Section II: Statewide Forest Resource Strategy

With more than 50 full-time employees, the NFS is a small organization with a large and important responsibility—providing technical and financial support for the improved health of Nebraska's trees and forests. Funded through a combination of state and federal sources, the agency relies heavily on partnerships with other federal and state agencies, nonprofits, and the private sector to jointly implement a diverse portfolio of programs that address state and national issues of high priority.

The NFS, part of the University of Nebraska system, within the Institute of Agriculture and Natural Resources, aligns its strategic goals with issues focusing on:

- Rural economic development and entrepreneurship,
- Natural resources management and environmental quality,
- Economically viable and sustainable food and biomass systems, and
- Communities and appropriate quality of life for individuals and families.

Federal resources used to support NFS programs are focused on contributing to the national programmatic themes of the USFS S&PF Program:

- Conserving working forest landscapes,
- Protecting forests from harm, and
- Enhancing public benefits from trees and forests.

To address these priorities across all lands, the strategic goals and actions detailed in Section II are intended to guide the NFS in achieving its mission of protecting, enhancing, and utilizing Nebraska's tree and forest resources and achieving landscape-level conservation of these forestlands. Several overarching strategies will guide the agency over the life of this FAP:

- Orient existing resources and assets to maximize impacts;
- Develop and strengthen partnerships to expand impacts;
- Seek financial resources from an increasingly broad array of sources; and
- Build capacity while concurrently expanding programming activities and impacts.

Chapter 8: Goals and Strategies

Overview

As detailed in preceding sections, Nebraska's forests and trees provide a plethora of benefits to all Nebraskans. From improved water and air quality to enhanced agricultural productivity, the spectrum of benefits Nebraskans receive is diverse. However, the public and private investment needed to sustain these resources is often unmet. The coalition of state forestry agencies, the USFS, and many partners remain committed to maximizing the ecological, environmental, and emotional benefits that trees and forests provide. This is evident from the development of state FAPs, national forest plans, and state wildlife action plans, all of which focus limited resources on the areas of greatest need.

This chapter identifies goals, strategies, objectives with measurable outcomes, and performance measures for the stewardship of trees and forests in Nebraska. The plan demonstrates how funds are leveraged to provide these results and how national priorities are supported. Strategies focus on supporting the national priorities to conserve, protect, and enhance trees and forest resources across the state.

The goals set forth in this document were designed to stretch the abilities of the NFS and its partners. These goals are not intended to be easy or achieved in isolation; each will challenge the NFS and all Nebraskans if we are to achieve a greater good for the state.

Specific Goals for 2020

Planning for this document began with the expertise of NFS field staff. These teams developed core issue areas for each of Nebraska's PFLs. The identified threats and desired outcomes were then used to directly inform the 12 goals and 22 resource strategies outlined in this chapter. NFS programs, staff, stakeholders, and partners will be essential in implementing the following 2020 FAP goals:

1. Enhance and promote the role of Nebraska's forests and trees for mitigation and adaptation to the global change in climate.
2. Manage trees and forest landscapes to include rural and community forest settings.
3. Manage the function of forest and tree systems in Nebraska for maximum and sustained benefits.
4. Improve, protect, and enhance fish and wildlife habitat in Nebraska.
5. Restore fire-adapted landscapes and reduce risk of wildfire impacts on Nebraska's trees, forests, and communities.
6. Manage for the health and productivity of Nebraska's trees and forests.

7. Manage and build the capacity of Nebraska's trees and forests, in conjunction with the forest products industry, agriculture, and communities, which are all vital to Nebraska's economy.
8. Maintain the natural environments of Nebraska including trees and forests, waterways, and rangelands.
9. Manage Nebraska's forest and trees to enhance the water resources of Nebraska.
10. Improve air quality and energy conservation through tree planting.
11. Connect people to the state's trees and forest resources.
12. Engage Nebraskans in the stewardship of trees and forests.

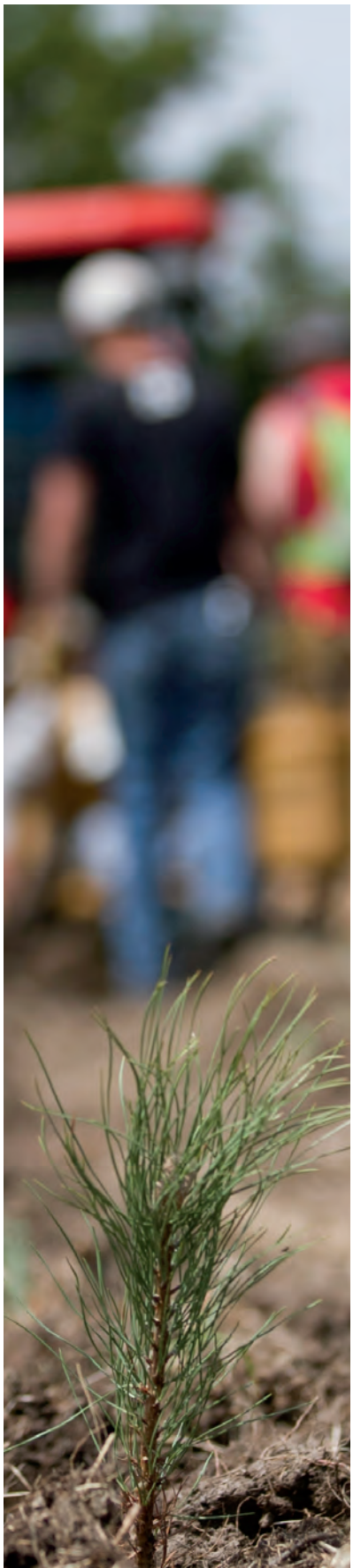
Program/Goals Matrix

The national priorities to conserve, protect, and enhance trees and forests in Nebraska are met by NFS staff, dispersed among nine program areas, that will be the drivers toward implementing the 12 FAP goals outlined in this document. Table 61 specifies which program areas coalesce around the stated goals, under the assumption that each meets all three national priorities.

Table 61: FAP Goals and NFS Program Crosswalk

National Priorities Conserve | Protect | Enhance									
FOREST ACTION PLAN GOALS	**NFS PROGRAMS (INCLUDING S&P FOREST PROGRAMS)**								
	FH	**CF**	**RF**	**FP**	**WF**	**CE**	**FL**	**AF**	**CFPT**
1. Enhance and promote the role of Nebraska's forests and trees for mitigation and adaptation to the global change in climate.	√	√	√	√		√	√	√	√
2. Manage trees and forest landscapes to include rural and community forest settings.	√	√	√	√	√	√	√	√	√
3. Manage the function of forest and tree systems in Nebraska for maximum and sustained benefits.	√	√	√	√	√	√	√	√	√
4. Improve, protect, and enhance fish and wildlife habitat in Nebraska.	√	√	√	√	√	√	√	√	√
5. Restore fire-adapted landscapes to reduce risk of wildfire impacts on Nebraska's trees, forests, and communities.	√		√	√	√	√	√		
6. Manage for the health and productivity of Nebraska's trees and forests.	√	√	√	√	√	√	√	√	√
7. Manage and build the capacity of Nebraska's trees and forests, in conjunction with the forest products industry, agriculture, and communities, which are all vital to Nebraska's economy.	√	√	√	√	√	√	√	√	√
8. Maintain the natural environments of Nebraska including trees and forests, waterways, and rangelands.	√	√	√	√	√	√	√		
9. Manage Nebraska's forest and trees to enhance the water resources of Nebraska.	√	√	√	√	√	√	√	√	√
10. Improve air quality and energy conservation through tree planting.	√	√	√	√	√	√	√	√	√
11. Connect people to the state's trees and forest resources.	√	√	√	√	√	√	√	√	√
12. Engage Nebraskans in the stewardship of trees and forests.	√	√	√	√	√	√	√	√	√

AF=Agroforestry; CE=Conservation Education; CFPT=Conservation Forestry Planting & Trees; CF=Community Forestry; FH=Forest Health; FL=Forest Legacy; FP=Forest Products; RF=Rural Forestry; WF=Wildland Fire



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Chapter 9: Implementation Approach

The NFS has developed strategic actions that serve as the vehicles for addressing the FAP's stated goals and the desired future condition of Nebraska's priority forest landscapes. This list was created to align goals, strategies, justifications, objectives, and performance measures with the challenges that are anticipated to occur while implementing Nebraska's FAP.

FAP Goal 1: Enhance and promote the role of Nebraska's forests and trees for mitigation and adaptation to the global change in climate.

Strategy 1: Increase tree planting to improve energy efficiency and air and water quality; address challenges posed by EAB.

Justification: Nebraska's forests offset significant carbon emissions. Additional benefits could be achieved through partnerships and management measures that promote woody biomass energy or plant trees for increased energy efficiency, air quality, and water quality. Because forests' benefits, including biodiversity, wildlife habitat and protection of water quality and quantity, are also affected by climatic shifts, preserving forest landscapes is paramount to ensuring these benefits are sustained.

OBJECTIVES	PERFORMANCE MEASURES
1. Increase #, native diversity, and survival of trees planted	# of trees planted; # of native species planted; survival rate
2. Increase landowner participation in programs	# of participating landowners
3. Increase tree planting capacity	Availability of quality stock; # of tree planters
4. Create carbon sink	# of trees planted

Approach 1: Focus on reforestation efforts.	
Challenges	More than 50 million trees have been lost in high priority landscapes Low survival rates for planted stock in the wildlands ▸ Weather conditions in the summer (hot and windy with limited moisture) lead to poor survival of bare-root planting stock Limited funding ▸ Reforestation cost @ $1.49 per tree or $298 per acre (180,000 acres) would cost approximately $53.6 million Lack of capacity ▸ Professional tree planters Quality seedlings and other planting stock
Tactics	Plant containerized seedlings for increased survivability (survival is near 90%) Plant diverse tree species Prioritize planting at microsites with north/east aspect slopes Engage landowners through outreach and education Develop cost-share programs to assist with planting Work with partners to promote planting Employ more reforestation and community foresters
Gaps in Funding	Need more cost-share programs for planting trees
Gaps in Capacity	Reforestation foresters Qualified tree planters available High-quality containerized seedlings Willing landowners
Gaps in Knowledge	Landowner education on tree planting programs and native/non-native species ▸ Education on non-native invasive species and native species ▸ Outreach to willing landowners and other stakeholders

Approach 2: Assist communities in the recovery from EAB.	
Challenges	These invasive insects threaten 44 million ash trees in Nebraska; one million of these trees are in communities Cost for ash removal, disposal, and replacement will be over $961 million Without replacement, loss of canopy will diminish the ability of communities to adapt to climatic change
Tactics	Comprehensively address EAB in communities: ▸ Work with partners to identify suitable replacement species ▸ Develop sources for alternative species to replace ash ▸ Work with communities to replace dead and dying ash ▸ Diversify community tree canopies ▸ Increase number of certified arborists and community personnel Employ more reforestation and community foresters, both NFS and partners
Gaps in Funding	New and updated community inventories Funding for EAB recovery plans Community recovery funds related to EAB Tree boards Education and outreach Wood utilization and urban wood networks
Gaps in Capacity	Community forestry staff ▸ NFS staff ▸ Community personnel ▸ Certified arborist Available high-quality planting stock
Gaps in Knowledge	Community education on invasive tree pests and disease ▸ Outreach to homeowners and other stakeholders ▸ Firewood sellers and users: lack of understanding of quarantines and compliance agreements ▸ Importance of not moving firewood

Strategy 2: Mitigate the negative impacts of climatic change through partnerships.

Justification: Nebraska's forests have the potential to offset significant carbon emissions. Additional benefits can be achieved through partnerships and management measures that promote the production of wood products as an alternative to disposal/burning and tree planting for energy efficiency and improved air and water quality.

OBJECTIVES	PERFORMANCE MEASURES
1. Leverage partnerships to increase planting and development of woody biomass utilization	# trees planted via partners; # of woody biomass utilization opportunities
2. Leverage partnerships to increase landowner and public understanding of the effects an alternative climate will have on forests and communities	# of people reached
3. Develop, with partners, alternative species for planting and building diversity in tree canopy	# species developed with partners
4. Create carbon sink	# of trees planted

Approach: Promote partnerships and engagement.	
Challenges	Public and political apathy and antagonism about changes in climate Partners sometimes have differing missions and approaches to issues
Tactics	Engage partners, stakeholders, and the public by focusing on common ground and increasing opportunities to work together towards climate stabilization Work with neighboring states and universities to develop alternative species for planting With partners, develop tree species and planting programs that allow trees to thrive in different climate scenarios With partners, develop innovative uses for forest products, including biochar, to provide for long-term carbon storage and reduced greenhouse gas emissions With partners, promote agroforestry systems and conservation tree planting to offset carbon emissions Utilize pivot corners, fence lines, and shelterbelts as planting sites to: ▸ Add to the biodiversity of a site ▸ Provide habitat for wildlife ▸ Store carbon With partners, develop guidelines for forest management on a wide range of topics, including weather extremes and climate shifts ▸ Share the guidelines with landowners, homeowners, and stakeholders via workshops, outreach, & education Use and encourage others to use BMPs in forests to promote healthy, resilient ecosystems Use education and outreach to partners, landowners, homeowners, and other stakeholders to share information about climatic shifts, the effects on forests, and how to mitigate Maintain and enhance community and rural forests across the state ▸ Promote community tree programs ▸ Develop tree advocates such as tree ambassadors and tree pest detectors ▸ Leverage federal community tree programs • Community Forest and Open Space Conservation Program ▸ Promote Arbor Day Foundation programs • Health Care Campus USA, Tree City USA, etc.
Gaps in Funding	Support for agroforestry practices Support for conservation tree planting Support for Arbor Day Foundation programs Support for wood products development Support for education, community forestry, and youth education opportunities
Gaps in Capacity	Agroforesters Reforestation forester Conservation tree programs Conservation educators Wood products experts Expand forest products industry High-quality planting stock Support alternative forest products research
Gaps in Knowledge	Impacts of a changing climate on Nebraska's tree and forest resources Actions to best mitigate and reduce the severity of a climatic shift Detailed, locally-available woody biomass volume information for forestlands, non-forestlands with trees, and community forests Knowledge of agroforestry practices by landowners, partners, and stakeholders

Strategy 3: Promote wood products development and other wood utilization options.

Justification: The manufacture of wood products from woody biomass leverages a carbon-neutral, renewable resource for applications including producing energy for heat, traditional lumber products, and innovative products such as biochar. These opportunities provide income for rural businesses and create products in high demand by consumers, while reducing open burning and the risk and incidence of slash pile fire escapes. Woody biomass is a byproduct of sustainable forest management which, when used, helps "clean" the forest of unwanted debris and hazardous woody fuels. Utilization can turn this waste product into a value-added economic driver for rural communities, reducing the overall costs of forest management and keeping Nebraska's forests sustainable in a changing climate.

OBJECTIVES	PERFORMANCE MEASURES
1. Develop opportunities within the supply chain	# of manufacturers, # of forest management projects which choose utilization over pile burning
2. Understand the inventory and available supply for biomass utilization	Monitor changes in forest conditions and understand forest inventory data
3. Foster product development through public/private partnerships	# of wood utilization projects, # of wood utilization technical assists

Approach: Foster wood product opportunities.	
Challenges	Woody biomass energy conversion is not seen as economically viable ▸ High transportation costs ▸ Economic feasibility of alternative fuels is believed to be better ▸ Haul distances limit resource availability for woody biomass utilization ▸ Fossil fuel alternatives are familiar and cheaper – a situation subject to change and uncertainty Regulatory restrictions impact wood product manufacturing ▸ Vehicle weight and length limits compared to neighboring states ▸ High workers' compensation insurance costs for forest industry businesses
Tactics	Develop regional supply studies of the forest resource Complete in-depth rural tree inventory Complete in-depth community tree inventory Identify areas with limited access to natural gas (biomass hubs) Address regulatory issues impacting industry success (e.g. transportation costs due to weight limit restrictions) Identify opportunities to incorporate wood products into existing markets Utilize partnerships to leverage funding and expertise to develop wood products Develop localized demand for biomass heating/cooling systems Develop localized demand for raw material through business development Incorporate wood utilization options into forest fuels reduction program prescriptions
Gaps in Funding	Supporting marketing and utilization activities Expanded inventory data acquisition and analyses Expanded fuels reduction work in high-risk areas Capital costs for conversion of thermal energy systems to woody biomass
Gaps in Capacity	Forest products and utilization staff are needed for the NFS, communities, loggers and contractors, and facilities that use woody biomass
Gaps in Knowledge	Community and stakeholder understanding and willingness to implement biomass systems Consumer awareness of wood product uses Consumer drivers that shift towards a wood product alternative from existing products Costs of wood utilization alternatives to traditional cut, pile, and burn forest management practices

Strategy 4: Improve forest health to improve forest resiliency.

Justification: Improving overall forest health increases resiliency of forests to alternative climate scenarios and other stressors. Targeted outreach and education on management activities further increases participation in climate mitigation efforts in Nebraska.

OBJECTIVES	PERFORMANCE MEASURES
1. Reduce woody materials in overstocked stands	# acres treated
2. Survey for pests to improve understanding of the problem	# surveys conducted; # acres surveyed

Approach: Expand education and outreach to increase understanding and participation.	
Challenges	Landowner apathy and antagonism about alternate climatic condition
	High per-acre cost of thinning
Tactics	Landowner outreach/education to increase participation
	Expand cost-share program for mechanical thinning to improve forest health
	Encourage safe, targeted use of prescribed fire
	Manage tree pest detection network
	Conduct pest surveys statewide
Gaps in Funding	Support for outreach and education activities
	Cost-share for thinning to improve forest health
Gaps in Capacity	NFS education and outreach staff
	Lack of funding for municipal forestry staff
Gaps in Knowledge	Knowledge of location of pest hotspots

FAP Goal 2: Manage trees and forest landscapes to include rural and community forest settings.

Strategy 1: Encourage long-term conservation efforts to keep forests in rural settings.

Justification: Rural forests are at risk from the effects of a changing climate, leading to an increase in tree pests and disease problems and an elevated threat of wildfires. When bundled with the lack of management, trees and forests in rural areas are at risk of decline. NFS staff works with the landowners, stakeholders, and partners that can build a strong resilient forest in the wildlands of Nebraska through the promotion of forest management, fuels reduction, and wood utilization.

OBJECTIVES	PERFORMANCE MEASURES
1. Increase # of trees planted	# of planted trees
2. Increase landowner participation in forest management	# of participating landowners; # of acres managed
3. Increase species and temporal diversity in rural community plantings	% of species composition of forest inventory
4. Increase forest management planning	# of management plans prepared; # of acres managed
5. Increase demand for forest products	# of timber harvests initiated
6. Increase contracting capacity	# of contractors
7. Foster culture of rural tree planting	# of tree advocates

Approach: Promote good forest management and wood utilization.	
Challenges	Limited markets constrain utilization opportunities ▸ High transportation costs and long haul distances ▸ Raw material is of low grade and value ▸ Haul distances limit resource availability for woody biomass utilization Low regeneration success from both natural and planted methods ▸ Poor cone crops ▸ Low number of high-quality seedlings ▸ High planting costs ▸ Not enough professional planting crews available Lack of landowner understanding on the importance of forest management ▸ Increased threats from fire and forest pests ▸ Reduced plant and animal biodiversity
Tactics	Use containerized stock to improve survival rate Work with partners to develop high-quality containerized seedling programs Engage landowners and work with partners to increase participation in forest management Develop stewardship plans for all properties with forest management activities and cost-share programs Develop growth/drain studies to foster understanding of the resource Develop innovative cost-share programs to promote and implement forestry best management practices, forest products utilization, and rural tree planting Foster development of niche forest products markets Develop legislation to address barriers to industry growth (load limits, workers comp) Provide contractor workshops Promote tree recovery and sustain the rural tree canopy, promote tree species diversity, develop tree advocates Address threatened and endangered species goals while continuing forest management operations Promote agroforestry systems (e.g. windbreaks, shelterbelts and other conservation tree plantings)
Gaps in Funding	Support for development and promotion of wood products Support for reforestation and afforestation Support for forest management activities on private lands
Gaps in Capacity	Seedling and sapling growing capacity NFS staff needed in rural forestry (district and silviculture foresters), forest health (conifer tree health expert), and forest products Logging industry has aging workforce, younger workforce interest, staff, and experience shortages
Gaps in Knowledge	Fine resolution color infrared imagery GIS forest data Drivers for forest landowner action towards managing their forests

Strategy 2: Encourage long-term conservation efforts to keep forests in community settings.

Justification: Community forests are at risk on several fronts. The effects of a changing climate lead to an increase in tree pests, diseases, and the threat of wildfires. When bundled with apathy, tight community budgets, and the lack of management, this causes many community trees to decline along with the ecosystem services that will be critical to making communities livable in an uncertain or hazardous climate.

OBJECTIVE	PERFORMANCE MEASURES
1. Create environment of community tree management and planting	# of tree advocates; # of tree boards; # of tree canopy plans; # of EAB recovery plans

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Approach: Use outreach, education, and training to encourage community engagement.	
Challenges	Two-thirds of the populace lives in cities and towns, with 470,000 acres of community forest at risk of insect and disease pests due to low species diversity
	Changing climate and lack of mitigation; declining forest management
	Projects must now account for a range of issues: severe weather, chronic drought, poor planting practices, poor species selection, insect and disease pests, herbicide damage
	Low funding in community budgets for trees and landscape maintenance
	A preponderance of older trees nearing or past their average life span
	Limited product options and waste management strategies constrain utilization of community wood waste
Tactics	Develop community tree advocates, tree boards
	Develop tree pest detector and herbicide advocate programs
	Develop advocacy group for herbicide issues
	Assist in the development of community tree canopy plans and EAB recovery plans
	Pursue alternative funding from foundations and corporate sources
	Provide training on pests and best management practices
	Develop planting recommendations for communities based on current tree inventories
	Promote alternative wood waste strategies to divert wood byproducts from landfills
	Promote development of higher value products from waste wood
	Continue tree species diversity initiatives
Gaps in Funding	Community forestry programs with limited or no annual budget
	Planting costs make tree replacement a low-priority
	Support for community tree inventories
	Support for tree advocate programs
	Removal of overmature trees (and replanting) on private properties in poor neighborhoods
Gaps in Capacity	More communities need to establish a tree board
	Community and forest health departmental staff is inadequate
	Lack of established tree care ordinances
	Lack of Arbor Day proclamation and observation
	Lack of high-quality nursey stock
Gaps in Knowledge	Fine resolution color infrared imagery
	GIS forest data
	Community tree inventory data
	Community tree canopy cover data
	Wood products manufacturing expertise in communities
	Herbicide issues

FAP Goal 3: Manage the function of forest and tree systems in Nebraska for maximum and sustained benefits.

Strategy: Promote active and sustainable management of Nebraska's forest resources to ensure a continued stream of environmental, economic, social, and human health benefits.

Justification: Keeping Nebraska's trees and forests healthy through management reduces the number of destructive wildfires, maintains healthy growing forests, and builds resilient community tree canopies. These are critical to the success of all species, including those with high conservation value.

OBJECTIVES	PERFORMANCE MEASURES
1. Reduce stocking rates in overstocked forests	# acres treated
2. Increase tree planting in understocked stands	# trees planted
3. Reduce acres burned during uncharacteristic wildfires	# acres burned

Approach: Work with landowners, partners, and communities to increase forest management.	
Challenges	Markets ▸ Limited markets limit utilization opportunities ▸ High transportation costs; long haul distances ▸ Raw material is low value and low grade ▸ Haul distances limit resource availability for woody biomass utilization Funding ▸ Without markets, funding limits the acres that can be treated ▸ High cost of treatment ▸ Lack of cost-share programs ▸ Lack of funding to diversify the community tree canopy Regulatory ▸ Differences in legal interpretation between agencies; threatened and endangered species may impact ability to conduct forest management ▸ Differences in load limits state-to-state increases hauling costs ▸ High worker compensation rates increases contractor costs
Tactics	Work with landowners to prepare management plans ▸ Develop alternative cost-share programs ▸ Require stewardship/long-term management plans for cost-share funding Work with communities to develop community tree management and EAB recovery plans Promote conservation tree planting ▸ Use of agroforestry and silvopasture systems Provide workshops to communities (train the professionals) ▸ Tree health ▸ Tree management ▸ Tree risk assessment Provide landowner workshops ▸ Best management practices ▸ Management in fire-prone landscapes ▸ Forest management and fuels treatment (silviculture) Develop innovative tree and forest grant programs Work with partners to develop high-quality land management programs
Gaps in Funding	Support for wood innovation and market development Support for landowner outreach Support for community outreach
Gaps in Capacity	Number of NFS staff for conservation foresters, agroforesters, and GIS Contract logging industry lacks experienced personnel and has staffing shortages
Gaps in Knowledge	Known threatened and endangered species presence/absence

FAP Goal 4: Improve, protect, and enhance fish and wildlife habitat in Nebraska.

Strategy 1: Reduce the major threats to fish and wildlife habitat caused by land fragmentation and urbanization.

Justification: Fragmentation caused by residential and commercial development disturbs wildlife habitat. Development in riparian areas can also harm aquatic habitat. Managing green infrastructure within and surrounding communities provides many valuable benefits important to human and ecological health. In rural areas, habitat fragmentation can be caused by agricultural land conversion from grasslands and forests to cultivated cropland. Increasing awareness of this and highlighting mitigation methods can help address this issue.

OBJECTIVES	PERFORMANCE MEASURES
1. Discourage riparian development by increasing acres managed in riparian forests	# acres managed
2. Increase public understanding of the relationship of forest function to habitat	# of people reached
3. Maintain/improve habitat quality via active forest management	# of acres managed; # trees planted/replaced
4. Educate landowners and the public on importance of forest habitat protection, particularly in riparian areas	# of people reached

Approach: Use education, training, and cost-share to increase awareness and protection of habitat in and near communities, riparian areas, and rural areas.	
Challenges	Decline in community forest cover over past 30 years stresses woodland-dependent species: ▸ Reduces mitigation of extreme weather ▸ Reduces ability to mitigate changes in climate Inadequate species and age diversity threaten forest sustainability and habitat Herbicide drift can pollute water and damage trees, threatening forest health and sustainability of habitat Economics drive agricultural producers to plant as much area as possible ▸ Leaves fewer buffers, windbreaks, and corridors for habitat
Tactics	Work with homeowners and landowners ▸ Increase available cost-share programs ▸ Encourage incorporation of habitat mitigation into agricultural activities ▸ Promote active management of stormwater and riparian forest buffers Work with communities ▸ Educate youth about the importance of trees and forests • Habitat • Human health ▸ Diversify tree species; develop community tree canopy plans ▸ Utilize Community Green Space/Forest Legacy to protect sensitive lands Provide workshops to communities ▸ Tree management ▸ Value and benefits of trees Develop innovative tree and forest grant programs Work with partners to develop high-quality land management programs Replace declining ash trees in riparian forests with appropriate and diverse tree species Develop new windbreak design practices to improve diversity
Gaps in Funding	Support for conservation education Support for homeowner outreach Support for community and youth programing
Gaps in Capacity	NFS staff in community forestry, forest health, and conservation education to engage homeowners Contracting base Staff and personnel Experienced contractors
Gaps in Knowledge	Community tree canopy inventories

Strategy 2: Reduce the major threats to fish and wildlife habitat caused by invasive and aggressive native plants, insects, and diseases.

Justification: Suitable habitat for resident and migratory wildlife is often threatened by invasive and aggressive native plants, insects, and diseases. As a largely privately-owned state, landowner and community understanding and engagement is essential to mitigating invasive and aggressive species and protecting habitat statewide.

OBJECTIVES	PERFORMANCE MEASURES
1. Educate landowners and the public on importance of forest habitat protection, particularly in riparian areas	# landowners reached
2. Increase number of acres managed, particularly in riparian forests	# acres managed; # acres treated
3. Replace declining ash trees in riparian forests with appropriate tree species	# of ash trees replaced
4. Maintain/improve habitat quality via active forest management	# of acres managed; # trees planted/replaced
5. Manage stormwater for better water quality	Implementation of National Association of State Forester's stormwater recommendations

Approach: Use education, training, and cost-share to increase awareness and protection of habitat in and near communities, riparian areas, and rural areas.	
Challenges	Invasive or aggressive species proliferate in riparian systems Weather extremes Forest pathogens Eastern redcedar encroachment continues due to lack of management or inability to educate absentee landowners
Tactics	Work with ranchers and farmers on land management ▸ Manage buffer zones/restore riparian buffers • Remove encroaching species • Replace dying ash ▸ Forestry planning ▸ Develop alternative cost-share programs Educate landowners about the importance of trees, tree management, and pests ▸ Workshops ▸ Articles & publications Work with partners to develop high-quality land management programs ▸ Develop habitat Work with communities ▸ Diversify species, develop community tree canopy plans ▸ Utilize Community Green Space/Forest Legacy to protect sensitive lands ▸ Provide workshops to communities • Pests • Tree management • Value and benefits of trees Develop innovative tree and forest grant programs
Gaps in Funding	Support for conservation education, homeowner outreach, and community and youth programing
Gaps in Capacity	NFS staff (forest health and conservation education) Contracting base shortages ▸ Staff and personnel ▸ Prescribed burn boss ▸ Support staff for burning
Gaps in Knowledge	Quality eastern redcedar inventory data in rangelands

FAP Goal 5: Restore fire-adapted landscapes and reduce risk of wildfire impacts on Nebraska's trees, forests, and communities.

Strategy 1: Reduce wildfire extent and severity in strategic areas.

Justification: Managing forests strategically to reduce wildfire extent and severity is crucial to the health of Nebraska's forests, the safety of residents in at-risk areas, and the contributions of forests to Nebraska's economy. Decades of fire suppression and changes in weather and precipitation have disrupted natural fire regimes, resulting in fuel buildup, loss of biological diversity, changed species composition, and loss of some fire-dependent species. Strategic forest management and landscape-scale planning will reduce wildfire extent and severity in Nebraska's forests.

OBJECTIVES	PERFORMANCE MEASURES
1. Manage forests to reduce wildfire risk	# acres managed; # of acres treated
2. Increase VFD capacity	# of VFDs participating; # of pieces of equipment placed; # hours of training; # of firefighters trained
3. Increase opportunities for wood products development	# of wood products development projects; # fuels projects with utilization component

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Approach: Use a multi-pronged approach to increase forest and fuels management via education, planning, fuels reduction, training, and equipment placement.	
Challenges	Buildup of forest fuels Expanding wildland urban interface Eastern redcedar encroachment Lack of management; absentee landowners
Tactics	Educate landowners and the public about the importance of managing fuels Manage regional forest types ▸ Implement landscape-scale fuels reduction projects Work with partners to develop high-quality land management programs Work with landowners to manage fire-prone landscapes Develop stewardship plans Plan and implement fuels reduction ▸ Mechanical treatments ▸ Prescribed fire Provide and promote VFD training ▸ Build cadet program Equipment placement with VFDs Increase participation incentives for VFDs Promote the utilization of wood residues Develop innovative tree and forest grant programs
Gaps in Funding	Support for eastern redcedar management Fuels treatments Encroachment into rangelands Firewise funding for communities Wood products development
Gaps in Capacity	NFS forestry staff (fuels reduction, conservation education, forest products utilization) Contracting base ▸ Staff and personnel ▸ Prescribed burn boss ▸ Support staff for burning Contractor base ▸ Fuels contactors with handcrews to increase management in difficult areas or small parcels
Gaps in Knowledge	Quality eastern redcedar inventory data in rangelands Identify and map high-risk impact zones around communities and forests

Strategy 2: Increase the safety of residents and firefighters in at-risk areas, WUI areas, and across wildlands.

Justification: The safety of residents and firefighters in at-risk areas often depends on fire awareness and preparation. Fire-safe landscapes, landowner awareness, and well-trained and equipped fire departments are essential to protecting lives and property.

OBJECTIVES	PERFORMANCE MEASURES
1. Increase landowner awareness and engagement	# landowners reached; # of acres managed and treated; # of structures protected
2. Create fire-safe landscapes	# CWPPs prepared; # of landowners protected; # acres treated
3. Establish and maintain Firewise communities	# of Firewise communities created or renewed
4. Increase fire department preparedness and capacity	# of VFDs participating; # of pieces of equipment placed; # hours of training; # of firefighters trained

Approach: Use education, planning, fuels reduction, training, and equipment placement to increase safety for residents and firefighters.	
Challenges	Buildup of forest fuels Expanding WUI Eastern redcedar encroachment Lack of management; absentee landowners Adoption of National Wildland Fire Coordination Group qualifications by VFDs and state agencies
Tactics	Conduct on-site landowner outreach and workshops Work with private landowners to develop stewardship plans and manage fuels Create innovative fuels management via cost-share programs Prepare CWPPs with relevant stakeholders for all areas of Nebraska Develop new tree and forest grant programs opportunities to reduce woody fuels Outfit VFDs with appropriate suppression equipment; provide enhanced training for higher firefighting qualifications; establish VFD/Prevention Academy to bolster personnel Establish Firewise communities Manage strategic fuel/fire breaks and travel corridors
Gaps in Funding	VFA funding level is below demonstrated need Support for expanded fuels treatments, fire/fuel breaks, and travel corridors Support for training capacity within VFDs Firewise funding for communities
Gaps in Capacity	NFS staff (fuels reduction, conservation education, wildland fire) ▸ Staff qualifications and training opportunities limit statewide training potential VFDs face staffing shortages and personnel with qualifications State-level wildfire incident management Suppression response can exceed resources of VFDs
Gaps in Knowledge	Fuel/fire break locations

Strategy 3: Increase the contributions of forests to Nebraska's economy to ensure that forests are managed, which reduces the risk of large wildfires.

Justification: Markets incentivize forest management which, in turn, reduces hazardous fuels. Creating markets can help make hazardous fuels reduction economically feasible. Wood products utilization and the resulting demand for raw materials can increase the economic feasibility of forest and fuels management by building on existing markets and tools and establishing new ones.

OBJECTIVES	PERFORMANCE MEASURES
1. Encourage the development of markets for traditional and innovative wood products	# markets developed
2. Increase timber harvest	# acres, board feet, cubic feet, and/or tons utilized

Approach: Work with business and others to develop new and expand existing markets for wood products. Use existing tools and develop new ones to increase financial feasibility.	
Challenges	Markets limit utilization opportunities ▸ High transportation costs; long haul distances ▸ Raw material is of low value and grade ▸ Haul distances limit resource availability for woody biomass utilization
Tactics	Work with business owners and others to develop wood products Promote traditional markets Develop innovative uses for raw material Utilize Good Neighbor Authority and other tools Develop alternative cost-share programs Improve technology transfer of new wood products opportunities
Gaps in Funding	Support for research and development of new wood products Support for alternative use programs ▸ Biochar as feed supplement, agricultural uses, and trail armoring
Gaps in Capacity	Training for business owners Rural economic development Forest products program growth and business development
Gaps in Knowledge	Forest products inventory data Biochar uses (digestion efficiency and methane reduction in livestock, cost/benefit) Alternative heat/cooling systems

FAP Goal 6: Manage for the health and productivity of Nebraska's trees and forests.

Strategy: Create healthy forest landscapes that have the capacity for renewal and recovery from a wide range of disturbances while continuing to provide public benefits and ecosystem services.

Justification: Forest health threats include insects, diseases, invasive and aggressive native plant species, herbicide damage, air pollution, and weather extremes. Working across interest groups, the NFS can expand awareness of threats to forest health and increase engagement to address forest and tree health issues.

OBJECTIVES	PERFORMANCE MEASURES
1. Keep trees and forests healthy	Monitor tree mortality trends
2. Reduce herbicide drift damage to trees	Survey; tissue testing
3. Understand and manage current and future insect and disease problems	# surveys; # of surveys completed and used to reduce negative impacts
4. Increase landowner and community engagement	# of workshops; # of people reached; # of tree health advocates
5. Increase green industry engagement	# of green industry conference attendees

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Approach: Work with partners to increase knowledge, provide training, and develop tree health advocates.	
Challenges	Introduction of EAB
	Likelihood other invasives will be introduced
	Native pests affecting non-native tree species (e.g. pine wilt and scotch pine)
	Native insects and pathogens affecting native tree species
	Alternate climatic conditions leads to less resilient forests and trees
	Herbicide damage
	Lack of tree diversity in community forests
	Predicting pest outbreaks
	Poor tree practices contributing to pests
	Overuse of pesticides, including tree trunk injections
Tactics	Conduct statewide pest surveys
	Provide workshops to stakeholders around the state
	Develop tree health advocates
	Provide training to industry professionals
	Train forestry staff alongside land managers, communities, tree advocates, and partners
Gaps in Funding	Research on how herbicide drifts, and effects on trees and forests
	Research on future invasive species
	In-depth research of current pests: range in the state, life cycles, best management, etc.
Gaps in Capacity	Training communities and landowners
	Forest health staff: especially expertise in conifer pests, diseases, and herbicides
	New forestry staff with pest experience/knowledge
Gaps in Knowledge	Herbicide issues
	New pests and diseases
	In-depth knowledge of current pests
	Underlying causes of tree declines
	Green industry, natural resource professionals, community and rural landowners are in need of education on pests, pesticides, quarantines, and proper tree/forest care

FAP Goal 7: Manage and build the capacity of Nebraska's trees and forests, in conjunction with the forest products industry, agriculture, and communities, which are all vital to Nebraska's economy.

Strategy: Utilize the opportunities that forested areas present for economic development while protecting sustainability.

Justification: Wood products utilization and the resulting demand for raw materials can increase the economic feasibility of forest and fuels management by building on existing markets and tools and establishing new ones. Forested areas present opportunities for economic development through specialty forest products, traditional forest products, woody biomass, and ecosystem services.

OBJECTIVES	PERFORMANCE MEASURES
1. Manage forested areas for forest products	# of forest stewardship management plans; # of acres managed
2. Reduce woody fuels and utilize material in value-added products	# of acres treated and material utilized
3. Improve forest health through tree management and utilization	# of acres managed
4. Develop and promote industry and niche markets for forest products	# of forest products businesses

Approach: Work with business and others to develop new and expand existing markets for wood products. Use existing tools and develop new ones to increase financial feasibility.	
Challenges	Limited markets Limited demand for products
Tactics	Engage partners through biochar and biofuel workshops and training Engage NRDs and other partners to identify innovative products Engage and inform landowners, partners, contractors, and green industry on use of woody material and biochar Engage non-traditional partners such as economic development organizations Provide workshops and training on best use of forest products Work with forestry staff to increase their knowledge
Gaps in Funding	Support for research for market development Support for research for new wood products and their uses
Gaps in Capacity	Need to achieve balance between supply and demand Connect landowners and businesses to utilize wood resources Connecting available forest products to the development of markets Market development staff and partners that facilitate or create new markets
Gaps in Knowledge	Forest inventory data How forest products can work with Animal Sciences industry to solve societal issues Biochar ▸ Livestock digestion efficiency ▸ Methane reduction ▸ Cost/benefit Cost/benefit of new systems and opportunities Availability of alternative heating/cooling systems and development of new systems

FAP Goal 8: Maintain the natural environments of Nebraska including trees and forests, waterways, and rangelands.

Strategy 1: Protect and enhance forest and range habitat.

Justification: Protecting, conserving, and enhancing forested habitat are critical to maintaining and enhancing biodiversity. Through concerted partnerships (including UNL, Extension, NRDs, NAC, NRCS and others), the NFS will develop new approaches and expand opportunities for the development of windbreaks, shelterbelts, and riparian buffers that will enhance the resiliency of Nebraska's forests and rangelands.

OBJECTIVES	PERFORMANCE MEASURES
1. Increase diversity by managing forest composition	# species represented
2. Diversify planting stock in communities and across rural lands	# species planted
3. Develop alternatives for eastern redcedar planting	# of alternative species
4. Restore ponderosa pine forests	# of acres restored
5. Conserve and protect rare native species and species on the edge of their natural range	# of individuals within target species

Approach: Utilize partners to expand opportunities to protect and enhance forest and range habitats.	
Challenges	Perceived negative value of conservation trees Lack of diversity in species
Tactics	Engage partners, landowners, and others through workshops and training to manage forests and trees Provide workshops on biodiversity and ecosystem (landscape) management Plant diverse species mix Work with UNL and others to develop alternatives for windbreaks to replace aggressive, native tree species with more desired species Engage non-traditional partners through collaborative initiatives/projects Engage communities and their leaders through community forestry programs Engage youth through conservation education Reduce spread of eastern redcedar into hardwood and pine forests Inventory, map, and identify rare native species
Gaps in Funding	Support for marketing and re-establishment of the conservation tree program Support to identify replacement species to adapt to climatic change and test viability of species in Nebraska Support for restoring ponderosa pine ecosystems
Gaps in Capacity	Riparian foresters, range ecologist, conservation tree coordinator Conservation tree sales platforms and online tools
Gaps in Knowledge	Inventory data on eastern redcedar in rangelands Animal Science partnerships for utilization of eastern redcedar Biochar opportunities to increase demand for eastern redcedar ▸ Digestion efficiency ▸ Methane reduction ▸ Cost/benefit ▸ Feedlot applications ▸ Soil amendments Cost/benefit of new systems Alternative heat/cooling systems

Strategy 2: Protect and enhance Nebraska's waterways.

Justification: Protecting and enhancing riparian areas protects soil and water quality while providing wildlife habitat. Through partnerships with oversight and compliance agencies, as well as landowners and communities, trees and other green infrastructure can be used to protect and enhance riparian buffers and the water quality of Nebraska.

OBJECTIVES	PERFORMANCE MEASURES
1. Engage landowners and communities through workshops on importance of species diversity, and flood mitigation techniques	# of workshops; # of people reached
2. Reduce ladder fuels	# of acres treated
3. Provide species diversity	# species planted
4. Mitigate flooding effects	# of healthy or improved riparian forest acres

Approach: Utilize partners, communities, and landowners to protect riparian areas.	
Challenges	Encroachment of unwanted native and non-native species into riparian systems Flooding in riparian buffers Uncharacteristic, large wildland fires Removal of riparian forests to increase crop planting
Tactics	Engage partners and landowners through workshops, training, and outreach Work with communities and landowners to address flooding issues by providing rain garden and stormwater management information Manage encroachment into riparian buffers by reducing forest fuels Manage fires Plant diverse tree species
Gaps in Funding	Support for reducing encroachment of unwanted species Marketing of trees and forests for water management Marketing of permeable landscapes and programs including trees and other vegetation
Gaps in Capacity	Landowners and businesses willing to work with alternative landscapes (e.g. agroforestry, conservation plantings, riparian buffers) Staff to help connect people with outdoor environment and alternative landscaping Youth conservation education to increase awareness
Gaps in Knowledge	Understanding the connection between healthy forest landscapes and human health benefits Data demonstrating the link between human health and trees; how this connection improves quality of life

FAP Goal 9: Manage Nebraska's forest and trees to enhance the water resources of Nebraska.

Strategy 1: Utilize Nebraska's forestry best management practices to help protect, restore, and sustain water quality, water flows, and overall watershed health.

Justification: Healthy riparian buffers are key to protecting water quality, water flows, and overall watershed health. Incentivizing landowners and partners to utilize sound forestry practices with respect to riparian buffer management will reduce encroachment of unwanted species, increase diversity of riparian species, and assist in managing wildland fires.

OBJECTIVES	PERFORMANCE MEASURES
1. Increase planting in riparian buffers	# of acres or trees planted
2. Restore riparian buffers	# of acres restored
3. Increase tree species diversity in riparian buffers	# species planted
4. Reduce eastern redcedar encroachment in riparian buffers	# of acres of eastern redcedar removal

Approach: Use education and outreach to train and engage stakeholders in practicing sound forestry within riparian buffers.	
Challenges	Encroachment of unwanted native and non-native species into riparian systems Flooding in riparian buffers Wildland fires Mechanisms to reach riparian forest landowners Demonstrating the importance of riparian forest buffers
Tactics	Plant diverse, native trees in riparian buffers Engage landowners and communities to manage invasive species in riparian areas Develop cost-share programs to assist managers with riparian buffer restoration Engage partners and landowners through workshops and training to restore buffers Work with landowners and agencies to install and restore riparian buffers Manage aggressive species encroachment into riparian buffers Manage fires through fuels reduction projects
Gaps in Funding	Lack of cost-share programs and other support to restore riparian buffers and reduce encroachment of unwanted species
Gaps in Capacity	Conservation educators
Gaps in Knowledge	Nebraska-centric data quantifying how forest riparian buffers affect water resources, which in turn benefit human health and local economies

Strategy 2: Build and maintain healthy community and rural forested watersheds to absorb rainfall and snowmelt, slow storm runoff, recharge aquifers, sustain stream flows, and filter pollutants.

Justification: Healthy community and rural forested watersheds serve important functions in the hydrologic cycle. Outreach, education, and cost-share opportunities that engage and train stakeholders to improve and establish high-quality riparian buffers are essential tools to improve the state's water quality and remediate impaired waterways.

OBJECTIVES	PERFORMANCE MEASURES
1. Manage community tree canopy	# of species planted
2. Reduce runoff	Measure runoff by utilizing National Association of State Foresters' performance measures
3. Reduce pollutants in stormwater	Measure nitrogen, phosphorous, and potassium in stormwater by utilizing National Association of State Foresters' performance measures
4. Inventory community forests to establish baseline	# of community forests inventoried

Approach: Use outreach and education to train and engage stakeholders.	
Challenges	Urbanization
	Urban stress factors such as impermeable surfaces leading to increased stormwater runoff
	Apathy toward trees by urban populations
Tactics	Train and engage communities, leaders, tree boards, and volunteers
	Develop markets and cost-share programs
	Engage partners, homeowners, and the public through workshops and training
	Promote riparian buffers and management of encroachment into existing buffers
	Develop community water-wise programs
	Partner with NRD and DNR to improve effectiveness of buffer efforts
Gaps in Funding	Lack of cost-share programs
Gaps in Capacity	NFS staff: conservation education and community forestry
	Community volunteers
Gaps in Knowledge	Nebraska-centric data quantifying how forest riparian buffers affect water resources, which in turn benefits human health and local economies
	Nebraska-centric data that demonstrates the value of healthy riparian systems in reducing pollution
	Nebraska-centric data showing the effects and benefits of stormwater management

Strategy 3: Identify areas for continued forest conservation and management to improve water quality, water flows, and overall watershed health.

Justification Additional riparian buffers added to the existing inventory will improve water resources. Identification of more riparian buffers that can be enhanced will expand the ability to protect water resources in Nebraska.

OBJECTIVE	PERFORMANCE MEASURE
1. Increase, track, and maintain inventory of buffers and plantings of buffers	# of plantings established; # of buffers inventoried

Approach: Use outreach and education to spark interest and engage stakeholders in identifying additional riparian areas for management to improve water resources.	
Challenges	Public understanding of the relationship between water health and human health Movement of fertilizer, herbicides, and pesticides from fields to water; movement from lawn applications to water
Tactics	Use workshops and training to engage landowners, homeowners, and community leaders to expand the number of riparian buffers as well as maintain and improve existing buffers Engage partners to expand the riparian buffer system in and around waterways Workshops with green industry
Gaps in Funding	Lack of cost-share programs for communities
Gaps in Capacity	Connection between people and trees/forest environment
Gaps in Knowledge	Nebraska-centric data quantifying how forest riparian buffers affect water resources and reduce pollution, which in turn benefits human health and local economies Presenting scientific data to the public in a manner that is actionable and understandable on healthy forest landscapes and human health benefits Nebraska-centric data demonstrating the link between human health and trees, and how this connection improves the quality of life

FAP Goal 10: Improve air quality and energy conservation through tree planting.

Strategy: Promote community and exurban forest cover, including agroforestry plantings, to improve air quality, reduce energy consumption and produce biomass for energy production.

Justification: Community and exurban forest cover, including agroforestry plantings, are a significant resource that provides an array of ecosystem services. There is an urgent need to plant more trees in a changing climate. Workshops and cost-share programs can provide information to increase knowledge related to community tree canopy cover, energy conservation, and conservation planting for landowners, producers, and communities.

OBJECTIVES	PERFORMANCE MEASURE
1. Increase conservation tree plantings	# of plantings
2. Increase the users of biomass and clean energy users	# of entities using biomass
3. Increase community tree plantings	# of trees planted

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Approach: Use education and outreach to train and engage stakeholders.	
Challenges	Public apathy toward trees Commodity prices (currently low) drive the removal of conservation plantings Emerald ash borer and other tree pests and diseases Modernized windbreak design and practices for the 21st century ▸ Value of windbreaks vs. the value of the potential crop production Lack of understanding of benefits of community tree canopy
Tactics	Engage partners and landowners through workshops and training; work with communities, homeowner, and landowners to understand trees and the value added by trees Engage communities, leaders, and green industry to adopt clean energy techniques Work with legislature on replacement of lost trees Evaluate community tree canopy cover during community tree inventories
Gaps in Funding	Lack of cost-share programs for agroforestry systems ▸ Agroforesty maintenance ▸ Tree care workshops Support for promoting the value and benefits of trees Support for community tree planting
Gaps in Capacity	Lack of agroforesters Lack of demonstration sites Lack of tree boards in communities
Gaps in Knowledge	Connection to value of trees ▸ Human health benefits ▸ Utility costs and energy usage Connection of trees to healthy agricultural systems ▸ Value and design of windbreaks in modern-era ▸ Data articulating benefits to agriculture when trees are present ▸ Data demonstrating return on investments in current ag systems

FAP Goal 11: Connect people to the state's trees and forest resources.

Strategy: Promote Nebraska's forests as natural backyards for communities; these can function as a connection between people and nature to increase appreciation.

Justification: Many communities in Nebraska are islands of trees in an agricultural or rangeland landscape. Use workshops, seminars, field days and publications to increase interest, knowledge of the value, and the awareness of forests and trees. The focus is reaching an ever-increasing non-farm/ranch population in communities across Nebraska.

OBJECTIVE	PERFORMANCE MEASURE
1. Increase the value residents place on trees and forests	# of workshops /trainings; # of people reached; results of improved public surveys; % workshop participants from underserved or minority communities

Approach: Use education and outreach to decrease apathy and increase awareness of the value of trees and forests.	
Challenges	Public apathy toward trees Low commodity prices drive removals of conservation plantings and riparian buffers Wildfires damage these resources Encroachment of unwanted species into forests and rangelands
Tactics	Engage partners and landowners through workshops and training to connect them with natural environments and the benefits provided by trees Work with communities, homeowners, and landowners to provide understanding of the real value of trees Educate Nebraskans about undesirable species (native and invasive) Track demographic data of workshop participants
Gaps in Funding	Educate Nebraskans on the value of tree plantings Educate Nebraskans of the negative effects of encroachment of unwanted species (both native and non-native species) Educate Nebraskans of the value of restoring forest ecosystems
Gaps in Capacity	Conservation educators Knowledgeable contractor base Restoration ecologist
Gaps in Knowledge	Level of apathy Local community tree priorities (tree boards, certified arborist)

FAP Goal 12: Engage Nebraskans in the stewardship of trees and forests.

Strategy: Promote management of rural and community forests and trees to provide for forests that include diversity in age class, canopy, and species of trees.

Justification: Increasing public engagement in the forest resource will be increasingly important in the decade ahead. Using workshops, seminars, field days, and publications can help inspire Nebraskans to plant trees and get involved in environmental stewardship of their community and rural areas. Engagement must occur among landowners, community leaders, students, stakeholders, and underserved groups and areas in the state. Without direct action in education and outreach, it will remain difficult to improve the state's forests and trees.

OBJECTIVES	PERFORMANCE MEASURES
1. Increase community and rural tree planting	# of trees planted; # of communities; # of rural areas; # of plantings in locations with high percentages of low-income and/or minority representation
2. Manage forest diversity including species, age class, canopy, and density	# acres treated; # of communities
3. Manage community tree canopy	# trees managed, # workers trained

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Approach: Use education and outreach to increase public engagement in forest and tree management.	
Challenges	Community tree inventory data is limited Past plantings have limited the number of species in communities Insects and diseases will eliminate some tree species Public and municipalities lack community forestry awareness and support ▸ Apathy, inaction, and human disconnect from tree planting and green space management ▸ Decreasing volunteerism
Tactics	Educate stakeholders to give them tools to manage forest diversity including species, age class, canopy, and density Track demographic and environmental justice data related to every project site Develop a protocol for tracking and reporting training and outreach effectiveness for participants from underserved populations, establishing a baseline for future inclusivity goals Identify organizations that work directly with underserved communities in order to efficiently identify new demographic audiences and effectively provide outreach and assistance that meets their needs Engage partners and landowners through workshops and training Engage landowners and community leaders in tree planting through Arbor Day events and other tree celebrations Work with communities and homeowners to address invasive species Promote the NSA's approved planting list of species for Nebraska
Gaps in Funding	Cost-share programs for planting diverse species mix Funding to acquire planting stock Cost-share programs for bioswales and pollinator habitat
Gaps in Capacity	NFS staff: community forestry, conservation education, and rural foresters
Gaps in Knowledge	Reason for apathy Connection between human health and tree data Lack of data surrounding the impacts of planting projects with underserved communities and populations