



Timmas Farm State Ecological Preserve is an important research and testing site for practical landscape scale restoration practices.



# UTILIZE

*... the opportunities that forested areas present for economic development while protecting sustainability*

The NFS is firmly committed to leading the state in sustaining and improving Nebraska's tree and forest resources. We accomplish this by caring for and utilizing these resources wisely and helping develop the people who will steward them now and in the future.

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“The Nebraska Forest Service's Conservation Education program provided valuable experiential learning opportunities for my UNK elementary level preservice teachers. They made connections to our course objectives using the lens of soon-to-be teacher”

DENA HARSHBARGER, PROFESSOR OF  
EDUCATION, UNK

# NO WASTE OF ENERGY

The Nebraska Forest Service has spent nearly 10 years testing and analyzing biochar. Now we're contributing \$100,000 to the Lincoln Biochar Initiative.

Like so many other Nebraska communities, Lincoln has sought ways to deal with the impact of emerald ash borer (EAB). NFS estimates there are 38,000 – 45,000 ash trees in Lincoln. With their removal, the City of Lincoln and the Nebraska Forest Service (NFS) have been discovering innovative ways to utilize downed ash trees.

They've provided wood to Lincoln Public Schools for low-income students to use in their industrial tech classes; and the Nebraska Department of Corrections used the wood for inmates to design a room for the Honu Home—a residence for parolees struggling with mental health issues. The latter project earned a top five spot in a local design competition.

Accolades aside, it didn't take long for city officials and NFS staff to recognize the root of the wood utilization problem went much deeper.

"While we've made significant progress, we've only been able to utilize a small percentage of those ash trees," says City of Lincoln Sustainability and Compliance Administrator, Frank Uhlarik.

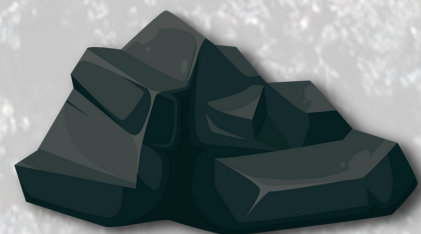
Of the 6,130 tons of woody biomass removed annually, 1,450 tons get processed into mulch, 220 tons are used for wood products, and 4,460 tons are transported to landfills, primarily to be utilized in the City's composting program. Wood and other organic materials break down quickly in landfills, gradually releasing captured carbon back into the atmosphere.

"We knew we had to get creative and begin looking for additional uses," says Uhlarik.

The City of Lincoln, Nebraska Forest Service, University of Nebraska-Lincoln, Lincoln Solid Waste Management Division, Lincoln Wastewater System, Lincoln Parks and Recreation Department, and the Natural Resource Conservation Service honed in on a potential solution: Biochar.



**Biochar is charcoal produced from plant matter and stored in the soil as a means of removing carbon dioxide from the atmosphere.**



Biochar is a pure carbon product made from organic material. It's produced through a process called pyrolysis. Pyrolysis is the decomposition of organic matter at very high temperatures in the absence of oxygen. It changes the chemical structure of the organic matter undergoing the process. The benefits of biochar are far-reaching and include carbon sequestration, improvements in plant growth and yield, enhancing soil structure, and reducing burning and landfilling of agricultural and forestry wastes.

"By creating biochar from the removed trees and other urban wood waste, we can put these trees back to work for the community and surrounding areas by addressing critical climate-related environmental challenges, including soil health and water quality," says NFS Forestry and Fire Bureau Chief, Adam Smith.

Biochar production would redirect EAB removal trees from the landfill and compost to community-beneficial applications with a side advantage of improving long-term carbon storage.

In June, Lincoln was one of seven American and European cities selected by Bloomberg Philanthropies to receive up to \$400,000 in money and technical assistance for a large-scale project to begin turning the city's wood waste into biochar—along with \$100,000 contributed by NFS. Lincoln will now build its first biochar production facility working closely with the Nebraska Forest Service, the University of Nebraska, and other stakeholders. The City is currently completing a feasibility study and design work for a processing facility which is scheduled to be operational by the summer of 2023. The University of Nebraska and NFS have spent nearly 10 years testing and analyzing biochar.

"Without the insights and experience NFS has had with biochar, we wouldn't have been in the running for the Bloomberg grant," says Uhlarik. "Also, the \$100,000 NFS is providing for the feasibility study is huge. It all presents us with an opportunity to make a real difference here in Lincoln."



**Biochar was applied to Lincoln's Sunken Gardens in spring of 2022**

NFS Forester Chrissy Land talks trees at a recent planting event in Hershey. Most smaller Nebraska communities don't have a dedicated forester on staff.



# HIT THE GROUND RUNNING

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30 days to complete a tree inventory? No problem. Gothenburg did it in two weeks.

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The early bird gets the worm.

"Or in this case, it's the grant," jokes NFS Community Forester Chrissy Land.

For the past year, Land has helped western Nebraska towns conduct tree inventories. Having an updated tree inventory gives communities an edge when applying for planting grants and funding. Considering the inevitable arrival of the emerald ash borer and thousands of dead ash trees in Nebraska, that's huge.

"These Nebraska towns and villages rely on grants to help fund replanting projects," says Land.

"Often times it's the only way they can hope to replace community trees."

Developing or updating a tree inventory is no small feat. It takes time and resources. Most smaller Nebraska communities don't have a dedicated forester on staff. That has meant that other municipal employees or volunteers stepped up to fill the gap.

For Lexington, it was the Assistant City Administrator. In Sidney and McCook, it was the city parks staff. In Gothenburg, it was the City Lineman, Kasey Bogus.

"It was certainly daunting at first," says Bogus.

Bogus and other trainees typically spent a day shadowing Land, learning tree identification methods and how to use the NFS statewide inventory software. From there, the challenge was to complete an inventory in 30 days. Land provided additional support, remotely.

Bogus one-upped them. With the help of Gothenburg's Park's Director, Noah Deah, he completed the town's inventory in two and a half weeks.

"It was remarkable," says Land. "I'm really proud of them."

Other communities soon followed suit. Sidney, McCook, Gordon, and Ogallala are among communities who have completed their inventories and plan to develop an Emerald Ash Borer Response Plan in collaboration with NFS. Perhaps more importantly, it also puts them in a prime position to apply for and receive tree planting grants from organizations including NFS and the Arbor Day Foundation.

"Without Chrissy, I don't know how we'd even begin" says Bogus. "She helped us get started. Once that happened, we got it done quickly and effectively."



# 'TREE TRUNKS' BRING NATURE EDUCATION TO SCHOOLS

Our goal is to provide unique environmental learning opportunities for both teachers and their students, in order to inspire the next generation of tree planters in our great state

Are students in your community missing out on good, old-fashioned field trips? In these days of strained school budgets and increasing demands on teachers' time and resources, field trips are becoming less frequent or even out of reach for some Nebraska schools.

Thanks to a new Nebraska Forest Service (NFS) program, teachers can now bring conservation education directly into the classroom. Activity kits—aptly called 'Tree Trunks'—are available for check-out by local teachers, educators, and the public from Affiliate Education Centers currently being established statewide.



The trunks provide Project Learning Tree and Project WET (Water Education Today) materials to area educators and residents. Each kit includes curricula and materials to lead environmental education lessons with students. Trunks are available for grades K-8 (meets Nebraska K-8 Science Standards) and early childhood/pre-school/K-2 kits for educators who work with children ages 1-8 in any setting.

Project Learning Tree uses forests as a 'window to the world' to increase understanding of our complex environment.

Project WET advances water education to foster understanding of global challenges and inspire local solutions. Both programs cultivate awareness and appreciation for Nebraska's natural resources while stimulating the ability to make informed decisions on environmental issues, the commitment to take responsible action, and the aptitude to select sustainable choices to conserve these resources for future generations.

An NFS-certified Affiliate Education Center is a special designation for museums, nature centers, and other educationally-invested organizations that are focused on environmental and STEM (science, technology, engineering, and math) education. Current Affiliate Education Centers are located in Columbus, Gering, Hastings, Lincoln, Omaha, Ponca, and Trenton.

# NFS SHINES IN CONSERVATION EDUCATION

The Nebraska Forest Service is rapidly becoming a national leader in conservation education. With enthusiasm and creativity, the Conservation Education program is adapting the program to challenges such as the pandemic and school budget limitations and is finding new and innovative paths forward.

Each year the Nebraska Forest Service strives to bring quality conservation and environmental professional development and resources to educators throughout the Cornhusker state. This is primarily achieved through managing the Project Learning Tree and Project WET programs in Nebraska. As the state sponsor for these programs, NFS creates professional learning events that meet the needs of Nebraska educators, connects curriculum resources to our local landscapes and natural resource issues, as well as coordinates the activities of several partner organizations who help support these programs.



“The kindergarteners of today in thirteen years will become the voters of tomorrow” said Jack Hilgert, Conservation Education Coordinator at NFS who serves as State Coordinator for Project Learning Tree and Project WET.

Project Learning Tree and Project WET provide Nebraska educators with quality, trusted lesson plans and curriculum materials which teach students how to approach the complex issues which face our state’s trees, forests, and environments both new and in the future while also empowering youth to employ critical-thinking and problem-solving skills to design creative stewardship solutions.



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In 2022, NFS and its network of statewide partners trained 753 educators to utilize Project Learning Tree and Project WET with over 50,000 students. More than one in ten Nebraska youth was educated about their local trees and environment through a PLT or WET lesson during 2022.

"The Nebraska Forest Service's Conservation Education program provided valuable experiential learning opportunities for my UNK elementary level preservice teachers," said Dena Harshbarger, a Professor of Education at the University of Nebraska at Kearney. "They made connections to our course objectives using the lens of soon-to-be teacher."

Now more than ever, quality conservation and environmental education to prepare Nebraska youth for the complex problems that our natural resources face in the future. As NFS looks to progressively shape the future of tree and forest stewardship, cultivation of these Conservation Education programs is critical to informing youth who will become the future foresters, voters, educators, landowners, leaders, and conservation stewards in Nebraska.



# FOREST FEST A SUCCESS

As if on cue, a picture-perfect early autumn day materialized in southeast Nebraska. A cool breeze filtered through the trees at Horning State Farm Demonstration Forest as hundreds of people descended on the property for the 2022 Forest Festival Family Fun Night.

"Just having everyone here again feels good," said NFS Communication Specialist Ben Bohall. "I missed seeing all the smiling faces and the chance to connect with the public."

In 2019, the annual event experienced its most successful year to date, with roughly 850 people attending. It marked a significant increase over 2018's attendance of 200 people. Although staff was eager to build onto its success in 2020, the pandemic happened and NFS was forced to make the best of an all-virtual event for the next two years.

"We did what we could remotely with the resources we had," added NFS Conservation Education Coordinator Jack Hilgert. "It wasn't ideal, but we made the best of it with activities such as Storytime readings and s'mores via Zoom."

This year marked a return to form as staff held the event in person, once again, bringing in over 30 natural resources partners to provide educational and fun outdoor activities. Increasing capacity proved a logistical hurdle that NFS Properties specialists Aaron Clare and Andrew Zahn tackled enthusiastically.



Activities included trail hiking, tree-climbing, archery, wildlife encounters, hayrack rides, kids' games, nature scavenger hunts, and more. Staff also served up 1,200 hot dog meals for hungry patrons. Best of all, it was entirely free to the public.

"I don't think I've ever been to an event like this where every single staff member was incredibly nice and happy to be there," said Omaha resident and attendee Arielle Miller. "The lines were only long because they gave everyone the same experience without feeling rushed. We all had a great time!"

All told, 950 people from towns and cities including Weeping Water, Nebraska City, Plattsmouth, Omaha, and Lincoln attended the event.

# Weeds, Trees, and Feed



To manage invasive grasses and bring back native Nebraska tree species, Nebraska Forest Service Forestry Properties Manager Aaron Clare and his team planted over 28,000 willow trees, as well as 6,000 sycamore and cottonwood trees, at the Timmas Farm Ecological Preserve in spring, 2015.

"The important thing was to re-establish the [native] cottonwoods and sycamores because they died in the [2011] flood. They lined the Missouri River before the flood happened," Clare said.

The native cottonwood and sycamore trees also thrived—and currently thrive—at an 85 percent success rate at Timmas, but the willow trees, which thrived more than the native tree species, were only planted to act as a temporary holding spot while the cottonwood and sycamore trees grew back toward the Missouri Riverbank.

"The willow trees were just sitting there," Clare said. "While native to the Timmas area, the willows are becoming overgrown so we came up with a unique solution to deal with it."

Dakota Wagner is the Browse Team lead at the Henry Doorly Zoo in Omaha, NE. The Browse Team diverts tree material statewide and turns this vegetation into essential nutrients to nutritionally and behaviorally benefit animals at the zoo, such as giraffes, elephants, and great apes.

Wagner and Clare reached an agreement that would benefit both the animals at the Henry Doorly Zoo and the Timmas forest management team—harvesting the willow trees.

"[The] willow [species] is a huge favorite of almost all our animals," Wagner said. "These branches are a great source of entertainment for the animals and also allows them to exhibit natural feeding behavior."

The willow trees are cut to a quarter of their height and harvested in rotation to promote regeneration. The trimmed branches are then stored in 55-gallon drums for feed use at the zoo.

"We're excited to see how this project evolves," Clare said. "It's good when one can find a secondary beneficial use for something that was already beneficial. It benefits the community, and animals, too."

Clare states that he, Wagner, and the Browse Team will continue to work together to ensure that the animals at the Henry Doorly Zoo are both enriched and fed.

# 2022 GRANT AWARDS AND FINANCIALS

*Through grant funding and leveraging its role within the Institute of Agriculture and Natural Resources at the University of Nebraska-Lincoln, we are able to enrich the lives of Nebraskans by increasing the value, condition, and use of the state's trees and forests.*

## Wildland Urban Interface Grants

### **Pine Ridge State (\$300K)**

**Awarded by USDA Forest Service**

**Scope:** The Pine Ridge area has a varied land-ownership demographic with private, state (Nebraska Game and Parks Commission, Nebraska Board of Educational Lands and Funds), and federal (US Forest Service) land intermingled across the landscape.

This project will treat hazardous fuels in state-owned Wildlife Management Areas (WMAs) and State Parks in the Pine Ridge CWPP Region. Trees will be thinned, ladder fuels will be removed, and fuel breaks will be established to help address this hazard on these state-owned lands.

### **Cedar-Dixon-Knox WUI Complex (\$300K)**

**Awarded by USDA Forest Service**

**Scope:** This project will implement forest fuel reduction in areas prioritizing human safety, property protection, and landscape connectivity. The project focuses on thinning along roads, creating fuel breaks, removing cedar from hardwood understory, and reducing canopy cover. We will create defensible space in and around communities within the Missouri River Northeast CWPP Region. The work will include creating fuel breaks by targeting coniferous and mixed forests (pure juniper stands or mixed deciduous/juniper stands) in and around recreation areas and rural subdivisions.

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### **Nebraska's Missouri River Bluffs Fuels Reduction (\$300K)**

**Awarded by USDA Forest Service**

**Scope:** This project will expand hazardous fuels reduction efforts in the Missouri River Bluffs region of Nebraska in accordance with the Missouri River Northeast, Middle Northeast, and Missouri River East Community Wildfire Protection Plans (CWPPs). The project will create defensible space around structures by treating adjacent vegetation, removing ladder fuels, protecting critical road access, and creating space between trees. The work will include creating fuel breaks by targeting coniferous and mixed forests (pure juniper stands or mixed deciduous/juniper stands) in and around recreation areas and rural subdivisions. Project locations prioritize human safety, infrastructure protection, and landscape connectivity.

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### **SUSTAINABLE URBAN FOREST RESILIENCY GRANT**

**An Equitable Response to EAB (\$482,892K)**

**Awarded by USDA Forest Service**

**Scope:** This project engages the NFS and the City of Lincoln in a collaborative effort to respond to Emerald Ash Borer impacts within the community. A holistic approach to address the challenge, particularly in Low- and Moderate-Income (LMI) neighborhoods and underserved residents. This project will: 1) Remove and replace ash trees, 2) Implement ash treatment program to retain high-quality trees growing on private LMI properties, 3) Plant and establish street trees and increase canopy in LMI neighborhoods.

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### **COMMUNITY ASSISTANCE FUNDS ADJACENT TO NATIONAL FOREST LANDS**

**Deadman Creek (\$256K)**

**Awarded by USDA Forest Service**

**Scope:** The project area is bordered by a State highway and by either a watershed boundary or county roads. It contains the entire 5,600-acre burn footprint of the September 2021 'Post Fire.'

This project prioritized creating strategically-located fuel breaks within or near the fire footprint. The fire-killed trees not harvested in the salvage efforts is the focus of this project.

## **LANDSCAPE SCALE RESTORATION**

### **Community Threat Assessment Protocol (CTAP 2) Awarded by USDA Forest Service (\$300K)**

**Scope:** The Community Threat Assessment Protocol (CTAP 2) engages CO, KS, and NE in a collaborative effort to identify and respond to rural community forests' threats and improve long-term resiliency. Rural communities face limited budgets and capacity, aging forests, environmental challenges including drought and severe storms, and a lack of information with which to manage their tree resources.

CTAP 2 will integrate new inventory and assessment data into proven management strategies. The project emphasizes cross-boundary and cross-sector collaboration among government entities, non-profits, extension, and private industry toward the completion of tree inventories, tree canopy assessments, management plans, and training workshops.

### **Community Small Projects, Wide Reach Awarded by USDA Forest Service (\$300K)**

**Scope:** Nebraska's trees are declining through a wide range of threats. This threat is compounded by the limited capacity in our communities resulting in Nebraska experiencing the 3rd highest tree canopy loss in the nation. The NFS Forest Action Plan identifies the goal of improving blighted areas as an opportunity to impact disadvantaged communities in a positive way. With the decline in the community tree canopy, a loss in these social, economic, and environmental benefits is inevitable. This project links sustainability and green infrastructure to financial and technical resources to improve and manage community tree canopy.

### **Wildland Volunteer Fire Assistance: (\$325K) Awarded by USDA Forest Service**

**Scope:** With funding through the US Forest Service and the Nebraska Forest Service, the grant provided 75/25 cost-share grants to volunteer fire departments across the state. The program funds purchased specific wildland fire-fighting PPE and gear to increase the department's wildland fire-fighting capacity. The grant focuses on expanding the department's capabilities by buying wildland fire clothing, personal protective gear and fire shelters, and wildland fire hand tools. Only department current on their wildland fire reporting qualified for this program.

### **Volunteer Fire Assistance Grants: (\$265K) Awarded by USDA Forest Service**

**Scope:** With funding through the US Forest Service, the Nebraska Forest Service provides 50/50 cost-share grants to volunteer fire departments across the state. The grant program funds go to local fire districts to purchase materials and equipment to increase the department's capacity. The grant focuses on expanding the department's capabilities through equipment purchases, training, and prevention activities. To qualify, departments must be current on their wildland fire reporting. Departments may purchase radios, protective clothing, self-contained breathing apparatus, and/or other fire-fighting equipment.

### **Nebraska Invasive Plant Management Grants (\$15k) Awarded by USDA Forest Service**

#### **Awarded by USDA Forest Service**

**Scope:** This grant helps fund suppression treatments of invasive (non-native) species on nonfederal lands. The benefit to the National Forest System is that invasive species are removed on lands adjacent to the national forest. Match funds include volunteer contributions, salary expenses, herbicide, equipment, mileage, and supplies.

### **Community Wildfire Defense Grant (\$50K) Awarded by USDA Forest Service**

#### **Awarded by USDA Forest Service**

**Scope:** This grant provides funding to the Nebraska Forest Service to assist communities and partners in the development of grant proposals. NFS provides Technical assistance to determine eligibility, education and outreach to promote the program, help with preparing applications, and aid in determining the "at risk" qualification needed for the program.

### **Forest Legacy (\$25K) Awarded by USDA Forest Service**

#### **Awarded by USDA Forest Service**

**Scope:** The project intends to protect forestland from fragmentation, subdivision, development, or conversion to non-forest use. This program is one of several strategies to protect the integrity of forest lands for timber and non-timber benefits.







# GRANTS/COST-SHARE AWARDED TO NEBRASKA FOREST SERVICE PARTNERS IN 2022

County	Community	Organization/Project	FEPP/FFP*	
			Grant Amount	Replacement Value
Douglas	Bennington	Bennington Rural Fire District	3,480	315,000
Douglas	Valley	Valley Rural Fire District		1,600,000
Douglas	Waterloo	Waterloo Rural Fire District		130,000
<b>Douglas Total</b>			<b>3,480</b>	<b>2,045,000</b>
Dundy	Benkelman	Benkelman Rural Fire District		200,000
Dundy	Haigler	Haigler Rural Fire District		355,000
<b>Dundy Total</b>			<b>0</b>	<b>555,000</b>
Fillmore	Exeter	Exeter Rural Fire District		198,000
Fillmore	Fairmont	Fairmont Rural Fire District		198,000
Fillmore	Milligan	Milligan Rural Fire District		225,000
Fillmore	Ohiowa	Ohiowa Rural Fire District	4,000	225,000
Fillmore	Shickley	Shickley Rural Fire District		16,000
<b>Fillmore Total</b>			<b>4,000</b>	<b>862,000</b>
Franklin	Campbell	Campbell Rural Fire District	3,750	605,000
Franklin	Franklin	Franklin Rural Fire District	5,625	52,000
Franklin	Hildreth	Hildreth Rural Fire District	7,500	200,400
Franklin	Riverton	Riverton Rural Fire District		254,000
Franklin	Upland	Upland Rural Fire District		405,000
<b>Franklin Total</b>			<b>16,875</b>	<b>1,516,400</b>
Frontier	Curtis	Curtis Rural Fire District		362,000
Frontier	Eustis	Eustis Rural Fire District		757,000
Frontier	Maywood	Maywood-Wellfleet Rural Fire District		59,500
<b>Frontier Total</b>			<b>0</b>	<b>1,178,500</b>
Furnas	Arapahoe	Holbrook-Edison-Arapahoe Rural Fire District	9,625	252,800
Furnas	Beaver City	Beaver City Volunteer Fire District	6,435	332,000
Furnas	Cambridge	Cambridge Rural Fire District	7,500	64,000
Furnas	Edison	Holbrook-Edison-Arapahoe Vol. Fire District	2,367	69,000
Furnas	Holbrook	Holbrook-Edison-Arapahoe Rural Fire District	3,750	198,000
Furnas	Oxford	Oxford Rural Fire District	5,625	1,031,400
Furnas	Wilsonville	Wilsonville-Hendley Rural Fire District	7,500	56,000
<b>Furnas Total</b>			<b>42,802</b>	<b>2,003,200</b>
Gage	Adams	Adams Rural Fire District		30,000
Gage	Barneston	Barneston Rural Fire District	4,486	437,400
Gage	Blue Springs	Blue Springs Rural Fire District		310,000
Gage	Clatonia	Clatonia Rural Fire District		39,000
Gage	Cortland	Cortland Rural Fire District		25,000
Gage	Odell	Odell Rural Fire District		129,000
Gage	Wymore	Wymore Volunteer Fire & Rescue District	6,150	68,000
<b>Gage Total</b>			<b>10,636</b>	<b>1,038,400</b>
Garden	Lewellen	Blue Creek Rural Fire District		552,000
Garden	Oshkosh	Garden County Fire District		429,000
Garden	Rackett	Rackett Rural Fire District		478,000
<b>Garden Total</b>			<b>0</b>	<b>1,459,000</b>
Garfield	Burwell	Burwell Rural Fire District		314,000
<b>Garfield Total</b>			<b>0</b>	<b>314,000</b>
Gosper	Elwood	Elwood - Gosper Vol. Fire Dept.	10,903	
Gosper	Elwood	Gosper County Rural Fire District		589,000
<b>Gosper Total</b>			<b>10,903</b>	<b>589,000</b>
Grant	Hyannis	Sandhills Rural Fire District	9,011	314,000
<b>Grant Total</b>			<b>9,011</b>	<b>314,000</b>
Greeley	Greeley	Greeley Rural Fire District	4,000	491,000
Greeley	Scotia	Scotia Rural Fire District		18,000
Greeley	Spalding	Spalding Rural Fire District		159,000
Greeley	Wolbach	Wolbach Rural Fire District		124,000
<b>Greeley Total</b>			<b>4,000</b>	<b>792,000</b>
Hall	Cairo	Cairo Rural Fire District		137,000
Hall	Doniphan	Doniphan Rural Fire District		325,000
Hall	Grand Island	NSVFA - Fire School		11,900
<b>Hall Total</b>			<b>0</b>	<b>473,900</b>
Hamilton	Aurora	Aurora Rural Fire District	4,000	814,000
Hamilton	Giltner	Giltner Volunteer Fire District	2,700	750,000
Hamilton	Hampton	Hampton Volunteer Fire District	2,800	198,000
Hamilton	Hordville	Hordville Rural Fire District		523,000
Hamilton	Marquette	Marquette Rural Fire District		613,800
Hamilton	Phillips	Phillips Rural Fire District		325,000
Hamilton		Landowners**	15,903	
<b>Hamilton Total</b>			<b>25,403</b>	<b>3,223,800</b>
Harlan	Alma	Alma Rural Fire District		310,000
Harlan	Orleans	Orleans Rural Fire District	6,370	1,103,000
Harlan	Stamford	Stamford Rural Fire District		360,000
<b>Harlan Total</b>			<b>6,370</b>	<b>1,773,000</b>
Hayes	Hayes Center	Hayes County Rural Fire District	3,030	458,000
<b>Hayes Total</b>			<b>3,030</b>	<b>458,000</b>
Hitchcock	Palisade	Palisade Rural Fire District	4,000	558,000
Hitchcock	Stratton	Stratton Rural Fire District		257,200
<b>Hitchcock Total</b>			<b>4,000</b>	<b>815,200</b>

County	Community	Organization/Project	FEPP/FFP*	
			Grant Amount	Replacement Value
Holt	Atkinson	Atkinson Rural Fire District	11,500	20,000
Holt	Chambers	Chambers Rural Fire District		180,000
Holt	Ewing	Ewing Rural Fire District		12,000
Holt		Holt County Rural Fire District		57,000
Holt	O'Neill	O'Neill Rural Fire District	7,750	638,300
Holt	Page	Page Rural Fire District		260,000
Holt	Stuart	Stuart Rural Fire District	4,783	220,000
Holt		Landowners**	87,347	
<b>Holt Total</b>			<b>111,380</b>	<b>1,387,300</b>
Hooker	Mullen	Mullen Rural Fire District		248,000
<b>Hooker Total</b>			<b>0</b>	<b>248,000</b>
Howard	Boelus	Boelus Rural Fire District		585,000
Howard	Dannebrog	Dannebrog Rural Fire District		218,000
Howard	Elba	Elba Rural Fire District		64,200
Howard	Farwell	Farwell Rural Fire District		234,000
<b>Howard Total</b>			<b>0</b>	<b>1,101,200</b>
Jefferson	Diller	Diller Rural Fire District		64,000
Jefferson	Fairbury	Fairbury Rural Fire Department	7,265	
Jefferson	Jansen	Jansen Rural Fire District #9		12,000
Jefferson	Plymouth	Plymouth Rural Fire District	10,500	209,000
<b>Jefferson Total</b>			<b>17,765</b>	<b>285,000</b>
Johnson	Cook	Cook Rural Fire District	5,220	56,000
Johnson	Sterling	Sterling Rural Fire District	7,500	143,000
<b>Johnson Total</b>			<b>12,720</b>	<b>199,000</b>
Kearney	Axtell	Axtell Rural Fire District		1,229,000
Kearney	Minden	Minden Volunteer Fire Department	5,625	
Kearney	Wilcox	Wilcox-Ragan Rural Fire District	9,625	278,000
<b>Kearney Total</b>			<b>15,250</b>	<b>1,507,000</b>
Keith	Brule	Brule Rural Fire District	7,571	278,000
Keith	Keystone	Keystone-Lemoyne Vol. Fire & Rescue	830	
Keith	Keystone	Ogallala Rural Fire District		951,500
Keith	Paxton	Paxton Rural Fire District		473,000
Keith		Landowners**	32,200	
<b>Keith Total</b>			<b>40,601</b>	<b>1,702,500</b>
Keya Paha	Springview	Keya Paha Rural Fire District		378,000
Keya Paha		Landowners**	84,773	
<b>Keya Paha Total</b>			<b>84,773</b>	<b>378,000</b>
Kimball	Bushnell	Bushnell-Johnson Rural Fire District	6,521	160,000
Kimball	Dix	Dix Rural Fire District		68,000
<b>Kimball Total</b>			<b>6,521</b>	<b>228,000</b>
Knox	Creighton	Creighton Rural Fire District		319,000
Knox	Crofton	Crofton Rural Fire District		315,600
Knox	Niobrara	Niobrara Rural Fire District		386,000
Knox		Landowners**	552,263	
<b>Knox Total</b>			<b>552,263</b>	<b>1,020,600</b>
Lancaster	Bennet	Bennet Rural Fire Department	4,000	
Lancaster	Firth	Firth Rural Fire District		52,000
Lancaster	Hickman	Hickman Rural Fire District	3,754	290,000
Lancaster	Lincoln	Southeast Rural Fire District		285,000
Lancaster	Raymond	Raymond Volunteer Fire & Rescue	11,500	
Lancaster	Waverly	Waverly Rural Fire District		640,000
Lancaster		City of Lincoln (Biochar Initiative)	26,590	
<b>Lancaster Total</b>			<b>45,844</b>	<b>1,267,000</b>
Lincoln	Hershey	Hershey Rural Fire District	9,625	80,800
Lincoln	Maxwell	Maxwell Rural Fire District		798,800
Lincoln	North Platte	Lincoln County Dive Rescue District		12,000
Lincoln	North Platte	North Platte Rural Fire District	3,824	12,000
Lincoln	Sutherland	Sutherland Rural Fire District		326,800
Lincoln	Wallace	Wallace Rural Fire District		1,291,600
Lincoln		Landowners**	257,233	
<b>Lincoln Total</b>			<b>270,682</b>	<b>2,522,000</b>
Logan	Stapleton	Stapleton Rural Fire District		1,405,800
<b>Logan Total</b>			<b>0</b>	<b>1,405,800</b>
Loup		Region 26 Emergency Management District		155,000
Loup	Taylor	Loup County Rural Fire District		237,000
<b>Loup Total</b>			<b>0</b>	<b>392,000</b>
Madison	Battle Creek	Battle Creek Volunteer Fire Department	7,625	
Madison	Meadow Grove	Meadow Grove Vol. Fire & Rescue	3,820	
Madison		Landowners**	177	
<b>Madison Total</b>			<b>11,622</b>	<b>0</b>
McPherson	Tryon	McPherson County Rural Fire District		136,000
<b>McPherson Total</b>			<b>0</b>	<b>136,000</b>
Merrick	Central City	Central City Rural Fire District		260,000
Merrick	Chapman	Chapman Rural Fire District		643,000
Merrick	Palmer	Palmer Rural Fire District		198,000
Merrick	Silver Creek	Silver Creek Rural Fire District		168,000
<b>Merrick Total</b>			<b>0</b>	<b>1,269,000</b>

# GRANTS/COST-SHARE AWARDED TO NEBRASKA FOREST SERVICE PARTNERS IN 2022

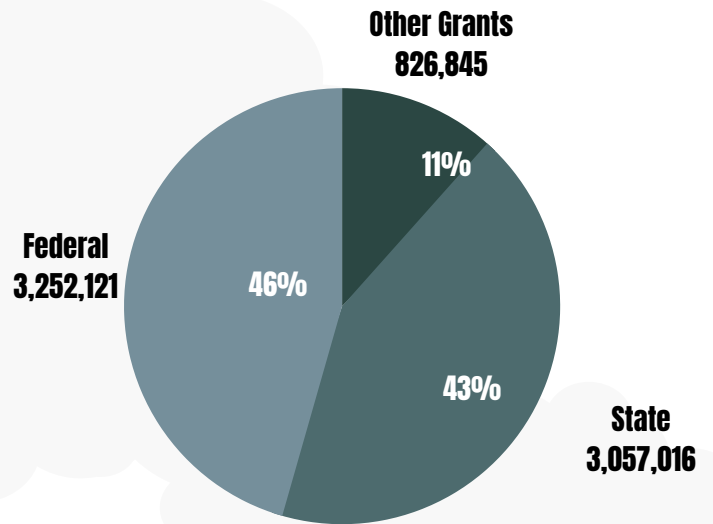
County	Community	Organization/Project	FEPP/FFP*	
			Grant Amount	Replacement Value
Morrill	Bridgeport	Bayard Volunteer Fire Department	4,080	
Morrill	Bridgeport	Bridgeport Rural Fire District		524,000
Morrill	Broadwater	Broadwater Rural Fire District	7,750	714,000
<b>Morrill Total</b>			<b>11,830</b>	<b>1,238,000</b>
Nance	Belgrade	Belgrade Rural Fire District		784,800
Nance	Fullerton	Fullerton Rural Fire District		462,000
Nance	Genoa	Genoa Fire Department	855	
Nance		Nance County Emergency Management Fire District		52,000
Nance		Landowners**	4,740	
<b>Nance Total</b>			<b>5,595</b>	<b>1,298,800</b>
Nemaha	Julian	Brock-Julian Rural Fire District		281,000
Nemaha	Nemaha	Nemaha Rural Fire District		338,000
Nemaha	Peru	Peru Volunteer Fire Department	8,030	
<b>Nemaha Total</b>			<b>8,030</b>	<b>619,000</b>
Nuckolls	Hardy	Hardy Rural Fire District		325,000
Nuckolls	Lawrence	Lawrence Rural Fire District		326,800
Nuckolls	Ruskin	Ruskin Rural Fire District		452,000
Nuckolls	Superior	Superior Rural Fire District		225,000
<b>Nuckolls Total</b>			<b>0</b>	<b>1,328,800</b>
Otoe	Douglas	Douglas Volunteer Fire District	2,126	12,000
Otoe	Dunbar	Dunbar Rural Fire District		198,000
Otoe	Syracuse	Syracuse Rural Fire District		155,000
Otoe	Unadilla	Unadilla Rural Fire District		52,000
<b>Otoe Total</b>			<b>2,126</b>	<b>417,000</b>
Pawnee	Burchard	Burchard Rural Fire District		225,000
Pawnee	DuBois	DuBois Rural Fire District		984,000
Pawnee	Pawnee City	Pawnee City Rural Fire District		55,000
<b>Pawnee Total</b>			<b>0</b>	<b>1,264,000</b>
Perkins	Grant	Grant Fire District	2,966	198,000
Perkins	Madrid	Madrid Rural Fire District		551,000
Perkins	Venango	Venango Rural Fire District		190,000
<b>Perkins Total</b>			<b>2,966</b>	<b>939,000</b>
Phelps	Bertrand	Bertrand Volunteer Fire Department	5,115	
Phelps	Funk	Funk Rural Fire District		326,800
Phelps		Phelps County Emergency Management District		12,000
<b>Phelps Total</b>			<b>5,115</b>	<b>338,800</b>
Pierce	Hadar	Hadar Rural Fire District		408,100
Pierce	Pierce	Pierce Fire Department	1,847	
Pierce	Plainview	Plainview Volunteer Fire Department	7,495	
<b>Pierce Total</b>			<b>9,342</b>	<b>408,100</b>
Platte	Columbus	Columbus Rural Fire District		12,000
Platte	Monroe	Monroe Rural Fire District		948,000
Platte	Platte Center	Platte Center Rural Fire District		61,000
Platte		Platte County Emergency District		155,000
<b>Platte Total</b>			<b>0</b>	<b>1,176,000</b>
Polk	Osceola	Osceola Rural Fire District		2,942,600
Polk	Polk	Polk Rural Fire District	2,170	923,500
Polk	Stromsburg	Stromsburg Rural Fire District	4,000	2,162,000
<b>Polk Total</b>			<b>6,170</b>	<b>6,028,100</b>
Red Willow	Bartley	Bartley Rural Fire District		83,000
Red Willow	Danbury	Danbury Rural Fire District		124,000
Red Willow	Indianola	Indianola Rural Fire District		258,000
Red Willow	Lebanon	Beaver Valley Rural Fire District		57,000
Red Willow	McCook	Red Willow Western Rural Fire District	9,250	315,200
<b>Red Willow Total</b>			<b>9,250</b>	<b>837,200</b>
Richardson	Falls City	Falls City Rural Fire District		310,000
Richardson	Humboldt	Humboldt County Rural Fire District	3,200	198,000
<b>Richardson Total</b>			<b>3,200</b>	<b>508,000</b>
Rock	Bassett	Gracy Rural Fire District		474,000
Rock	Bassett	Rock County Rural Fire District		804,000
Rock	Newport	Newport Rural Fire District		919,200
Rock		Landowners**	22,680	
<b>Rock Total</b>			<b>22,680</b>	<b>2,197,200</b>
Saline	Crete	Crete Volunteer Fire & Rescue	7,500	
Saline	DeWitt	Saline County Rural Fire District		113,000
Saline	Dorchester	Saline County Rural Fire District		498,650
Saline	Friend	Saline County Friend Fire District	4,000	567,000
Saline	Swanton	Swanton Volunteer Fire Department	8,245	
Saline	Tobias	Saline County Rural Fire District		225,000
Saline	Wilber	Saline County Rural Fire District		467,000
<b>Saline Total</b>			<b>19,745</b>	<b>1,870,650</b>
Sarpy	Springfield	Springfield Volunteer Fire Department	1,842	
<b>Sarpy Total</b>			<b>1,842</b>	<b>0</b>

County	Community	Organization/Project	FEPP/FFP*	
			Grant Amount	Replacement Value
Saunders	Ashland	Ashland Rural Fire District	11,500	762,000
Saunders	Cedar Bluffs	Cedar Bluffs Rural Fire District	11,350	873,700
Saunders	Ceresco	Ceresco Rural Fire District		20,000
Saunders	Colon	Colon Rural Fire District	8,025	325,000
Saunders	Ithaca	Ithaca Rural Fire District		256,000
Saunders	Malmo	Malmo Rural Fire District	4,000	879,000
Saunders	Mead	Mead Rural Fire District	4,000	551,000
Saunders	Morse Bluff	Morse Bluff Rural Fire District		270,000
Saunders	Prague	Prague Rural Fire District	8,909	
Saunders	Valparaiso	Valparaiso Rural Fire District		121,000
Saunders	Wahoo	Wahoo Volunteer Fire District		18,000
Saunders	Yutan	Yutan Rural Fire District		590,000
<b>Saunders Total</b>			<b>47,784</b>	<b>4,665,700</b>
Scotts Bluff	Gering	Gering Valley Rural Fire District	4,000	198,000
Scotts Bluff	Henry	Henry Volunteer Fire District		2,400
Scotts Bluff	Lyman	Lyman Volunteer Fire District		12,000
Scotts Bluff	Lyman	Lyman-Kiowa Rural Fire District		334,000
Scotts Bluff	Minatare	Minatare-Melbeta Rural Fire District	3,090	789,000
Scotts Bluff	Mitchell	Mitchell Rural Fire District	4,425	476,000
Scotts Bluff	Morrill	Morrill Fire District	4,000	198,000
Scotts Bluff	Scottsbluff	Scottsbluff County Mutual Aid	2,000	
Scotts Bluff	Scottsbluff	Scottsbluff Rural Fire District		278,000
<b>Scotts Bluff Total</b>			<b>17,515</b>	<b>2,287,400</b>
Seward	Cordova	Seward County Rural Fire District		198,000
Seward	Garland	Garland Volunteer Fire Department	4,000	
Seward	Goehner	Seward County Rural Fire District		254,000
Seward	Pleasant Dale	Seward County Rural Fire District		18,000
Seward	Staplehurst	Seward County Rural Fire District		130,800
Seward	Tamora	Seward County Rural Fire District		14,000
Seward	Utica	Seward County Rural Fire District		124,000
<b>Seward Total</b>			<b>4,000</b>	<b>738,800</b>
Sheridan	Gordon	Gordon Rural Fire District	6,510	319,000
Sheridan	Hay Springs	Hay Springs Rural Fire District		805,000
Sheridan	Lakeside	Heart of the Hills Rural Fire District		2,967,000
Sheridan	Rushville	Rushville Rural Fire District	7,500	668,000
Sheridan		Landowners**	88,066	
<b>Sheridan Total</b>			<b>102,076</b>	<b>4,759,000</b>
Sherman	Ashton	Ashton Rural Fire District		245,000
Sherman	Litchfield	Litchfield Rural Fire District		198,000
Sherman	Loup City	Loup City Rural Fire District		132,000
Sherman		Landowners**	51	
<b>Sherman Total</b>			<b>51</b>	<b>575,000</b>
Sioux	Harrison	Harrison Rural Fire District	11,500	1,316,800
Sioux		Landowners**	73,536	
<b>Sioux Total</b>			<b>85,036</b>	<b>1,316,800</b>
Stanton	Pilger	Pilger Fire District		198,000
Stanton	Stanton	Stanton Rural Fire District		401,000
<b>Stanton Total</b>			<b>0</b>	<b>599,000</b>
Thayer	Alexandria	Alexandria Rural Fire District		39,800
Thayer	Belvidere	Belvidere Rural Fire District		30,000
Thayer	Byron	Byron Rural Fire District		353,000
Thayer	Carleton	Carleton Rural Fire District		313,000
Thayer	Chester	Chester Rural Fire District		373,000
Thayer	Deshler	Deshler Rural Fire District		799,800
Thayer	Gilead	Gilead Rural Fire District		28,600
Thayer	Hebron	Hebron Rural Fire District		1,274,500
Thayer	Hubbell	Hubbell Rural Fire District		196,000
<b>Thayer Total</b>			<b>0</b>	<b>3,407,700</b>
Thomas	Halsey	Halsey Rural Fire District		92,000
Thomas	Thedford	Thedford Rural Fire District	8,770	395,000
<b>Thomas Total</b>			<b>8,770</b>	<b>487,000</b>
Thurston	Thurston	Thurston Rural Fire District		434,000
Thurston	Walthill	Walthill Rural Fire District		12,000
Thurston	Winnebago	Winnebago Area Emergency Management Fire District		310,000
Thurston	Winnebago	Winnebago Rural Fire District		78,000
<b>Thurston Total</b>			<b>0</b>	<b>834,000</b>
Valley	Arcadia	Arcadia Rural Fire District		149,000
Valley	Ord	Ord Volunteer Fire Department	3,782	
Valley		Landowners**	225	
<b>Valley Total</b>			<b>4,007</b>	<b>149,000</b>
Washington	Arlington	Arlington Rural Fire District		416,600
Washington	Blair	Blair Volunteer Fire Department	3,002	
Washington	Herman	Herman Rural Fire District		124,000
<b>Washington Total</b>			<b>3,002</b>	<b>540,600</b>

# GRANTS/COST-SHARE AWARDED TO NEBRASKA FOREST SERVICE PARTNERS IN 2022

County	Community	Organization/Project	FEPP/FFP*	
			Grant Amount	Replacement Value
Wayne	Hoskins	Hoskins Rural Fire District		225,000
Wayne	Winside	Winside Rural Fire District		56,000
<b>Wayne Total</b>			<b>0</b>	<b>281,000</b>
Webster	Bladen	Bladen Rural Fire District		245,000
Webster	Blue Hill	Blue Hill Rural Fire District		540,800
Webster	Guide Rock	Guide Rock Rural Fire District	7,500	841,800
Webster	Red Cloud	Red Cloud Rural Fire District	11,500	1,290,000
<b>Webster Total</b>			<b>19,000</b>	<b>2,917,600</b>
Wheeler	Bartlett	Bartlett Volunteer Fire Department	1,464	
Wheeler	Bartlett	Wheeler County Rural Fire District		672,000
Wheeler	Ericson	Wheeler County Rural Fire District	658	569,000
<b>Wheeler Total</b>			<b>2,122</b>	<b>1,241,000</b>
York	Benedict	Benedict Rural Fire District		961,000
York	Bradshaw	Bradshaw Rural Fire District		258,000
York	Gresham	Gresham Rural Fire District		391,000
York	McCool Jct.	McCool Jct Volunteer Fire Dept.	4,000	
York	Waco	Waco Rural Fire District		201,200
York	York	York County Emergency Management Fire District		315,000
<b>York Total</b>			<b>4,000</b>	<b>2,126,200</b>
Middle Niobrara NRD (Pine Reforestation Program)			67,403	
Nebraska Emergency Management				450,000
Nebraska Firefighters Museum			600	
Nebraska Game & Parks - Lake McConaughy				56,000
Nebraska Game & Parks - Lake Minatare				56,000
Nebraska State Fire Marshal			4,000	184,700
NSVFA Fire Prevention Team			400	
NSVFA Fire School			4,000	
Statewide SEAT Program				623,700
Upper Niobrara White NRD (Pine Reforestation Program)			63,921	
<b>Grand Total</b>			<b>2,717,284</b>	<b>120,992,150</b>

## FUNDING SOURCES

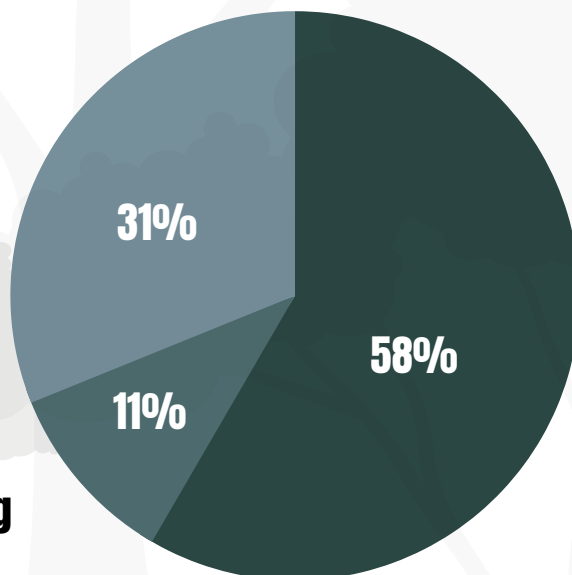


\*FEPP/FFP = Federal Excess Personal Property/Federal Firefighter Property currently loaned to Rural Fire Districts

\*\* = Landowners receiving cost-share funds for forest fuels treatment, forest management activities and/or forest product development.

## NFS EXPENDITURES

**Grants/Cost-share**  
**1,996,264**



**Salaries/Benefits**  
**3,743,003**

**Operating**  
**672,316**

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