

North Central Nebraska Community Wildfire Protection Plan



FOR THE COUNTIES
OF BOYD, BROWN,
CHERRY, HOLT,
KEYA PAHA, AND
ROCK

Photo courtesy of Seth Peterson

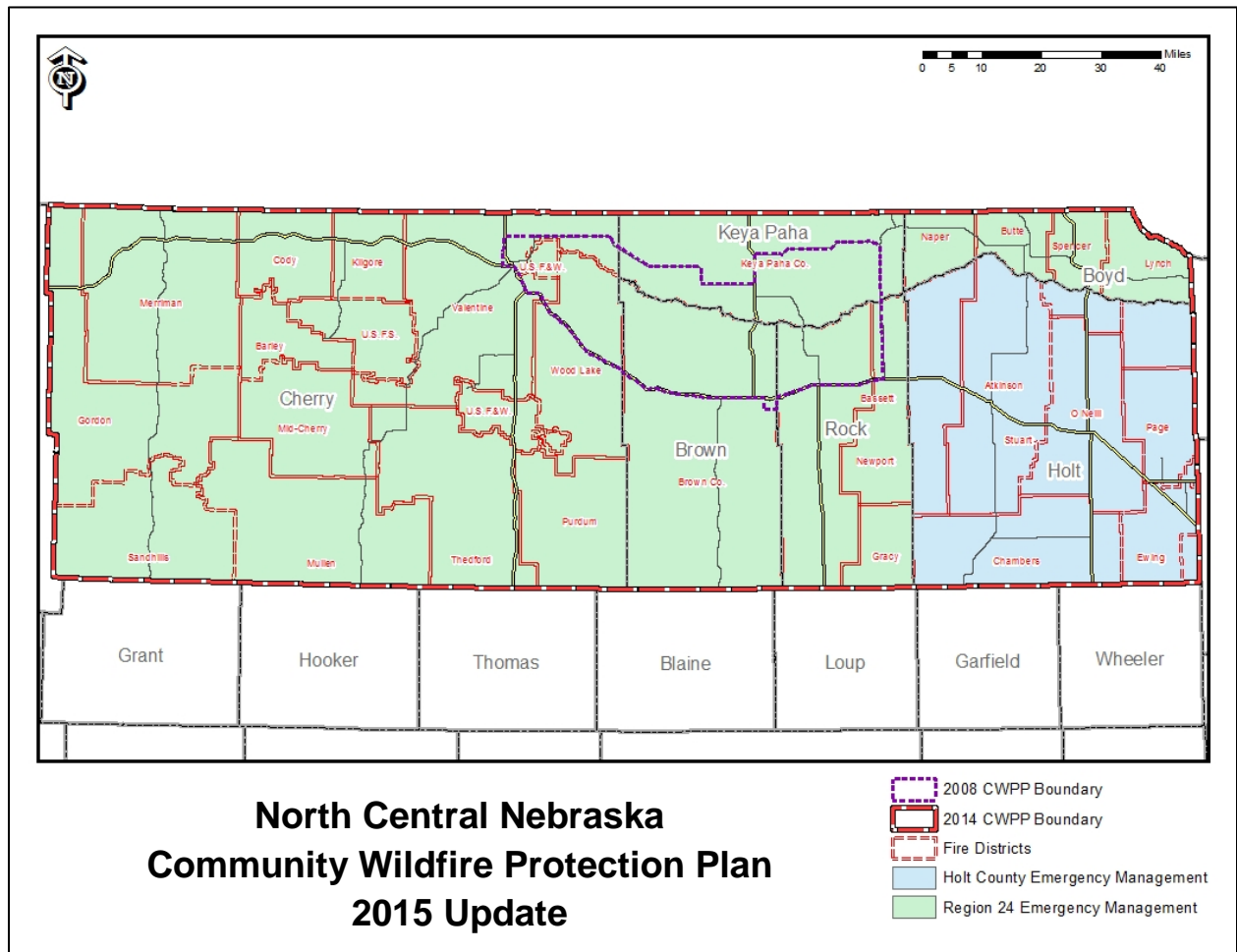
Update 2015



UNIVERSITY OF
Nebraska
Lincoln®



North Central Nebraska Community Wildfire Protection Plan



North Central Nebraska Community Wildfire Protection Plan

FACILITATED BY THE

Nebraska Forest Service

IN COLLABORATION AND COOPERATION WITH

BOYD, BROWN, CHERRY, HOLT, KEYA PAHA, AND ROCK COUNTIES

LOCAL VOLUNTEER FIRE DISTRICTS

REGION 24 AND HOLT COUNTY EMERGENCY MANAGEMENT

CENTRAL NIOBRARA WATERSHED FIRE ADVISORY COUNCIL

LOCAL MUNICIPAL OFFICIALS

LOCAL, STATE, AND FEDERAL NATURAL RESOURCES AGENCIES

AREA LANDOWNERS

Prepared by
Sandy Benson, Forest Fuels Management Specialist
Nebraska Forest Service
308 E. US Highway 20 • PO Box 130
Bassett, NE 68714
Phone 402-684-2290 • sbenson4@unl.edu
<http://nfs.unl.edu>

Special thanks to:

Joseph Stansberry
Susan Helmink
Jennifer Corman
Fred McCartney
Casey McCoy
Lew Sieber
Michael Morgan
Don Westover
Kim Slezak



Photo courtesy of Seth Peterson

It is the policy of the University of Nebraska-Lincoln not to discriminate based upon age, race, ethnicity, color, national origin, gender, sex, pregnancy, disability, sexual orientation, genetic information, veteran's status, marital status, religion or political affiliation.

North Central Nebraska Community Wildfire Protection Plan

Approved By:

Boyd County Board of Supervisors

Signature: Steve Spencer Title: Chairman
Name Steve Spencer Date: 3-24-15

Brown County Board of Commissioners

Signature: Raymond H. Small Title: CHAIRMAN
Name RAYMOND H. SMALL Date: 3-17-2015

Cherry County Board of Commissioners

Signature: Mark I. Adanson Title: CHAIR - CHERRY CO. COMM.
Name MARK I. ADANSON Date: MARCH 10, 2015

Holt County Board of Supervisors

Signature: William T. Telke Title: Chairman
Name William T. Telke Date: 3/16/15

Keya Paha County Board of Commissioners

Signature: Corey L. Nilson Title: Chair - Keya Paha Co Comm
Name Corey L Nilson Date: 3-10-15

Rock County Board of Commissioners

Signature: Jim L. Stout Title: Chairman Rock Co.
Name Jim L. Stout Date: 3-16-15

Nebraska Forest Service

Signature: Scott J. Josiah Title: Director, Neb. Forest Ser.
Name Scott J. Josiah Date: 3/25/15

Table of Contents

Introduction and Legislative Background	1
Goals and Objectives.....	2
Priority Landscapes	3
Process and Overview	4
Community Specific Considerations	
Boyd County.....	11
Brown County	12
Cherry County	13
Holt County	17
Keya Paha County	18
Rock County	20
Action Plan	22
List of Appendices	30

North Central Nebraska Community Wildfire Protection Plan

Introduction

In 2008 members of the Central Niobrara Watershed Fire Advisory Council worked together to develop a Community Wildfire Protection Plan (CWPP), known as the Central Niobrara Watershed Fire Management Plan. The purpose of this plan was to effectively manage fire and hazardous fuels and to improve collaboration and communication between the various agencies and organizations who manage fire in the central Niobrara River valley.

Having a CWPP in place allows the Nebraska Forest Service (NFS) to apply for federal grant dollars to cost-share forest fuels reduction treatments in at-risk areas within the boundaries of the CWPP. The original CWPP boundary included only a small portion of the central Niobrara River watershed in Brown, Cherry, Keya Paha, and Rock Counties – the area that was of immediate concern at the time the plan was prepared. That boundary does not include several areas in priority landscapes that could benefit from forest fuels treatment cost share programs. In May, 2014 the Advisory Council recommended amending the plan boundary to coincide with the Region 24 Emergency Management Area boundary. Subsequently, Holt County, which has its own emergency management area, opted in.

Adjusting the CWPP boundaries may increase opportunities for counties, municipalities, and rural fire districts to seek grant funding for activities related to fire protection. The amended CWPP is not intended to replace the original plan, which is included in its entirety in Appendix A. The amended plan updates outdated data, adds information about areas within the amended boundary, and adds information about Firewise® Communities and other programs that can help homeowners protect their homes and improve firefighter safety. The expanded boundary includes large areas of both forested and non-forested lands, which increases the usefulness and effectiveness of the CWPP.

Legislative Background

To be eligible for federal funding assistance for forests and wildlife, the federal government requires states to prepare action plans that lay out a strategy for conservation work. The Nebraska Game and Parks Commission first published the Nebraska Natural Legacy Project in 2005 as the state's first Wildlife Action Plan (updated in 2011). It identified 40 biologically unique landscapes to help prioritize where conservation work can best be directed. All or parts of ten of the biologically unique landscapes are found within the amended CWPP boundary (Appendix B).

In accordance with the 2008 Farm Bill's requirement for states to conduct a comprehensive analysis of their forests, in 2011 the NFS published the Statewide Forest Resource Assessment and Strategy, known as the Forest Action Plan. Priority forest areas were identified throughout the state using the National Land Cover Dataset. This dataset represents 15 land cover and land use types including open water, development, crops, shrubs, pasture, wetlands, and forests.

The Healthy Forest Restoration Act (US Congress, 2003) requires that a CWPP be developed collaboratively, that it identify and prioritize areas for fuels reduction and methods to reduce fuels on those areas, and that it include recommendations about strategies to reduce structural ignitability. The updated CWPP addresses Healthy Forest Restoration Act requirements and other needs identified by stakeholders.

North Central Nebraska Community Wildfire Protection Plan

Goals and Objectives

State Action Plan Goals and Objectives

This CWPP and the results of its implementation relate directly to all of the Forest Action Plan objectives:

- Objective 1 – Actively and sustainably manage forests
- Objective 2 – Restore fire-adapted lands and reduce risk of wildfire impacts in forests and adjacent communities
- Objective 3 – Identify, manage and reduce threats to forest and ecosystem health
- Objective 4 – Protect and enhance water quality and quantity
- Objective 5 – Improve air quality and conserve energy
- Objective 6 – Assist communities in planning for and reducing wildfire risks
- Objective 7 – Maintain and enhance the economic benefits and values of trees and forests
- Objective 8 – Protect, conserve and enhance fish and wildlife habitat

Sustainably managed forests will reduce wildfire impacts in forests and communities and reduce threats to ecosystem health. Healthy forests, in turn, protect air and water resources and fish and wildlife habitat. Communities that plan for and reduce wildfire risks may also reap both the direct and indirect economic benefits of healthy forests in fire-adapted landscapes.

Implementation of this CWPP also relates directly to the goals of the Nebraska Natural Legacy Project of conserving natural communities, keeping common species common, and protecting at-risk species. Sustainably managed, fire-adapted forests include a diversity of habitats for both at-risk and common species. Restoring unnaturally dense forests to a more natural mosaic vegetative pattern benefits both wildlife and human communities.

CWPP Goals and Objectives

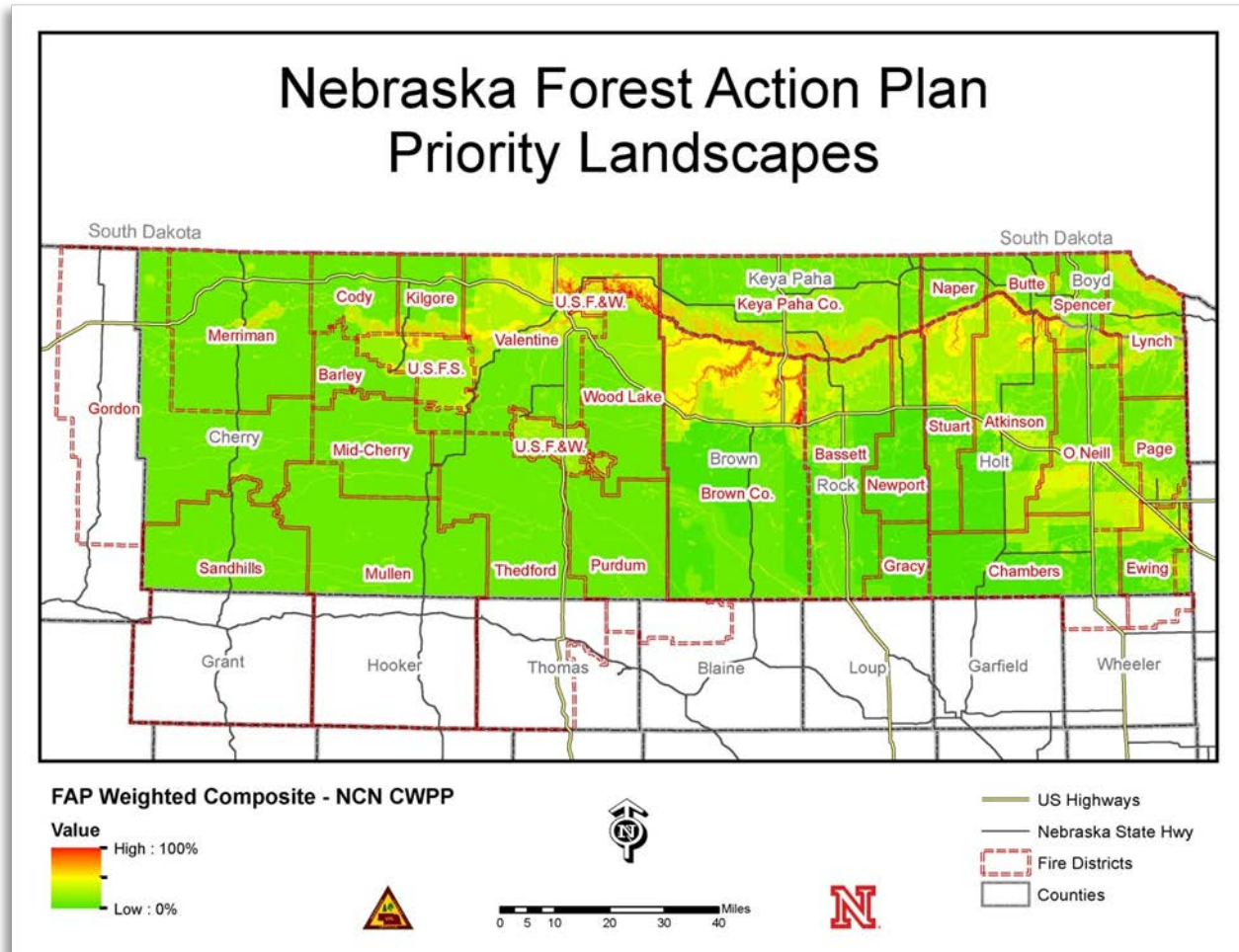
In addition to the broad goals and objectives stated in the original CWPP (Appendix A), the following specific goals and objectives have been identified:

1. Identify hazards and areas at risk
 - a. Identify factors associated with wildfire risk
 - b. Evaluate areas to determine risk
2. Reduce wildfire risk to identified areas
 - a. Partner with stakeholders, including landowners, land managers, fire personnel, and conservation organizations and agencies
 - b. Identify, prioritize, and treat hazardous fuels
 - c. Support emergency response through training and acquisition of equipment
 - d. Promote wildfire prevention and education
 - e. Encourage communities to participate in development of strategies that will reduce wildfire risk
3. Restore fire-adapted ecosystems
 - a. Provide training to enable rapid assessments of burned lands and the implementation of stabilization techniques
 - b. Encourage land managers to control non-native invasive plant species and to actively manage prolific and aggressive native species
4. Establish a monitoring and evaluation process
 - a. Annually evaluate the CWPP implementation effectiveness and recommend changes as needed
 - b. Conduct monitoring of selected collaboratively developed projects and activities to assess progress and effectiveness

North Central Nebraska Community Wildfire Protection Plan

Priority Landscapes

The Forest Action Plan identified Priority Landscapes to focus effort and project funding on landscape-scale projects within these landscapes. The area within the amended CWPP boundary contains a range of landscapes, from farm land and sandhills to riparian woodlands and coniferous forests.



One of the priority landscapes is the Niobrara River Valley. This area experienced large, catastrophic fires in 2006 and 2012. In 2006, the Big Rock Fire charred over 1,720 acres and burned into the city of Valentine (pop. 2,789), requiring part of the city to be evacuated and destroying numerous homes and other structures. The Region 24 Wildfire Complex of 2012 burned more than 75,000 acres within the amended CWPP boundary in Keya Paha, Brown, and Cherry Counties, destroying most of the town of Norden. A fire south of Merriman in 2012 burned over 3,200 acres and threatened several ranch homes. Also in 2012, a 6,717 acre fire burned into Cherry County from South Dakota and caused the evacuation of Crookston.

These incidents show that intense fire behavior can develop in forested areas, move aggressively into the surrounding non-forested land, and threaten population centers. For this reason the NFS has designated all six counties that abut the central portion of the Niobrara River as Wildland Urban Interface (WUI).

North Central Nebraska Community Wildfire Protection Plan

Treatment to reduce woody fuels within the forested areas will help lessen the risk of wildfire within the WUI. This expanded WUI will allow the NFS to utilize federal grant funding to cost-share fuels reduction treatments throughout the region.

Drought and unnaturally dense and unhealthy forests continue to create extreme wildfire risk. Drought cycles are predicted to occur with increasing frequency. Communities can protect structures by reducing their ignitability, reducing the surrounding woody fuels, and improving access for emergency equipment.

Process

The first step in the CWPP amendment process was to gather input from a core working group of stakeholders. Initial participation came from members of the Central Niobrara Watershed Fire Advisory Council, whose members include local fire departments, the Middle Niobrara Natural Resources District, the Nebraska Forest Service, the Nebraska Game and Parks Commission, the US Fish and Wildlife Service (Fort Niobrara and Valentine National Wildlife Refuges), the National Park Service (Niobrara National Scenic River), the Natural Resources Conservation Service (Valentine office), and The Nature Conservancy (Niobrara Valley Preserve).

This group provided the framework for the update. For planning purposes, each county within the CWPP boundary is considered a community.

A presentation explaining the purpose and need of the update was given to each of the five county boards within the Region 24 Emergency Management Area, and all of them endorsed the effort. The Holt County Supervisors learned of the project and asked to be included, and a presentation was given to them as well.

An outreach letter and questionnaire to help with feedback was mailed to potentially interested parties, including fire districts and emergency management personnel within the proposed updated CWPP boundary, county and municipal governments, four natural resources districts, federal and state agencies, state legislators, and non-government organizations. A press release was published in local newspapers that described the update, encouraged input, and provided contact information for comments. The complete outreach list and the questionnaire are included in Appendix E.

Feedback from the initial outreach was incorporated into a draft document presented at public meetings in O'Neill, Butte, Bassett, and Valentine, providing further opportunity for public input. Comments on the draft CWPP were incorporated into the final document, which was then sent to the six county boards for signature.

Overview

The original CWPP (Appendix A) contains descriptive information of the area that is not repeated in this update. The update includes only those topics not covered in the original and those needing updating.

Climate and Weather

North central Nebraska has a continental climate with cold winters and hot summers. According to published climate data 1981-2010, annual rainfall averages in the area decrease from over 25 inches in the east to less than 18 inches in the west. Average relative humidity ranges from 33-92%, with extremes of 17-100%. July is the warmest month, averaging 87-89 degrees F. Over the course of the year typical wind speeds vary from 1 mph to 21 mph, rarely exceeding 29 mph. The highest monthly average wind speed of 11-13 mph occurs in April and May, at which time the average daily maximum wind speed is 20-21 mph.

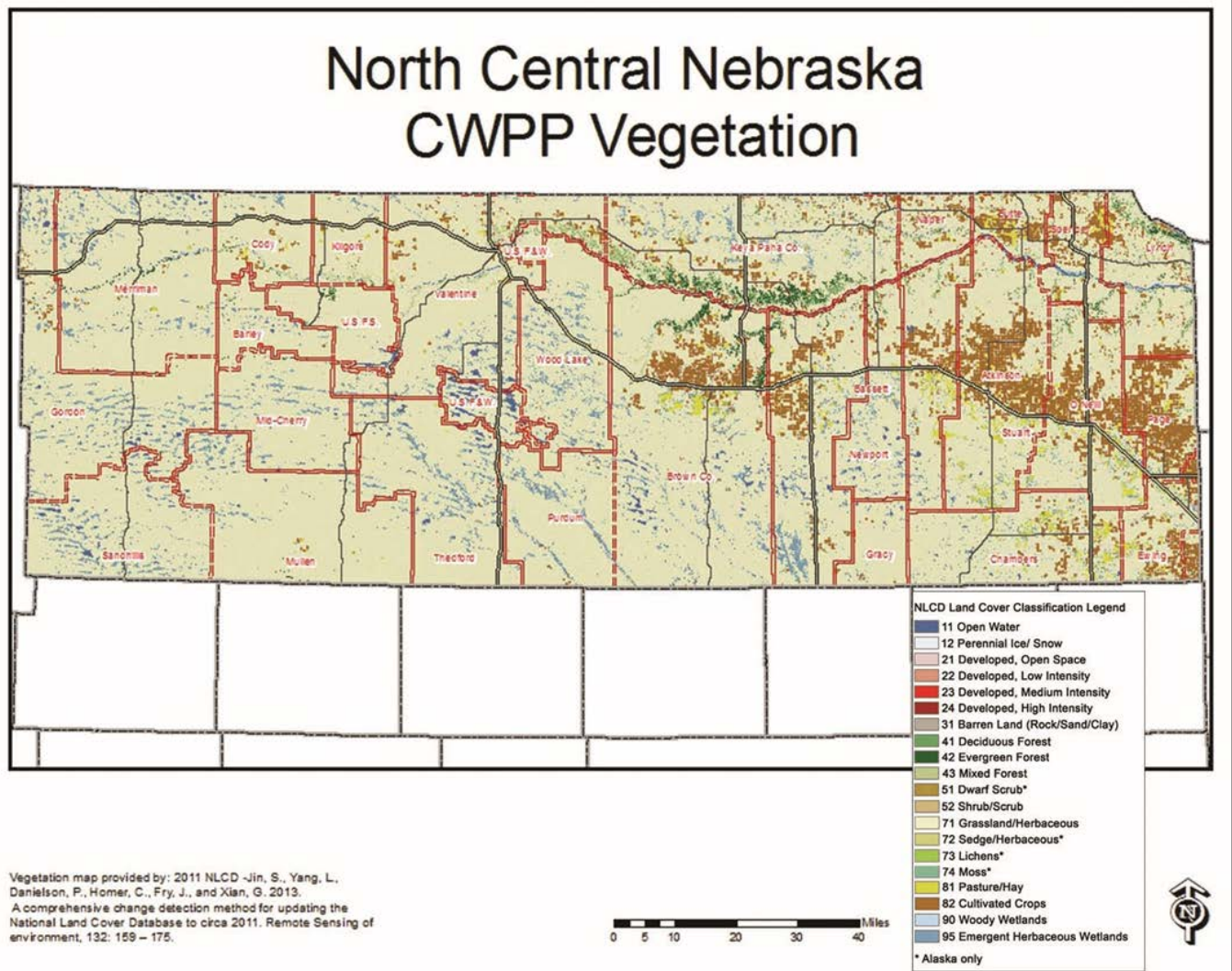
North Central Nebraska Community Wildfire Protection Plan

The National Climatic Data Center reported 2012-2013 as the warmest, driest years on record, with some areas receiving less than half of normal rainfall. In recent decades droughts have become more severe, with peaks about every six years. Extreme drought and wildfire years occurred in 1988, 1994, 2000, 2006 and 2012.

Weather factors define fire season and fire direction. Two general fire seasons have been noted in the area. The early season occurs from snowmelt and the last spring frost (when the previous year's cured vegetation dries) until early May, then eases as vegetation greens up. The late season begins in mid to late summer as fine fuels, such as grasses, begin to dry. In most years the late season extends to mid-November, coinciding with agriculture crop harvests, leaf drop, and curing of grasses in wildland areas. Wet springs can delay the onset of the early season, but they produce more grasses and forbs (fine fuels) in ditches and across rangelands that in late summer and fall become tinder for sparks to start wildfires.

Vegetation and Natural Communities

Vegetation includes large expanses of sandhills and mixed grass prairie, with deciduous forests in the drainages and coniferous forests (ponderosa pine and eastern redcedar) on the bluffs. In many areas eastern redcedar has encroached into the prairies. Detailed information about plant communities appears in Appendix A.



North Central Nebraska Community Wildfire Protection Plan

Land Use

With the exception of two national wildlife refuges and a small national forest unit in Cherry County, state school lands, and several state parks, recreation areas, and wildlife management areas, most of the land within the CWPP boundary is privately owned. Agriculture (livestock and crops) is the predominant use on private and school lands. School lands occupy over 339,662 acres within the CWPP boundary.

Residential and commercial uses dominate the region's 24 incorporated cities, towns, and villages and their immediate surroundings. Rural residential land use exists in conjunction with agricultural operations and recreational subdivisions.

Recreation is an increasingly significant land use in the area, particularly along the Niobrara River. There are just under 23,400 permanent residents in the communities covered by the CWPP, but tourism brings in over 70,000 visitors annually just to the Niobrara National Scenic River, and thousands more visitors to both public and private lands throughout the region. The primary recreational activities are hunting and river floating (canoes, kayaks, tubes). See Appendix A.

All six counties in the updated CWPP boundary have county zoning plans in place. There are currently no restrictions in any of the counties for new building construction in fire-prone areas such as canyon rims. Some of the county zoning offices provide Firewise® information when they issue new building permits. In 2010 the National Park Service provided a two-page flyer to the zoning administrators in Brown, Cherry, Keya Paha, and Rock Counties for this purpose. In 2012 the NFS provided Firewise® materials to the same four county zoning offices for distribution to landowners applying for building permits.

Wildland Urban Interface

The Wildland Urban Interface is defined as areas where homes and other structures are built near or on lands prone to wildfire. According to the "Ready, Set, Go!" program, managed by the International Association of Fire Chiefs, the WUI is not necessarily a place, but a set of conditions that can exist in nearly every community. It can be a major subdivision or it can be four homes on an open range. National Fire Protection Association literature states that conditions include, but are not limited to, the amount, type, and distribution of vegetation; the flammability of the structures in the area and their proximity to fire-prone vegetation and to other combustible structures; weather patterns and general climate conditions; topography; hydrology; average lot size; and road construction. The WUI exists in every state in the country, and in every county/community within the amended CWPP boundary. Site-specific WUI issues are listed in each community section of this CWPP update.

Wildfire Risk Assessment

Historic Role of Fire

Prior to European settlement, large fires (started by lightning or indigenous people) were common, and these fires kept the prairies free of most woody vegetation. Based on evidence from tree rings at the Niobrara Valley Preserve, parts of the Niobrara River Valley may have experienced a mean fire interval of 6 to 10 years prior to Euro-American influence.¹ However, since settlement, people have become increasingly adept at suppressing wildfire, and without fire, over time, the forests became densely overcrowded and woody vegetation encroached on prairies. See Appendix A.

Local Fire History

Nebraska is no stranger to extremely large fires. In 1865 the US Army and ranchers intentionally set a 300 mile wide prairie fire during a dispute with Native Americans. The fire blackened the entire section of Nebraska south of the Platte River and West of Fort Kearney. It was visible from Colorado and Kansas, and eventually it burned all the way to Texas. Closer to home, a historic marker near Newport, in Rock County, tells the story of a 40-mile

North Central Nebraska Community Wildfire Protection Plan

wide fire that threatened the town in 1904. Nebraska's largest wildfire occurred in 1972, when 100,000 acres burned near Mullen.

More recently, in 1999 about 40,000 acres of sandhills prairie burned along a 10-mile front from Thedford almost to Valentine, killing one firefighter. In 2006 about 9,600 acres burned near Halsey, just south of the CWPP area. An 11,000 acre fire near Thedford in 2011 seriously injured two Valentine firefighters.

Locally, large fires in recent years included the 1,720-acre Big Rock Fire near Valentine in 2006 and, in 2012, the Region 24 Wildfire Complex (75,856 acres in Keya Paha, Brown, and Cherry Counties), a 6,717 acre fire that burned into Cherry County from South Dakota and caused the evacuation of Crookston, and a 3,238-acre fire along the Niobrara River south of Merriman. As observed in 2012 and evidenced in historical research, the Niobrara River is not always a barrier to fire spread.¹

Some fire districts voluntarily report their annual fire response data to the Nebraska Forest Service. The table below shows the fire data reported by fire departments from 2000 to 2013, by county.

Fire History 2000-2013 as Reported to the Nebraska Forest Service					
County	# Fires Lightning	Acres	# Fires Human	Acres	# Mutual Aid Responses
Boyd	29	493	113	5,859	29
Brown	15	68,156	40	2,070	21
Cherry	266	50,395	211	41,005	134
Holt	33	75	135	2,320	11
Keya Paha	21	9,115	15	417	6
Rock	28	377	38	8,766	4

Because the fire districts vary in their level of reporting, there is no accurate, comprehensive fire history available for the CWPP area. The NFS does have GIS data showing the locations of some of the larger fires. These have been mapped by county and appear in Appendix B.

From 2003 through 2014, the US Fish and Wildlife Service reported a total of 12,442.6 acres burned on its properties in Cherry and Rock Counties. Of these acres, 11,285 were prescribed fires, and 1,157.6 acres were wildfires. Wildlife refuge fire crews also assisted neighboring fire districts with wildfire suppression on 35,743 acres during this period.

From 1994 through 2012, the US Forest Service reported a total of 3,471.8 acres burned in wildfires on the Samuel McKelvie National Forest. Of these acres, 1,040 were human-caused fires and the rest were lightning fires. In 2002 USFS personnel conducted a 450-acre prescribed fire in McKelvie's Lord Lakes area.

Fire Hazard

In the years since European settlement, exclusion of low-intensity ground fires, limited forest management, and prolific regeneration of eastern redcedar and ponderosa pine have increased the fire danger in forested areas. This, combined with severe drought, created conditions conducive to the catastrophic wildfires of 2006 and 2012. Drought conditions also increased the wildfire risk in the grasslands.

Wildfire Hazard is described in detail in the Wildfire section of the Region 24 Emergency Management Multi-Jurisdictional Hazard Mitigation Plan (pp. 65-74), which is included in Appendix C. There are some errors in the

North Central Nebraska Community Wildfire Protection Plan

figure and table numbers in the 2010 Region 24 plan. This plan is in the process of being updated. Those updates will be available from the Region 24 Emergency Management Office when that work is complete, which will be after this CWPP update has been released.

Individual locations of concern are identified in each community-specific section of the CWPP. Additionally, the Region 24 Emergency Management Director identified specific areas of concern for the five Region 24 counties. These locations include the Long Pine area (including Pine Creek Canyon and Hidden Paradise) and the numerous wooded areas along rivers and creeks where there are homes and other structures. Many of these areas have limited access. He identified area-wide high-risk ignition sources as dense undergrowth and, depending on time of year, dry weather conditions when fires can start from lightning and hot farm machinery. He underscored the importance of addressing fuel load reduction in community mitigation plans.

Economic Impacts

Excessive fuel loading can affect local economies in many ways. It reduces available forage, and therefore the pasture carrying capacity, for livestock and wildlife. If woody fuels are removed by uncontrolled, high intensity wildfire, other resources are affected. Intense fires may induce hydrophobic soils, which significantly increase runoff and erosion in steep terrain. Loss of grazing capacity and decreased water quality can be long-lasting problems for landowners whose livelihoods depend on livestock and hunting income.

A proactive approach to reducing hazardous fuels can provide jobs and generate valuable wood products such as lumber, posts, and biomass. Mechanically thinning forests reduces the hazard and risk of intense wildfire, can improve grazing capacity and wildlife habitat, and can increase the amount of precipitation that reaches streams, lakes, and the water table. Adherence to the *Forestry Best Management Practices for Nebraska* by those conducting mechanical thinning operations can reduce the potential for soil erosion from equipment use.

Emergency Operations

Responsibilities and Mutual Aid Agreements

Volunteer fire departments are the first line of defense against wildfires on private and state lands within each community. The US Fish and Wildlife Service and the US Forest Service have fire divisions that can respond to wildfires on the federal lands those agencies manage.

Under the Region 24 Common Emergency Management Agreement Boyd, Brown, Cherry, Keya Paha, and Rock Counties have mutual support responsibilities. Brown, Cherry, Keya Paha, and Rock County fire departments are all members of the KBRC Mutual Aid District. Holt and Boyd Counties comprise the Holt/Boyd Mutual Aid Association. The Naper fire chief noted that “We make things work to stay safe.” Holt County handles dispatch for Boyd County. Holt County will also respond to Rock and other neighboring counties, as needed.

Several Cherry County fire departments are members of the Sandhills Mutual Aid Association in the Region 26 Emergency Management Area south of Region 24. Counties along the north border of the CWPP area also participate in mutual aid with the bordering counties in South Dakota. The Merriman Fire Department is part of Cherry County Mutual Aid and the Pine Ridge Mutual Aid District. The US Fish and Wildlife Service has mutual aid agreements with all of the counties surrounding the wildlife refuges. Because the Nebraska National Forest’s Bessey Ranger District includes the McKelvie National Forest, the US Forest Service is a member of both the Sandhills and Cherry County Mutual Aid Associations.

In addition to notification by Sheriff’s Department personnel and/or dispatch, Region 24 Emergency Management has notification from “Code Red” that will allow Region 24 EMA to develop groups that can be called in an emergency situation for notification of evacuations, hazardous material incidents, flooding beyond

North Central Nebraska Community Wildfire Protection Plan

flash flooding, child abductions, and any emergency notification, including wildfire. This will allow notification of a large geographical area or a group of people.

According to the Region 24 Emergency Management Director, a new state ID card system for emergency response personnel and equipment was introduced prior to the wildfires of 2012 and is still in the process of being implemented. This identification and credentialing system will allow first responders (agencies, personnel, and equipment) to more efficiently respond to incidents. It will streamline the incident check-in process and track time spent on an incident for both personnel and equipment. The ID cards use bar codes that identify equipment, people and their qualifications, and can even track volunteers.

The Mobile Express program is used to track an incident. The Rapid Tag program helps track volunteers. A volunteer's driver's license is swiped and the data used to print an identification card which is then used by Mobile Express to track the volunteer. The program can also be used to generate a printed "Battle Book" that lists equipment (with picture, description, and ID card) and personnel so that first responders can check into an incident via radio without having to physically check in. Training for this system is ongoing statewide.

Staging and Safety Zones

The forested drainages are separated by wide expanses of grasslands and farm ground. There are abundant staging areas and safety zones in the uplands away from the canyon edges. Grazed pastures, green alfalfa fields, and fallow farmland can provide staging areas and safety zones away from the forested areas. For those who responded to the questionnaire, location-specific information is provided in each community section. The Region 24 Emergency Management Director stated that fairgrounds and city parks are generally good locations, depending on the specific location of a wildfire.

Roads/Bridges

In addition to the federal and state highways, the region is served by a network of county-maintained roads. Ranch trails provide additional access for fire suppression and other emergency vehicles. Restricted bridges and roads which could restrict truck/lowboy passage have not been mapped. Developing such a map has been identified as a need that should be addressed (see Action Plan).

Communications

The Region 24 Emergency Management Director stated that gaps in cellular service are widespread across Region 24. Additionally, there have been some radio compatibility issues that are currently being addressed. Refer to the Action Plan section of this update. Location-specific information, provided by those who responded to public outreach, about communications is listed in each community section of this CWPP update.

Capabilities and Capacity

A listing of apparatus and staffing for each fire district is included in Appendix G. Some districts have agreements with outside agencies or county departments (such as Roads) for assistance with heavy equipment.

Through the Federal Excess Property Program (FEPP), a cooperative program with the U.S. Forest Service, the Nebraska Forest Service acquires and reconditions fire vehicles which are no longer needed by the federal government. These vehicles are loaned to rural fire districts, which are responsible for maintenance. When no longer needed, the vehicles are returned to the NFS and are either re-assigned or sold, with the proceeds being returned to the US treasury. Currently, almost 300 pieces of FEPP equipment are in use by 180 rural fire districts across Nebraska. In the six-counties covered by the North Central Nebraska CWPP, there are 89 pieces of FEPP equipment, valued at \$7,427,750 and housed at 21 fire stations and substations.

North Central Nebraska Community Wildfire Protection Plan

This program allows fire districts to obtain essential fire-fighting equipment at an affordable price. The NFS Fire Shop can also provide cooperating fire districts resources to reduce vehicle maintenance costs. This includes securing parts for vehicles and providing complimentary maintenance checks. Mechanics can also provide routine vehicle maintenance at the NFS Fire Shop or fire districts may use a trusted local mechanic. Two NFS mobile repair units are available to respond to the maintenance needs of cooperating fire districts. These units can provide routine repairs, as well as on-site support for cooperating districts in the event of catastrophic fires.

The Wildfire Control Act of 2013 enabled the establishment of Single Engine Air Tanker (SEAT) bases in Nebraska. Nebraska has a long history of utilizing aerial applicators for fire suppression, and the addition of permanent bases further enhances fire aviation and initial attack capabilities. SEAT bases are staffed by Nebraska Forest Service personnel during the fire season, working with a SEAT on contract to Nebraska through its partners at the Nebraska Emergency Management Agency. One of these permanent SEAT bases has been established at Miller Field in Valentine. In addition, a mobile SEAT base to support operations at airports without a permanent base is completed and a second mobile base is planned. The SEAT provides critical observation and access for remote areas. The Region 24 Emergency Management Director noted that tanker support is critical for all locations away from towns and perennial water supplies such as lakes and rivers. See Appendix H for more information on the SEAT base program and aerial applicators.

Location-specific information, provided by those who responded to public outreach, concerning water sources, staging and safety zones, and infrastructure is listed in each community section of this CWPP update.

Training

The Nebraska Forest Service provides wildland fire training through classes in numerous communities across the state as well as mutual aid schools and State Fire School attended by 1,500 people each year. In addition, the NFS sponsors the Nebraska Wildland Fire Academy, held annually in April at Fort Robinson State Park. Begun as an interagency effort by the NFS and the U.S. Forest Service, the Academy provides opportunities for Nebraska volunteer firefighters to attend nationally-recognized wildland fire training at a much lower cost on a schedule that doesn't require them to be away from home more than what is already required by their volunteer efforts. It also enables local volunteers to enter the national red card system and develop certifications that are recognized across the nation. Classes cover a variety of topics ranging from beginning to advanced firefighting techniques, Firewise® landscaping and construction to leadership and educating others about fire prevention. They offer flexibility and can be fine-tuned to meet the needs of local fire departments.

NFS delivered and sponsored course hours grew from just 73 in 2007 to 598 in 2013. While the NFS Wildland Fire Training Program has provided a growing amount of training in recent years, the program was at maximum capacity. To increase capacity, two additional wildland fire instructors have been hired by the NFS – including one based in Ainsworth. The addition of these two instructors will increase the amount of wildland fire training available, grow the number of Nebraska firefighters eligible for national wildland fire certification, improve the efficiency of the program by locating the training providers closer to the students, and assist with major training efforts such as the Nebraska Wildland Fire Academy and State Fire School. See Appendix A for additional information on training.

North Central Nebraska Community Wildfire Protection Plan

Community-Specific Considerations

BOYD COUNTY

540 sq. miles

2013 population: 2,032

Community Profile

Boyd County occupies the northeast corner of the CWPP area. It is bounded on the west by Keya Paha County, on the south by the Niobrara River and Holt County, on the east by Knox County, and on the north by the state of South Dakota and the Missouri River. Incorporated towns and villages include the county seat of Butte (pop. 321), Spencer (pop. 443), Lynch (pop. 238), Naper (pop. 83), Bristow (pop. 64), Anoka (pop. 6), Gross (pop. 2), and Monowi (pop. 1). US Highway 281 and State Highway 11 cross the county from north to south in the central part of the county. State Highway 12 bisects the county from east to west.

There are volunteer fire departments in Bristow, Butte, Lynch, Naper, and Spencer. Besides municipal lands, public lands include two small Nebraska Game and Parks Commission Wildlife Management Areas south of Butte (approx. 231 acres total), a 30-acre extension of the Karl E. Mundt National Wildlife Refuge, which lies mostly in South Dakota, and 10,404 acres in school lands.

Vegetation zones include riparian deciduous forest along the Niobrara, Keya Paha, and Missouri Rivers and their tributaries, agriculture crop fields concentrated in the southwest and scattered elsewhere throughout the county, and mixed-grass prairies in the uplands. In some areas eastern redcedar has encroached sufficiently into grasslands and deciduous forests to become a distinct and highly flammable vegetation type.

Locations of special concern include the wooded bluffs along the Niobrara and Missouri Rivers and their tributaries, where dense stands of eastern redcedar have encroached under deciduous forests, creating high fire hazard. WUI areas of concern include homes along the Niobrara and Missouri River breaks. Eastern redcedar encroachment into pasture lands, particularly near the canyon rims, is creating an increasing risk of extreme fire behavior in these areas. All of Boyd County's towns and villages and all of the forested areas along the rivers and streams lie within the boundaries of the WUI as defined by the NFS in the introduction to this CWPP update.

Protection Capabilities and Infrastructure

Water Sources

The only developed water systems (not private wells) are in the towns and villages. The Missouri, Niobrara, and Keya Paha Rivers are reliable water sources. Reservoirs, ponds, and stock tanks are located throughout the community. During drought conditions many of the reservoirs and ponds are not reliable sources of water. Many smaller streams have only intermittent flows and are not reliable.

Utilities/Phone service

Boyd County is crossed by several high tension power lines. Rural electric service is provided by Nebraska Public Power District, which operates a hydroelectric generating facility on the Niobrara River south of Spencer. There is both cellular and landline telephone service available in the county. There are gaps in cell coverage in some canyon areas.

Staging and Safety Zones

The Naper Fire Chief noted that the community of Naper provides a good staging zone in the event of a large wildfire.

North Central Nebraska Community Wildfire Protection Plan

BROWN COUNTY

1,225 sq. miles

2013 population: 2,926

Community Profile

Brown County is located in the south central portion of the CWPP area. It is bounded on the west by Cherry County, on the south by Blaine County, on the east by Rock County, and on the north by the Niobrara River and Keya Paha County.

Incorporated communities include the county seat of Ainsworth (pop. 1,728), Johnstown (pop. 64), and Long Pine (pop. 305). US Highway 20 bisects the county from west to east and State Highway 7 and US Highway 183 cross the county from south to north in the central and eastern parts of the county. Volunteer fire departments in Brown County include Ainsworth, Johnstown, Long Pine, and Brown County Rural Fire Department.

Besides municipal lands, public lands include 38,487 acres in school lands, eight state wildlife management areas and three state recreation areas (4,170 acres total), 1,991 acres of the University of Nebraska's Barta Brothers Ranch, and about 718 acres in scattered 40- and 80-acre parcels owned by the federal Bureau of Land Management and the National Park Service. Approximately 34,811 acres of The Nature Conservancy's Niobrara Valley Preserve are located adjacent to the Niobrara River in Brown County. TNC is a non-profit, non-governmental conservation organization.

Vegetation zones include ponderosa pine forests and savannas along the bluffs of the Niobrara River and its tributaries, deciduous forests along the Niobrara and Calamus Rivers and their tributaries, agriculture crop fields concentrated in a wide band north of US Highway 20 and scattered elsewhere throughout the county, and sandhills-mixed grass prairie throughout the county. In some areas eastern redcedar has encroached sufficiently into grasslands and forests to become a distinct and highly flammable vegetation type.

The Fairfield Creek wildfire of 2012 (part of the Region 24 Wildfire Complex) successional set back many acres of forest to forbs, grasses and shrubs. Over time, fine fuels build up in burned woodlands because grazing animals are often unable to access areas where burned tree "skeletons" have fallen in jackstraw fashion across the landscape. These areas carry a high fuel load of both standing and downed heavy fuels, as well as fine fuels, putting them at high risk of extreme fire behavior once again when the next fire passes through, sometimes years later. The fallen trees also impede emergency access during subsequent wildfires.

The area most at-risk from wildfire is located in the northern quarter of the county, south of the Niobrara River. Locations of special concern include the wooded bluffs along the Niobrara River and its tributaries, where dense stands of eastern redcedar have encroached under pine and deciduous forests, creating high fire hazard. Eastern redcedar encroachment into pasture lands, particularly near the canyon rims, is creating an increasing risk of extreme fire behavior in these areas. WUI areas of concern include homes along the Niobrara River and its tributaries. Hidden Paradise, an unincorporated recreational community on Pine Creek, adjacent to Long Pine, has been identified as the most wildfire-vulnerable community in Nebraska. In addition to heavy woody fuels, it has limited access with road and bridge limitations.

These limitations apply to other parts of Pine Creek Canyon as well. Other high-risk locations identified by the Ainsworth/Brown County Rural Fire Department include Long Pine and Keller Park State Recreation Areas, Pine Canyon, and Plum Creek Canyon, as well as most of the other wooded areas and grasslands.

North Central Nebraska Community Wildfire Protection Plan

All of Brown County's population centers and all of the forested areas along the rivers and streams lie within the boundaries of the WUI as defined by the NFS in the introduction to this CWPP update.

Protection Capabilities and Infrastructure

Water Sources

The only developed water systems (not private wells) are in Ainsworth and Long Pine. The Niobrara and Calamus Rivers and their tributaries are generally reliable water sources. Reservoirs, ponds, and stock tanks are located throughout the community. During drought conditions many of the reservoirs and ponds are not reliable water sources. Many smaller streams have only intermittent flows and are not reliable. The Ainsworth/Brown County Rural Fire Department has noted a severe lack of water sources in the grasslands in the south part of the county.

Utilities/Phone service

Rural electric service is provided by KBR Rural Public Power District. There is both cellular and landline telephone service available in the county. Cell service is spotty in many locations, and not available at all in most of the canyons. The Ainsworth/Brown County Rural Fire Department has listed the Niobrara Valley as especially problematic for cellular telephone and radio communication.

Staging and Safety Zones

The Ainsworth Fire Chief noted that, in the event of a large wildfire, potential staging areas and safety zones could include the Ainsworth Fire Station, the Johnstown fairgrounds hall, and a self-contained mobile command trailer owned by the Ainsworth Fire Department.

Roads and Bridges

There are some Brown County roads that have missing bridges that could present access delays in a wildfire situation. Other roads have bridges with width and/or weight limitations that could limit emergency vehicle access.

CHERRY COUNTY

6,010 sq. miles

2013 population: 5,788

Community Profile

Cherry County occupies the west end of the CWPP area. It is bounded on the west by Sheridan County, on the south by Grant, Hooker, Thomas, and Blaine Counties, on the east by Brown and Keya Paha Counties, and on the north by South Dakota. Cities and villages include the county seat of Valentine (pop. 2,789), Cody (pop. 154), Crookston (pop. 69), Kilgore (pop. 77), Merriman (pop. 128), Nenzel (pop. 20), and Wood Lake (pop. 63). Unincorporated communities include Brownlee, Elsmere, and Sparks. US Highway 20 crosses the northern part of the county from west to east and US Highway 83 crosses the county from south to north in the eastern part of the county. State Highways 61 and 97 provide additional major north-south routes across the county. State Highway Spur 16F runs south from Nenzel through McKelvie National Forest, then runs southwest and connects via county road to State Highway 61 roughly halfway between US Highway 20 and State Highway 2. State Spur 16B runs west southwest from US Highway 83 south of Valentine to the Valentine National Wildlife Refuge, and connects via county road to State Highway 97 south of McKelvie National Forest. State Highway 2 provides an east-west route just south of the county line.

Seven volunteer fire districts are located completely within Cherry County: Valentine, Barley, Cody, Kilgore, Merriman, Mid-Cherry, and Wood Lake. Five fire districts in neighboring counties include portions of Cherry County: Gordon, Mullen, Purdum, Sandhills, and Thedford.

North Central Nebraska Community Wildfire Protection Plan

Additionally, the US Fish and Wildlife Service (Valentine and Fort Niobrara National Wildlife Refuges) and the US Forest Service (Nebraska National Forest/McKelvie NF/Bessey Ranger District) have wildfire response capability.

There is more public land in Cherry County than in the other counties located within the CWPP boundary. In addition to municipal lands, public lands include the federally-owned McKelvie National Forest (115,523 acres), the Fort Niobrara and Valentine National Wildlife Refuges (92,118 acres total), and several scattered small holdings administered by the Bureau of Land Management and US Army Corps of Engineers (334 acres total). State lands include 171,154 acres in school lands, UNL's Gudmundsen Sandhills Laboratory (11,154 acres), the Valentine Fish Hatchery (910 acres), four state parks and recreation areas (10,173 acres total), and nine wildlife management areas (6,478 acres total). Approximately 18,094 acres of The Nature Conservancy's Niobrara Valley Preserve are located adjacent to the Niobrara River in Cherry County. TNC is a non-profit, non-governmental conservation organization.

Vegetation zones include ponderosa pine forests and savannas along the bluffs of the Niobrara and Snake Rivers and their tributaries, deciduous forest along the Niobrara, Snake, North Loup, and Middle Loup Rivers and their tributaries, sandhills prairie throughout most of the county, and agriculture crop fields along and north of the Niobrara River and sparsely scattered throughout the sandhills valleys. In some areas along the Niobrara and Snake Rivers and their tributaries, eastern redcedar has encroached sufficiently into grasslands and forests to become a distinct and highly flammable vegetation type.

The Fairfield Creek and Merriman wildfires of 2012 and the Big Rock wildfire of 2006 successional set back many acres of forest to forbs, grasses and shrubs. Over time, fine fuels build up in burned woodlands because grazing animals are often unable to access areas where burned tree "skeletons" have fallen in jackstraw fashion across the landscape. These areas carry a high fuel load of both standing and downed heavy fuels, as well as fine fuels, putting them at high risk of extreme fire behavior once again when the next fire passes through, sometimes years later. The fallen trees also impede emergency access during subsequent wildfires.

The areas that are at highest risk from wildfire are located in the northern and central parts of the county, along the wooded bluffs of the Niobrara and Snake Rivers and their tributaries, where dense stands of eastern redcedar have encroached under ponderosa pine and deciduous forests, creating high fire hazard. Eastern redcedar encroachment into pasture lands, particularly near the canyon rims, is creating an increasing risk of extreme fire behavior in these areas. Locations of special concern include homes at the edges of Valentine and recreational use areas along the Niobrara River from Berry Bridge east to the county line.

Cherry County Commissioners and emergency management personnel identified the Snake River, Schlagel Creek, and Gordon Creek as areas at extremely high risk from wildfire. The Prairie Club Golf Course and the nearby residential areas have numerous structures on the canyon rim with dense woodlands below. These areas could benefit greatly from the implementation of Firewise practices and forest fuels treatment activities.

The Valentine City Manager identified the northern and northwestern edges of Valentine as at high risk because they border heavily wooded areas. There is also a housing development on Lakeshore Dr. on the north side of town that has only one way in and one way out. He also identified dry grasses and burned trees from the Big Rock fire and overgrown, unthinned forests as posing a threat to Valentine.

The Middle Niobrara NRD has specifically identified the area that burned in the 2006 Big Rock Fire as at high risk for burning again in a future wildfire, and the region surrounding the burned area as containing large quantities of dense woody fuels. These locations include the area surrounding the Valentine water tower, the west side of US Highway 83 north of Valentine, and the North Mill Pond residential area.

North Central Nebraska Community Wildfire Protection Plan

The MNNRD named high-risk ignition sources, including heavy fuels (burned trees) in the Big Rock Fire footprint, dry unburned expanses of eastern redcedar and ponderosa pine, and grasslands. They identified specific areas with inadequate access, including homes on canyon points and in canyon bottoms. Topics the MNNRD would like to see incorporated into mitigation plans include promoting and making available fire extinguisher checks and fire extinguisher operation training, and promoting chipping and utilization of overstocked ponderosa pine and eastern redcedar trees.

Merriman area fire personnel identified specific areas with inadequate access or road/bridge limitations as the Niobrara River and Leander Creek. Areas considered high-risk ignition sources in the Merriman area are along roads and on pasture ground that receives many lightning strikes.

The Mullen Fire District, which lies partly in Cherry County, has identified the woodlands along the Middle Loup River in Cherry County, as well as areas along the Dismal River in neighboring Hooker County as high-risk areas.

All of Cherry County's population centers and all of the forested areas along the rivers and streams lie within the boundaries of the WUI as defined by the NFS in the introduction to this CWPP update. The rangeland portions of the community which lie outside of the WUI are at risk from range fires, which can travel quickly through light fuels. Historically, some of these fires have exceeded 100,000 acres in size.

Protection Capabilities and Infrastructure

Water Sources

The only developed water systems (not private wells) are in the municipalities. The rivers and their larger tributaries are generally reliable water sources. Reservoirs, ponds, and stock tanks are located throughout the county. During drought conditions many of the reservoirs and ponds are not reliable water sources. Many smaller streams have only intermittent flows and are not reliable. According to Merriman area fire personnel, windmills are critical water sources and it can be a problem when windmills are turned off during the summer.

The Prairie Club Golf Course, located near the Snake River, has a system of approximately one hundred 150 psi water hydrants with 5,800 gpm capability that could be used for filling tanks on fire vehicles. These hydrants are not currently mapped, but the main hydrant is located at their maintenance facility headquarters.

The Middle Niobrara NRD manager named the Mill Pond at the edge of Valentine as the best water supply. He noted that most of the canyons do not have water in them, other than small creeks. He said that water supply wells are needed in the canyons. The Valentine City Manager noted that city water can be accessed at the Valentine Fire Department. He said that although the Mill Pond on the north edge of town was used in the past, it is filling with sand and may not always be available in the future.

Utilities/Phone service

Cherry County is crossed by several high tension power lines. Rural electric service is provided by Cherry-Todd Rural Electric, KBR Rural Electric, and Panhandle Rural Electric Membership Association. There is both cellular and landline telephone service available in the county. Cell service is spotty in many locations, and, according to the Middle Niobrara NRD, of limited availability or not available at all in some of the northern canyons. Merriman area fire personnel report cell that coverage and group communications are generally poor. They ranked putting a communications plan in place as a vital component of a mitigation plan. The Mullen Fire District noted that areas in Cherry County north and west of Mullen have gaps in cell phone coverage.

North Central Nebraska Community Wildfire Protection Plan

Staging and Safety Zones

The Middle Niobrara NRD manager noted that, in the event of a large wildfire, potential staging areas and safety zones could be the Cherry County fairgrounds (safest) and the Cherry County Hospital, which is fairly close to the canyons. Merriman area fire personnel identified areas that have already burned as potential safety zones. According to the Valentine City Manager, the Valentine fire department at the corner of Hall and B Streets was successfully used as a staging area during the 2006 fire, and it can be used as such again in the future.

Communications

Cherry County Emergency Management provided the following overview of the capabilities of the Cherry County communications system:

Merriman

- Radio equipment is located approximately 14 miles south of Merriman
- Cherry County-Merriman law enforcement / Merriman fire
- Cherry County Road District #3

Cody

- Page forward repeater on Cody water tower
- Fire base station in fire hall
- Road district base station in road shop

Kilgore

- Page forward repeater I on fire hall tower

Nenzel

- Tower location: Approximately 25 miles south of Nenzel on county-owned tower
- Fire base station
- Law base station
- Road district base station

Beaver

- Tower location: approximately 35 miles south of Valentine on US Hwy. 83 county-owned tower
- Fire base station
- Law base station
- Road district base station

Wood Lake

- Tower location on city water tower
- Fire base station in fire hall

Norden

- Tower location approximately 3 miles west of Norden
- Fire base station
- Law base station
- Road district base station

North Central Nebraska Community Wildfire Protection Plan

Valentine

- Tower location north edge of Valentine
- Fire base station
- Law base station
- Road district base station
- Controls for all radios in other tower locations are located in dispatch

Dispatch center: From dispatch there is direct contact with

- Fire departments (entire county)
- Local and county law enforcement
- Nebraska Game and Parks Commission officers
- National Park Service rangers
- Valentine Utilities
- County road districts
- South Dakota state radio
- Winner (SD) police department
- Fort Niobrara fire units

Communications Trailer: Ability to talk to all above and also Paraclete Radio system with

- 800 UHF
- 300 UHF
- VHF high band
- VHF low band
- Cellular booster

All tower locations and trailer are generator-equipped

Additional Equipment

Cherry County emergency management personnel noted that “ranch rigs” – 4WD trucks with water tanks – often provide initial attack on wildfires. There are about 250 such units in the county.

HOLT COUNTY

2,418 sq. miles

2013 population: 10,449

Community Profile

Holt County occupies the southeast corner of the CWPP area. It is bounded on the west by Rock County, on the south by Garfield and Wheeler Counties, on the east by Knox and Antelope Counties, and on the north by the Niobrara River and Boyd County. Incorporated cities, towns, and villages include the county seat of O’Neill (pop. 3,705), Atkinson (pop. 1,245), Chambers (pop. 268), Emmet (pop. 48), Ewing (pop. 387), Inman (pop. 129), Page (pop. 166), and Stuart (pop. 590). The unincorporated community of Amelia is in southwestern Holt County. US Highways 20/275 bisect the county from west to east and US Highway 281 and State Highway 11 cross the county from north to south in the central part of the county. These two highways are connected by State Highway 95 south of O’Neill. There are volunteer fire departments in O’Neill, Atkinson, Chambers, Ewing, Page, and Stuart. Besides municipal lands, public lands include 68,815 acres in school lands, five Nebraska Game and Parks Commission properties (1,420 acres total), and a few scattered small holdings (125 acres total) administered by the federal Bureau of Land Management.

North Central Nebraska Community Wildfire Protection Plan

Vegetation zones include riparian deciduous forests along the Niobrara and Elkhorn Rivers and their tributaries, agricultural crop fields concentrated along a wide strip north of the Elkhorn River and in the southeast corner of the county, mixed-grass prairies in the uplands south of the Niobrara River, and sandhills-mixed grass prairie south of the Elkhorn River. In some areas eastern redcedar has encroached sufficiently into grasslands and deciduous forests to become a distinct and highly flammable vegetation type.

The area most at-risk from wildfire is located in the northern third of the county, between the Niobrara River and the northern edge of cultivated farm ground. Locations of special concern include the wooded bluffs along the Niobrara River and its tributaries, where dense stands of eastern redcedar have encroached under deciduous forests, creating high fire hazard. Eastern redcedar encroachment into pasture lands, particularly near the canyon rims, is creating an increasing risk of extreme fire behavior. WUI areas of concern include homes along the Niobrara River and its tributaries. All of Holt County's population centers and all of the forested areas along the rivers and streams lie within the boundaries of the WUI as defined by the NFS in the introduction to this CWPP update.

Protection Capabilities and Infrastructure

Water Sources

The only developed water systems (not private wells) are in the cities, towns and villages. The Niobrara River and its tributaries are generally reliable water sources. Reservoirs, ponds, and stock tanks are located throughout the community. During drought conditions many of the reservoirs and ponds are not reliable sources of water. Some smaller streams have only intermittent flows and are not reliable. The Page Volunteer Fire Department reports having access to two wells in the northern part of their district; otherwise they rely on tankers and mutual aid.

Utilities/Phone service

Holt County is crossed by several high tension power lines. Rural electric service is provided by Nebraska Public Power District, which operates a hydroelectric generating facility at the Spencer Dam on the Niobrara River north of O'Neill. There is both cellular and landline telephone service available in the county. It is likely that there are gaps in cell service coverage in the canyons. The Page Volunteer Fire Department reports spotty cell service within the town of Page, but radios operate satisfactorily.

KEYA PAHA COUNTY

774 sq. miles

2013 population: 790

Community Profile

Keya Paha County is located in the north central portion of the CWPP area. It is bounded on the west by Cherry County, on the south by the Niobrara River and Brown and Rock Counties, on the east by Boyd County, and on the north by South Dakota. Incorporated villages include the county seat of Springview (pop. 242) and Burton (pop. 10), and the unincorporated communities of Carns, Meadville, Mills, Norden, and Riverview. State Highway 12 bisects the county from west to east and US Highway 183 crosses the county from south to north in the central part of the county. One volunteer fire department, Springview Fire and Rescue, serves the entire county. Besides municipal lands, public lands include 21,243 acres in school lands and two state wildlife management areas (1,314 acres). Approximately 2,505 acres of The Nature Conservancy's Niobrara Valley Preserve are located adjacent to the Niobrara River in Keya Paha County. TNC is a non-profit, non-governmental conservation organization.

North Central Nebraska Community Wildfire Protection Plan

Vegetation zones include ponderosa pine forests and savannas along the bluffs of the Niobrara River and its tributaries, deciduous forests along the Niobrara and Keya Paha Rivers and their tributaries, mixed-grass prairie in the uplands, and agriculture crop fields in a wide band along and north of the western $\frac{3}{4}$ of State Highway 12 and scattered elsewhere throughout the county. In some areas, particularly south of State Highway 12, eastern redcedar has encroached sufficiently into grasslands and deciduous forests to become a distinct and highly flammable vegetation type.

The Region 24 Complex wildfires of 2012 successional set back large expanses of forest to forbs, grasses and shrubs. These areas carry a high fuel load of both standing and down heavy fuels, putting the burned area at high risk of burning again in a future wildfire.

The area most at-risk from wildfire is located north of the Niobrara River, and along the Keya Paha River drainage, where dense stands of eastern redcedar have encroached under ponderosa pine and deciduous forests, creating high fire hazard. Eastern redcedar encroachment into grasslands, particularly near the canyon rims, is creating an increasing risk of extreme fire behavior in these areas. The Keya Paha County Commissioners have identified homes along the Niobrara and Keya Paha Rivers and their tributaries as WUI areas of significant concern. There are load limitations on the Carns and Norden Bridges, and numerous canyons without access.

All of Keya Paha County's population centers and all of the forested areas along the rivers and streams lie within the boundaries of the WUI as defined by the NFS in the introduction to this CWPP update. The Keya Paha County Commissioners would like to see a mitigation plan that includes application of the Fire Safe program and expands forest fuels reduction and cedar mitigation throughout the community.

Protection Capabilities and Infrastructure

Water Sources

The only developed water system (not private wells) is in Springview. The Niobrara and Keya Paha Rivers and their tributaries, including Cub Creek Reservoir, are generally reliable water sources. The Keya Paha County Commissioners have noted that reservoirs, ponds, irrigation wells, and stock tanks are located throughout the community. During drought conditions many of the smaller reservoirs and ponds are not reliable sources of water. Many smaller streams have only intermittent flows and are not reliable.

Utilities/Phone service

Rural electric service is provided by KBR Rural Public Power District and, on the west end of the county, Cherry-Todd Rural Electric. There is both cellular and landline telephone service available in the county. Cell service is spotty in many locations, and not available at all in most of the canyons. The Keya Paha County Commissioners reported that there are large gaps in coverage along the river basins. Coverage diminishes north and south of State Highway 12, causing problems for the northern and southern extremities of the county. Communications continue to be a major deficit throughout the county.

Staging and Safety Zones

The Keya Paha County Commissioners noted that, in the event of a large wildfire, potential staging areas and safety zones could be located at the Norden fairgrounds and the village of Springview.

North Central Nebraska Community Wildfire Protection Plan

ROCK COUNTY

1,012 sq. miles

2013 population: 1,411

Community Profile

Rock County is located in the south central portion of the CWPP area. It is bounded on the west by Brown County, on the south by Loup County, on the east by Holt County, and on the north by the Niobrara River and Keya Paha County. Incorporated communities include the county seat of Bassett (pop. 619) and Newport (pop. 97). The unincorporated communities of Duff, Rose, and Sybrant are located south of Bassett and Mariaville is located south of the Niobrara River near State Highway 137. US Highway 20 bisects the county from west to east and US Highway 183 and State Highway 7 cross the county from south to north in the western part of the county. State Highway 137 runs north from US Highway 20 at Newport into Keya Paha County. Volunteer fire departments in Rock County include Bassett/Rock County Rural Fire Protection District, Newport, and Gracy.

Besides municipal lands, public lands include 29,558 acres of state school lands, two small state wildlife management areas (193 acres total), 2,657 acres of the University of Nebraska's Barta Brothers Ranch, the 2,400-acre John W. and Louise Seier National Wildlife Refuge, and a few scattered small holdings administered by the federal Bureau of Land Management (160 acres total). Audubon of Kansas, a non-profit conservation organization, owns the 5,160-acre Hutton Niobrara Ranch Wildlife Sanctuary on the north central edge of the county.

Vegetation zones include riparian deciduous forest along the Niobrara and Elkhorn Rivers and their tributaries, as well as several Calamus River tributaries on the southern end of the county; mixed-grass prairie in the uplands in the northern part of the county; agriculture crop fields concentrated in the west central portion and scattered elsewhere throughout the county; and sandhills-mixed grass prairie south of the Elkhorn River. In some areas eastern redcedar has encroached sufficiently into grasslands and deciduous forests to become a distinct and highly flammable vegetation type.

The area most at-risk from wildfire is located in the northern quarter of the county, south of the Niobrara River. Locations of special concern include the wooded bluffs along the Niobrara River and its tributaries, where dense stands of eastern redcedar have encroached under deciduous forests, creating high fire hazard. Eastern redcedar encroachment into pasture lands, particularly near the canyon rims, is creating an increasing risk of extreme fire behavior. WUI areas of concern include homes along the Niobrara River and its tributaries. All of Rock County's population centers and all of the forested areas along the rivers and streams lie within the boundaries of the WUI as defined by the NFS in the introduction to this CWPP update.

Rock County officials have identified the Bar 25 ranch property along Pine Creek as being at extremely high risk from wildfires. Additionally, they have identified the Lamb and Red Cedar ranches in the northern part of the county as areas with inadequate access, road/bridge limitations, or only one way in and out.

Protection Capabilities and Infrastructure

Water Sources

The only developed water systems (not private wells) are in Bassett and Newport. The Niobrara River and its tributaries are generally reliable water sources. Reservoirs, ponds, and stock tanks are located throughout the community. During drought conditions many of the reservoirs and ponds are not reliable sources of water. Many smaller streams have only intermittent flows and are not reliable. The Bassett/Rock County Rural Fire Chief noted that the department relies solely on a tanker system for water supply.

North Central Nebraska Community Wildfire Protection Plan

Utilities/Phone service

Rock County is crossed by several high tension power lines. Rural electric service is provided by Nebraska Public Power District and KBR Rural Public Power District. There is both cellular and landline telephone service available in the county. County officials report that cell and radio service are spotty in many locations, and not available at all in many of the canyons.

Staging and Safety Zones

The Bassett/Rock County Rural Fire Chief noted that, in the event of a large wildfire, potential staging areas and safety zones could be located on the Brown-Rock County Line Road, 2 miles north of US Highway 20 and on State Highway 7, 7½ miles north of Bassett at the Red Cedar Ranch junction.

North Central Nebraska Community Wildfire Protection Plan

Action Plan

Establish and Implement a Risk Assessment Procedure

Risk assessment is a systematic process for identifying and assessing the range of elements that could lead to undesirable outcomes for a specific situation. Quantitative risk assessment requires calculations of the two primary components of risk: the magnitude of the potential loss and the probability that the loss will occur. For the wildland urban interface, a risk assessment is a step in the planning process that identifies the probability that any feature/element of the landscape and structures that will create potential harm to a homeowner or community.²

It is important to understand the meaning of risk and hazard in relation to wildfire. **Risk** is the chance or probability of occurrence of fire. **Hazard** is the exposure to risk; in a wildfire situation, those hazards can be related to either the natural or the human-made environment. Natural hazards include fuel type and amount of fuels, topography, and weather. Human-made hazards include the limited availability of water, limited access to structures, limited green space around structures, and the ignitability of structures. The capability of firefighting resources will be compromised by the severity of both natural and man-made hazards.³

An assessment should include a review of the area's fire history, fuels/vegetation rating, topographic hazard analysis, weather hazard potential, access, water availability, defensible space, and structural ignitability.

One good source of "how-to" information to establish a risk assessment protocol is *Field Guidance: Identifying and Prioritizing Communities at Risk* (National Association of State Foresters. June 27, 2003. <http://www.stateforesters.org/reports>).

Fire Risk Rating and Ignitability

Homes in both forested and non-forested settings can be at risk from wildfires. The opportunity for developing quantitative structure risk ratings would be under location-specific CWPPs for the more populated areas. The balance of the region is rural/agriculture with widely spaced home locations. The region has not yet experienced the degree of rural development seen in more populous areas. There is an opportunity to perform structural risk and ignitability analysis and treatment activities in rural residential and recreational home sites in forested settings at the same time fuels mitigation treatments are being conducted in the same area.

Prioritization

WUI areas can be prioritized based on data gathered during risk assessment. Previous assessments have specifically identified the Niobrara, Snake, and Missouri Rivers and their tributaries as having the highest priority for hazardous woody fuels reduction. This includes the population centers of Valentine and Long Pine and nearby unincorporated residential developments as well as dispersed recreational developments along these waterways. Further assessments will identify additional priority areas.

Risk Reduction²

The goal of risk reduction is to reduce the potential loss to life and property. Understanding that wildfire is inevitable can help communities prepare for wildfires. Fire-adapted communities are knowledgeable, engaged communities where actions of residents and agencies in relation to infrastructure, buildings, landscaping, and the surrounding ecosystem lessen the need for extensive protection actions and enable the community to safely accept fire as part of the surrounding landscape. A successful fire-adapted community approach has the potential to save lives, homes and communities, and millions of dollars in suppression costs annually.

North Central Nebraska Community Wildfire Protection Plan

There is a range of actions communities can undertake to become more fire adapted. In general, the more elements that a community has addressed, the more fire-adapted the community will become. Major elements of a fire-adapted community include vegetation management, ignition-resistant homes, local responder understanding of how to prepare and deal with wildfire, cooperation between jurisdictional authorities, and fuels treatments on both private and public lands to reduce hazardous fuels and create fuels buffers.

Homeowners can undertake mitigation measures that can decrease the potential destructive effects a wildfire might have on their property. Some measures are designed to modify the forest environment surrounding a structure to decrease potential ignition sources. Others focus on modifying the construction of a structure itself (or changing its location) to make the structure more resistant to ignition. To reduce the risk for the long term, actions need to be maintained over time.

Common Practices

- Actively managing vegetation near the home by reducing density, conducting landscaping maintenance, and replacing flammable vegetation with ignition-resistant components. Greater efforts are needed within close proximity of the structure and gradually decreasing efforts beyond that.
- Maintaining structures free of needles, leaves, and other organic debris from decks, roofs, and near the base of exterior walls.
- Increasing ignition resistance of structures by actions such as using ignition-resistant roofing and covering exterior openings of structures, such as attic vents, eaves, soffits, and crawl spaces, with non-flammable wire mesh screening.
- Removing flammable materials from beneath structures and decks.
- Locating firewood, fuel tanks, and LPG tanks at a safe distance from structures.

Refer to Appendix D for a listing of several programs, such as “Firewise” and “Ready Set Go,” available to help homeowners and communities reduce wildfire risks.

Recommendations for Improving Emergency Preparedness

Communication

Develop and implement a comprehensive communications plan. Multiple jurisdictions within the CWPP boundary have identified communications as a major issue when working under a mutual aid scenario. Various responders have different communications hardware, and often these are incompatible with one another. This is more than just a nuisance. Communication is vital to responder safety and to coordinating an effective response to wildfire. Local and state emergency management personnel are aware of this issue and have been working to resolve it. Having and using a comprehensive communications plan is integral to maintaining smooth operations.

Coordination

Coordination between responders is crucial in any emergency response situation. Local emergency managers need to be able to tie in their responses with the Region 24 and Holt County emergency plans. This framework is already in place. One of the gaps identified by local officials in several of the Local Emergency Operations Plans (LEOPs) is the lack of wildfire-specific information in those documents. In most of them, fire is lumped in with hazardous materials. The information contained in this CWPP update is intended to augment existing information and serve as a “step-down” plan that supports these LEOPs.

North Central Nebraska Community Wildfire Protection Plan

Aerial Support

It is critical to maintain the Single Engine Air Tanker program authorized through the Wildfire Control Act of 2013. Without this quick-response capacity, the danger of a small fire in difficult terrain growing into a large wildfire escalates exponentially.

Map and Data Updates

Some county roads and bridges have weight or width limitations, or both, that may inhibit use by emergency vehicles. In some areas bridges have been removed, requiring detours to access these areas. Planners can work with counties and fire departments to identify and map all roads and bridges, specifically identifying restricted roads and bridges. Distributing this to fire departments and other emergency responders would facilitate route planning. This information could also be used to help prioritize fuel treatment areas.

Equipment other than fire equipment has proven useful in many wildfire situations. Counties may want to consider adding an inventory of non-fire department equipment (such as county road graders) to the mutual aid equipment database.

The water hydrant system at the Prairie Hills Golf Course and other water sources could be mapped and added to this database. Other map data that would be useful, especially in a format that could be easily accessed by hand-held devices, include types and locations of pipelines and pumping stations, power substations, power lines, towers and antennas for air resources to avoid, flammable material storage areas, and overhead water refill access points.

During the Cherry County public meeting to review the draft CWPP update, there was considerable discussion about incorporating technology into the action plan. Cherry County emergency management staff noted that the US Fish and Wildlife Service has GPS'd tanks, water supplies, and other useful information for both wildlife refuges in Cherry County and it would be helpful to have that done in each of the fire districts and made available for hand-held devices.

Currently, there is limited information available about the locations and sizes of historic wildfires within the CWPP counties. Improved reporting would provide data to geographically focus fuels reduction work on those areas most prone to wildfire. The NFS has a database already in place that could easily be used to help with this. Planners and fire departments are urged to work together to gather and report wildfire data to improve fuels mitigation efforts.

Referring to the incomplete fire history table that was included on in the CWPP draft update, the Cherry County public meeting attendees suggested that the action plan include exploring potential means of encouraging VFDs to do a better job of reporting. It was noted that since reporting is voluntary for the fire districts, perhaps incentives could be offered to increase the reporting level. It should also be noted that comprehensive fire reporting helps volunteer fire districts demonstrate a need for fire equipment such as that in the FEPP program. There is a risk that incomplete reporting could imply that there is no pressing need for this type of equipment. This could potentially put the status of the program in jeopardy.

Community Preparedness

Prepared communities reduce hazards, protect homes, and increase firefighter safety. Work with homeowners in WUI areas to establish and expand Firewise Communities, Fire-Adapted Communities, and Ready, Set, Go programs across the region. In a wildfire situation, responders often must quickly decide which homes have the best chance of being saved so they can focus their efforts on them. Preparation by property owners prior to a wildfire can contribute to firefighter safety and help them protect structures. See Appendix D.

North Central Nebraska Community Wildfire Protection Plan

Work with counties and municipalities to evaluate one-way-in/one-way-out subdivisions for potential addition of alternate ingress/egress routes. Estimate costs and identify potential grants or other financial assistance to address these issues.

County zoning plans could be strengthened to include provisions to limit new construction in areas such as canyon rims that are at high risk from wildfire. Although government regulation is not popular with many local residents, counties might want to at least consider both the monetary costs to taxpayers and the danger to fire department personnel responding to wildfires in these areas. At the very least, setbacks from the canyon rims, adequate emergency access, and specific Firewise® practices could be considered for implementation in the areas at highest risk.

Training and Education

Firefighter Training

Although in this plan the volunteer fire departments are specifically excluded from mandatory fitness requirements, local departments can be encouraged to seriously consider doing this, both for safety reasons and to help keep their insurance costs down. All volunteer fire departments are encouraged to participate fully in wildland training opportunities provided through the Nebraska Forest Service and other agencies. Refer to the training sections in the Overview section and in Appendix A.

Educational Opportunities for Property Owners

The Firewise® and “Ready Set Go” programs offer excellent guidelines for reducing the loss from wildfire for urban and rural structures. The NFS “Living with Fire” series, for both prairie and woodland areas, are also valuable educational tools for property owners. Fire extinguisher checks and operation training could be offered as part of Firewise® events that participating communities hold annually. Involving local communities in these volunteer programs would increase the public awareness regarding structure risk mitigation. See Appendix D.

Fuels Mitigation Strategies

There are several approaches to reducing wildfire hazard through fuels management. In addition to active participation by property owners in the structural protection programs described above, practices such as prescribed grazing, prescribed fire, and mechanical fuels reduction can work together to provide protection over large areas containing a diversity of terrain and vegetative cover.

Prescribed Fire

The Nebraska Game and Parks Commission, The Nature Conservancy, and the Niobrara Valley Prescribed Fire Association use prescribed fire as an effective land management tool on state, non-profit, and private lands. Prescribed fire can be extremely efficient for keeping eastern redcedar encroachment in check on grasslands. In forested settings, prescribed fire is more effective and safer when used to maintain woodlands after they have been mechanically thinned. When tree densities are reduced prior to burning, it is easier to keep the fire on the ground, where it cleans up downed woody fuels without killing healthy trees. Crown fires are difficult to control, and they kill healthy trees. The original CWPP extensively discussed prescribed fire (see Appendix A).

Prescribed Grazing

Grazing keeps fine fuels such as grasses in check. But overgrazed pastures are problematic for range and livestock health, as well as for wildlife. Landowners can work with range and wildlife management professionals to develop grazing plans that will benefit livestock while protecting grasslands and wildlife and managing fine fuels to reduce wildfire hazard.

North Central Nebraska Community Wildfire Protection Plan

The University of Nebraska's Institute of Agriculture and Natural Resources, the Natural Resources Conservation Service, and the Nebraska Game and Parks Commission all have specialists available to help landowners develop a grazing system that will address these concerns.

Mechanical Fuels Reduction in High-Risk Forested Settings

There are two major types of high-risk forested settings within the CWPP boundary: dense, overgrown forests and areas with high tree mortality from wildfire and/or insects and disease. The high mortality in the latter areas is nearly always a result of the dense, overgrown conditions characterizing the former.

In unburned forests, mechanical thinning will decrease ponderosa pine density to healthy levels and reduce eastern redcedar encroachment in both pine and deciduous forests. Density in pure eastern redcedar forests on quality sites can be reduced to levels that provide increased protection from fire.

Within unburned areas there are many old slash piles remaining from timber harvesting conducted in the region during the 1990s and early 2000s. These piles are still a fire hazard. Disposing of them by either burning during appropriate winter conditions or chipping on-site are acceptable means to mitigate this threat. Chips can help reduce soil erosion in disturbed areas. The chips should be spread, not piled, to allow vegetation to become established in these areas. Piles of chips not only prevent or delay revegetation, they also can be a source of spontaneous combustion.

Over the past several decades, many of the forests within the CWPP boundary have experienced some level of fire, much of it extreme. The severely burned areas are now at equal or greater fire risk than the remaining green forests. Fire-killed trees constitute a very heavy fuel load that will persist for decades after a fire, creating potential for a return fire to burn at even greater intensity than during the original burn. Although no research has been found to help determine the time interval between the initial fire and the point when the fire-killed trees have deteriorated to the point where they will no longer contribute to extreme fire behavior, a forester in the Pine Ridge noted that in 2014 the ponderosa pines killed in the 1989 Fort Robinson fire finally appeared to be reaching that point, 25 years later. Because eastern redcedar decomposes more slowly than ponderosa pine, a longer risk period can be expected for them.

Because of this risk, burned areas should, where economically feasible, receive fuels reduction treatment. The NFS has developed prescription parameters for fuels reduction in recently burned forests. It is extremely important to protect unburned or lightly burned "green islands" within burned areas from future high-intensity fires because these islands are seed sources for forest regeneration.

The cost of forest fuels reduction depends on access, terrain, and tree density. Utilization of wood products generated by these treatments has the potential to offset the costs of doing the work. However, presently there is little local commercial market for trees removed in forest fuels reduction treatments. The Middle Niobrara NRD is working with the NFS to develop a market for wood chips as biomass.

The NFS sometimes has access to federal and state grant funding to cost-share with forest landowners to reduce the cost borne by the landowner for these treatments. Appendix F contains the guidelines the NFS uses when cost-sharing forest fuels mitigation projects within this CWPP boundary.

North Central Nebraska Community Wildfire Protection Plan

Fuels reduction in High-Risk Non-Forested Settings

Fuels management works best when it is conducted on a landscape basis. In addition to reducing woody fuels in forested areas, it is also important to manage the grass component on both forested areas and range land. Appropriate grazing can significantly reduce fire risk. Fuels treatments are only as effective as their weakest link. Unmanaged “islands” within managed areas pose a significant risk to the managed lands. Cost-share programs can encourage landowners to manage their forested and non-forested lands.

Much of the fuels reduction activities outside forested areas will involve creating defensible space around rural homes and other structures. The same Firewise® guidelines that apply in forested settings also apply in non-forested settings.

Maintenance

Reducing hazardous fuels is not a one-time event. Areas that have been treated by any method to reduce hazardous fuels must be maintained on a regular basis because the vegetation continues to grow. NFS fuels treatment contracts include a requirement that the work be maintained for a minimum of ten years after the project is completed. Treatment, particularly mechanical treatment, can be costly, so continued maintenance (keeping regrowth in check) not only prolongs the period of hazard protection, it also protects the monetary investment made by landowners and the cost share program.

Monitoring and Evaluation

The objective of fuels mitigation treatments in forested settings is to reduce the stand density to levels which will remain effective for 20 to 30 years. The NFS maintains a database that quantifies the time and level of treatment performed under NFS contracts on forested properties state-wide. This helps resource managers to evaluate when and where resources for future fuel treatments should be directed.

The extreme fire behavior of 2012 tested many of the fuels reduction treatments that have been implemented in the Niobrara Valley. Wildfires provided an opportunity to observe the effectiveness of various types and intensities of treatments. What we learned from the 2012 fire season will strengthen our ability to plan future fuels mitigation treatments.

For example, prior to the 2012 fires, thinning ponderosa pine stands to a residual basal area of 80 sq. ft. per acre was considered optimum for tree growth and adequate for fuels reduction in the central Niobrara Valley. This may be correct for low intensity fires on gentle terrain, but it is not adequate protection from intense fire behavior in steep terrain. Thinning parameters for NFS projects in ponderosa pine forests in the central Niobrara Valley have been reduced to 60 sq. ft. per acre of residual basal area.

Schedule

The maintenance for this plan will be directed by the six county boards, and coordinated with the Central Niobrara Watershed Fire Advisory Council. The Council will annually review the plan, re-evaluate priorities for action items and progress, and recommend updates as needed.

Annual review of the strategy recommendations will be necessary as various projects or tasks are accomplished and areas at-risk decline in hazard rating. Annual review will also be needed as infrastructure needs change or are met and should include representation of stakeholders who participated in the development of the plan.

North Central Nebraska Community Wildfire Protection Plan

A total revision of the plan every five years is recommended because infrastructure needs change, specifically: population changes, land use changes, fuels reduction projects are completed, emergency services in outlying areas improve, updates are received for computer software and data, and areas of extreme wildfire hazard decline or increase.

Monitoring

The continued involvement of the public is needed to accomplish many of the recommendations for the CWPP. It is important that the process allows for continued collaboration with stakeholders on how best to meet their needs, while at the same time achieving the objectives of this plan. Agency stakeholders will monitor their efforts according to their internal protocol, documenting accomplishments and redesigning strategies as needed.

Copies of the plan will be available at the six county courthouses, public libraries, and at the NFS office in Bassett. It will also be available online at <http://nfs.unl.edu/documents/CWPP/NorthCentral.pdf>.

Evaluation

Annual assessment of the identified projects is very important to determine whether or not progress is being made. Units of measure to be considered when updating the plan in the future for the purpose of reporting accomplishments are listed below:

1. Number of projects accomplished which improve fire agency/emergency service response time.
2. Number of transportation problems resolved that improve road systems for access, ingress/egress.
3. Number of water sources added to improve firefighting response.
4. Number of pieces/types of equipment obtained and number of training courses provided.
5. Number of acres treated for fuels reduction and type(s) of treatment used.
6. Number of events with prevention message delivery, number of prevention courses attended/conducted, number of news releases or prevention campaigns conducted, and number of prevention team meetings held.
7. Number of partners/agencies/groups involved.
8. Number of people contacted (meetings, courses, etc.) and number of educational items distributed (brochures, etc.).

Each participating agency/organization should assess their projects using the units of measure listed above to determine progress. This plan does not serve as a means of bypassing the individual processes and regulations of the participating agencies. Each project must adhere to any pertinent local, state or federal rules. The CWPP is a coordinating document for projects related to education and outreach, information development, fire protection, and fuels treatment.

North Central Nebraska Community Wildfire Protection Plan

Endnotes

- 1 Guyette, R.P., M.C. Stambaugh, and J.M. Marschall. 2011. A quantitative analysis of fire history at national parks in the Great Plains. A report prepared for the Great Plains Cooperative Ecosystem Studies Unit and National Park Service. 78 pp.
- 2 Wildland Urban Interface Wildfire Mitigation Desk Reference Guide. (August, 2014). Retrieved from <http://www.nwcg.gov/pms/pubs/pms051.pdf>
- 3 Baker County Community Wildfire Protection Plan. (Oregon. February 15, 2006).

North Central Nebraska Community Wildfire Protection Plan

List of Appendices

Appendix A: 2009 Central Niobrara Watershed Final Fire Management Plan	32
Appendix B: Maps	
1. CWPP Boundary Overview	151
2. Nebraska Natural Legacy Project: Biologically Unique Landscapes	152
3. County Aerial Photos with Volunteer Fire Department Boundaries and Historic Fires	
Boyd County.....	153
Brown County	155
Cherry County	157
Holt County	159
Keya Paha County	161
Rock County	163
Appendix C: Region 24 Multi-Jurisdictional Hazard Mitigation Plan (2010) Wildfire Hazard Section	165
Appendix D: WUI Mitigation Programs and Structural Ignitability Reduction Practices	176
Appendix E: Stakeholder Survey and Distribution List.....	178
Appendix F: NFS Thinning Prescriptions for the Middle Niobrara Watershed	181
Appendix G: Rural Fire Department Contact Information and Equipment	187
Appendix H: 2014 Emergency Assistance for Wildfire Control Quick Reference	204

Appendix A

2009 Central Niobrara Watershed Final Fire Management Plan

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan

Central Niobrara Watershed Final Fire Management Plan



September 2009

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 1

Approved By:

National Park Service:

Signature: George T. Turnbull Title: Acting Regional Director
Name: George T. Turnbull Date: 3/28/11

U.S. Fish and Wildlife Service:

Signature: Steven Hicks Title: Project Leader
Name: Steven Hicks Date: 12/6/10

The Nature Conservancy:

Signature: Mace A. Hack Title: STATE DIRECTOR
Name: MACE A. HACK Date: DEC 10 2010

Nebraska Game and Parks Commission:

Signature: Tamas N. Douglas Title: Deputy Director
Name: Tamas N. Douglas Date: 1/11/11

Natural Resources Conservation Service:

Signature: Craig Derickson Title: 1/5/11
Name: CRAIG DERICKSON Date: State Conservationist

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 2

Timber Industry Representative:

NOTE:

There is currently no Timber Industry Representative for the Niobrara Council at this time. 3/21/2011 /s/ Stuart W. Schneider

Nebraska Forest Service:

Signature: [Signature]

Title: Director, Niobrara FS

Name: Scott J. Josiah

Date: 12/15/10

Ainsworth Fire District:

Signature: [Signature]

Title: Fire Chief

Name: Bredley Fiala

Date: 8 Feb 2011

Bassett Fire District:

Signature: [Signature]

Title: Fire Chief

Name: Jim L. Stout

Date: 2-12-11

Springview Fire District:

Signature: [Signature]

Title: Fire Chief

Name: Scott E. Hallock

Date: 3-1-11

Valentine Fire District:

Signature: [Signature]

Title: Chief

Name: Terry Engles

Date: 12/7/10

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 3

1. EXECUTIVE SUMMARY	40
2. INTRODUCTION	40
3. GENERAL CONSIDERATIONS	43
3.1 <i>Natural Communities</i>	43
3.2 <i>Land Use</i>	44
Table 1: Land Ownership.....	44
3.3 <i>Economic Development & Tourism</i>	45
3.4 <i>Special Considerations</i>	45
4. FIRE HISTORY OF THE SANDHILLS & NIOBRARA RIVER VALLEY	46
4.1 <i>Present Conditions</i>	46
Table 2: Wildland Fires Reported by Volunteer Fire Departments.....	47
4.2 <i>Past Conditions</i>	47
4.3 <i>Fire History</i>	48
4.4 <i>Desired Future Conditions</i>	49
5. CURRENT FIRE MANAGEMENT ACTIVITIES & STRATEGIES.....	51
5.1 <i>Landowner Prescribed Fire & Hazard Fuel Reduction</i>	51
5.2 <i>Agency/Organization Prescribed Fire & Hazard Fuel Reduction</i>	52
5.2-1 Nebraska School Trust Lands (Board of Educational Lands and Funds)	52
5.2-2 The Nature Conservancy	52
Table 3: Prescribed fires on Niobrara Valley Preserve	53
5.2-3 Fort Niobrara National Wildlife Refuge	54
Table 4: Fort Niobrara NWR - Year & Acres Burned	54
5.2-4 Nebraska Forest Service	54
5.3 <i>Initial Attack & Suppression</i>	55
5.4 <i>Training</i>	55
5.5 <i>Education</i>	56
5.6 <i>Recent Investigations & Research</i>	58
6. STRATEGIES TO RESTORE A FIRE ADAPTED SYSTEM.....	60
6.1 <i>Landowner Prescribed Fire Workshops</i>	60

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 4

6.2 Prescribed Fire Brochure	61
6.3 Hazard Fuel Reduction Brochure	61
6.4 Prescribed Fire Groups and Crews	61
6.5 NWCG Training	62
6.6 Prescribed Fire Equipment Caches	62
6.7 Funding	63
6.8 Economic/Business Concerns	63
7. FIRE TRAINING & EQUIPMENT	64
7.1 Goal	64
7.1-1 Action Step	64
7.1-1a Physical Fitness Standards	65
7.1-1b Training Standards	65
7.1-2 Action Step	65
7.2 Goal	65
7.2-1 Action Step	66
7.2-2 Action Step	66
8. INITIAL ATTACK	66
8.1 Incident Command System	66
8.2 Fire Reporting	67
8.3 Response	68
8.4 Equipment Lists	68
8.4-1 The Nature Conservancy (TNC)	68
8.4-2 NPS	68
8.4-3 FWS	69
8.5 Fire Chiefs and Department Addresses (See Appendix J)	69
8.6 Emergency Contact Information (See Appendix K)	69
8.7 Coordination with County Dispatches	69
8.8 Annual Operating Plan (AOP)	69
8.9 MOU/General Agreements	69
8.10 Plan When Fire Exceeds Local Capabilities	70
8.11 Emergency Preparedness & Evacuation	70
8.12 Training	70
9. FIRE MANAGEMENT COORDINATION	70

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 5

9.1 NPS Role	70
9.2 Education/Interpretation	71
9.3 Sandhills Cattle Association	78
9.4 UNL Extension	78
9.5 Sandhills Task Force.....	79
9.6 Fire Advisory Council Partners.....	79
9.7 Funding	80
9.8 Shared Equipment	80
9.9 Upcoming Prescribed Fires/Burn Evaluations/Lessons Learned	80
9.10 Liability	80
9.11 Maintenance	81
9.12 Fire Monitoring	81
10. PRESCRIBED FIRE ON PRIVATE LAND	81
10.1 Goals.....	81
10.2 Training Opportunities for Private Landowners	82
10.3 Local Prescribed Fire Caches	82
11. AGREEMENTS, RULES & REGULATIONS.....	82
11.1 Annual Review	82
11.2 Legislation Allowing NPS and FWS to Burn on Private Lands	82
11.3 Other Important laws and Policies.....	83
11.4 Niobrara Council	84
11.5 Wyden Amendment.....	84
12. WILDLAND URBAN INTERFACE	85
12.1 Hazardous Fuel Reduction Plans.....	87
12.2 Zoning Issues.....	87
12.3 Emergency Management.....	88
12.4 Brochures.....	88
12.5 Media	88
13. MONITORING AND EVALUATION	89
13.1 Voluntary Monitoring	89

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 6

Bibliography.....	91
APPENDIX A: CNW Fire Management Area Map	93
APPENDIX B: Compliance Documents NEPA and NHPA.....	94
APPENDIX C: Wildland Fire Occurrence Data	95
Figure C1: Fort Niobrara NWR Fire Occurrence Data	95
Table C1: VFD Fire Occurrence 2004	96
Table C2: VFD Fire Occurrence 2003	97
Table C3: VFD Fire Occurrence 2002	97
Table C4: Fire Occurrence 2001	100
Table C5: VFD Fire Occurrence 2000	101
APPENDIX D: Weather Averages and Indices.....	102
Figure D1: Burning Index over a Three Day Period.....	102
Figure D2: Average High and Low Temperatures over the Annum	103
Figure D4: Distribution of Annual Rainfall	103
Figure D5: Distribution of Annual Snowfall	104
Table D1: Valentine Weather Averages	105
Fire Weather Forecast by County in Central Nebraska:	105
APPENDIX E: Prescribed Fire Brochure	106
APPENDIX F: Zoning Handout.....	107
APPENDIX G: Fire Reporting (Dispatch Card)	108
APPENDIX H: NE ECS-8 Grazing Lands Monitoring Plan & Key Area Documentation Form .	109
APPENDIX I: VFD Equipment Lists.....	110
APPENDIX J: Fire Chiefs and Department Addresses.....	113
APPENDIX K: Emergency Contact Information.....	114

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 7

APPENDIX L: Incident Command System.....	117
APPENDIX M: Contractors/Operators: Cedar Removal & Rx Fire	118
APPENDIX N: FAC General Agreement.....	119
APPENDIX O: Wildland Fire Suppression Flow Chart.....	125
APPENDIX P: Effectiveness of Fuel Treatments.....	126
National Fire Plan Glossary of Wildland Fire Terms	127

1. EXECUTIVE SUMMARY

The over-arching purpose of this Fire Management Plan is to improve collaboration among and enhance communications between the various agencies and organizations who manage fire in the Central Niobrara Valley watershed. Another equally important objective is to educate private landowners about the benefits of utilizing prescribed fire and hazardous fuel reduction as tools to help restore native grasslands affected by invasive woody species and to protect valued woodlands from the effects of catastrophic wildland fire. Sections of interest to private landowners within this document include the introduction (history of the plan's development), plan boundaries, the natural communities, fire history, implementing prescribed fire on private lands and protecting homes and property from wildland fires (wildland urban interface). This plan will serve as the primary fire management document for the Niobrara National Scenic River and does not replace any other agency or organization's plan, but rather supplements them to coordinate fire management activities across a varied primarily privately owned landscape.

2. INTRODUCTION

Through the collaborative efforts of private landowners, various organizations, rural fire departments, and state and federal agencies the Central Niobrara Watershed (CNW) Fire Management Plan (FMP) was developed. As early as 2002, the National Park Service (NPS) explored the possibility of creating a FMP for the Niobrara National Scenic River (NSR). This was somewhat of a novel idea, as the NPS does not own any land within the Niobrara NSR. The NPS however, is directed by Congress to manage the river and its immediate environs to protect the outstandingly remarkable values that include its scenic attributes (six ecosystems with distinct vegetative characteristics) consisting of extensive pine, boreal, and hardwood forests and grasslands.

The NPS felt that one of the major threats to the scenic qualities of the NSR was the possibility of uncontrolled wildland fires. Pine densities in forests throughout the Niobrara River valley and its side canyons have increased substantially since the early 1900's and invasion by eastern red cedar (*Juniperus virginiana*) has created a thick, volatile understory of ladder fuels. This is due in part to the continual suppression of wildland fires for over a century. Resulting fires would be difficult to control, and would be capable of destroying homes, buildings, and other improvements along the river valley.

Rather than drafting a fire plan that would encompass only the NPS boundary along the river between Valentine and Newport (23,074 acres) the NPS suggested a more expansive boundary from rim to rim, or perhaps even including vast grasslands to the north and south of the river valley. Recognizing that a community fire planning effort utilizing multiple partnerships was the best way to protect the river's resources, the NPS met in July 2003 with various agencies, organizations and private landowners to seek direction and gather input as to what

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 9

kind of plan would best protect the outstandingly remarkable values of the designated river segment. From this meeting the concept of a need for a collaborative process to address fire and fuels management over a much broader area was strengthened. Community involvement and education are essential components of this planning process. The overriding management goal of this plan is to provide an acceptable means for each of the partners to accomplish their own goals and objectives efficiently and effectively through the coordinated and cooperative use of limited resources. This document will serve as an overarching community wildland fire plan for the watershed in a four-county area, as well as satisfy NPS fire planning requirements outlined in the Service's primary reference manual, RM-18.

The CNW encompasses about 793,762 acres. Lands in private ownership comprise approximately 97% of the project area. The U.S. Fish and Wildlife Service, Nebraska Game and Parks Commission, National Park Service, and local governments manage the remaining lands. Wildland Fire Associates (a private contractor) through collaboration with the Central Niobrara Watershed Fire Advisory Council (FAC) facilitated the formulation of this FMP.

Agencies and organizations within the CNW include the:

- National Park Service, Department of Interior (NPS)
- Natural Resources Conservation Service, Department of Agriculture (NRCS)
- Nebraska Forest Service (NFS)
- Nebraska Game and Parks Commission (NGPC)
- Niobrara Council (NC)*
- Rural Fire Departments**
- The Nature Conservancy (TNC)
- U.S. Fish and Wildlife Service, Department of the Interior (FWS)

** Not a member of the FAC*

*** FAC members include the Valentine Volunteer Fire Department (VFD), Springview VFD, Ainsworth VFD, the Bassett VFD and a timber industry representative. Within the planning area are the communities of Valentine, Long Pine, Wood Lake, Johnstown, Ainsworth, Bassett, Newport, Springview, Meadville, Norden, and Sparks.*

Broad management objectives that relate to resource management are compiled from the Niobrara NSR Final General Management Plan (NPS September 2006); the Fort Niobrara National Wildlife Refuge Comprehensive Conservation Plan (FWS 1999); the Niobrara Valley Site Conservation Plan (Steuter and Behrens 1999); and Nebraska Game and Parks Commission Focusing on the Future Plan (NGPC 2004). These management objectives are:

- Preserve, restore, and enhance the unique diversity of upland and riparian plant communities and associated water resources of the CNW.
- Preserve, restore, and enhance the ecological diversity and abundance of migratory and resident wildlife in the CNW.
- Contribute to the preservation and restoration of threatened and endangered flora and fauna that occur or have historically occurred in the CNW.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 10

- Provide the public with quality opportunities to learn about and enjoy the ecological diversity, wildlands, wildlife, and history of the CNW in a largely natural setting and in a manner compatible with the purposes for which the Niobrara National Scenic River, Fort Niobrara National Wildlife Refuge, Niobrara Valley Preserve, Nebraska State Parks, State Wildlife Management Areas, and other land designations were established.
- Promote partnerships to preserve, restore, and enhance a diverse, healthy, and productive ecosystem in the CNW.

Partner goals (agencies/organizations and private landowners) vary widely and range from increasing farm or ranch production, restoration or maintenance of historic scenes, supporting native plant communities, providing for firefighter and public safety, to the protection of natural and cultural resources and human developments from unwanted wildland fire.

The specific goals of the CNW Fire Management Plan are to:

- Ensure firefighter and public safety by implementing LCES¹, reviewing the 10 Standard Firefighting Orders and 18 Situations that Shout Watch Out, implementing temporary closures, and providing public information and education.
- Suppress all unplanned ignitions to protect private property, natural, cultural, and paleontological resources from unacceptable impacts attributable to fire.
- Identify and assess hazardous fuels that have the potential to affect targeted natural and cultural resources.
- Utilize prescribed fire and/or other methods (e.g. mechanical) to reduce threats posed by hazardous fuels. Reduce fire hazards through construction of defensible fuel spaces that protect communities and resources. Protect the outstandingly remarkable values of the National Scenic River.
- Utilize prescribed fire and/or other methods, as appropriate, to maintain long-term stability, diversity of fire-dependent vegetation communities, and improve the integrity of the ecosystem.
- Cooperate with partners and other interested parties to incorporate their concerns and compatible resource objectives in fire management programs.
- Enhance communications among agencies and organizations involved with fire management.
- Develop the support and understanding of prescribed fire as a valuable management tool among communities, agencies and visitors through various educational efforts.
- Ensure that fire management activities do not adversely affect adjacent communities.
-
-

¹ (Lookout, Communications, Escape Routes, Safety Zones)

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 11

- Ensure smoke production from prescribed fires does not violate state and/or federal standards; minimize smoke impacts to neighbors and visitors to the watershed.
- Ensure fire management actions are consistent with other planning documents.
- Educate the public in *Firewise* landscaping and construction techniques.

3. GENERAL CONSIDERATIONS

The Central Niobrara Watershed is the area between Highway 12 to the north, Highway 137 to the east and Highway 20 to the south with three additional inclusions. These inclusions are the town of Long Pine and the canyons to the south (also known as Hidden Paradise), Plum Creek Valley State Wildlife Management Area, and the town of Valentine and canyons to the north and west of Valentine. The CNW resides entirely within the State of Nebraska and in portions of Cherry, Rock, Brown and Keya Paha counties. Appendix A contains a map of the CNW and the surrounding region.

Niobrara National Scenic River, comprising approximately 23,074 acres, is located in north-central Nebraska. The 76-mile National Scenic River was established in 1991 by Public Law 102-50 (105 Stat. 254), which amended the Wild and Scenic Rivers Act. The Law also specified that the U.S. Fish and Wildlife Service would continue to manage that portion of the Scenic River within the Fort Niobrara National Wildlife Refuge (NWR). The Law established an advisory commission (now the Niobrara Council) and constrained the amount of land the National Park Service could own in fee-title.

3.1 Natural Communities

In north-central Nebraska, the 100th Meridian runs north/south through the Niobrara River valley. Here an unusual blend of climate, geology, and topography provides for an incredible diversity of plants and animals. Varying exposure to sun, wind and moisture determines vegetative communities and their dependent wildlife. Six different ecosystems meet and mix within the watershed and include ponderosa pine forests; relict boreal forests of paper birch and aspen; eastern deciduous forests of ash, oak, elm, box elder, and cottonwood; mixed Sandhills prairie; patches of eastern tallgrass prairie along the river; and Dakota (Northern) mixed grass prairie.

South of the Niobrara are the rolling Sandhills, a vast dunefield stabilized by vegetation with interspersed wetlands. At the Sandhills northern edge the Niobrara River has cut up to 400' deep through several rock layers, including the Ash Hollow, Valentine, Rosebud, and Pierre formations. These unique geological formations include fossils of many extinct mammalian species



Diverse hardwood forest with aspen & birch – note cedar understory

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 12



including beavers, camels, horses, rhinoceros, and mastodons, as well as fossils of fish, alligators, and land tortoises. Dense forests of pine and various hardwoods cover the slopes and canyons. Eastern red cedar has invaded the forest understory, creating ladder fuels and spreading into forest openings and across grasslands. In many places, entire pastures have been lost to cedar invasion.

Hardwoods grow within the river valley and adjoining springbranch canyons (canyons created by the flow of water from springs and seeps that in turn, feed into the Niobrara

River). Remnant patches of tallgrass prairie grow on river benches (elevated flatlands created by the natural down cutting of the river). On the northern slopes and rim are expansive forests of ponderosa pine that give way to mixed grasses further west and north.

Within the project area, major vegetation types include prairie (533,528 acres), a coniferous forest of mostly ponderosa pine and eastern red cedar (41,725 acres); eastern deciduous forest (42,082 acres); mixed conifer and deciduous woodlands (1,753 acres); and woody and herbaceous wetlands (27,090 acres). Fire is a natural component of most of these communities and one of the primary influences under which these communities developed. Residents have suppressed natural fire ignitions in the project area for over 120 years.

3.2 Land Use

Within the CNW planning area, the approximate distribution of land ownership is:

Table 1: Land Ownership

Ownership	Acres
U.S. Fish and Wildlife Service	19,131 acres
Bureau of Land Management	240 acres
Bureau of Reclamation	125 acres
Middle Niobrara Natural Resources District	2 acres
Nebraska Game and Parks Commission	7,106 acres
The Nature Conservancy (other private)	51,184 acres
Board of Educational Lands and Funds	29,900 acres
Private Ownership	686,074 acres

Croplands and pastures occupy about 136,055 acres. About 8,055 acres are open water. The remaining 3,445 acres include communities, commercial developments, roads, bare ground, quarries/gravel pits and urban grasslands.²

² National Land Cover Data Set 1992

3.3 Economic Development & Tourism

Most rural areas in north-central and western Nebraska have declined in population over the last several decades. Cherry County has declined in population from 6,846 to 6,148 people in the last 30 years while the town of Valentine has only decreased by 55 since the 1960 census, which was an all-time high for the city. Agriculture (specifically cattle ranching) is the strongest component of the local economy. Tourism is the third largest economic input. The scenic river supports the local area economy with an estimated 4.7 million dollars income and 114 local jobs. Efforts are underway in local communities to recruit small businesses and light

manufacturing and to promote tourism and the variety of recreational opportunities the area has to offer.

New home construction is growing as retirees and those seeking vacation properties buy land and build cabins in the Niobrara River valley. Many of these newcomers and residents are likely unaware of the ecological changes in the forests and prairie and uninformed about the dangers from wildland fire. Fire management concerns include smoke from prescribed fires and its effect on tourism, potential impacts to cattle ranching, vehicular safety (visibility); resident and visitor safety during large wildland fires; area closures due to fire activities; and fire bans and their effect on visitors to the National Scenic River, state park, and other recreation areas.

3.4 Special Considerations

The CNW is home to thirteen plant communities and a host of federal and/or state listed species, Nebraska Natural Legacy Project Tier 1 At-Risk Species, and other Nebraska rare species. The list includes fifteen birds, four mammals, ten fish, four insects, and seventy plants to consider when making management decisions associated with wildland fire, prescribed fire, or other habitat management actions. Many of the region's funding sources are designed to address the specific needs of rare and declining species. All fire management projects should consider critical life requirement periods (i.e. nesting) and enhance habitat quality for these species accordingly.

As much as possible managers should apply fire management activities outside the primary nesting season to minimize effects on production of most bird species. In addition, as the primary habitat for most fish species is near the headwaters of streams, land managers should take special care to insure that fire management activities do not contribute to increased erosion that can affect fish survival and production.

A portion (4,635 acres) of the Fort Niobrara National Wildlife Refuge is federally designated wilderness (PL 94-557 October 19, 1976). Special regulations governing the use of mechanized equipment and various impacts to the environment exist for the management of federally designated wilderness.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 14

Congress designated seventy-six miles of the Niobrara River (PL 102-50, 5-24-1991) as a component of the Wild and Scenic Rivers System. Within its boundary of 23,074 acres, Congress has charged the NPS to protect five well-defined ORVs. These include its scenic, recreational, geologic, fish and wildlife, and paleontological values. Most of the land within the National Scenic River boundary remains in private ownership. The NPS is responsible to prevent actions within the boundary that might negatively affect these ORVs. The Niobrara Council reviews all burn permits for consistency with the purposes of the scenic river designation.

Smith Falls State Park, Borman Bridge Wildlife Management Area (WMA), Bobcat WMA, Thomas Creek WMA, Fred Thomas WMA, Plum Creek WMA and the Valentine State Fish Hatchery are all Nebraska Game and Parks Commission lands (6,467 acres) within the boundaries of the CNW. Various regulations and policies govern these lands as well.

The Nature Conservancy's 51,184 acre Niobrara Valley Preserve (Preserve) is located along a 25-mile stretch of the Niobrara River extending from Smith Falls State Park to just west of Meadville, NE. The majority of the Preserve is located on the south side of the river. However, the Preserve also extends north of the river near Norden Bridge. Additionally, the Conservancy leases approximately 4,000 acres of state and federal lands that they also manage to meet specific conservation goals. The Nature Conservancy has an active fire program and manages their lands to preserve and enhance plant and animal diversity.

Burn bosses should discuss cultural and paleontological resources with individual landowners when creating prescribed fire burn plans, or undertaking hazardous fuel reduction activities. Particular agencies and organizations address these items in their own fire management plans. Landowners should inform VFD of these special resources when attacking wildland fires where fire personnel use heavy machinery for control and containment.

4. FIRE HISTORY OF THE SANDHILLS & NIOBRARA RIVER VALLEY

4.1 *Present Conditions*

In recent years, the intensity and extent of fires in the CNW have seemed to increase significantly. A tree limb shorted out a power line and ignited the Big Rock Fire, which started near Valentine on July 16, 2006. The resulting fire burned over 3,000 acres and resulted in severe property and ecological damage. Low humidity (approximately 9%), extreme temperatures (113 °F), and high winds resulted in rapid spread into the north edge of town and along canyon rims, where ten homes were destroyed and numerous other buildings were damaged or destroyed. Severe fire conditions resulted in areas of complete stand replacement, occurring particularly on steep forested slopes. Few local firefighters had previously witnessed the levels of extreme fire behavior and rapid rates of spread as those occurring during the Big Rock Fire.

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 15

North Central Nebraska Community Wildfire Protection Plan

The largest local fire event in recent history occurred on September 17, 2000. On that day, a lightning storm produced over 50 fires in Cherry County that burned over 100,000 acres in 36 hours (most outside the project area). Five fires ranged in size from 1,276 acres to 22,587 acres. Nearby, much larger fires have occurred on private property with one fire burning 87,000 acres in less than 24 hours. The Thedford Fire occurred in 1999, south of the Valentine NWR (outside of this plan's area), and burned 74,000 acres (much of it grasslands) in two and a half days. Most of the fire's spread occurred during the first burning period.

Table 2 shows fire department reports from 2000 through 2006 (Note: some of these fires have occurred outside the plan's boundary). In addition, NWR staff suppressed an average of thirteen wildland fires that burned 935 acres in each of the last ten years (however, most of these fires occurred on the Valentine NWR or otherwise outside the management planning area).

Table 2: Wildland Fires Reported by Volunteer Fire Departments

Year	Lightning-Caused Reported	Acres Burned	Human-Caused Reported	Acres Burned
2000	15	6,156	13	662
2001	11	36	16	530
2002	41	610	45	13,374
2003	14	20	7	13
2004	9	15	12	1,590
2005	6	47	10	136
2006	20	169	14	3160
2007	5	20	3	11
2008	4	12	2	2
Total	125	7,085	122	19,465
Average	14	787	14	2,164

This short fire history period fails to capture information from recent years of high severity during which tens of thousands of acres burned.

4.2 Past Conditions

Local Fire Departments, the U.S. Fish and Wildlife Service (Fort Niobrara and Valentine NWR), and The Nature Conservancy maintain separate records for their respective lands. Thus, comprehensive and compatible fire records are not available for the CNW because of differences in reporting procedures and requirements.

Refuge staff has responded to wildland fires in every month of the year (FMIS 2001). The FWS quickly suppresses most wildland fires while they are still small but some fires have spread beyond FWS lands onto private ranches. Inhibitions of suppression efforts by firefighters are due in part to the lack of natural or fabricated fuel breaks. Fuel loads are generally light, but

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 16

exhibit fast drying times and burn with high rates of spread. Wind driven fires in these fuels can burn for 20 miles or more in a single burning period.

Lightning, usually accompanied by wind most commonly occurs during April through September. Storms often may not be accompanied by rain. In general, dry lightning fires appear to be more common in drought years. Multiple starts on a single day are common during warmer months. Appendix C contains more information on fire occurrence.

4.3 Fire History

Fire is a natural component of the Sandhills and Niobrara River valley environments and one of the conditions under which vegetation on the CNW evolved (Harrison 1980, Bogan 1993, Bragg 1994). Historic records describe huge prairie fires ignited by lightning or humans. Fires burned millions of acres because there were few natural fuel breaks and no suppression. The River Valley/Sandhills ecotone indicates that fires occurred every 4 to 5 years between 1850 and 1900 (Bragg 1986 and 1994). A great reduction in bison numbers on the Great Plains also occurred during this period, which may have influenced fire return intervals and/or fire intensity. Steinauer and Bragg (1987) reported that the mean fire interval increased from 3.5 years between 1851 and 1900 to 8.5 years between 1901 and 1951. Presumably, the fire frequency now is near zero, as fire suppression became more effective post World War II than it was before World War II. There is no comprehensive fire history database for the CNW to evaluate the pre-settlement fire intervals on the grasslands, Niobrara River Valley, and ponderosa pine/prairie ecotone.

Research throughout the Great Plains indicates historic fire frequencies of 1 to 10 years for tallgrass prairies (Kucera 1981), 5 to 10 years for rolling mixed-grass prairies (Wright and Bailey 1980), 2 to 25 years for ponderosa pine forests (Wright and Bailey 1980), and 10 to 30 years for other forested Great Plains areas (Wright and Bailey, 1980). Research at Wind Cave National Park indicated mean fire intervals of 10-12 years in ponderosa pine savannah (twice as frequent as at interior forest sites), probably due to the influence of fire in adjacent prairies (Brown and Sieg 1999).

TNC (1999), citing Moore (1972) indicates that 32% of fires in the Northern Great Plains could be attributed to Native American ignition, 14% to early European settlers, and the balance to lightning Westover (1984). Higgins (1986) notes that regardless of ignition source, wildland fires occurred primarily during two periods: March through May and July through November, with peak periods of ignition in April and October.

Grasslands historically evolved in areas with a disturbance frequency too high to permit the establishment of tree species, or in areas too dry or too wet for most regionally indigenous tree species. Over 120 years of wildland fire suppression on the CNW has resulted in various changes in vegetation composition and structure - the most visible of which are the pioneering of eastern red cedar, ponderosa pine, and other shrubs into prairies and into the understory of savannas and forests, or the filling of wetlands with slowly decomposing decadent vegetation

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 17

and invading woody growth. Steinauer and Bragg (1987) note encroachment of ponderosa pine, particularly on north slopes beginning mainly after 1900. Reducing this encroachment could increase the scenic aesthetic and create a more natural ecosystem eventually reducing the potential for large stand replacing fires.

Changes in grass and forb composition caused by fire exclusion are not well documented due to a lack of baseline data, except in cases of exotic species invasion. Bragg (1997, 1998) studied the effects of single fires during various seasons on Sandhills mixed-grass prairie.

He noted that a single fire did not result in any substantive changes in species or community diversity.

There were, however, differences in abundances of various species and litter – usually for less than four years – following fire. No dramatic changes in species richness were observed in response to fire. Bragg (1998) concluded, “Data suggest that more frequent fires occurring in different seasons have the potential to maintain a highly diverse landscape through differentially affecting species occupying different topographic locations.”

Pfeiffer and Steuter (1994) found that spring burning increased production of both rhizomatous grasses and bunchgrasses, but that summer burning reduced production of bunchgrasses. They further noted that bison reduced the standing crop of bunchgrasses much more than rhizomatous grasses following burning.



Biondini, et al. (1999) noted that bison actively selected burned areas on the Niobrara Valley Preserve during the growing season for one to three years following fire. They mostly avoided old burns and unburned areas (there was no significant effect of fire on bison range use during the non-growing season). Biondini noted other management implications to this pattern of bison use, particularly (1) providing undisturbed nesting cover for waterfowl and other species in unburned areas, (2) providing habitat for species preferring short stature grasslands, (3)

providing areas of increased forb abundance and diversity, and (4) enhancing control of woody species.

4.4 Desired Future Conditions

Desired future conditions will vary widely among private landowners. Agencies and organizations may also manage for different conditions depending upon their mission, goals and objectives. In a broad sense land managers could accomplish ecological objectives throughout the watershed (i.e. non-crop and undeveloped lands) with seasonally prescribed fires occurring every three to thirty years, depending upon vegetative type (forest or grasslands) and specific objectives.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 18

Generally, maintenance for grasslands would require burning every three to ten years and ponderosa pine forests every two to twenty-five years following initial fuel treatment and burning. Fire frequency would need to be adjusted to meet the needs of landowners and managers and in consideration for grazing needs, drought, and other disturbance factors. Surface fires of low to extreme intensity would be needed on 55-85% of the landscape (over 16% is either not burnable or difficult to burn, such as wetlands).



In order to initially restore the health of the natural communities within a decade, an estimated 50,000+ acres of grasslands, 8,000+ acres of mixed woodlands, and 3,600+ acres of ponderosa pine would need to be burned annually

throughout the planning area. These figures are determined from an average return interval of 10 years for grasslands, 20 years for mixed forests, and 11.5 years for ponderosa pine forests and their relative area covered.

A fire regime of infrequent fires has replaced a historic fire regime of frequent low intensity fuel-reducing surface fires within ponderosa pine and mixed pine forests. This has led to increased fuel levels, and a greater probability of high intensity/stand replacement fires, which pose a greater threat to life, property, and resources, because such fires are difficult to suppress.

The desired condition is a landscape with an appearance of what would exist with natural processes uninterrupted and what probably had existed historically. It should display a mosaic of complex vegetation patterns that would have evolved naturally from ecological and geological processes. Vegetation types should vary greatly with openings, seral stages, and a variety of plant communities occurring in a random patchwork.

Fire-management activities should maintain or improve production and native-species diversity in all six of the area's ecosystems. Conifer encroachment and the resulting increased stand densities are threatening these ecosystems. The invasion of exotic grasses and weedy forbs also threaten many area grasslands. This is partly a result of fire exclusion, and in some cases, improper grazing practices. Land managers should apply prescribed fire and other management tools, where appropriate, at a time and in a manner that will counter these threats and realize goals.

Fire-management activities should improve the quality and quantity of habitat for wildlife species by reducing woody-species encroachment and timber stand densities, and promoting more desirable native-plant species. Restoring and improving plant-species diversity improves ecosystem health and promotes a greater diversity and abundance of wildlife.

5. CURRENT FIRE MANAGEMENT ACTIVITIES & STRATEGIES

5.1 Landowner Prescribed Fire & Hazard Fuel Reduction

The state of Nebraska prohibits open burning (81-520.01). The Fire Chief or their designee of a Rural Fire Department may issue a waiver by issuing a burn permit to private landowners to conduct prescribed fires (including pile burns). Statistics are not currently compiled concerning private landowner conducted burns or hazardous fuel reduction activities. The Fire Advisory Council (FAC) has distributed a new fire report card to Volunteer Fire Departments to record fire data in order to compile annual statistics on wildland fires and prescribed fires (Appendix G). Within the National Scenic River corridor, the Niobrara Council must approve all prescribed fire permits by private landowners or organizations to ensure that they are consistent with the scenic river's desired future conditions.

The Nebraska Game and Parks Commission (NGPC) has been actively funding prescribed fire projects on private lands in the Niobrara River watershed with funding received through the



Landowner Incentive Program (LIP), Nebraska Environmental Trust Fund, and State Wildlife Grants. Rare and declining plant and animal species occur in the watershed and eastern red cedar encroachment and invasive species such as cool season grasses are threatening their habitats. The NGPC intends for LIP funds to be used to restore habitat for these rare and declining species.

The NGPC has funded numerous prescribed burns in the last several years. In 2004 three prescribed burn projects totaled 417 acres. In 2005 327 acres were burned, and three projects involving 804 acres were burned in 2007. In 2008, 4 spring burns and 1 fall burn were conducted comprising 1719 acres. Prescribed burn plans and agreements are currently being developed that will involve 8 burns encompassing 1384 acres in 2009, 12 burns encompassing 2081 acres in 2010, and some follow-up smaller burns occurring in succeeding years.

The first prescribed fire with technical assistance provided by the Natural Resources Conservation Service (NRCS) occurred within the planning area on April 15, 2004. A contractor from Kansas on a local ranch conducted the 132-acre prescribed fire. Staff from the Broken Bow NRCS field office wrote the burn plan. Its purpose was to stimulate warm season grasses, control invasive woody plants, reduce cool season grasses and improve wildlife habitat. The landowners received cost-share funds through the EQIP program.



North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 20

Personnel carried out three additional prescribed fires in April of 2005. The District Conservationist in the Valentine NRCS office developed each plan. The FWS and TNC fire program personnel also reviewed these burn plans. The goals of each of these burns (178, 158 and 75 acre burns) were to reduce competition from cool season grasses (smooth brome and/or cheat grass), stimulate warm season grasses, improve wildlife habitat (increase diversity), control eastern red cedar invasion, and reduce hazardous fuel loads. In 2006, the Valentine NRCS office had four requests for prescribed fire plans; none were implemented due to poor weather and the lack of available burn contractors. In the spring of 2007, the Valentine NRCS office conducted three prescribed fires. Two prescribed fires (76.6 acres) were cost shared under EQIP (both of which were carried over from 2006) and one burn (217.7 acres) was not cost shared. Of the two remaining prescribed fires planned in 2006, a landowner withdrew one and NRCS scheduled the other for the spring of 2009. In 2008 the Valentine NRCS office had four requests for prescribed fire plans.

Nebraska Forest Service personnel recognize the need for reducing wildland fire fuel loads in many types of woodlands within the state. Overstocked woodland populations will require some type of initial entry to reduce hazardous fuels prior to follow up prescriptions, such as prescribed burning to manage future stocking levels. Initial treatments will reduce ladder fuels and provide space between dominant and co-dominant crowns. Resulting trails and roads will facilitate future fire control. In the summer of 2006, the National Forest Service called for private landowner applications to access cost share grants from the National Fire Plan (50% of \$350/acre) to eliminate hazardous fuels like eastern red cedars and reduce pine densities in forests to protect structures and property. A Forester/Wildland Fuel Specialist is now stationed in Valentine. Their duties include assisting landowners in managing forest health and establishing fuel breaks. There is \$200,000 in grant money (75% cost-share) currently designated for this program along the Central Niobrara.

5.2 Agency/Organization Prescribed Fire & Hazard Fuel Reduction

5.2-1 Nebraska School Trust Lands (Board of Educational Lands and Funds)

The Board of Educational Lands and Funds (BELF) is the constitutionally established Trustee of Nebraska's K-12 School Trust Lands. The Board's Field Representative initially reviews each request by a lessee to conduct a prescribed fire and the associated prescribed fire burn plan. Further review by BELF State Office staff may be required and the approval by the Board is a necessary final step. There is no policy for "automatic approval."

5.2-2 The Nature Conservancy

Dr. Allen Steuter, former graduate student of Professor Henry Wright, Texas Technological University, and pioneer fire practitioner and researcher, introduced prescribed fire to the Niobrara Valley Preserve (NVP) in 1984. After the introduction of bison to the preserve in 1985, many fires were set in different seasons in the original 7,500-acre "east" bison pasture. Researchers used these plots to test and refine the concept of fire-grazing interactions to increase both structural and species diversity and distribution in Sandhills Prairie, and to improve forage quality for bison, which winter without supplemental feeding.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 21

In succeeding years, other fires were set primarily for eastern red cedar control and to thin overstocked ponderosa pine stands, both with some success. Fire activity varied annually due to weather and other variables, and in some years, personnel were unable to conduct any burns. Burning reached a peak in the late 1990s and then declined beginning in 2000, due both to chronic drought and loss of key personnel at a time when The Nature Conservancy was converting to National Wildland Fire Coordinating Group (NWCG) standards. Recently the fire program has become revitalized with personnel holding improved qualifications and more burns conducted through cooperative measures. Nearly 4,000 acres were burned in 2007-08, with the majority of the burning completed in the spring of 2008.

Table 3: Prescribed fires on Niobrara Valley Preserve

Year	Burns	Total Acres	Year	Burns	Total Acres
1984	2	300	1999	8	2,393
1987	1	60	2000	4	373
1988	2	160	2001	3	135
1989	3	949	2002	2	125
1992	1	70	2004	1	200
1994	1	80	2005	0	0
1996	7	1,880	2006	0	0
1997	5	950	2007	3	500
1998	4	2,237	2008	10	3,600

The NVP also has a long history of cutting eastern red cedar, both for fence posts and saw timber as well as for conservation purposes. An emphasis on harvest dictated that most clearing occurred in small stands of straight, clear-trunked trees, usually in or near the valley bottom.

Partial harvesting of thick stands also helped to open up areas otherwise largely impenetrable by prescribed fire. In early 2007, TNC received a grant and staff subsequently expanded mechanical clearing activities to include Sandhills pastures with the goal of complete elimination of eastern red cedars on targeted areas. These areas included low-density stands, Preserve boundary areas, and other areas where fire would be less economical or relatively risky. Cedars were removed from about 5,600 acres of land during the fall and winter of 2007-08 and efforts are still on-going.



Cost of burning for The Nature Conservancy under National Wildfire Coordinating Group (NWCG) standards, both for equipment and personnel, is higher when compared to pre-NWCG burning, and funding is sometimes difficult to obtain.

However, NVP has received grant funds to conduct mechanical clearing, as described earlier, and for the actual implementation of prescribed fire. TNC has used these resources for hazardous fuel reduction, burn unit preparation, and the application of fire.

5.2-3 Fort Niobrara National Wildlife Refuge

After the introduction of prescribed fire at the Fort Niobrara National Wildlife Refuge in 1995, the program continued to grow throughout the following decade (Table 4, list of acres burned by year is included below). Presently, FWS is targeting approximately 1000 acres per year using prescribed fire, of which 700–800 acres include eastern red cedars. There will be a mechanical fuel reduction target primarily of large cedars, for approximately 100 acres each year.

Table 4: Fort Niobrara NWR - Year & Acres Burned

Year	Acres burned	Year	Acres burned
1995	30	2004	22
1997	65	2005	43
1988	358.1	2006	956
1999	222	2007	1315
2001	642	2008	0 ³
2002	20		

From 2006-07 at the Borman Bridge State Wildlife Management Area a contractor cut and piled eastern red cedars to reduce cedar invasion on grasslands and in easily-accessible wooded portions. This project was part of a fuel reduction project in conjunction with the FWS and NGPC. A major hazardous fuel reduction project is now underway at the Fort Niobrara Refuge to reduce eastern red cedar and ponderosa pines along the western boundary and southwest corner where wildland urban interface is a concern. Agency personnel are now removing fuels and hope to conduct prescribed fires in treated areas. The FWS may utilize a contractor in the future.

5.2-4 Nebraska Forest Service

The Nebraska Forest Service has a brochure with information on forest fuels management (fuels reduction) at: <http://www.nfs.unl.edu/documents/fireprotection/nfsfuelstreatment.pdf>

³ 72 acres of cedars were mechanically removed on the refuge's western boundary in 2008. All prescribed fires in 2008 were conducted on the Valentine NWR.

5.3 Initial Attack & Suppression

Most wildfires are suppressed by VFDs in their respective districts. Currently the FWS performs initial attack through mutual aid agreements with local VFDs. The FWS receives support from the local VFDs for fires occurring on Refuge System lands and FWS supports the local VFDs by responding to fires occurring in their respective response areas. The NPS may accompany the USFWS on initial attack when within/adjacent to the scenic river boundary. TNC performs initial attack with direct assistance from VFDs.

5.4 Training

FWS refuge staff has offered some suppression training to local VFDs but there are incomplete records. The FWS will continue to offer S-130 Basic Firefighter, S-190 Introduction to Fire Weather, S-211 Portable Pumps and Water Use, S-234 Ignition Operations, and other courses based on interest, funding, instructor availability, and need.

The Natural Resources Conservation Service National Range and Pasture Handbook provides policy for NRCS participation in the Planning and Application of Prescribed Burns: "NRCS supports and encourages the use of prescribed burning on rangeland, pastureland, forest land, hay land, Conservation Reserve Program (CRP) land, and wildlife land to meet specific resource management objectives." NRPH, rev. 1, December, 2003, Appendix A-1.

Employees actively involved in the planning and writing of prescribed burn management plans receive training, certification and job approval authority for those activities from the NRCS State Range Management Specialist. This training includes; Fire ecology, fire behavior, fire safety and smoke management.

NRCS encourages employee participation in approved prescribed burn training activities and workshops, including those conducted by other agencies or organizations. The Valentine Field Office staff currently maintains at least one employee with the training and certification to discuss the use of prescribed fire as a conservation tool with clients and to apply this practice in a contract. At this time, the Valentine Field Office does not have a staff member with the job approval authority to write prescribed burn management plans. Any subsequent training and certification of staff for this elevated job approval authority lies at the discretion of the District Conservationist.

The Nebraska Forest Service contracts with the training division of the State Fire Marshal's Office. A part of each Firefighter I course is devoted to wildland fire suppression under the terms of this contract.

Each year, NPS personnel take refresher training offered by the Fort Niobrara NWR staff. They may also attend refresher training or gain other certification levels in other geographical areas. In 2006, the NPS readied a Type 6 engine and has plans to bring at least one employee up to qualification as an Engine Boss and two to Engine Operator within the next few years. The

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 24

NPS will be called out by the FWS and suppress fires under their supervision as a member of the Keya Paha Brown Rock and Cherry (KBRC) Mutual Aid Association.

The NPS has no specific fire staff and, therefore, is not able to offer training directly to other agencies or the public. In the past, however, the NPS did offer training to rural fire departments through the Rural Fire Assistance grant program. In 2002 and 2003 the NPS and FWS teamed up to facilitate S-130, S-190 and water handling training for several VFDs throughout the watershed. Annually two to four NPS rangers are red-carded.

Three TNC personnel are currently qualified to the Firefighter 2 level. The Conservancy also draws upon non-local staff and partners to supplement fire team needs.

5.5 Education

Currently, the Central Platte Natural Resources District (NRD) Fire Program aids in providing prescribed fire training to local landowners at several locations each spring. This one-day training is followed by participation in a prescribed fire, and is held in conjunction with the

Prescribed Burn Taskforce. The NRD also offers NWCG training such as S-130 Basic Firefighter, S-190 Introduction to Fire Weather, and S-131 Advanced Firefighter training to local firefighters and cooperating agency personnel.

In 2005, the Central Platte NRD gave presentations at the Society for Range Management meeting in Ainsworth, Nebraska and the NARD conference in Kearney, Nebraska. They also hosted educational booths at the Nebraska Grazing Conference, Husker Harvest Days, and the NARD conference where they distributed a booklet, *Landowners Guide to Prescribed Fire*, and a brochure discussing the NRD cost-share to numerous landowners. In the future, they hope to give presentations to local schools, and to conduct training for other interested NRDs. They are also aiding in the formation of a statewide council to address prescribed fire education, cooperation, and policy.



In 2006, after the Big Rock Fire, the NRCS, UNL Extension office, NFS and the local NRD presented three public meetings for affected landowners and interested parties about hazardous fuel reduction needs around structures, erosion control methods, cost-share programs, and information for managing pine forests in the watershed through thinning and other methods. In addition the FAC (NPS, NGPC, NRCS and NFS) held a public meeting in Valentine, Nebraska on October 5, 2006 to inform the public

about the FMP process, cost-share programs for hazardous fuel reduction, wildlife benefits and conducting prescribed fires, and efforts to start a private landowner prescribed fire association. On January 23, 2007, the NPS gave a presentation in Ainsworth, Nebraska explaining the status of the CNW Fire Management Plan.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 25

This occurred during a NGPC informational meeting about the Nebraska Natural Legacy Project that also included the application of prescribed fire to improve habitat for Tier I and II wildlife species and discussion of the availability of NFS cost-share money for hazardous fuel reduction in forests.

Private landowner representatives from the Taylor/Sargent area also described their efforts to start a local prescribed fire association of ranchers. The NFS in cooperation with the North Central RC&D also conducted a *Firewise* Workshop for the public in Ainsworth that fall. A second public meeting, centered on forest fuels management was conducted in July 2008 at the Norden fairgrounds. The workshop included presentations, a tour of recent fuels management projects, demonstrations related to wood utilization and wood products exhibits.

The FWS will continue to support private land prescribed fire projects through the NRCS. Support will include the development, editing and review of fire prescription plans. NRCS will also serve as a member of a core team for training and education. The Niobrara Council will continue to look for opportunities to be involved in public education concerning fire management.

Two excellent articles have appeared in Nebraska Game and Parks Commission's Nebraskaland magazine. An article in the December 2006 issue, *Saving an Ecosystem*,

explains the importance of prescribed fire in restoring the mosaic of grasslands and forests at the Rock Glen Wildlife Management Area. A lengthy article in the January 2007 issue, *Fire on the Ridge*, describes the effects of recent wildland fires on Nebraska's Pine Ridge, the ecological implications of the absence of fire over the last several decades, and the need for improved forest and grassland resource management. Before and after photos in these articles are visual goldmines that illustrate the changes in tree densities after a fire, especially pine and cedar densities.

The Nebraska Prescribed Fire Council held its formative meeting on December 8, 2005. Their mission is to increase the understanding of safe, professional fire use and to assist landowners in utilizing prescribed fire as an important tool in grassland management. The Council is examining state laws and procedures to ease barriers to conducting prescribed fires and continue to provide quality training to landowners.

The Nature Conservancy participates in educational and outreach activities, including the Fire Learning Network, which holds local, regional, and national meetings. The FMP area lies within the Great Plains-FLN "Middle Niobrara-Sandhills" anchor site. Much of the original FLN momentum has spun off into the FMP itself, which has a high degree of overlap with the original FLN-identified issues and objectives, and other fire-related efforts. In October 2008, the Middle Niobrara-Sandhills anchor site hosted a Great Plains FLN meeting in Ainsworth, Nebraska. More than fifty participants attended the conference, shared successes and challenges, and toured local fire management sites. Some attendees also participated in NVP-hosted burns conducted immediately following the meeting.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 26

The NPS offers an outreach program in the local schools and is available to speak to classes on an “as requested” basis about a variety of resource topics. The Fifth Grade Curriculum book Science Horizons has a short (two-page) section on fire titled, *2000: How Should We Manage Forest Fires?* The NPS should examine the Valentine Rural High School curriculum to determine if any courses address fire management and should offer their educational services to the school.

Local reporters and NPS staff have also written several newspaper articles in which the NPS and other partners (FWS, TNC) have teamed up to educate the public about wildland fire, fire ecology and the need for hazardous fuel reduction/ prescribed fire. The following articles have appeared in the Valentine Midland News:

August 9, 2006 - After the Fire Land Care Workshop Held

August 23, 2006 - Plans underway since 2004 for Central Niobrara Watershed Fire Management Plan

September 27, 2006 - Good fire – bad fire – what you can do

October 4, 2006 - Fire...friend and foe – find out more

January 21, 2009 – Central Niobrara Watershed Fire Management plan open houses

The NPS plan, “A Strategy for the National Park Service Wildland Fire Communications and Education Program” aims to enhance recognition, acceptance and support for the role of fire in ecosystems and management of fire and fuels in the NPS. The document should be adaptable to address and meet local needs and is directed towards protecting lives, property and resources while restoring and maintaining healthy ecosystems. There are six mission goals; goals 4 and 6 apply poignantly to the CNW:

Mission Goal 4: Internal and external audiences understand and support the role of fire in ecosystems and the management of fuels and fire.

Mission Goal 6: A well-established wildland fire communications and education program enhances the service’s collective efforts towards its number one priority, firefighter and public safety.

Educating visitors and local residents about the importance of fire in maintaining healthy forests and grasslands and resident/visitor safety are two of the highest educational goals for the CNW project area. Efforts to implement these mission goals should include public meetings, newspaper, radio and magazine articles, brochures, school classroom speakers, attending organization meetings, media relations, wayside exhibits, public demonstration burns, tours and hikes, self-guided trails, training and other educational opportunities.

5.6 Recent Investigations & Research

Researchers are addressing fire issues in the Niobrara Valley and adjacent Sandhills through ongoing research. One topic investigated is the decline of blowout penstemon (*Penstemon haydenii*) in the Nebraska Sandhills and its relationship to fire suppression and the absence of grazing bison.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 27

A study conducted by the University of Nebraska-Lincoln (UNL) in the Bessey District of the Nebraska National Forest (Wedin 2003) is investigating the environmental effects of a planted forest on grasslands. In Nebraska, the spread of woody species into grasslands is due in part to the suppression of wildland fire. Prolonged periods of fire suppression cause a vegetation change from grassland to open canopied forest, and eventually closed canopied forest (pine and/or cedar). Carbon storage is also affected. Under dense pine stands, soils are losing up to 50% of their organic matter and becoming more acidic.

Compared to 75% of the carbon stored in Sandhills prairie, only 10% is stored beneath dense pine stands. In addition, pine forests tend to use much more water in the winter (when temperatures exceed freezing) than grasslands. Winter is perceived as a critical period for groundwater recharge of aquifers. Comparable studies (Steuter 1990) have shown that the woodlands are expanding out of the Niobrara River valley and its springbranch canyons into adjoining Sandhills Prairie.

A similar study (Eggemeyer, et. al. 2006) also examined the expansion of ponderosa pine and eastern red cedar into Sandhills prairie and concluded that these deeply rooted trees used more water than grasses in summer which, because grasses senesced when rainfall is scarce.

In winter, when grasses are not utilizing water, the trees will grow and tap deep soil moisture to compensate for a lack of growth during droughts.



By examining sedimentary and fossil records, other research from UNL has shown that drought and fire increased dune formation in the recent geologic past, and that as recently as 1,000 years ago there were droughts more severe than in the 20th century (Nicholson, Swinehart 2005). A similar project at UNL (IANR News Service 2003) is an interdisciplinary study of the interaction of sand, grass, and water in stabilizing the dunes in the Sandhills region. They are exploring how grazing and fire, along with climatic factors affect the dunefields. The dunes have

gone from grass-covered to barren several times over the last few thousand years.

Yet another study (Mangan, et. al. 2004) examined the impacts of drought, functional plant type, fire grazing, and erosion relative to dune stability in the Sandhills. It concluded that fire and grazing alone did little to adversely impact vegetation, but when combined with drought, biomass decreased.

The Nature Conservancy (Steuter 1996) has studied the effects of fire on grasslands and the interactions of bison grazing with other mammals, like pocket gophers, after fire. Generally, bison are attracted to burned areas to feed on new bunch grasses. Their preference for a particular burned area declines over time. During summer burns, bison favor burned areas in open, rolling country when breeding, even though better forage may be available on recently burned lands in hilly or wooded areas. Biomass after bison grazing tends toward rhizomatous

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 28

grasses and forbs. The Fire Learning Network reports that for the Sandhills particular, specific, and improved prescriptions and methods need to be developed.

Forest Type Mapping Project: Nebraska Forest Service staff classified areas of homogeneous forest/woodland vegetation to provide a base-mapping layer for forest management applications in the Niobrara Valley. Definiens Image processing software was used to classify 2006 color-infrared (CIR) imagery into grassland, ponderosa pine forest, eastern red cedar forest, deciduous forest, developed land, bare earth, and water as land cover categories. Agricultural land was removed prior to classification using the Farm Service Agency common land unit layer. Noticeable errors and inconsistencies were removed from the final classifications using Erdas Imagine image cleaning tools.

Using the forest type information, hazardous fuel potential may be more readily identified and mapped. Areas of high priority for fuel reduction efforts may be established based on fuel characterization, proximity to high value property, topographical features, etc. Acreage determinations based on planned management activities will help guide funding and labor needs.

Using forest types to stratify inventory sampling may provide estimates of available small diameter round wood and woody biomass resulting from forest/woodland management activities. The potential to spur economic growth exists within areas where there are sufficient quantities of raw materials for lumber, posts and the bio-fuels industry.

Two recent studies (Buenger 2003 and Sturdevant, et. al. 2006) relate to the effects of fire on archaeological resources. They describe how buried archaeological resources are generally not threatened by either wildland or prescribed fires unless trenching or machinery is used to construct fire lines. Surface objects can be damaged, depending on fire and fuel characteristics. This would be more of an issue in the forests rather than prairies where black lines are used. Pile burns located directly over resources can also adversely affect these resources. Fossil resources would be most likely threatened by heavy machinery use if fire lines were to be constructed for major forest fires.

6. STRATEGIES TO RESTORE A FIRE ADAPTED SYSTEM

6.1 Landowner Prescribed Fire Workshops

NRCS and partners held two prescribed fire schools in St. Paul and Osceola during January of 2007. As previously mentioned, the FAC held a public information meeting in October of 2006 in Valentine. Presentations from the NGPC regarding the Landowner Incentive Program and the NRCS explaining EQIP were supplemented by information provided by the NFS about current and proposed funding for hazardous fuel reduction projects in the central Niobrara

River valley. In addition, the FAC described problems associated with eastern red cedar encroachment and high densities of ponderosa pine, and provided a brief overview about the FAC. Availability of Private Landowner Prescribed Burn Associations was also a topic of great interest among landowner participants.

6.2 Prescribed Fire Brochure

The FAC has created a prescribed fire brochure entitled, *Prescribed Fire Use in the Nebraska Sandhills and Niobrara River Valley* (Appendix E). The NGPC provided funding for printing this brochure.

6.3 Hazard Fuel Reduction Brochure

The FAC recommends that the brochures, *Country Living at its Best* and *It's the Little Things That Count* (both published by the Nebraska Forest Service University of Nebraska-Lincoln), be made available to each new zoning request applicant in the four-county area.

These brochures and various other hazardous fuel reduction handouts will be made available to the public through various agencies and at local libraries.

6.4 Prescribed Fire Groups and Crews

At two recent meetings, ranchers from the North Platte and Taylor/Sargent areas discussed local fire associations in which ranchers and farmers have collaborated to implement prescribed fires. In one instance, the group sought non-profit status, received grants to purchase fire equipment, and conducted burns to improve grasslands and reduce or eliminate eastern red cedars. Another group of ranchers did not formally organize, but burned numerous acres each spring to reduce or eliminate eastern red cedars and improve grazing.

These presentations generated significant interest from local ranchers, especially when they learned that up to 80% of some lands were lost to cedar invasion and that prescribed fire restored the land to pasture. The NGPC held a well-attended meeting in Sparks, Nebraska in October of 2008 to introduce the concept of formulating a private landowner prescribed fire group. Subsequently, in December of 2008 a number of local residents formed a Prescribed Fire Group that encompasses six counties. They appointed a president, vice-president and a secretary/treasurer. There is an eastern and western representative for this large landscape as well. Collaboration will occur with the local Fire Learning Network (FLN). This group investigates strategies to encourage and empower local ranchers to form prescribed fire groups, get needed training, and make equipment available for prescribed fires.

A number of models exist for conducting prescribed fire on private lands, including the use of contracted crews, dedicated agency and NGO (non-government organization) crews, and groups of cooperating landowners. No one model is best for all situations, nor are they mutually exclusive. Rather, fulfillment of the FMP goals will require use of all models, alone or in combination.

However, application of prescribed fire ideally will undergo an evolution within the area as people accept use of fire and become experienced in its use. It is reasonable that in the short

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 30

term, some expert assistance might be required to conduct fires on private property. This can take the form of contractors, agency and NGO crews, and planners working with individuals, who gain experience and confidence with prescribed fire. In the long term it is envisioned that groups of cooperating landowners having some degree of organization will apply most prescribed fire.

The benefits of enabling landowners to burn their own property are significant. Once a critical mass of cooperators is reached, the group can supply adequate labor. Ranchers can share equipment and its cost spread among members. At a more organized level, such a group may be able to accept grants to pay for training and equipment.

The NPS has the authority to cooperate with local fire organizations and to assist them when doing so helps enhance or protect the outstandingly remarkable values of the river. Newer cooperators can gain valuable experience by assisting more seasoned members on fires. Also, when trained and experienced, landowners or managers have a distinct advantage when conducting fires on their own property, in that they know the land and fuels and can best gauge whether management objectives have been met. Liability is also reduced. Finally, others can replicate this model across a larger landscape, with the formation of local groups to service optimally sized rural neighborhoods.

Despite this vision of substantial self-reliance, it is reasonable that broader cooperation among all partners should continue, especially when burning larger units, complex and potentially dangerous fuels, or under more extreme conditions.

6.5 NWCG Training

The FWS and other cooperators will offer NWCG training courses in the local area. FWS will serve as a contact for training outside the local area. The State Fire Marshal's office offers training for VFDs.

6.6 Prescribed Fire Equipment Caches

The Nebraska Game and Parks Commission secured fire equipment with State Wildlife Grant funds. They will use or lend this equipment to implement prescribed fire on private lands. Equipment available for loan includes; one 200 gallon slide-in pumper; an ATV sprayer; three two-way radios; miscellaneous *Nomex* shirts, pants and jumpsuits; three collapsible backpack pumps; two flappers; five fire rakes; three drip torches; and one weather kit. The Commission has secured funding for creating two fire cache trailers to be loaned to private landowners that meet guidelines and training established by the newly developed prescribed fire association. The trailers (one located at the NGPC in Bassett and one at the NRD office in Valentine) would be equipped to enable 10-person crews to conduct prescribed fire.

The TNC does not have a fire cache with equipment available for use by other entities. TNC may consider a loaner program after expansion and upgrade of their equipment cache.

6.7 Funding

In 2005, the Nebraska Game and Parks Commission received a Landowner Incentive Program (LIP) grant from the FWS to focus on management of unique ecosystems along the Niobrara National Scenic River corridor and within the Sandhills. Unique at-risk plant and animal species and wetland ecosystems occur in these areas and need protection against invasive species and management practices that threaten survival. One portion of the grant enabled NGPC to fill a three-year term employee to focus on restoring these ecosystems. The position was filled in the fall of 2006 and works with the Northern Prairies Land Trust. Another portion of the grant provides approximately \$245,000 for landowner agreements, which benefit at-risk species by improving habitat in these focus areas. Landowner agreements are required to obtain a 75% federal to 25% non-federal matching funds. Many landowner agreements will encourage eastern red cedar removal through prescribed fire or mechanical treatment, and

meadow management strategies that benefit at-risk species. Several projects were planned or implemented in 2007 to conduct prescribed fires and reduce fuel loads.

The Nebraska Game and Parks Commission also administer the WILD Nebraska program that utilizes habitat stamp dollars to improve wildlife habitat on private lands. These funds are limited and can be used in cooperation with Natural Resource District funds. The Commission has cooperative agreements with all NRDs in the focused region. Funds are available for wetland, grassland, and woodland related projects.

The Nebraska Game and Parks Commission is continually applying, or assisting landowners in applying for other grants to benefit private lands habitat. Some of these granting sources include the Nebraska Environmental Trust Fund, Partners for Wildlife Program, Private Stewardship Grants, and State Wildlife Grants.

In 2007, the Nebraska Forest Service received a grant of \$200,000 to reduce hazardous fuel loads in the forests of the Middle Niobrara River valley. A previous seed grant of \$39,899 was made available to private landowners in the fall of 2006 following the Big Rock Fire and was distributed to local landowners. This grant was also for the purpose of reducing understory ladder fuels (primarily eastern red cedar) and thinning ponderosa pine forests. Another similar grant may become available in 2009.

6.8 Economic/Business Concerns

The Nebraska Forest Service has conducted numerous workshops across the State to demonstrate the utilization of merchantable and small diameter timber for wood products. Demonstrations include a portable band mill for lumber production and a post peeler to produce posts suitable for fencing material or post furniture and rail applications. A Wood Energy Action Team was formed to investigate, demonstrate, and promote new technology using woody biomass for energy. This team will work to:

- Accelerate timber stand improvement on private woodlands based on increased market demand for firewood.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 32

- Promote fire safety in the home when heating with wood; work with larger institutions statewide (schools, clinics, private businesses, etc.) that could utilize wood heating and cooling.
- Utilize urban tree waste for wood fuels.
- Facilitate the development and expansion of companies engaged in harvesting and conversion of trees to other products.

Recent discussions have occurred in Nebraska concerning the possibility of utilizing various fast-growing tree species (such as poplars) to produce ethanol. It is unknown if cedars would be considered feasible for this process. Other possible uses of forest resources include production of cedar oil and chips for roads and landscaping, and building a power plant fueled by wood products.

7. FIRE TRAINING & EQUIPMENT

7.1 Goal

An important goal is to encourage that all government, for-profit, and nonprofit entities* that support the CNW Fire Management Plan, and who apply prescribed fire within the watershed, meet National Wildfire Coordinating Group (NWCG) PMS 310-1 standards within five years of this plan's endorsement.

Rationale: There are numerous county, state, and federal agencies within the CNW that use prescribed fire as a management tool. Some nonprofit organizations also manage land with prescribed fire. However, uniform training and equipment standards currently do not exist among agencies and organizations conducting prescribed fires.

Adopting uniform standards will enhance the safety and effectiveness of prescribed fire efforts and help to control public liability in the CNW. By using the same training and equipment standards, wildland firefighters and their staff will improve communication lines and realize safety standards intended to create a positive climate for prescribed fire throughout the landscape.

** This would not include local prescribed fire associations composed of ranchers, VFDs, etc.*

7.1-1 Action Step

The FAC will develop fire standards for the CNW using NWCG 310-1 as a framework. (PMS 310-1 is available at <http://www.nwcg.gov/pms/docs/310-1new.pdf>). These standards include:

- Personal Protective Equipment Standards
- Nomex trousers and shirt or other NWCG approved wildland fire resistant clothing
- Hard hat (designed for high-heat environment)

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 33

- Eight (8) inch high leather boots with lug-type soles
- Eye protection (goggles, face shield, or safety glasses)
- Leather gloves
- Fire ignition devices (matches, lighters, fusees)
- Fire shelter

7.1-1a Physical Fitness Standards

Each agency would be responsible for issuing fitness tests to satisfy their agency standards, health screenings, and certification forms. Fitness levels include:

- Moderate level fitness test -- all firefighters required to carry a 25-pound pack for 2 miles in 30 minutes or less (Field test).
- Arduous level fitness test -- all firefighters required to carry a 45-pound pack for 3 miles in 45 minutes or less (Pack Test).

7.1-1b Training Standards

Most agencies/organizations utilize seasonal workers on the fire line. Seasonal workers can participate as firefighters as long as they meet their respective agency's physical fitness standards.

Within five years of plan endorsement, all agencies and organizations should either have a burn boss or be able to share qualified personnel to carry out burns.

7.1-2 Action Step

Facilitate the adoption of NWCG standards among cooperating agencies and organizations.

- Seek funding to assist with the acquisition of equipment, training, and Personal Protective Equipment.
- Set up centralized locations to qualify individuals for physical fitness testing (field and pack tests).
- Offer NWCG training opportunities in cooperation with DNR Fire Coordinator Specialist.

7.2 Goal

One hundred percent of burn bosses will utilize a fire complexity-rating system for prescribed fires.

Rationale: A fire complexity-rating system is used to identify prescribed fire plan elements or characteristics that may pose special problems or concerns and where prescribed fire plan changes may be prudent to mitigate or eliminate these problems or concerns. Fire complexity-rating system considers three factors:

- Risk, the probability or likelihood that an adverse event or situation will occur
- Potential consequence, some measure of the cost or result of an adverse event or situation occurring.

- Technical difficulty, which indicates the skill needed to implement the burn and deal with unexpected or adverse events.

7.2-1 Action Step

Develop a prescribed fire rating system for the CNW, or utilize the prescribed fire complexity guide (PNS-424, NFES 2472).

(See http://www.nwcg.gov/pms/RxFire/complexity_analysis.pdf)

7.2-2 Action Step

Establish guidelines for the use of a fire complexity-rating system.

Example: For low complexity burns, agencies may be able to determine their own qualifications, whereas on burns of moderate or higher complexity, and on which resources of more than one agency are utilized, the NWCG 310-1 standards should be applied.

8. INITIAL ATTACK

8.1 Incident Command System

Federal agencies such as the NPS and FWS use the Incident Command System (ICS) a component of the National Incident Management System (NIMS) when responding to and fighting wildland fires and other emergency incidents. Some VFDs have had specific training in ICS, but few if any of their firefighters have qualified for ICS positions. The FAC encourages VFDs, Sheriff Departments and the local Office of Emergency Management to work together to get a basic ICS course offered in the area, so that emergency personnel can attend and receive training in managing incidents, such as fire. There is a high probability of large-scale wildland fires in the immediate future. Management complications can ensue from one VFD trying to manage the numerous responding departments and agencies. The complexity of a large-scale incident could overwhelm a fire chief.

When over fifty VFDs responded to the Big Rock Fire in 2006, it placed a heavy burden on a few individuals to coordinate operations. A Unified Command structure is an alternative for incident management when many personnel respond and an incident becomes very complex. A typical fire department has a Chief with an Assistant Chief in command positions. Utilizing the Incident Command System would enhance the incident's organizational effectiveness by utilizing various personnel from within the primary agency, as well as personnel from other entities and organizations to fill IC positions such as Incident Commander, Information Officer, Operations Chief, Planning Chief, Logistics Chief, and Finance Chief.

Basic Function/Position responsibilities are as follows:

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 35

Incident Command: Leads the entire operation from start to finish and obtains targeted results. Other members of the fire organization accomplish the work, rather than solely the IC. The command is responsible for all on scene activities, staff consensus and decisions, establishment of a command post, policy implementation, and establishing communications with local dispatch or the responsible agency.

Operations: Carries out tactical activities (ground, air, water); commits resources; assigns operational work based on contents of a daily management plan (Incident Action Plan).

Planning: Acquires all information pertinent to the operation (who, what, where, how, why, when); tracks resources and their status; prepares maps, record, photos, weather forecasts and records, etc.; conducts briefings and debriefings; establishes strategy; mobilizes and demobilizes resources and entire operations; provides documentation; completes investigations.

Logistics: Acquires what is necessary to support operations; provides resources, supplies, equipment to carry out the mission; responsible for transportation, medical care, food, sleep facilities, personal hygiene, etc.; provides all incident communications infrastructure (network, interface, messages, etc.).

Finance: Establishes costs for lost and damaged property, resource costs (all items used to suppress the fire), injury/claims compensation, personnel costs tracking (hours worked, days, OT, hazard pay, etc.), fiscal documentation and logs, etc.

Information Officer: Relates incident news to media in a timely matter.

Safety Officer: Provides risk analysis, and daily safety briefings; collects injury and near miss reports.

Liaison(s): Helps to coordinate business between departments and agencies.

Technical Specialists: Specifically addresses special problems.

Appendix L contains an organizational chart of the Incident Command System.



8.2 Fire Reporting

Members of the public generally report wildland fires by calling 911 or dialing the local county sheriff department. County dispatchers will complete a form CNW FAC – F1 (Appendix G) and immediately notify the VFD or agency that is accountable for response. The Dispatcher Card (see section 8.7) will be kept in the dispatch office and will be available to the FAC or responding agency.

8.3 Response

After a county dispatch center receives a report of a wildland fire they notify VFD members by pager and/or phones. Each respective VFD reports to the firehouse and then responds to the scene of the fire. County Dispatch notifies the FWS to respond to a particular fire when requested by the primary responders. The FWS will notify the NPS by phone to assist them with a response to a fire. Presently the NPS will act under the direction and authority of the FWS when responding to fires on a National Wildlife Refuge or on mutual aid fires within or adjacent to the National Scenic River boundary. TNC responds directly to wildland fires and requests assistance from VFDs when needed. See Appendix O for a flowchart illustrating fire reporting and response.

8.4 Equipment Lists

A list of VFD equipment is included in Appendix I. Each VFD was sent a letter (approved by the FAC on 8-18-06) in October 2006 and January 2007 requesting updated equipment lists of trucks and major equipment capabilities. Most VFDs have responded.

8.4-1 The Nature Conservancy (TNC)

- 1 Type 6 engine (300 gallon)
- 2 Type 7 engines (200 gallon)

- 1 Draft Pump
- 6 Panama drip torches; 5 silver-type drip torches
- 1 Cat motor grader w/ radio
- 1 Ford 4WD tractor/Brush Hog mower w/ radio
- 10 old style shelters
- 6 new Nomex@ 2-piece PPE; 10 old Nomex@ 1-piece PPE
- 6 FSA complete backpacks
- 10 FSA spare bags
- 5 metal Indian pumps, with upgrades suspension systems
- Assorted helmets, goggles, headlamps
- 12 flappers, 4 council rakes, 6 Pulaskis, 4 chainsaws

8.4-2 NPS

Currently the NPS has the following general equipment:

Hand tools (flappers, Pulaskis, Council rakes, axes, McLeods, shovels, etc.)

Portable hand pumps (backpack)

Drip Torches

Belt Weather Kits

Firefighter Packs and PPE (yellow packs, sleeping bags/pads, water bottles, headlamps, files, flagging, fusees, personal first aid kits, headlamps, leather gloves, Nomex@ shirts and pants.)

Educational materials (training manuals, forms, Fireline Handbooks, etc.)

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 37

1988 Chevrolet 1 ton fire truck (6.2 liter - 30 Custom deluxe Diesel) I-147065, with a 1997 "Wildfire Pacific" 250-gallon tank w/18 hp engine Wajax Pacific BB4 pump (110 gpm @ 100 psi) mounted on the truck bed.⁴ A complete inventory record is kept of all equipment.

8.4-3 FWS

The FWS has a fully stocked fire cache with the following engines:

E6315 300 gallon model 52

E6316 300 gallon model 52

E6317 300 gallon grass rig

E125 300 gallon grass rig

E126 300 gallon grass rig

E127 300 gallon grass rig

WT13 1250 gallon tender

8.5 Fire Chiefs and Department Addresses (See Appendix J)

8.6 Emergency Contact Information (See Appendix K)

8.7 Coordination with County Dispatches

The NPS gave county dispatch centers a Dispatcher Card in February 2007 to assist them with recording information from reporting parties for wildland fire. Though its use is voluntary, the

card improves information collection and assists VFDs in gathering accurate information on the type of fire, location, rate of spread, etc.

8.8 Annual Operating Plan (AOP)

With an approved FMP and a formal written agreement among the members of the Fire Advisory Council, an Annual Operating Plan will be prepared (2010) outlining the specific tasks that the various partners will seek to accomplish on an annual basis. Job positions, names, phone numbers call lists, radio frequencies, and equipment lists will be included in the AOP. The AOP will remain in effect for the duration of the FMP.

8.9 MOU/General Agreements

The state of Nebraska and federal land management agencies (including U.S. Fish and Wildlife service,

NOTE: Congress mandates that the National Park Service protect the outstandingly remarkable values of the Niobrara National Scenic River. Although the NPS cooperatively manages these resources, only four percent of landowners along the river felt the NPS should have primary responsibility for management of natural resources. Protecting local ownership of the land and maintaining its rural character were the highest objectives to these landowners (2001 Niobrara Council Landowner Survey). One of these values includes its scenic attributes, which are composed of an astonishing array of forest types and grasslands. A second value includes the great diversity of wildlife species. Managing these diverse resources is an especially challenging task because the **NPS does not own or directly control any land** at this time. Presently the NPS is unable to conduct or assist with prescribed fires on private lands (the NPS may assist TNC on prescribed fires). Efforts are underway to allow federal agencies (especially a non-land owning agency) to help manage land within and/or adjacent to its boundaries in more creative ways, thus the necessity for the NPS to help manage a broader landscape by collaborating with various agencies and organizations in an attempt to affect positive ecological changes over a much greater area.

⁴ This truck will be surplus in 2009

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 38

National Park Service, and U.S. Forest Service) entered into a general wildland fire agreement in 2007. This agreement states in part that all parties may assist each other for fire suppression operations within the state of Nebraska. The NPS and FWS will develop an Annual Operating Plan (AOP) to provide direction to all involved partners. Mutual Aid Agreements exist among the U.S. Fish and Wildlife Service and local rural fire departments that allow each party to assist in wildland fire suppression when needed.

8.10 Plan When Fire Exceeds Local Capabilities

When a fire exceeds the capabilities of the local fire district, the fire district will call for mutual aid. If mutual aid resources are not sufficient to control the fire, then the Region 24 Emergency Management Director can declare an emergency and contact the Nebraska Emergency Management Agency (NEMA). If the resources of the State are insufficient to control the fire, then NEMA can begin to call for other state and federal resources through the Great Plains Interagency Dispatch Center in Rapid City, South Dakota. This Dispatch Center, in turn, is linked to the National Interagency Coordination Center in Boise, Idaho. The FWS will operate under their own policies within their own fire management plan. The NPS owns no lands at this time, but in the future, if lands are owned and managed by the NPS, it would request assistance from local resources first, and then contact the Interagency Dispatch Center for additional suppression resources.

8.11 Emergency Preparedness & Evacuation

The Region 24 Emergency Management director has the responsibility to determine emergency preparedness and evacuation procedures for their respective counties and communities. Cherry County has a detailed Local Emergency Operations Plan that addresses evacuation procedures.

The FAC suggested that the river valley be divided into various districts with contact persons, organizations and calling trees. Each agency/organization is responsible for evacuation plans for their lands.

8.12 Training

Training will be agency-specific for initial attack. The FWS/NPS will offer S-130 Basic Firefighter and S-190 Introduction to Fire Weather on an as-needed basis as well as make higher level courses available when feasible (Burn Boss, Engine Boss, etc.)

9. FIRE MANAGEMENT COORDINATION

9.1 NPS Role

The NPS's role in current fire management activities is largely a supportive one. The NPS assists in the suppression of wildland fires within and immediately adjacent to its boundaries as a member of the KBR&C Mutual Aid Association and through other agreements.

North Central Nebraska Community Wildfire Protection Plan

The NPS will respond to wildfires under the direct guidance and supervision of the U.S. Fish and Wildlife Service until/if the NPS has its own fire management organization. When feasible the NPS will also assist with prescribed fires at Fort Niobrara NWR, The Nature Conservancy and PLO fires conducted through the Niobrara Prescribed Fire Association. For the purposes of this plan there is only one **Fire Management Unit** and only one response – **suppression**. Other agencies, entities and private landowners have the primary responsibility of direct fire management during wildland fires and prescribed fires. In extended attack situations, the NPS could fill an overhead role that is appropriate to incident management and provide firefighters and/or equipment to the extent training and qualifications allow.

At higher staffing classes, the NPS will work closely with the FWS and assist them when feasible in providing personnel.

9.2 Education/Interpretation

Rural fire departments, the NPS and other federal agencies such as the U.S. Forest Service have had a long tradition of fire suppression. Historically the general goal of fire management was to control and extinguish wildland fires as quickly as possible, usually within the first twenty-four hours. The images of Smokey Bear and Bambi conjure up thoughts of the destructive power of wildland fire upon our nation's forests and the death of countless wildlife.

Our culture has largely accepted these engrained impressions. The point is that we may not want to change the local public's image of "wildland fires". Wildland fires destroy millions of acres of forest annually, burn homes and vehicles, and adversely affect water quality. Worst of all is the annual loss of firefighter and civilian lives. However, we want to educate people about the potential benefits of utilizing prescribed fire and managing our forest resources through reducing hazardous fuels and establishing firebreaks.

Part of this process is educating the public about the role that fire plays in the maintenance of various ecosystems. Excluding all fires will result in unwanted wildland fires becoming more frequent and dangerous than if fire management is used. Fire suppression has been successful, and resulted in detrimental changes to the ecosystem and hazardous fuels buildup.

Native Americans used fire as a tool to manage landscapes for hunting, personal protection, and survival. Farmers and ranchers have traditionally used fire to burn ditches, debris piles, and pastures though many landowners have little understanding of the role that fire plays in an ecosystems, maintaining healthy grasslands and forests. With the frequent barrage of media images during busy summer fire seasons, the public has developed a fear of fire as a destructive force, yet ironically, this same public seems to take little action in locating homes in areas away from fire prone areas or providing a defensible space around their homes.

There are various publications available to the public that inform landowners of risks and teach methods to protect private property. Though we have had some success in educating the public about fire across the country, much work remains. Education alone may not be enough.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 40



Because of a longstanding tradition of good stewardship, area ranchers take great pride in the care and preservation of the landscape and the sustainability of the Sandhills ecosystem. Productive grasslands, sufficient water and healthy forests are all common goals that landowners want to preserve, protect, and improve. The CNW Fire Advisory Council's role on the Niobrara is to cooperate and assist other local agencies and organizations, and to inform the public of the advantages and inherent dangers of fire. This opens the door to discussions on how the public can use

prescribed fire as one of several tools to improve livestock production, ensure better grasslands, and begin the prolonged task of managing forests to reduce the possible effects of catastrophic wildland fire.

Educating younger generations about fire's natural role and effects is an important first step. With a myriad of new educational standards and requirements to meet, local schools have little time to learn about fire. The FAC, NPS, Niobrara Council, and other partners can provide additional information and insight to ecosystem management lessons. Many of the associated issues fit into science curriculum, including the water cycle, energy relationships in biotic communities, pollution, and animals and their habitats. Fire plays a crucial role in all of these basic concepts and many more.

As an example the third grade curriculum includes science topics such as, *Living in a Forest*, *Living in a Desert*, and *Forces that Change the Land*. Fourth graders read the chapter *Using Our National Parks* and fifth graders learn about nature in *How do Ecosystems Change Naturally?* The creative interpreter will weave fire into these required curricula. This will begin to educate the next generation of landowners so that fire becomes a familiar topic -- a natural process and a manageable tool that they can use to benefit economies, as well as ecosystems. Teachers could integrate upper class science students into pre- and post-burn field studies to see the differences in grasslands and forests with and without fire management.

A second undertaking is to work with the current generation of landowners. The vast majority are ranchers. Unlike Kansas where the skies are said to turn black each spring, using fire as a tool in north-central Nebraska is in its infancy. The combined efforts of organizations, such as the Natural Resources Conservation Service, Nebraska Game and Parks Commission, Nebraska Forest Service, and The Nature Conservancy's Fire Learning Network, results in slow but steady progress to educate landowners about the role and benefits of fire in dependent ecosystems. Cost-share programs provide resources and expertise to help landowners reduce forest density, protect property from fire, improve grasslands, and eliminate or reduce the invasion of woody vegetation into pastures. Hazardous fuel reduction efforts, best management practices (which might include deferred grazing) and prescribed fire are methods being used to attain management goals.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 41

Local residents have long looked at fire as a thing to be feared and immediately extinguished. VFDs aggressively attack prairie fires, and rightly so. People most often focus on the dangers and destructive nature of fire because it burns valuable grazing lands and can destroy property and livestock, rather than examine the beneficial aspects of fire. In the early stages of local burning efforts, mistakes made in the application of fire to the landscape can cause great damage and set a program back months or perhaps years. It is critical that agencies and contractors as well as private landowners take the highest of precautions when conducting prescribed fires. Certainly private landowners need to be told up front that fire is dangerous and sometimes unpredictable. Usually human error or unanticipated changes in weather cause fire escapes. Although topography and fuel conditions are predictable, weather is not and sometimes the best-laid plans may go awry without adequate site preparation and contingency plans.

Getting local residents to accept prescribed fire as a practical tool and gaining the trust of fire management authorities are two critical aims of this FMP. Illustrating that direct fire management can protect valuable resources and property and may increase profits is an important aspect as well.

A third issue is to convince local authorities of the importance of protecting personal property and lives. In theory, this should not be a hard sell, but if it involves implementing new regulatory measures, it can become difficult to sell. Current and new landowners need to become aware of how best to situate homes, but also of how to protect structures before disaster strikes. The Big Rock Fire in Valentine in July of 2006 and the Chadron Area Fires in August were wake-up calls for Nebraskans, illustrating that if we do not start acting soon, destructive fires will continue to occur. What is surprising is how many landowners have not made efforts to protect their property, have only made cursory efforts, or have even rebuilt on the same locations that have the same topographical risks. The Fire Advisory Council is working with county zoning authorities and county commissions to notify new landowners of fire risks when choosing a building site. It is a first step in a lengthy process of awareness, education, and perhaps future regulatory oversight.

Fourth, insurance providers are beginning to see the results of poor building site choices made by property owners. Through the destructive forces of hurricanes, floods, landslides, and fire, insurance agencies are beginning to increase rates for high-risk policies or are even refusing to insure properties. Until insurance companies tighten standards regarding the placement of homes and modification of traditional building/construction standards, homeowners will continue to place themselves and their property at unnecessary risk.

The FAC will work with its partners in advising the public about planned burns and fuel reduction projects. Good public relations and notifying the local populace about the fire-related activities is an important step in helping local communities and landowners to understand fire. The FAC will seek to notify visitors of fire danger levels through signage and through public media (newspapers, television and radio stations). VFDs have the authority to implement burning restrictions and fire bans and they work closely with county commissioners and law

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 42

enforcement agencies when making these decisions. The vast majority of wildland fires and prescribed fires within the CNW boundary take place with inadequate communication among agencies and organizations. Efforts to meet with fire agencies and VFDs to improve communication and to record fires for statistical purposes are underway. Neighbors need to be notified, the media contacted, and signs placed to inform the public about planned prescribed fires or hazardous fuel reduction projects. These efforts will help enhance public education and safety, and decrease the likelihood that visitors might report or attempt to put out a prescribed fire.

During extended attack operations within the scenic river boundary, the Chief of Interpretation or their designee will function as a liaison between a local media contact person and/or a Public Information Officer in order to provide for effective communication between park personnel, the public and the media. During the case of a large-scale wildland fire, the Park may request a Public (Fire) Information Officer (PIO) from outside the Park. In the NPS Long Range Interpretive Plan "Fire History" is listed as a research need (pg. 76) and fire should certainly be considered as a subject matter in the development of wayside exhibits, site bulletins, educational outreach and interpretive programs. The NPS should incorporate elements of the fire management program into the overall Interpretive Program and explained where possible and appropriate.

Barriers to effective education and interpretation include mobility of visitors and the numerous entry/exit points to the CNW; a lack of public facilities, such as ranger stations, picnic areas,

public campgrounds, etc., the absence of a central visitor center for the river/Sandhills environs; seasonal visitation fluctuations; and a lack of wayside exhibits.

The FAC will meet post-season and will gather statistical data from area dispatchers, agencies, and organizations. The FAC will also complete an informal assessment of public perception of the FACs fire management efforts. The FAC will accomplish this through coordination with

Note: Step-up plan for Public Information Activities (Specific to the Niobrara NSR Only)

Prior to the beginning of each spring fire season the Park Superintendent, Chief Ranger, Chief of Interpretation, Regional Fire Education and Prevention Specialist, and Regional Prescribed Fire Specialist should discuss any known prescribed fires planned by partners or plans to burn on NPS administered areas for the upcoming year. The Chief Ranger will evaluate the potential of the upcoming fire season and a public notification plan will be prepared based upon that analysis. It is essential that agencies carefully articulate information pertaining to fire danger, public advisories, closures, prescribed fire activity, and suppression operations to the public. They should consider a variety of methods in this planning process, including the use of local television, radio and newspaper resources, as well other informational contacts such as the use of posters, flyers, Internet sites and letters to neighbors.

The managing agency or entity needs to apprise the public of the basic facts regarding wildland fire activity, including the location and status of a fire and any special restrictions that may be enacted. When someone discovers a wildland fire in the area, the generally report it to an area Dispatch Center via 911. The local VFD Chief (who may work closely with county commissioners and sheriff departments) handles public information activities for at least the first 24 hrs. If officials expect the fire to exceed the initial attack period (24 hrs), it is likely that other entities and agencies (such as the Nebraska Emergency Management Agency or other federal agencies) could assist, and the Incident Command System implemented. Managers should consider a request to order a qualified Fire Information Officer (PIO) if the fire is located within the NPS boundary. Park staff should fill these positions if possible, to help ensure familiarity with the resources involved in the incident. Should the incident transition to a Type I incident, a PIO will generally accompany the Incident Management Team to the fire; this can also apply to some Type II incidents. Notifications will always be supportive of public concerns. PIOs should emphasize that trained professionals are leading the incident and that action taken will manage the situation according to established guidelines.

As is the case with most incidents, news media often arrive on the scene unannounced. Fire managers need to manage the media, not prohibit it. The Fire Chief or Incident Commander would be responsible for ensuring that media activities do not jeopardize the safety of the media crew, public, or fire management personnel, and that they do not hamper effectiveness of wildland fire operations. Managers should not allow media personnel on fire lines without required personal protective equipment, including fire shelters and a current "red-card" certifying their qualifications for being on the line. When possible, a CNW representative shall accompany media personnel on larger, longer duration fires within the park's boundary.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 43

neighbors, local groups, and other agencies/entities. This coordination should include consultation on any pertinent issues with

the State fire office and VFDs. In some instances, NPS park staff may take the lead on issues with adjacent landowners, State air quality and VFDs. The purpose of soliciting feedback is to revise plans, procedures, and educational efforts regarding fire management within the planning area. The FAC will issue a joint press release summarizing the year's accomplishments of its partners.

The Fire Program Coordinator will cooperate with the Regional Fire Education, Prevention and Information Specialist on the following programs:

- Development of site bulletins or brochures on the basic objectives for using prescribed fire for hazardous fuel reduction and ecological benefits.
- The FAC will maintain a file of public comments received concerning prescribed fires and use them to improve procedures, public relations, and communication efforts targeted at increasing support for the fire management program.

The FAC is committed to keeping the public informed of its fire management program and activities. Staff will develop informational and educational media to reach as many segments of the public as possible. This may include park neighbors, local and state government representatives, special interest groups, schools, public organizations, and other groups. Within agencies (NPS, FWS, NFS) materials and programs exist currently that will help deliver information concerning the role that fire plays in

preserving and protecting the cultural and natural resources of the fire management area.

Regionally appropriate and specific information will be developed and disseminated.

The Volunteer Fire Departments will take the lead in an active fire prevention program and should coordinate with other agencies to protect human life and property, and prevent damage to cultural resources or physical facilities. Fire prevention activities will be based upon fire history, including ignition sources, and current conditions.

An integral part of the fire prevention program is that all employees, cooperators, contractors and permit holders be mindful of their own activities that could lead to unwanted ignitions. Setting a good example will aid the FACs credibility with its neighbors. Public contact staff will look for opportunities to integrate fire prevention and safety messages into informal and formal visitor contacts.

If NPS staffing levels increase, the Interpretive Division may implement a program of public education regarding potential fire danger. They would do this through visitor contacts, bulletin board materials, handouts, and interpretive programs in order to increase visitor and neighbor awareness of fire hazards.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 44

It is essential that the FAC inform agency employees, partners and cooperators about fire prevention and the objectives of the fire management program as well as changes in existing conditions throughout the fire season.

Prior to, during, and after a prescribed fire, cooperators need to communicate to the public the beneficial effects of prescribed fires and the dangers of unplanned wildland fires. Information must be included that emphasizes the potential severity and prevention of human-caused wildland fires.

During periods of extreme or prolonged fire danger, FAC agencies should provide fire prevention messages to the visiting public and park neighbors. These messages may be informal contacts by various agency/organization staff, press releases to area media outlets and on agency/organization websites, or by such means as the staff determines necessary and appropriate, including future interpretive programs. Emergency restrictions regarding fires or area closures may become necessary. Such restrictions, when imposed, would be consistent with those implemented by fire chiefs and cooperators.

When a cooperator is conducting a prescribed burn within the river corridor, a notice at the Valentine Ranger Station, Fort Niobrara NWR Visitor Center, NRCS office, NGPC office in Bassett, the Smith Falls State Park office, and the Niobrara Council should be posted to supplement visitor contacts. Agencies would use these notices to direct, inform, guide, and caution visitors about existing fire conditions and prescribed fire activities. When feasible, partners will also post information on websites and share information with interested parties by email or effective means.

All partners are responsible to communicate their organizations' policies about the use of fire in the various ecosystems to the public. The primary goal of information management is to provide fire information to the public. Another essential goal is to provide accurate and updated information to elected officials, cooperating agencies, media, and local communities.

Activities planned to meet these goals include the following:

- 1) Undertake an information and education program to ensure that citizens, key contacts, and employees understand the status of the fires within the planning area and the purpose of the specific action(s). This will include providing updated information to visitor contact personnel along the river at cooperating agencies.
- 2) Prepare and send a fire information update to all employees, cooperating agencies, media, legislative outlets, local communities, adjacent landowners, and other interested parties on a regular basis. Such updates should include the past 24-hour status, anticipated planned actions, and other pertinent information regarding such things as smoke management, structure protection, or closures.
- 3) Prepare news releases as needed on specific events related to the management of the fire(s).

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 45

- 4) Arrange and coordinate special visits or tours with Congressional offices, feature writers or photographers, local community officials, outfitters and guides, or other appropriate officials.
- 5) Meet the interests and needs of private citizens, contractors, and outfitters in conjunction with resource advisors.
- 6) Coordinate with partner agency Public Affairs Officers or suppression team information officers via conference calls or meetings.
- 7) Include information pertaining to closures or fires when visitors inquire regarding boating, hunting or other affected activities.
- 8) Assist when possible in the staffing of an information office during large extended-attack fires to provide current information.
- 9) Provide updated information to office personnel across the fire management boundary and at adjoining and cooperating agencies. Educational specialist or PIOs should incorporate ecological concepts into information handouts, selected books written about the area, web pages, and wayside and visitor center exhibits. Information handouts explaining the fire management program will be prepared and periodically updated. During periods when prescribed fires are burning, various field personnel will distribute these handouts to visitors at information boxes or visitor centers, during informal contacts along the river valley.
- 10) Interpreters should feature the fire management program into future interpretative talks, walks, automated programs, and other written materials, web pages, and wayside and visitor center exhibits, giving particular attention to these activities when fires are conspicuous from visitor centers and/or local communities.
- 11) NPS staff and involved partners will prepare and release joint news articles during ongoing fires within the scenic river boundary to local newspapers, radio, and television stations, and post information on web sites.
- 12) The NPS will write articles about the CNW FAC fire management program for publication in statewide or regional periodicals.
- 13) The FAC will provide public information outlets of neighboring land management agencies with fire management information, particularly when ongoing fires are burning within the area.
- 14) Fire organizations should inform employees of the fire management program and the status of ongoing fires. This will enable employees to communicate effectively with the public.
- 15) Fire personnel should discuss the fire management program during informal contacts with other agencies, organizations, contractors, commercial users, Special Use Permit holders, neighbors, and area-wide visitors.
- 16) When possible, the NPS will place signs notifying the public about ongoing prescribed fires, wildland fires, area closures, dense smoke, or other special situations along roadways, visitor centers, launch ramps, trailheads, campsites, and day use sites.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 46

Neighbors are those private parties having property within or immediately adjacent to the boundaries of the fire management area. Fire management activities can directly affect these parties in both beneficial and adverse ways. Keeping neighbors informed of fire management activities is a key component of mitigating adverse impacts of those activities. In order to accomplish this:

- Each agency, entity or landowner conducting a prescribed fire should notify landowners having property adjacent to prescribed fire units of the planning process and contact them directly, by telephone or e-mail, not more than 48 hours before ignition.
- Each spring before prescribed burning begins the FAC with assistance from its partners will prepare and send out a press release describing the locations, objectives, and planned treatment windows of prescribed fire projects planned for initiation in the following spring, summer, and fall. The fire manager will notify at least one local newspaper covering each of the counties affected by smoke from any of the prescribed fires. The notice will include contact names and numbers.
- Using the NPS web site to provide information or links to information about fire ecology and about prescribed fire activities in the river valley is an excellent tool. Staff will direct inquiries about fire operations within the National Scenic River to this web site.
- Public outreach will be used to inform people of ways to protect themselves from the impacts of smoke from prescribed and wildland fires. Examples of possible methods of public outreach are disseminating brochures about fire and smoke, posting notices at local businesses and boat ramps, and placing signs in and around burned areas.

9.3 Sandhills Cattle Association

The FAC met with the Sandhills Cattle Association and will address the issues of prescribed burning and the loss of grasslands to woody shrubs in future meetings. They currently distribute the Fire Advisory Council brochure on prescribed fires to area ranchers and produce a newsletter.

9.4 UNL Extension

The University of Nebraska-Lincoln (UNL) Extension in Cherry County supports the creation and implementation of the CNW Fire Management Plan. People understand the importance of wildland fire suppression, but as a landscape management tool the public is less accepting of prescribed fire. This plan will facilitate a balanced approach to fire in the Niobrara River ecosystem. UNL Extension will assist in disseminating information about the FMP. UNL Extension will also be involved in educational workshops on fuel reduction to reduce wildland fire severity and the use of prescribed fire as a land management tool.

9.5 Sandhills Task Force

The Sandhills Task Force is a coalition of ranchers and conservationists formed in 1991 to address issues and problems facing a 20 county region. Its vision is to promote economic diversity and prosperity for individuals and communities in the Nebraska Sandhills. The careful management of native grasslands and wetlands will help enhance and support diverse wildlife communities.

The Sandhills Task Force works with landowners to design projects suited for their range operations by building partnerships with private and public organizations. It can assist in financial assistance, technical assistance, matching researchers or funding to projects, and by providing support to educational programs. Restoring and maintaining grasslands and forests in their natural state benefits wildlife as well as cattle and bison.



The Sandhills Task Force works exclusively to promote conservation on private lands within the Nebraska Sandhills. The majority of their sixteen-member board are ranchers, who support the voluntary application of fire as a management tool for landowners. Use of fire to maintain and improve production while supporting diversity of native species has long been one of the board's goals. Reflected in this FMP are the Sandhills Task Force's diverse landowner goals, objectives, and management styles. Prescribed fire planning and implementation can make a

significant contribution to preservation of existing native plant and animal species while controlling encroachment of various non-natives.

Prescribed fire also helps to ensure the safety of residents, visitors, and firefighters in the watershed by minimizing the chances of uncontrollable wildland fire. The Sandhills Task Force supports the concepts of community supported fire policies that respect stakeholders' views. Empowering local VFDs, harnessing their commitment to community, coupling their energy with the agencies that operate with external funding, and molding these factions into a cohesive FMP coalition will leave our resource base stronger as well as help individual agencies meet their resource goals.

9.6 Fire Advisory Council Partners

The NPS, FWS, NFS, NGPC, NRCS, TNC and four VFDs are all core members of the Fire Advisory Council. Agencies and entities of the FAC have signed a General Agreement (Appendix N) to assist in the administration of CNW fire management. Additionally, a representative of the timber industry and private landowners are involved in the FAC. The Fire Advisory Council will meet on at least an annual basis to coordinate fire management activities within the project area. Each agency/entity will manage their own fire-related goals and objectives through individual management plans. Items of business for FAC will include:

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 48

- Enhancing training opportunities (NWCG training, monitoring, evaluation, etc.)
- Promoting prescribed fire schools
- Gathering data (acres burned by prescription and unwanted wildland fire and number of acres of hazardous fuel mitigation)
- Creating maps with fire locations (GIS layers, etc.)
- Setting annual goals for acres burned/treated
- Reviewing FMP annually
- Providing input into burn plans
- Offering public education and information on the wise use of fire
- Working with other agencies and entities to find funding sources for hazardous fuel reduction, prescribed fire, acquisition of fire equipment, and other matters relating to fire management

9.7 Funding

There is no specific funding other than agency base funds and project funds from grants to specific agencies and entities for the FAC. The FAC will work through interagency or agency programs to accomplish the goals/tasks of the FMP.

9.8 Shared Equipment

The Nebraska Forest Service (NFS) in cooperation with the U.S. Forest Service has access to Federal Excess Personal Property (FEPP). The NFS can assign FEPP, predominantly all wheel drive vehicles, to local fire districts for use in fire suppression. The Springview VFD houses a hose trailer (funded through the NPS and the RFA program) that is available for use

by any local department to suppress fires when forests are involved. Fort Niobrara NWR maintains an inventory of Class A foam to battle large blazes for multiple days before they need to resupply.

9.9 Upcoming Prescribed Fires/Burn Evaluations/Lessons Learned

The FAC will review any data cards (CNW FAC – F2) received on a bi-annual basis (late spring/early summer, late fall/winter) and calculate statistics and note problems. The FAC will provide a copy of these statistics to all partners and VFDs.

9.10 Liability

Each landowner conducting prescribed fires or hazardous fuel reduction projects on their own property is responsible for their own insurance and liability coverage. Agencies will conduct prescribed fires under their own agency guidelines and policies. Private contractors should be required to carry liability insurance by the employing private landowner wishing to conduct a burn. Prescribed Fire Associations will need to work out individual details in regard to insurance and liability before conducting prescribed fires.

9.11 Maintenance

Each agency, entity, organization or individual will be responsible to maintain group equipment according to agreed upon standards.

9.12 Fire Monitoring

Except for agency specific monitoring and requirements, the NRCS, NFS or NGPC will design monitoring plans for private landowner prescribed fires in accordance with project goals and objectives.

10. PRESCRIBED FIRE ON PRIVATE LAND

10.1 Goals

The CNW project area encompasses all of the Niobrara National Scenic River corridor (23,074 acres) and adjacent lands in public and private ownership, totaling 793,762 acres. Lands in private ownership make up approximately 97% of the project area with cattle ranching functioning as the principle industry. Grazing management is the primary land management tool to steward rangelands and riparian areas.

Historically, fire was prevalent on the landscape and responsible for shaping and developing Nebraska's unique grassland and riparian woodland resources. Due to the lack of fire as a management tool, species such as eastern red cedar have invaded rangelands and the Niobrara corridor causing a loss in grassland production and ecological diversity across the landscape.



Private Landowner
Prescribed Burn

As previously mentioned, a primary goal of this FMP is to promote and utilize prescribed fire through a collaborative partnership effort to preserve, restore, and enhance the unique biological and ecological diversity of upland and riparian

habitat to sustain long-term, viable populations of unique flora and fauna in the region.

Other objectives include firefighter and public safety; suppress all unwanted wildland fires to protect human life, private property, and natural, historical, and cultural resources; identify, assess, and reduce/mitigate hazardous fuels; improve communications with the public; and provide training and education concerning prescribed fire.

Fire and fuels management goals for the ensuing five years may be very ambitious given that prescribed fire is not currently a common land use practice. Some goals are to:

- Utilize an appropriate management response to suppress about 200 wildland fires totaling approximately 25,000 acres.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 50

- Conduct 150-200 prescribed fires in ponderosa pine, prairie, eastern deciduous forest, and wetland communities with total burned acreage of about 150,000-300,000 acres.
- Carryout mechanical hazardous fuel reduction projects totaling about 6,000-8,000 acres during a typical five-year period.
- Burn debris piles to dispose of biomass from hazardous fuel reduction projects.

10.2 Training Opportunities for Private Landowners

The Niobrara Prescribed Fire Association carried out “training” burns in the spring of 2009 near Hwy 7 and north of Johnstown.

10.3 Local Prescribed Fire Caches

See section 6.6

11. AGREEMENTS, RULES & REGULATIONS

11.1 Annual Review

The FMP will be reviewed on an annual basis and if needed updated at a minimum every three years. The FAC will collect fire report cards (Form CNW FAC – F2) on an annual basis in the early winter (November/December) and prepare a report that tracks the number and kinds of wild fires, acreages, prescribed fires, etc. (Appendix G). The report findings will be sent to VFDs, partner agencies, and the local press (as a news release), and will be used to set goals for the coming year, strengthen funding requests, and aid in future planning.

11.2 Legislation Allowing NPS and FWS to Burn on Private Lands

The Wild and Scenic Rivers Act gives broad authority to the managing agency (i.e., NPS) to work cooperatively with private landowners, as well as states and private organizations to protect and manage river resources in section 11 (b) (1).

One of the greatest threats to the National Scenic River corridor is the invasion of grasslands by woody shrubs and eastern red cedar trees and the increase in tree and understory (mostly cedar) densities in forests because of fire suppression. Annual appropriations language may give the NPS some authority to address hazardous fuel reduction (HFR) needs.⁵

SECTION 11.(b)(1) *The Secretary of the Interior, the Secretary of Agriculture, or the head of any other Federal agency, shall assist, advise, and cooperate with States or their political subdivisions, landowners, private organizations, or individuals to plan, protect, and manage river resources. Such assistance, advice and*

⁵ On 4-27-2009 the NPS signed a letter establishing a formal relationship with the **Niobrara Prescribed Fire Association** to assist them with prescribed burns.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 51

cooperation may be through written agreements or otherwise. This authority applies within or outside a federally administered area and applies to rivers, which are components of the national wild and scenic rivers system, and to other rivers. Any agreement under this subsection may include provisions for limited financial or other assistance to encourage participation in the acquisition, protection, and management of river resources.

11.3 Other Important laws and Policies

Nebraska law prohibits open burning without a permit.

Chapter 81, Article 5 –Open Burning

81-520.01 State Fire Marshal; open burning ban; waive; permit. (1) There shall be a statewide open burning ban on all bonfires, outdoor rubbish fires and fire for the purpose of clearing land. (2) The fire chief of a local fire department or his or her designee may waive an open burning ban under subsection (1) of this section for an area under his or her jurisdiction by issuing an open burning permit to a person requesting permission to conduct open burning. The permit issued by the fire chief or his or her designee to the person desiring to conduct an open burning shall be in writing, signed by the fire chief or his or her designee, and on a form prescribed by the State Fire Marshall. The State Fire Marshall shall provide local fire departments with such forms. (3) The fire chief of a local fire department or his or her designee may waive the open burning ban in his or her jurisdiction when conditions are acceptable to the chief or his or her designee. Anyone burning in such jurisdiction when the open burning ban has been waived shall notify the fire department of his or her intention to burn.

81-520.03: Range-management burning, defined.

For purposes of sections 81-520.04 and 81-520.05, range-management burning shall mean the controlled application of fire to existing vegetative matter on land utilized for grazing.

81-520.04: Range-management burning; permit; issuance; when.

The fire chief of a local fire department or his or her designee may waive an open burning ban under subsection (1) of section 81-520.01 by issuing a permit for range-management burning only if the range-management burning is to be conducted in accordance with 81-520.05.

81-520.05 Range-management burning; application for permit; plan; contents; fire chief; duties.

(1) A landowner, tenant, or other landowner's agent of the land where range-management burning is proposed shall file an application for a permit and a plan for conducting such burning. The plan shall include:

- (a) The name of the landowner of the land on which the range-management burning is to occur;
- (b) The name of the person who will supervise the range-management burning if such person is different from the landowner;
- (c) The land-management objective to be accomplished;
- (d) A map showing the areas to be burned including natural and manmade firebreaks;
- (e) Procedures to be used to confine the fire in boundary areas without preexisting firebreaks;
- (f) A list of equipment that will be on and;
- (g) The types and conditions of the vegetative matter to be burned on the land and in adjacent areas;
- (h) Identification of roads and habitations that may be affected by smoke;
- (i) A description of weather conditions believed to be required to safely and successfully conduct the range-management burning, including wind speed, temperature, and relative humidity; and
- (j) Such other information as may be prescribed by the fire chief of a local fire department.

(2) The fire chief of a local fire department or his or her designee shall evaluate each plan to determine its compliance with subsection (1) of this section. If a plan fails to comply with all provisions of such subsection, a permit for range-management burning shall not be issued.

(3) the fire chief of a local fire department or his or her designee shall issue a permit for range-management burning if (a) the plan complies with subsection 91) of this section and (b) the fire chief or his or her designee

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 52

deter mines that range-management burning conducted in accordance with the plan would be conducted with due regard for the safety of people and property outside the burning area. No permit shall be valid for more than thirty days.

11.4 Niobrara Council

The Niobrara Council must approve requests for open burning permits within the National Scenic River corridor to ensure that they are,

*“ . . .consistent with and as described by the laws of the State of Nebraska, and in consideration of the purposes of the Niobrara National Scenic River designation, including the scenic river's free-flowing condition and scenic, geological, biological, agricultural, historic and prehistoric resources.” **

Although not a member of the Fire Advisory Council, a Niobrara Council representative attends meetings and provides input acting as a liaison with the FAC.

** Source: state law language for Niobrara Council's authority*

11.5 Wyden Amendment

If managers are applying prescribed fire to federal land the Wyden Amendment allows an agency to burn on private lands within or adjacent its boundaries. This amendment allows prescribed fire practices that only recently began widespread use in our country. The FWS has the ability to conduct prescribed fires on private lands bordering the Fort Niobrara NWR. Summary excerpted from RM 18 Chapter 10

Fuels Treatment on private Lands: is authorized under the authority of the Wyden amendment which is codified in Title 16, Chapter 18, Section 1011(a) of the Code of Federal Regulations (CFR); or the authority within the Interior Appropriations Act. The Wyden Amendment allows the Service to enter into agreements with the, “heads of other federal agencies, tribes, State and local governments, private and nonprofit entities and landowners for the protection, restoration and enhancement of fish and wildlife habitat and other resources on public or private land and the reduction of risk from natural disaster where public safety is threatened that benefit these resources on public lands within the watershed.”

All fuel treatments must also comply with NPS Fire Management policies. To comply with the CFR there must be a signed agreement with the landowner that:

- Includes such terms and conditions mutually agreed to by the Service and the landowner;
- Stipulates improved viability of and otherwise benefit the fish, wildlife, and other biotic resources on public land within the watershed;
- Authorizes the provision of technical assistance by the Service in the planning of the management activities that will further the purposes of the agreement;
- Provides for the sharing of costs of implementing the agreement among the Service, the landowner, and other entities, as mutually agreed on by the affected interests;

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 53

- Ensures that any expenditure by the Service pursuant to the agreement is determined by the Service to be in the public interest; and
- Includes such other terms and conditions as are necessary to protect the public investment on private lands, provided the Secretary and the landowner mutually agree to such terms and conditions.

At this time, the only prescribed burning occurring on private lands (Wyden Amendment) is through the private lands group of the FWS.

The Nebraska Game and Parks Commission developed a white paper in the spring of 2005 outlining a concept for using federal fire resources, specifically trained fire personnel, to assist with prescribed fire on private lands in Nebraska. Prescribed fire is an effective and ecologically beneficial tool for managing native grassland and woodlands. Benefits may include increased floral and faunal diversity, control of invasive plant species, and increased vigor of native plants to mention a few.

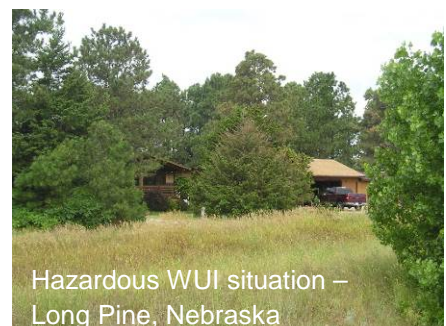
The white paper pointed out that even though there is interest among landowners, and public and private land managers to conduct prescribed fires, there are several roadblocks to achieving a desired level of use of fire as a tool. Among the principal barriers to prescribed fire on private lands are the lack of technical expertise or equipment to effectively conduct prescribed fires, and the availability and cost of risk management instruments. Local VFDs have assisted with conducting prescribed fires, but their abilities are limited because firefighters are volunteers and have other full time employment and may be unavailable during opportune burning conditions.

The intent of the white paper was to seek means of using federal fire crews (i.e. FWS, USFS, USBOR, NPS) to assist and train private landowners in Nebraska in conducting prescribed fires. Federal fire crews generally have the knowledge, training, equipment, personnel, and technical expertise to conduct prescribed fires. The USFS, through the Wyden Amendment, has the authority to perform management practices like prescribed fire on private lands adjacent to federal lands. The objective of the white paper was to broaden the intent of the

Wyden Amendment to enable other federal agencies to work on private lands. Further exploration is still needed to enable assistance by federal fire crews on private lands.

12. WILDLAND URBAN INTERFACE

The Wildland Urban Interface (also known as WUI) is the area where structures and other human development meet or intermingle with undeveloped wildland. In most areas throughout the country, this interface is evident where suburbs or rural housing developments have encroached upon wildlands.



North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 54

People are building houses on the edges of forests, or even within forests, often bordering federal lands such as National Forests and National Parks. On a smaller scale, however, any place a person builds a house within or adjacent to forests, brushy areas, or even grasslands can constitute a WUI situation. Within the Niobrara valley watershed, this is most evident as



Destroyed Residence
– Big Rock Fire

new landowners build cabins and houses atop ridges overlooking the river valley or adjacent creeks and canyons. Even ranch houses may constitute WUI situations if a prairie fire can sweep into the vicinity and threaten to destroy the house, outbuildings, and other development where there are ungrazed or unmowed grasses, brush, or windbreaks (often-eastern red cedar). Wildland fire can easily spread to manmade structures from the surrounding land.

WUI areas are evident within the FMP boundaries and include the canyons (Minnechaduzza Creek and its tributaries) north and west of the Valentine city limits where developers have constructed several housing developments, as well as individual homes. The Big Rock Fire of July 2006 destroyed ten homes on the north side of town. Some homeowners have rebuilt in the exact same places. Ponderosa pine covers these steep canyon walls with an understory of cedar and shrubs, while hardwoods dominate the wetter canyon bottoms. The cities of Valentine and Long Pine have houses scattered within or adjacent to pine forests and ungrazed grasslands and brushy areas. These homes are subject to great danger from wildland fire.

The area surrounding the Highway 20/83 Bridge south of Valentine and over 70 miles eastwards along the river to the east boundary of the CNW include rugged pine canyons and tributaries north and south of the river with high densities of ponderosa pine and thick understories of cedar and shrubs. Eastern red cedar and ponderosa pine are also encroaching on grazing land. Traveling east, the pine gives way to hardwoods and cedar. Due to a slight increase in moisture, the cedar understory is most dense in the eastern half of the project area. Residents often build summer cabins and new homes deep within the pines or atop ridges, affording pleasant views of the valley, yet they are at high risk for being destroyed by wildland

fire. The Plum, Pine, Fairfield, and Bone Creek drainages all contain dense forests of pine, cedar, and/or hardwoods. Many homes within these canyons are at great risk. Along Hwy 20 near the town of Long Pine, the forested canyons are so dense that it is difficult to walk through them. Many homes are nestled among the trees. In the Hidden Paradise area south of the town of Long Pine, dozens of vacation cabins are at extreme risk. These homes are crowded together in a narrow canyon with limited access in dense forests of cedar, hardwoods, and mixed pine. Fire would quickly spread from one home to another.

12.1 Hazardous Fuel Reduction Plans

Perhaps the first step in addressing the issue of WUI is education. Since private citizens own most of the land within the project area, fire managers must inform them of the risk. Many landowners are as of yet, unaware of the problem, or if aware, unwilling to take action. Often homeowners think that fire will not destroy their home. Most homeowners cannot identify hazardous fuels. Some property owners may be unable to do the necessary work or cannot afford to hire a contractor to reduce hazardous fuels. Within weeks of the Big Rock Fire, only a few landowners were making efforts to reduce hazardous fuels around their homes. Property owners need to address the most serious threats found around homes and buildings. These are:

- Reducing ladder fuels (dead branches, shrubs, etc.)
- Eliminating the cedar understory in pine and mixed pine/hardwood forests
- Thinning the density of the pine forests
- Improving access for fire department vehicles, and
- Establishing a sufficient fire control buffer space between the forest or natural grassland edge and the structures

Many other secondary problems exist as well. A lack of water sources, construction materials used in buildings, firewood piles adjacent to homes, and inadequate vehicular access pose a serious risk. Agencies held several workshops in the Valentine area during the summer/fall of 2006 to educate homeowners about the dangers of hazardous fuels and living in the WUI. The Nebraska Forest Service has offered cost-share funding to private landowners who reduce hazardous conditions in adjacent forests and around their structures. A list of current contractors who thin forests and cut cedar is found in Appendix M.

Fire managers need to get more information out to other communities. This will better inform the public of their role in protecting private property from unwanted fire. Since participation is voluntary, and it is in the early stages of implementation, it is too soon to evaluate the success of the efforts currently underway. The FAC will hold meetings in other towns in the future to better educate the public and get the word out about the need for mitigation of fire hazards.

Landowners need to establish fuel breaks (Fig. 1) within the river corridor along county roads and state/federal highways to help slow or stop the spread of severe wildland fires. Some agencies within the FAC such as the NFS will encourage landowners to apply for cost-share grants to conduct hazardous fuel reduction operations on their property bordering roads and to

utilize mowing or grazing strategies to reduce flashy fuels. Agencies such as the NPS may also enter into cooperative agreements with landowners to construct firebreaks.

12.2 Zoning Issues

(See Appendix F)

12.3 Emergency Management

In the event of a catastrophic fire event along the Niobrara River, the PSAPs (Public Service Answering Points) will attempt to contact residents of their particular counties by phone. If unable to contact, personnel from law enforcement and other responding agencies will be dispatched to contact residents of the corridor to evacuate. Evacuation decisions will be incident or event driven and will also follow the Primary Evacuation Plan of the county(s) involved. If the PSAP has Reverse 911, this program can be used to contact residents of a particular area. In the event of seasonal homes where no phone service is available, direct contact will need to be made. The Emergency Operations Center and/or Incident Command will be in charge of the evacuation incident. Emergency notification for fires within the Fort Niobrara NWR or Smith Falls State Park will be the responsibility of the respective agency. The NFS has a Fire Danger Map posted on their website that is updated twice daily. The NPS & its partners will seek to place fire danger signs in strategic locations along the valley and will help coordinate fire bans with Rural VFDs and Sheriff Offices.

12.4 Brochures

The FAC hopes to persuade county zoning authorities to send a one-page handout and hazardous fuel reduction brochures to all new zoning applicants (new residents or construction permits). Fire managers can distribute this information to the public through various media (newspaper, radio) and made available in certain locales (libraries, extension offices, etc.). The NPS mailed "*Country Living At Its Best*" (fire protection information) and, "*Prescribed Fire Use in the Nebraska Sandhills and Niobrara River valley*" to over 200 Niobrara River Valley residents in December of 2007. The NFS also has a brochure about managing forest fuels (see Section 5.2-3)

12.5 Media

County Emergency Managers will coordinate the release of fire information with the cooperation of the local governments (city, county officials) and the involved Volunteer Fire Departments. Agency-specific personnel such as Public Information Officers, Superintendents, etc. will handle fire information on state or federal land.

13. MONITORING AND EVALUATION

Federal agencies will implement long and short term monitoring to assess accomplishments, and determine the effects of management activities on cultural and natural resources. Private landowners and non-Federal agencies may or may not opt to participate in this monitoring. The NPS could confer with fire ecologists at the NPS Midwest Regional Office or the FWS Mountain Prairie Regional Office on the monitoring of prescribed fires and fire effects. The NPS should consult them about future prescribed fire plans with regard to potential fire effects and attaining desired conditions. The fire effects monitors may assist in establishing vegetation-monitoring plots and assessing fire effects and hazardous fuel mitigation activities on the vegetative community.

The National Park Service Fire Monitoring Handbook may serve as a reference for other agencies to use in the monitoring of prescribed fires. Other resources are available that will also serve as excellent references.

13.1 Voluntary Monitoring

The purpose of monitoring is to evaluate the effects of past management practices, confirm new effective management practices, identify trends that can be used to predict future changes, and learn about environmental factors that affect the land. Site managers should develop monitoring plans that evaluate short term and long-term lumber or grass (AUM) production goals and management objectives for the burn unit(s).

Pre-burn Monitoring: As part of the planning process for a prescribed fire, Rx Burn Specialists should select permanent monitoring site(s) that are representative for the burn unit using a Global Positioning System device.

The monitoring specialist could collect the site's baseline information by taking five photographs at each monitoring point. The first photograph should be looking down on a 3 ft. x 3 ft. frame (made out of ½" PVC pipe) lying on the ground adjacent to the point. It should include an identification label (land steward name, date, location, field number, monitoring point number, etc.). The photograph will document current ground cover, plant composition, total annual production, etc. Next landscape photographs should be taken facing out from the site in all four directions (identify each photo as N, S, E, or W). Private landowners may prefer a simple photo point site for monitoring as their primary concern is economic loss or gain. They may have goals that differ substantially from land management agencies and organizations.

The "Grazing Lands Monitoring Plan and Key Area Documentation" (NE-ECS-8) sheet or similar form (Appendix H) can be used by managers to record baseline information and other observations related to land steward goals and management objectives for the prescribed fire.

Post-burn Monitoring: Regular monitoring intervals (semi-annual, annual, etc.) can be set up on a schedule, as needed, to document the results of the prescribed fire and progress made towards meeting land steward goals and/or management objectives. At a minimum,

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 58

researches should collect monitoring information on the site(s) annually (at least for the first few years) and at the same time each year.

Summary: Fire managers can apply the monitoring technique discussed above to any landscape (grazing lands, forestlands, etc.). Monitoring techniques need to be as simple as possible with the underlying goal of data collection being: “keep the records you need, use the records you keep.” Detailed monitoring methods and techniques are available to land stewards, depending on the short and long-term management and monitoring objectives for the burn unit(s). Individual agencies will utilize their own monitoring methods per policy. Technical assistance for monitoring is available to land stewards by contacting local conservation agencies (County Extension Services, NPS, NRCS, and FWS).

Bibliography

Biodini, Mario E.; Steuter, Allen E.; and Hamilton, Robert G. *Bison use of Fire-Managed Remnant Prairies* in Journal of Range Management 52(5), September 1999.

Bragg, Thomas B. 1998. *Fire in the Nebraska Sandhills Prairie*. Pages 179-194 in Teresa L. Pruden and Leonard A. Brennan (eds.) *Fire in ecosystem management: shifting the paradigm from suppression to prescription*. Tall Timbers Fire Ecology Conference Proceedings, No. 20. Tall Timbers Research Station, Tallahassee, FL

Bragg, T.B. 1997. *Response of a North American Sandhills Grassland to Spring, Summer, and Fall Burning: Community Resistance to Disturbance (1984-1996)*. In Bushfires97 Proceedings, B.J. McKaige, R.J. Williams, and W.M. Waggitt, editors. Parks Australia North and CSIRO Tropical Ecosystems Research Centre, Darwin, Northern Territory, Australia.

Bragg, T. B. 1986. *Fire history of a North American Sandhills prairie*. Int. Congr. Ecol., 4:99, Brown, Peter M. and Sieg, Carolyn H. *Historical Variability in fire at the ponderosa pine – Northern Great Plains prairie ecotone, southeastern Black Hills, South Dakota*. Ecoscience, 6 (4): pgs. 539-547, 1999.

Buenger, Brent A. 2003. *The Impact of Wildland and Prescribed Fire on Archaeological Resources*. Report on file, National Park Service, Midwest Archaeological Center, Lincoln, Nebraska

Eggemeyer, Kathleen D.; Awada, Tala; Wedin, David A.; Harvet, F. Edwin and Zhou, Xinhua 2006, *Ecophysiology of two Native Invasive Woody Species and Two Dominant Warm-Season Grasses in the Semiarid Grasslands of the Nebraska Sandhills*, International Journal of Plant Sciences, Volume 167, pages 991-999.

Harrison, A. T. 1980. *The Niobrara Preserve: its biogeographical importance and description of its biotic communities*. Report to the Nature Conservancy, Minneapolis, Minnesota. 116 p.

IANR News Services, *Scientists gain \$1.8 million grant to study Sandhills*, 2003 University of Nebraska/Lincoln (Internet resource).

Kucera, C. L. 1981. *Grassland and fire*. In: Mooney, H.A. Bonnicksen, T.M., Christensen, N.L. Lotan, J.E. and Reiners, W.A. (eds), *Fire regimes and ecosystem properties*, pp. 90-111. USDA For. Serv. Gen. Tech. Rep. WO-26.

Mangan, J.M.; Overpeck J.T.; Webb, R.S.; Wessmean, C.; Goetz, A.F.H. *Response of Nebraska Sand Hills Natural Vegetation to Drought, Fire, Grazing, and Plant Functional Type Shifts as Simulated by the Century Model*, Climatic Change, Vol 63, Nos. 1-2 March 2004, pp. 49-90 (42)

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 60

Moore, C.T. 1972. *Man and fire in the central North American Grassland 1535-1899: A documentary historical geography*. Ph.D. Dissertation, University of California, Los Angeles, 155p.

Nicholson, Barbara and Swinehart, James, 2005 from “*Great Plains Research publishes new studies on the environment*”, University of Nebraska/Lincoln News Release (Internet resource).

Pfeiffer, Kent E. and Steuter, Allen A. *Preliminary Response of Sandhills Prairie to Fire and Bison Grazing in Journal of Range Management* 47 (5) September 1994.

Steinauer, Ernest M. and Bragg, Thomas B. *Ponderosa Pine (Pinus ponderosa) Invasion of Nebraska Sandhills Prairie*. The American Midland Naturalist, Pgs. 358-365. 1987

Steuter, Allen A. 1990 *Woodland/Grassland Boundary Changes in the Middle Niobrara Valley of Nebraska Identified by 13C values of Soil Organic Matter*. American Midland Naturalist: Vol. 124, No. 2 (Oct, 1990) pp. 301-308.

Steuter, Allen A. TNC Newsletter Report, Center for Grassland Studies Summer 1996 Newsletter pgs. 10, 11

Sturdevant, Jay T.; Schreier, Cheryl; Skalsky, Rod and Wienk, Cody 2006. *Experimental Study of Local Fire Conditions and Effects on Surface or Near-Surface Archaeological Resources at National Park Service Units in the Midwest Region*. Proposal on file, National Park Service, Midwest Archeological Center, Lincoln, Nebraska

TNC 1999 Handout discussing Dr. Tom Bragg's Fire Chronology and Higgins – Historical Records

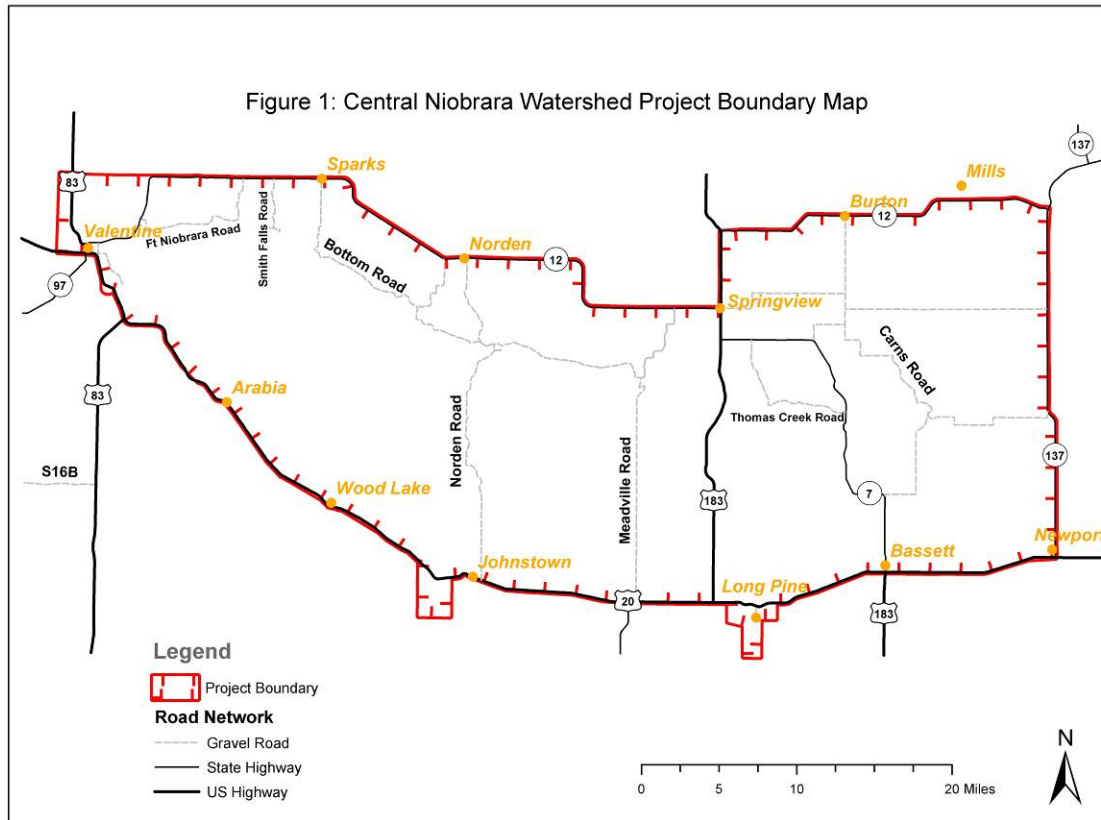
Wedin, David *Ecosystem Consequences of Trees in Grasslands: Insights from Bessey's Forest* Center for Grassland Studies, Spring 2003

Westover, D.E. 1984. *Nebraska Wildfires*. Department of Forestry, Univ. of Nebraska-Lincoln. 27 p.

Wright, H. A. and A. W. Bailey, 1980. *Fire ecology and prescribed burning in the Great Plains – A research review*. U.S. Forest Service General Technical Rep. INT-77. 60 p.

Note: Primary FMP author was unable to relocate some sources (Bogan 1993; Bragg 1994).

APPENDIX A: CNW Fire Management Area Map

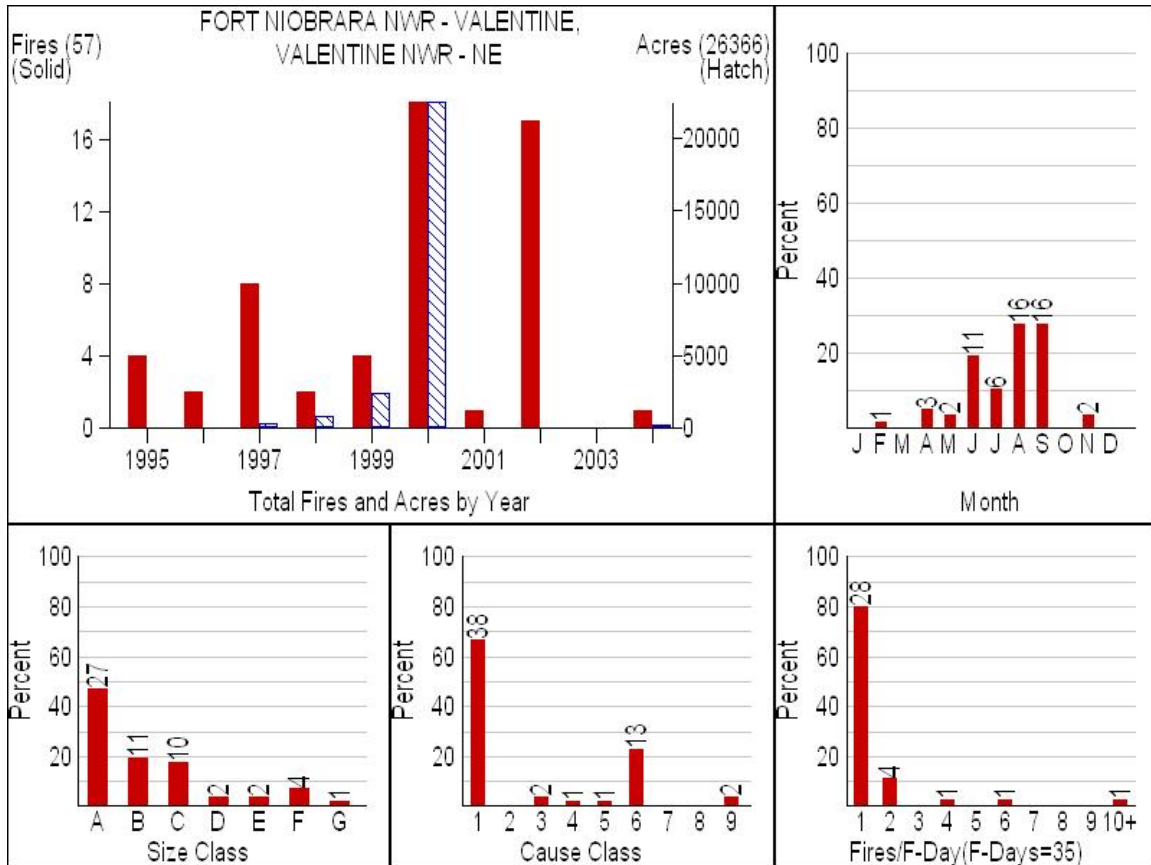


APPENDIX B: Compliance Documents NEPA and NHPA

The Environmental Assessment is a separate document.

APPENDIX C: Wildland Fire Occurrence Data

Figure C1: Fort Niobrara NWR Fire Occurrence Data



North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 64

Table C1: VFD Fire Occurrence 2004

FIRE DISTRICT	LOCATION	COUNTY	DATE	TOTAL ACRES	CAUSE	SPECIFIC CAUSE
Valentine	Valentine FD	Cherry	9/18/04	10	Misc.	Hunters
			9/2/04	10	Misc.	Unknown
			8/31/04	0.5	Lightning	
			8/2/04	5	Lightning	
			7/29/04	0.1	Lightning	
			7/4/04	0.01	Lightning	
			7/3/04	0.01	Lightning	
			5/9/04	1	Misc.	Unknown
			3/19/04	1500.5	Equipment	Baler
			3/12/04	10	Equipment	Car/ Truck
Wood Lake Newport	Valentine FD Newport FD	Cherry Rock	9/1/04	2	Misc.	Other
			8/15/04	0.25	Lightning	
			4/17/04	160	Debris Burning	Pile Burning
			3/11/04	0.01	Debris Burning	Pile Burning
			3/6/04	2.1	Equipment	Welding
			2/22/04	0.1	Debris Burning	Pile Burning
			2/8/04	0.1	Debris Burning	Pile Burning
			1/31/04	0.01	Debris Burning	Pile Burning
			1/31/04	0.01	Debris Burning	Pile Burning
			1/31/04	0.01	Debris Burning	Pile Burning
Brown	Johnstown FD	Brown	11/15/04	1	Equipment	Combine
			9/8/04	4	Misc.	Unknown
			8/15/04	5	Lightning	
			7/28/04	0.01	Lightning	
			4/14/04	40	Misc.	Unknown
			5/16/04	3	Lightning	
			3/19/04	0.1	Equipment	Baler
			3/12/04	0.1	Equipment	Baler

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 65

Table C2: VFD Fire Occurrence 2003

FIRE DISTRICT	LOCATION	COUNTY	DATE	TOTAL ACRES	CAUSE	SPECIFIC CAUSE
Valentine	Valentine FD	Cherry	1/1/03	1	Misc.	Power Lines
			8/9/03	8	Lightning	Unknown
			7/13/03	1	Lightning	
			7/14/03	1	Lightning	
			7/15/03	1	Misc.	Fireworks
			7/28/03	0.1	Misc.	Other
			9/10/03	2	Lightning	
Wood Lake	Wood Lake FD	Cherry	8/5/03	1	Equipment	Hay Grinder
			7/21/03	1500.5	Lightning	
			7/21/03	10	Lightning	
			7/25/03	2	Equipment	Tractor
			8/21/03	0.25	Misc.	Power Lines
			8/15/03	160	Equipment	Baler
			7/25/03	0.01	Equipment	Combine
Keya Paha	Springview FD	Keya Paha	7/31/03	2.1	Debris Burning	Pile Burning
			9/25/03	1	Misc.	Unknown
			9/24/03	2	Equipment	Car/Truck
			9/14/03	5	Misc.	Power Lines
			7/3/03	1	Equipment	Baler
Newport	Newport FD	Rock	3/23/03	1	Debris Burning	Pile Burning
Brown County	Johnstown FD	Brown	7/25/03	4	Equipment	Combine

Table C3: VFD Fire Occurrence 2002

FIRE DISTRICT	LOCATION	COUNTY	DATE	TOTAL ACRES	CAUSE	SPECIFIC CAUSE
Valentine	Valentine	Cherry	8/8/02	1	Lightning	
			8/0/02	223	Lightning	
			8/8/02	4	Lightning	
			6/27/02	1	Misc.	Fireworks
			8/15/02	0.01	Misc.	Spontaneous Combustion
			6/24/02	1	Lightning	
			6/9/02	1	Misc.	Unknown
			6/6/02	2	Lightning	
			8/21/02	0.01	Lightning	

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 66

FIRE DISTRICT	LOCATION	COUNTY	DATE	TOTAL ACRES	CAUSE	SPECIFIC CAUSE
Valentine	Valentine	Cherry	8/14/02	4	Equipment	Baler
			6/30/02	1	Misc.	Unknown
			8/16/02	0.01	Misc.	Spontaneous Combustion
			9/5/02	20	Lightning	
			9/4/02	5	Lightning	
			3/30/02	1	Misc.	Unknown
			7/11/02	1	Misc.	Spontaneous Combustion
			7/16/02	1	Equipment	Baler
			2/2/02	5	Equipment	Feed/Hay Grinder
			8/10/02	1.01	Misc.	Power Lines
Wood Lake	Wood Lake	Cherry	11/20/02	1	Misc.	Unknown
			6/25/02	15	Lightning	
			6/25/02	0.25	Lightning	
			6/25/02	32	Lightning	
			1/31/02	3	Debris Burning	Pile Burning
			5/2/02	0.13	Equipment	Car/Truck
			2/15/02	1	Debris Burning	Pile Burning
			7/17/02	1	Equipment	Baler
			7/18/02	1	Misc.	Discarded Material
			8/7/02	0.5	Smoking	
Wood Lake	Wood Lake	Cherry	8/14/02	0.5	Equipment	Misc.
			8/14/02	0.5	Equipment	Baler
			8/17/02	0.13	Railroad	North Central RR
			8/17/02	1	Railroad	North Central RR
			7/16/02	0.5	Equipment	Baler
			9/18/02	0.25	Misc.	Power Lines
			11/17/02	5	Equipment	Car/Truck
			10/14/02	2	Equipment	Car/Truck
			9/4/02	2	Lightning	
			9/5/02	5	Lightning	
Keya Paha	Springview	Keya Paha	9/5/02	10	Lightning	
			9/5/02	2	Lightning	
			9/4/02	5	Lightning	
			9/4/02	5	Lightning	
			8/29/02	2	Lightning	
			8/28/02	1	Misc.	Unknown
			8/13/02	1	Misc.	Unknown
			8/11/02	1	Lightning	
			8/11/02	3	Lightning	
			8/3/02	10	Lightning	
Brown County	Calamus	Brown	8/3/02	20	Lightning	
			8/6/02	300.01	Misc.	Power Lines
			7/29/02	1,011	Misc.	Power Lines
			7/17/02	3	Misc.	Unknown
			2/14/02	3,600	Equipment	Car/Truck
			9/4/02	20	Equipment	Welding
			6/21/02	25	Lightning	
			6/6/02	100	Lightning	
Brown County	Johnstown	Brown				

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 67

FIRE DISTRICT	LOCATION	COUNTY	DATE	TOTAL ACRES	CAUSE	SPECIFIC CAUSE
Brown County	Long Pine	Brown	7/17/02	4	Misc.	Unknown
			4/7/02	4	Equipment	Car/Truck
Newport	Newport	Rock	4/4/02	110	Debris Burning	Pile Burning
			1/19/02		Debris Burning	Pile Burning
Rock County	Bassett	Rock	5/26/02	3	Lightning	
			6/22/02	1	Misc.	Unknown
			7/14/02	2	Lightning	
			5/26/02	3	Lightning	
			6/22/02	1	Misc.	Unknown
			7/14/02	2	Lightning	
			7/31/02	7,000	Equipment	Baler
			10/13/02	10	Debris Burning	Pile Burning
			7/10/02	1	Lightning	
			6/6/02	100	Lightning	
			6/7/02	3	Lightning	
			6/16/02	2	Lightning	
			6/17/02	2	Lightning	
			6/23/02	1	Lightning	
			6/24/02	2	Equipment	Car/Truck
			6/27/02	1	Misc.	Power Lines
			3/25/02	200	Misc.	Unknown
			7/9/02	10	Lightning	
			7/22/02	30	Equipment	Baler
			7/30/02	2	Lightning	
			7/30/02	150	Lightning	
			7/31/02	900	Equipment	Baler
			8/1/02	3	Incendiary	Suspicious
			8/3/02	1	Lightning	
			8/3/02	1	Lightning	
			8/3/02	30	Lightning	
			8/8/02	1	Lightning	
			8/10/02	1	Lightning	
			9/4/02	160	Equipment	Misc.
			7/9/02	1	Lightning	

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 68

Table C4: Fire Occurrence 2001

FIRE DISTRICT	LOCATION	COUNTY	DATE	TOTAL ACRES	CAUSE	SPECIFIC CAUSE
Valentine	Valentine FD	Cherry	7/30/01	3	Lightning	
			4/24/01	500	Misc.	Power Lines
			4/5/01	1	Misc.	Power Lines
			3/19/01	5	Equipment	Welding
			8/11/01	1	Equipment	Misc.
			9/5/01	10	Lightning	
			8/12/01	10	Lightning	
			7/28/01	1	Misc.	Unknown
			7/25/01	2	Misc.	Unknown
			6/30/01	1	Misc.	Fireworks
			6/25/01	1	Misc.	Unknown
			5/10/01	10	Misc.	Power Lines
Wood Lake	Wood Lake FD	Cherry	3/12/01	0.5	Equipment	Tractor
Keya Paha	Springview FD	Keya Paha	4/12/01	1	Misc.	Power Lines
			9/13/01	5	Lightning	
			7/31/01	1	Lightning	
			7/30/01	5	Lightning	
			7/30/01	1	Lightning	
Brown County	Long Pine	Brown	7/30/01	1	Lightning	
			4/9/01	0.1	Debris Burning	Agricultural Burning
Brown County Newport	Raven Newport	Brown Rock	6/24/01	1	Misc.	Unknown
			8/24/01	0.01	Lightning	
			7/30/01	0.01	Lightning	
Rock County	Bassett	Rock	10/1/01	2	Equipment	Baler
			8/21/01	1.01	Equipment	Combine
			8/2/01	0.11	Lightning	
			6/15/01	2	Debris Burning	Agricultural Burning

North Central Nebraska Community Wildfire Protection Plan

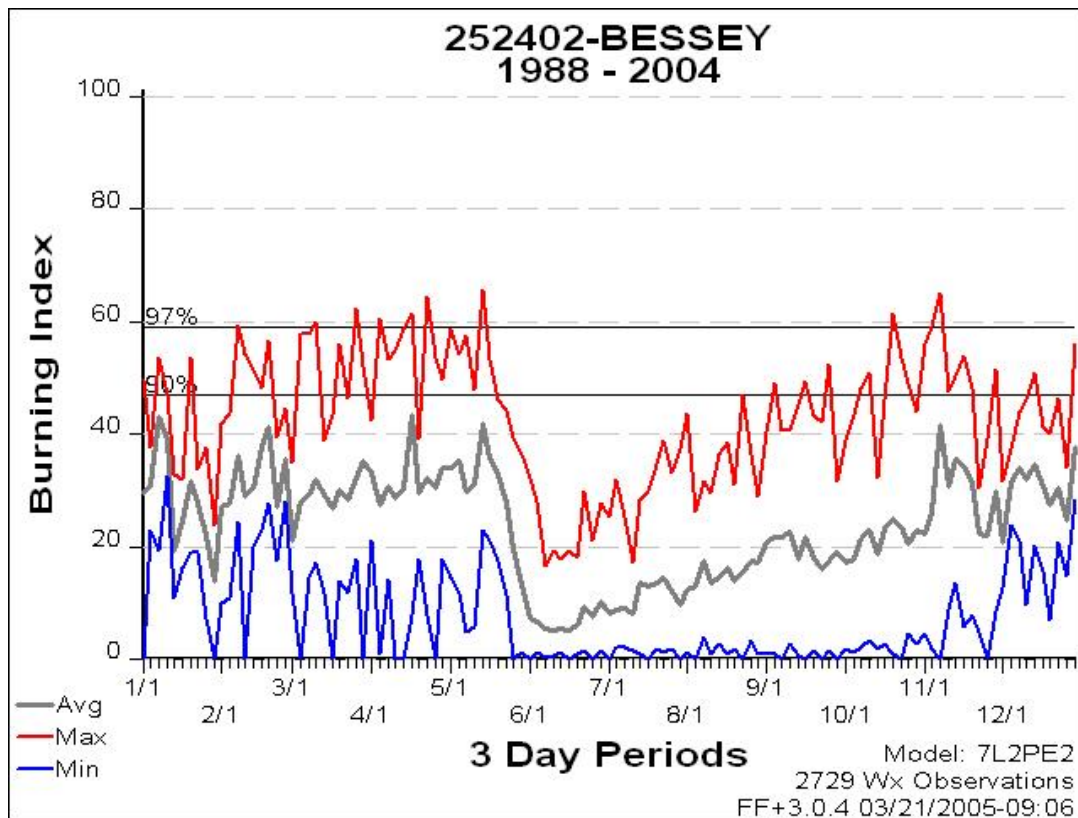
Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 69

Table C5: VFD Fire Occurrence 2000

FIRE DISTRICT	LOCATION	COUNTY	DATE	TOTAL ACRES	CAUSE	SPECIFIC CAUSE
Mid-Cherry	Mid-Cherry	Cherry	8/25/00	60	Lightning	
Wood Lake	Wood Lake FD	Cherry	9/16/00	3,500	Lightning	
			9/18/00	2001	Lightning	
			9/18/00	118	Lightning	
			9/27/00	350	Equipment	Cr/Truck
			9/6/00	0.01	Lightning	
			4/5/00	0.1	Debris Burning	Agricultural Burning
			4/4/00	10	Debris Burning	Trash Burning
Keya Paha	Springview FD	Keya Paha	6/9/00	0.5	Lightning	
			7/24/00	5	Lightning	
			7/24/00	1	Lightning	
			7/17/00	30	Equipment	Welding
Brown County	Ainsworth	Brown	2/28/00	1	Misc.	Unknown
			8/2/00	1	Equipment	Misc.
			7/28/00	5	Lightning	
			7/24/00	400	Lightning	
			3/6/00	2	Debris Burning	Agricultural Burning
			9/18/00	40	Lightning	
			9/18/00	5	Lightning	
			9/18/00	5	Lightning	
			9/18/00	6	Lightning	
Newport	Newport	Rock	10/19/00	160	Equipment	Car/Truck
Rock County	Bassett	Rock	8/10/00	2	Equipment	Baler
			8/3/00	1	Equipment	Baler
			7/24/00	10	Lightning	
			7/17/00	40	Welding	
			3/28/00	30	Smoking	
			11/4/00	35	Equipment	Car/Truck

APPENDIX D: Weather Averages and Indices

Figure D1: Burning Index over a Three Day Period



North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 71

Figure D2: Average High and Low Temperatures over the Annum

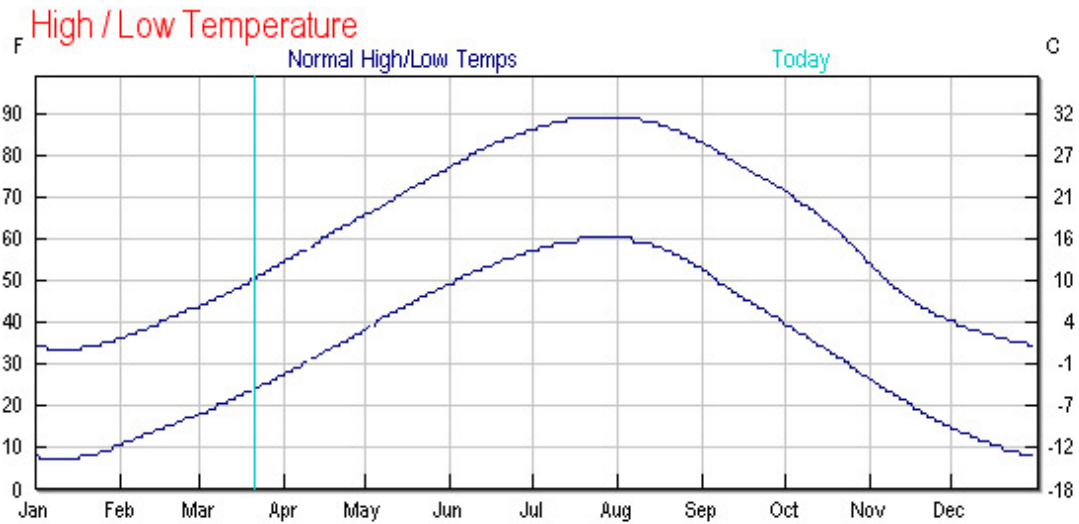
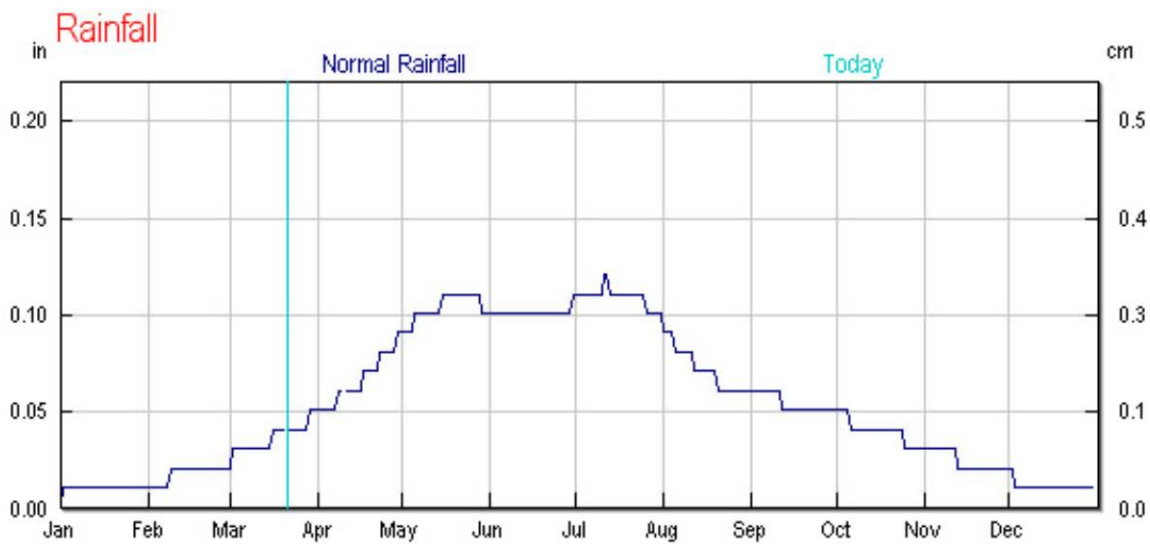


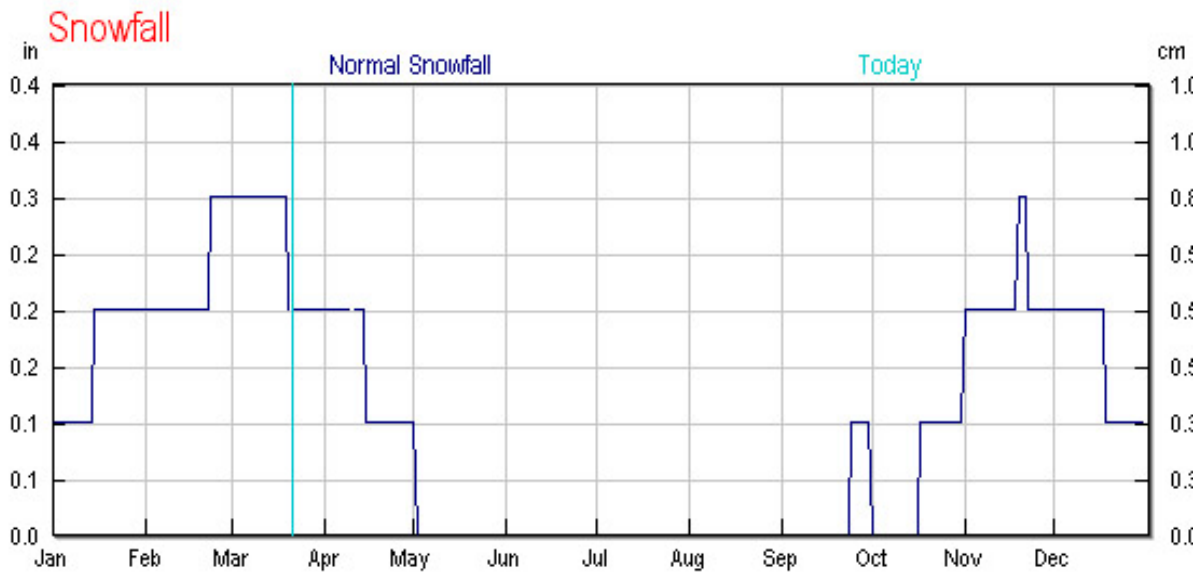
Figure D4: Distribution of Annual Rainfall



North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 72

Figure D5: Distribution of Annual Snowfall



North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 73

Table D1: Valentine Weather Averages

Valentine Nebraska Weather Averages												
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
High Temp (F)	33	38	47	60	71	82	89	87	76	64	47	35
Low Temp (F)	7	12	21	33	44	54	60	58	46	34	21	9
Snow (in)	5	4	6	2	0	0	0	0	0	1	3	4
Wind Speed (mph)	9	9	10	11	11	10	9	9	9	9	9	9
Wind Direction	WN W	NNW	NNW	NNW	S	SSE	S	S	S	WN W	WN W	WN W

<http://www.wunderground.com/NORMS/DisplayNORMS.asp?AirportCode=KVTN&StateCode=NE&SafeCityName=Valentine&Units=none&IATA=VTN&lastyear=on&normals=on&records=on>

Fire Weather Forecast by County in Central Nebraska:

www.weather.gov/northplatte

Once on this website, look in the left column for “**Forecasts**” and click on “Fire Weather”. Look under **RAWS Weather Observations**. The closest RAWS station is located at the Valentine NWR. You can also obtain spot weather forecasts on this website (resume April 1 of each year).

APPENDIX E: Prescribed Fire Brochure

Insert Hard Copy here

APPENDIX F: Zoning Handout

Welcome to _____ County. We hope you will enjoy living in our county and the many natural amenities that this area has to offer. In order to assist you in choosing a safe building site for your home, weekend cabin, or outbuildings, the county has drawn up a list of recommendations to help improve the safety of your property in the event of wildland fire. Although these suggestions are not mandatory, we strongly advise that you seek to implement as many of them as possible. By following these guidelines, you will be making wise decisions to protect your family, home, and property. The beauty of the Niobrara River valley's pine canyons is one of several reasons people choose to live here. All landowners have a responsibility to take measures to reduce wildland fire risks. If you need further advice or assistance, please contact one of the resources listed below.

Locate your home and outbuildings off ridge-tops, well back from steep slopes and away from gullies. Wildfires can easily travel up slopes and burn into structures. Preferably, locate your home at least 100 feet from the forest edge. Do not build a structure located within pinewoods where embers can travel from burning trees to your house or where a crown fire could spread to your roof.

Use fire resistant materials in the construction of your home. Consider using cement shingles or building a metal roof. There are many attractive cement siding products. Adobe is also an alternative siding to use.

Screen in the underside of balconies and above ground decks. Use composite materials for decks, which are less susceptible to fire.

Install only double or triple paned windows. Limit the size and number of windows facing nearby forests.

Cover your chimney and stovepipe with a nonflammable screen.

Consider installing an emergency sprinkler system within your house and on your roof/deck.

Plant no trees within 30' of your home. Keep this space "lean, clean, and green."

Consider thinning the forest within a set distance from your home or outbuildings. Depending upon slope, this distance may vary from 30' to 200'. Cut branches from tree trunks 6-10' high.

Eliminate ladder fuels in the understory (cedars, shrubs, etc.)

Ensure that the road into your property is wide enough to allow emergency vehicles enough room to pass each other. Build a loop drive or have a large turn-around area at road's end to ease congestion and traffic flow. If possible, have at least two exit points.

Eliminate understory flammable vegetation and ladder fuels along access roads.

Post your name and home address at the end of your private road so that fire personnel can easily locate your property.

Have a reliable source of water nearby to refill fire engines (2500 gallons is a minimum recommended supply).

Obtain, read, and follow suggestions from brochures that address wildland fire dangers.

For additional information go to www.firewise.org or contact one of the following agencies for assistance:

Nebraska Forest Service (308) 728-3221

U.S. Fish & Wildlife Service (402) 376-3789

National Park Service (402) 376-1901

UNL Cherry County Extension (402) 376-1850

UNL KBR County Extension (800) 634-8951

Region 24 Emergency Management Agency (Cherry, Keya Paha, Brown & Rock)
(402) 684-2424

APPENDIX G: Fire Reporting (Dispatch Card)

Central Niobrara Watershed Fire Report Form



1. Reporting Party (RP): _____
2. Address/Location of RP:

3. RP Phone Number: _____
4. Day/Time of Report: _____
5. Actual Fire Location:
 - a. Landmarks (*Local names*) _____
 - b. Description _____

6. Wind: Calm ___ Light ___ Moderate ___ Strong ___ Gusty ___
7. Wind Direction: _____
8. Fuel Burning: Grass ___ Shrubs ___ Single Tree ___ Pine Forest ___ Deciduous Forest ___
Mixed Forest ___
9. Estimated Fire Size at Report _____ Acres
10. Dispatcher Receiving Report _____
11. Fire Name: _____
12. Actual Fire Location (*complete a, and either b, c or d*):
 - c. Local name/landowner: _____
 - d. Map Location: Quadrangle _____
 - e. T. _____ R. _____ Sec. _____ Sec. ¼ _____
 - f. UTM Coordinates: _____ (E) _____ (N) _____
 - g. _____ (Lat.) _____ (Long.)
13. Date/Time Reported/Conducted _____
14. Fuel Burning: (*Check any that apply*) Grass ___ Shrubs ___ Single Tree ___ Pine Forest ___
Deciduous Forest ___ Mixed Forest ___
15. Probable Cause of Fire: Lightning: _____ Arson: _____ Prescribed _____ Accidental
(*list cause*): _____
16. Actual Fire Size: _____ (acres) Perimeter: _____
17. Comments/Narrative: _____


CNW FAC – F1

_____ FAC Fire #

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 77

APPENDIX H: NE ECS-8 Grazing Lands Monitoring Plan & Key Area Documentation Form

 NRCS NEBRASKA <small>Natural Resource Conservation Service</small>		Grazing Lands Monitoring Plan and Key Area Documentation NE-ECS-8									
Client Name:				Conservationist:				Date:			
Long Term Management Objective				Short Term Management Objective							
Long Term Monitoring Objective				Short Term Monitoring Objective							
Key Area Number	Date Established	Established By:	Soil/Aspect/Slope	Ecological Site	Plant Community	UTM Coordinates and Elevation		Location		Monitoring Method	Key Plant Species
						Zone		T			
						E		R		Plot frame/Size	Monitoring Schedule
						W		S		# Transects	
						E		1/4		Transect length	
Key Area Photograph	<p>Insert <u>KEY AREA PHOTOGRAPH</u> here.</p> <p>Select Insert-Picture-From file and browse to the file where photo is stored. Select the photo, click on Insert. Resize the photo by selecting the corner editing circles and re-shape to fit the cell.</p>								Photo Information		
									Date of Photo		
									Time		
									Photographer		
									Pasture Name		
									Pasture #		
									Transect #		
									Transect/Photo Bearing (°)		
Transect/Photo Direction											
Descriptions and Comments											

APPENDIX I: VFD Equipment Lists

Long Pine VFD:

LP-1 1972 IHC 4x4 Grass Rig (250 gal)
LP-2 1967 Ford Pumper (500 gal)
LP-3 1986 Chevy 1 ¼ ton 4x4 Grass Rig (250 gal)
LP-4 1991 IHC Tanker/Pumper (1600 gallons)
Lp-5 6x6 2 ½ ton M44A2 series Truck (2600gals)
LP-19 Crash/Supply Unit

Springview VFD:

S1 - 1974 International Pumper Truck (1000 gallon?)
S2 - 1960 Ford Grass Rig (250 gallon)
S7 - 1989 GMC Pumper Truck (750 gallon?)
S9 - 1980 Chevy 1-ton (250 gallon)
1962 2 ½ ton 6x6 Tanker (1250 gallon)
Two 1968 Kaiser Jeeps (Forestry Service)

Valentine VFD:

- Grass Rigs: R-1, R-2, R-6, R-7, R-8, R-9*
- Tankers: R-3, R-5, G-5
- Personal equipment carrier: R-4

R-1: 300 gallons, 300' 1" booster, 150' 1 ½"

R-2: 300 gallons, 300' 1" booster, 150' 1 ½"

R-3: 1,800 gallons (300 gpm @ 150 psi) 500' 1 ½"

R-5: 3000 gallons (+ 300 gallon portable tank) 150' 1 ½", 100' 2 ½" hose

R-6: 200 gallons, 150' ½"

R-7: 300 gallons, 300' 1", 150' 1 ½"

R-8: 300 gallons, 300' 1" (booster), 150' 1 ½", + 300' 1" (small reel)

R-9: 300 gallons, beam sprayer

G-5: 2000 gallons, 300' 1 ½", 250' 1 ½", 50' 3" fill hose

**stationed at Merritt Reservoir*

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 79

Wood Lake:

W1: 1995 Ford 350 Diesel (150' 1" hose) 400 gallons
W2: 1963 Ford 4x2 tanker (50' 1.5" hose) 1200 gallons
W3: 1969 Ford 4x2 Grass Truck 100' 1" hose, 800 gallons
W4: 1991 Ford 4x4 Grass Truck 100' 1" hose, 300 gallons
W5 1974 Ford 4x4 Grass Truck 100' 1" hose, 300 gallons
W6 1999 Chevy Grass Truck 100' 1" hose, 450 gallons + 800' 3" hose

Ainsworth:

A1: 1994 Ford City Pumper 900 gallons (1000 gpm)
A2: 2000 Sterling Tanker/Grass-rig 800 gallons
A3: 1986 Ford Rural Pumper (?) 750 gallons (500 gpm)
A4: 1998 Ford Tanker/Grass-rig 800 gallons
A5: 1967 Ford Truck Pumper 500 gallons (750 gpm)
A6: 1977 Army 6x6 Tanker/Grass-rig 1000gallons
A20: 1976 Chevrolet Rescue Truck
A21: 1992 Chevrolet Command Unit
2005 John Deere Gator (60 gallon spray tank & rescue basket)
2006 Trailer 8.5' x 24' enclosed mobile support unit (radios, beds, drinks, gator aide, AC, small command center, etc.)

Springview:

S1: 1974 International Pumper Truck 1100 gallons
S2: 1960 Ford Grass Rig 500 gallons
S3: 1972 Chevrolet Grass Rig 250 gallons
S4: 1970 Chevrolet Grass Rig 250 gallons
S5: 1968 Kaiser Jeep/Forestry Service 250 gallons
S6: 1968 Kaiser Jeep/Forestry Service 250 gallons
S7: 1989 GMC Pumper Truck 1250 gallons
S8: 1976 Chevy Suburban Personal carrier
S9: 1980 Chevy 1-ton/mini Pumper Command vehicle 250 gallons
S10: 1962 Studebaker 6x6 Tanker 1250 gallons
S12: 2007 Ford 1 tone Grass Rig gallons?
S11: 1986 Chevy 1 ¼ ton Grass Rig (Forestry Service) 250 gallons
KBR&C Hose Trailer

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 80

Newport:

Five - 4x4 Grass Rigs with 200 gallon tanks

One - 4x4 Grass Rig with 800 gallons

One - 1200 gallon Tanker

Bassett:

B1: 1986 Chevy Grass-rig 250 gallons (250 gpm)

B2: 2000 Ford Grass-rig 250 gallons (250 gpm)

B3: 1966 Chevy Pumper 750 gallons (500 gpm)

B4: 1980 INC Pumper 750 gallons (750 gpm)

B5: 1987 Ford Pumper 750 gallons (500 gpm)

B7: 1952 IHC Tanker 1500 gallons (300 gpm)

B8: 1950 Diamond Red Tanker 2000 gallons (250 gpm)

B14: 1950 GMC Pumper 200 gallons (500 gpm)

APPENDIX J: Fire Chiefs and Department Addresses

Ainsworth VFD

c/o Chief Brad Fiala
PO Box 425
Ainsworth, NE 69201

Bassett VFD

c/o Chief Jim Stout
PO Box 603
21 N. State Street
Bassett, NE 68714

Johnstown VFD

c/o Chief Ben Burdick
PO Box 317
Johnstown, NE 69214

Long Pine VFD

c/o Chief Eric Denny
PO Box 150
497 N. Main Street
Long Pine, NE 69217

Newport VFD

c/o Chief Kurt Micheel
555 N. Ash
PO Box 244
Newport, NE 68759

Springview VFD

c/o Chief Scot Hallock
PO Box 204 (#264 home)
Springview, NE 68778

Valentine VFD

c/o Chief Terry Engles
224 S. Hall St.
Valentine, NE 69201

Wood Lake VFD

c/o Chief Craig O'Kief
PO Box 663
Wood Lake, NE 69221

APPENDIX K: Emergency Contact Information

Radio Frequencies & Phone Numbers (402 Area Code)

Dept. Name	Chief/FMO/Supt.	Home #	Work# (cell)	VFD #
Ainsworth	Brad Fiala	387-0433	387-10102/	760-1512 cell
Bassett	Jim L. Stout	684-3906		
FWS	Troy Davis	376-1397	376-3789 x	228
Johnstown	Ben Burdick	722-4287		
Long Pine	Eric Denny	273-4578		
Newport	Kurt Micheel	244-5208	760-0261	
NPS	Stuart Schneider	376-5962	376-1901 x	101
Smith Falls	John Lemmon	376-2858	376-1306	
Springview	Scot Hallock	497-3632	760-1391	497-3331
Valentine	Terry Engles	376-3507	376-3100	376-1700
Wood Lake	Craig O'Kief	967-3442	376-4133	967-3400

Emergency Numbers

To report a wildland fire call these numbers:

Brown County SO (Ainsworth, Johnstown, Long Pine): **911** or (402) 387-1440

Cherry County SO (Valentine & Wood Lake): **911** or (402) 376-1890

Keya Paha County SO (Springview): **911** or (402) 497-3201

Rock County SO (Bassett, Newport): **911** or (402) 684-3811

Great Plains Interagency Dispatch Center (605) 393-8017

Radio Frequencies

Guidelines:

- Try to use primary high-band channels for communications within an agency
- Use **39.98** MHz for communications between departments and agencies/organizations; **State Mutual Aid** (155.475) or **Govt. Common Use Digital** (168.6125/F7E (Rx), 168.6125/293 (Tx))
- Keep radio traffic to a minimum – communications between agencies should be restrained to command level(s)
- Avoid 10-codes; use plain language
- Ensure all vehicles and on-foot firefighters have a working radio with spare batteries
-

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 83

- On mutual assist fires the IC should develop a simple communications plan immediately

Ainsworth VFD

High band Direct: 158.775 MHz

High band Repeater: 153.785 MHz

Bassett VFD

High band Direct: 155.925 MHz

High band Repeater: 153.920 MHz

Low band 39.98 MHz

Brown County (Roads)

Direct (used by Long Pine, Johnstown, South Pine, Raven & Calamus): 155.025 MHz

Repeater (used by same departments as listed above): Rx 153.775 MHz, Tx 153.815/114.8

Fort Niobrara National Wildlife Refuge

United States Fish & Wildlife Service (FWS):

Rx 169.775/078 MHz; Tx 169.775/078/127.3 MHz

Repeater: Rx 169.775/078; Tx 169.725/078/127.3 MHz

Keya Paha County (Roads)

Direct (Springview VFD): 158.880 MHz

Repeater (Springview VFD): 154.085 MHz

Nebraska State Mutual Aid

High Band Law Enforcement (LE): 155.475 MHz

Low Band LE: 39.90 MHz

Low Band Fire: 39.98 MHz

Niobrara National Scenic River

National Park Service (NPS): Direct 171.1625/100 MHz

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 84

West Repeater: Rx 171.1625/100; Tx 166.3375/200 MHz

East Repeater: Rx 171.1625/100; Tx 166.3375/300 MHz

Niobrara Valley Preserve

The Nature Conservancy (TNC): 151.520 MHz

NOAA (weather): 162.450 MHz

Smith Falls State Park

Nebraska Game & Parks Commission (NGPC)

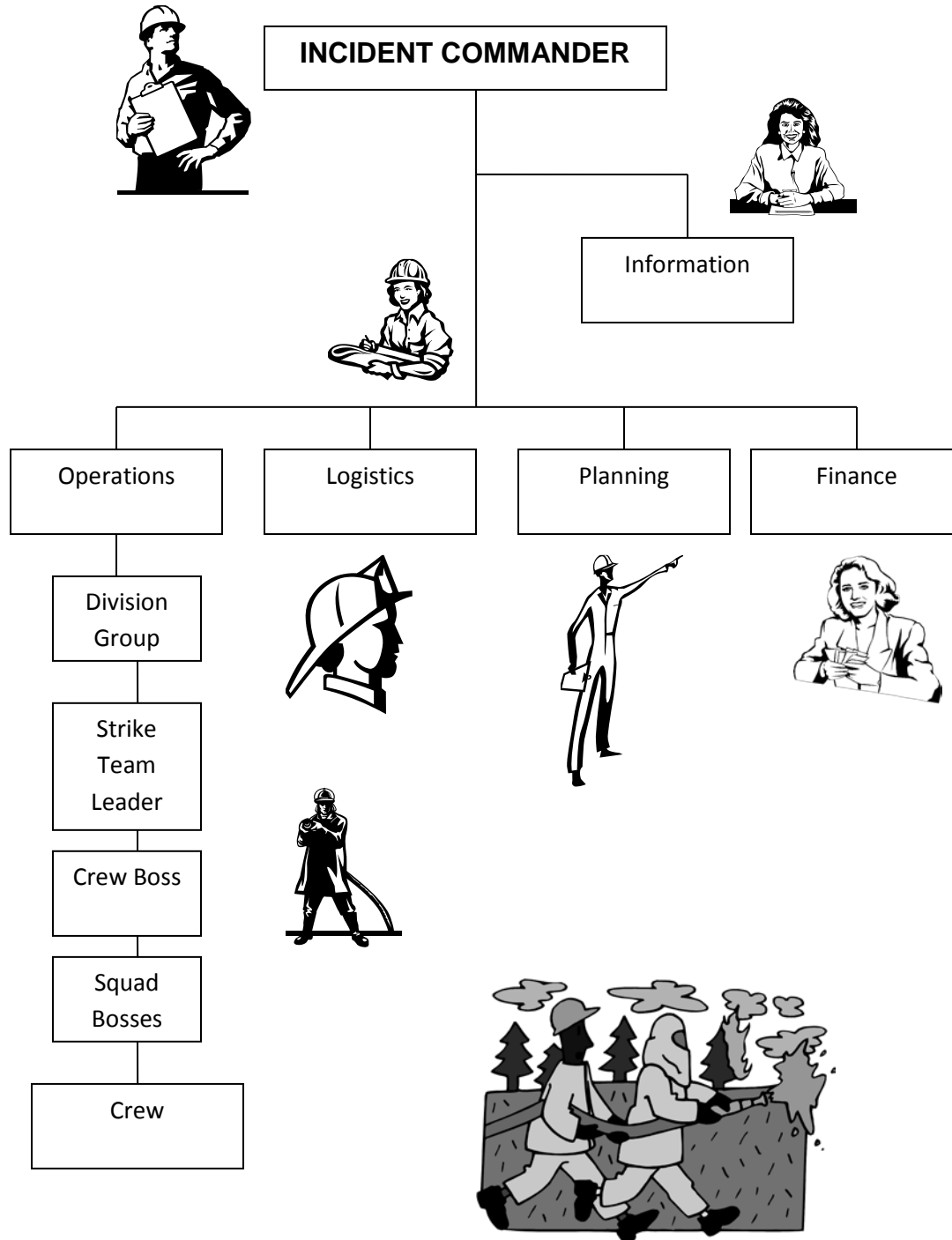
(Parks): 151.475 MHz

Valentine VFD

Radio (used also by Wood Lake): 39.98 MHz

Pagers: 158.820 MHz

APPENDIX L: Incident Command System



North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 86

APPENDIX M: Contractors/Operators: Cedar Removal & Rx Fire

SKIDDER OPERATIONS

Neil Coleman

Arnold, NE 69120
(308) 848-3394

Equipment:

5 machines
4 Bobcats shears w/ sweeps
1 Hot saw w/ 321 hydro axe
Can cut up to 20-26" diameter trees
14-14 trees/minute \$100/hour

Brent Eigenberg

1304 W. Koenig
Grand Island, NE 68801
(308) 383-4198

Bre1@charter.net

Minimum job is \$250
\$250 first 4 hours
Over 4 hours \$55/hour

Dennis Jones

387-2698
Ainsworth, NE 69210
Cedar removal

Gross Seed Company, Inc.

402-722-4215
HC 66 Box 13
Johnstown, NE 69214
Skidder with non-moving blade system;
Trees to 6" diameter

Big Toys Hire & Rentals LLC

Jordan & Ryan Ross
(402) 760-1145 or 1146
PO Box 171
Springview, NE 68778
Cedar Tree Removal
(Skidders w/ hydraulic blades)

Lawrence Turner
HC13 Box 40
Sparks, NE 69220
(402) 376-1547

Equipment:

Bobcat w/ saw blade

Dale Waterman

O'Neill, NE
(402) 336-4325

Equipment:

Wrangler articulated loader w/
cutters on front

SAWMILL OPERATIONS

Mike & Dwight Sawle
Meadville, NE 68778
(402) 497-3727
722-4440 (Mike work)

Pete & Lynn Sawle
(402) 497-3571
Meadville, NE 68778

Equipment:

Chain saws, Bobcat skid steer, thin forests, cut for stumpage and salvageable lumber

PRESCRIBED FIRE

Neil Classen

PO Box 333
Lynch, NE 68746
(402) 569-3116

Bob Lowe*

49233 807th Rd.
O'Neill, NE 68763
(420) 336-3213

Eric G. Rumble*

90275 497th Ave.
Bristow, NE 68719
(402) 583-1237

Up In Smoke – Jeff Scott

Valentine, NE 69201
Cell: 620-546-6304

* Carry no insurance

APPENDIX N: FAC General Agreement

General Agreement
Between the
United States Department of the Interior
National Park Service
Niobrara National Scenic River
and the
Central Niobrara Watershed Fire Advisory Council

This agreement is entered into by and between the National Park Service (NPS), United States Department of the Interior, acting through the Superintendent of Niobrara National Scenic River (NIOB); the U.S. Fish and Wildlife Service (FWS), United States Department of the Interior, acting through their Project Leader at Fort Niobrara National Wildlife Refuge; Nebraska Game and Parks Commission (NGPC), acting through their Administrative Assistant; the Natural Resources Conservation Service (NRCS), United States Department of Agriculture, acting through their State Conservationist; The Nature Conservancy (TNC), a non-profit corporation of the District of Columbia, acting through its State Director; Nebraska Forest Service (NFS), University of Nebraska/Lincoln, acting through their State Forester & Director; and four fire districts (Valentine, Bassett, Springview and Ainsworth), acting through their respective Fire Chiefs or designees.

ARTICLE I – BACKGROUND AND OBJECTIVES

The Niobrara National Scenic River was designated by an act of Congress on May 24 1991⁶ and set aside 76 miles of the Niobrara River in north-central Nebraska to be managed by the National Park Service through partnerships with various federal, state and local agencies and organizations as well as individual private landowners. Designated Scenic Rivers are defined as, “Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.”⁷

In order to better protect those resources entrusted to the management of the National Park Service within and adjacent to the Niobrara National Scenic River, the NPS has embraced the concept of a watershed-based fire management plan that encompasses approximately 794,000 acres, various ecosystems and habitats and involving multiple partnerships and several communities. In 2004 various agencies, organizations and private landowners came together to form a core team, known herein as the “Central Niobrara Watershed Fire Advisory Council” in a cooperative effort to plan and promote the concept of a fire management plan that is not solely dependent on individual agency boundaries and that would work across agency lines, private lands and fire district borders to help manage wildland fire on a larger, ecosystem scale.

The goals are to:

- Ensure firefighter and public safety by implementing LCES, reviewing the 10 Standard Firefighting Orders and 18 Situations that Shout Watch Out, implementing temporary closures, providing public information and education.
-

⁶ § 1274 (a) United States Code Title 16-Conservation § 791-End and Title 17 Copyrights 1994 Edition

⁷ §1273 (b) (2) United States Code Title 16-Conservation § 791-End and Title 17 Copyrights 1994 Edition

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 88

- Suppress all unscheduled ignitions to protect private property, natural, cultural and paleontological resources from unacceptable impacts attributable to fire.
- Identify and assess hazardous fuels that have the potential to adversely affect targeted natural and cultural resources.
- Utilize prescribed fire and/or other methods (e.g. mechanical) to reduce threats posed by hazard fuels conditions.
- Utilize prescribed fire and/or other methods, as appropriate, to maintain long-term stability, diversity of fire-dependent vegetation communities and improve the integrity of the ecosystem.
- Cooperate with partners and other interested parties to incorporate their concerns and compatible resource objectives in fire management programs.

Enhance communications among agencies and organizations involved with fire management.

Develop the support and understanding of prescribed fire as a valuable management tool among communities, agencies and visitors through various educational efforts.

- Ensure that fire management activities do not adversely affect adjacent communities.
- Ensure smoke production from prescribed fires does not violate state and/or federal standards; minimize smoke impacts to neighbors and visitors to the watershed.
- Ensure fire management actions are consistent with other planning documents.

This group will formally exist for 5 years following the last date of signatures unless the partners decide to terminate this agreement at an earlier time. It may be in the best interest of said signatory partners to extend this agreement, if so desired, for purposes of continuing to administer or provide input and guidance to carrying out the fire management plan.

The authority for this agreement is found in PL 90-542 as amended; and 16 U.S.C. §§1271-1287, especially § 1281 (e) and §1282 (b) (1).

ARTICLE II – STATEMENT OF WORK

a. The NPS will:

- 1) provide technical assistance in the planning of a watershed-based wildland fire management plan through formal/informal input and review, compilation of needed materials, research, providing facilities or materials, and other administrative work necessary to complete and carry out the fire management plan;
- 2) meet at least biannually to review past hazard fuel reduction (HFR) and prescribed fire projects; seek funding, education and training sources and opportunities; discuss successes and problems, lessons learned and compile statistical data for acres treated/burned; compile data for fire occurrences and examine the success of communications and cooperation among partners; set goals for coming year;
- 3) assist with fire research-related activities;
- 4) participate in the public review process (NEPA).

b. The other signatory partners will:

- 1) provide technical assistance in the planning of a watershed-based wildland fire management plan through formal/informal input and review, compilation of needed materials, research, providing facilities or materials, and other administrative work necessary to complete and carry out the fire management plan;

North Central Nebraska Community Wildfire Protection Plan

- 2) meet at least biannually to review past HFR and prescribed fire projects, seek funding, education and training sources and opportunities; discuss successes and problems, lessons learned and compile statistical data for acres treated/burned; compile data for fire occurrences and examine the success of communications and cooperation among partners; set goals for coming year;
- 3) participate in the public review process (NEPA).

ARTICLE III – TERM OF AGREEMENT

This agreement will be effective for a period of five years from the date of final signature, unless terminated earlier by one or other parties pursuant to Article VIII.

ARTICLE IV – KEY OFFICIALS

All communications and notices regarding this Agreement will be directed to the following official(s) for each party:

A. For the NPS

Dan Foster
Superintendent
Niobrara National Scenic River
P.O. Box 319
Valentine, Nebraska 69201
(402) 376-1901
FAX (402) 376-1949
C. For NGPC

Jim Douglas
Wildlife Division Administrator
2200 N. 33rd Street
PO Box 30370
Lincoln, NE 68503-0370
(402) 471-5539
FAX 471-5528
E. For the FWS

Steve Hicks
Deputy Project Leader
Fort Niobrara/Valentine Complex
HC 14, Box 67
Valentine, NE 69201
(402) 376-3789
FAX 376-3217

B. For The Nature Conservancy

Mace Hack
State Director - TNC
Nebraska Field Office
1025 Leavenworth Street
Omaha, NE 68102
(402) 342-0282
FAX (402) 342-0474
D. For the NRCS

Steve Chick
State Conservationist
Federal Bldg. Room 152
100 Centennial Mall N.
Lincoln, NE 68508-3866
(402) 437-5300
FAX 437-5327
F For the NE Forest Service

Scott J. Josiah
State Forester & Director
Nebraska Forest Service
P.O. Box 830815
Lincoln, NE 68583-0815
(402) 472-1476
FAX 472-2964

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 90

G. For the Springview Fire District

Rusty Nilson
Fire Chief
HC 80 Box 125
Springview, NE 68778
(402) 497-3427 (h)

I. For the Valentine Fire District

Terry Engles
Fire Chief
224 S. Hall Street
Valentine, NE 69201
(402) 376-3507 (h)

H. For the Bassett Fire District

Jim Stout
Fire Chief
PO Box 603
Bassett, NE 68714
(402) 684-3906 (h)

J. For Ainsworth Fire District

Brad Fiala
Fire Chief
P.O. Box 425
Ainsworth, NE 69210
(402) 387-0102 (b)

ARTICLE V – PROPERTY UTILIZATION

Not Applicable

ARTICLE VI – PRIOR APPROVAL

Not Applicable

ARTICLE VII – REPORTS AND/OR OTHER DELIVERABLES

Each spring, the Fire Advisory Council will prepare a document outlining the number of known, planned prescribed fires and hazard fuel reduction projects that are supported through partners, examine their objectives and planned acres burned/treated; revise/update applicable information within the AOP; discuss training needs and opportunities; examine equipment needs and purchases among partners; and discuss educational outreach plans. In the fall, the core team will compile statistical data of the actual number of burns conducted, acres of HFR projects and prescribed fires, number of wildland fires and acres, and evaluate various aspects of the fire program.

ARTICLE VIII – TERMINATION

Any party may terminate this Agreement by providing the other with sixty (60) days advance written notice. In the event that one party provides the other party with notice of its intention to terminate, the parties will meet promptly to discuss the reasons for the notice and attempt to resolve any differences.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 91

ARTICLE IX – STANDARD CLAUSES

1. **Civil Rights**

During the performance of this agreement, the participants agree to abide by the terms of USDI-Civil Rights Assurance Certification, nondiscrimination and will not discriminate against any person because of race, color, religion, sex or national origin. The participants will take affirmative action to ensure that applicants are employed without regard to their race, color, religion, sex or national origin.

2. **Officials Not to Benefit**

No member or delegate to Congress, or resident Commissioner, shall be admitted to any share or part of this agreement, or to any benefit that may arise there from, but this provision shall not be construed to extend to this agreement if made with a corporation for its general benefit.

3. **Public Information Release**

Partners will obtain prior approval from the Fire Advisory Council for any public information releases regarding this agreement that refer to the agreement, any activities hereunder, or any participating organizations, bureau, agency, park unit, or employee (by name or title). The specific text, layout, photographs, etc. of the proposed release must be submitted with the request for approval.

ARTICLE XI – AUTHORIZING SIGNATURES

IN WITNESS HEREOF, the parties hereto have signed their names and executed this General Agreement.

National Park Service:

Signature: _____
Name: _____

Title: _____
Date: _____

Fish and Wildlife Service:

Signature: _____
Name: _____

Title: _____
Date: _____

The Nature Conservancy:

Signature: _____
Name: _____

Title: _____
Date: _____

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 92

Nebraska Game and Parks Commission:

Signature: _____
Name: _____

Title: _____
Date: _____

Natural Resources Conservation Service:

Signature: _____
Name: _____

Title: _____
Date: _____

Nebraska Forest Service:

Signature: _____
Name: _____

Title: _____
Date: _____

Ainsworth Fire District:

Signature: _____
Name: _____

Title: _____
Date: _____

Bassett Fire District:

Signature: _____
Name: _____

Title: _____
Date: _____

Springview Fire District:

Signature: _____
Name: _____

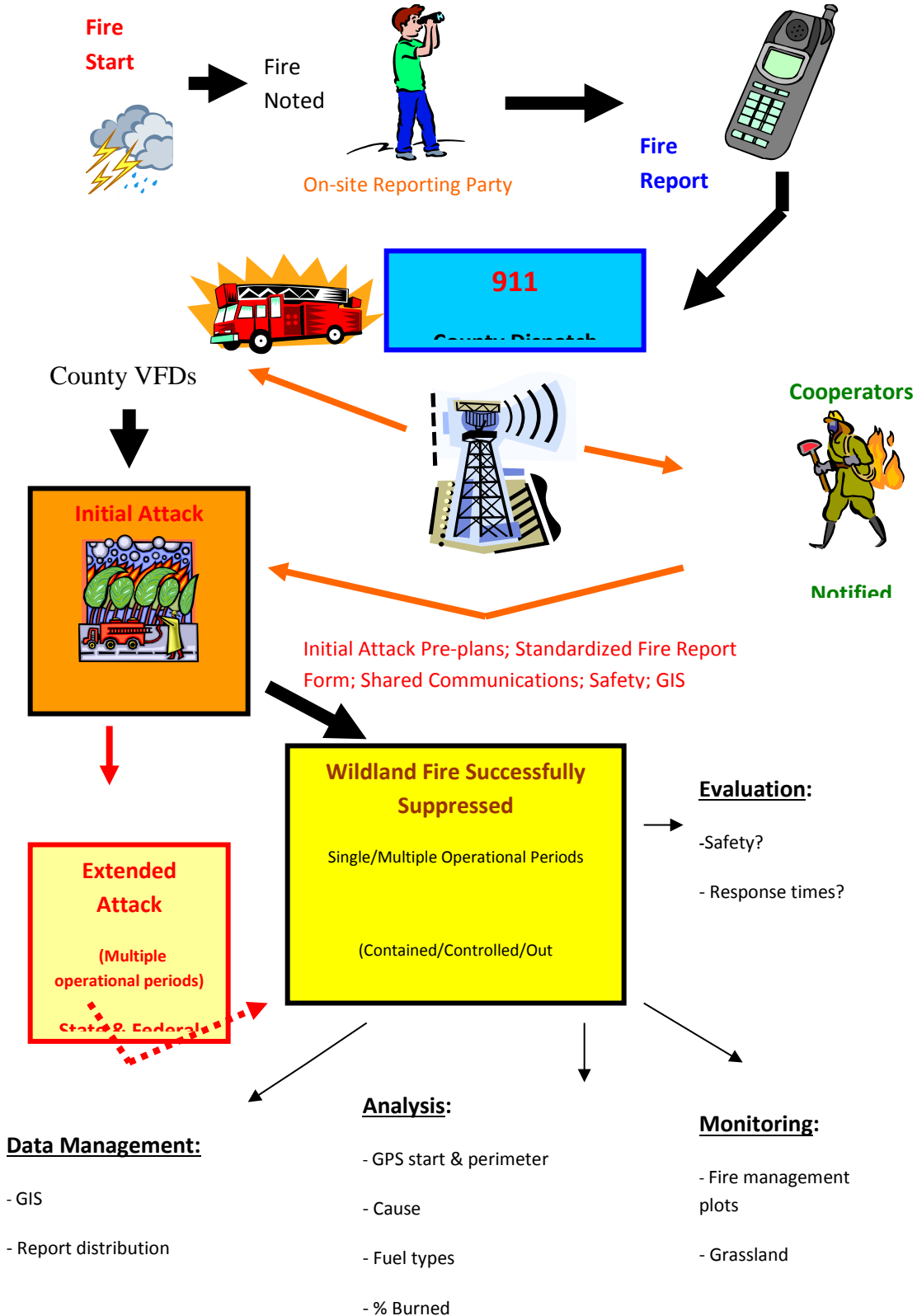
Title: _____
Date: _____

Valentine Fire District:

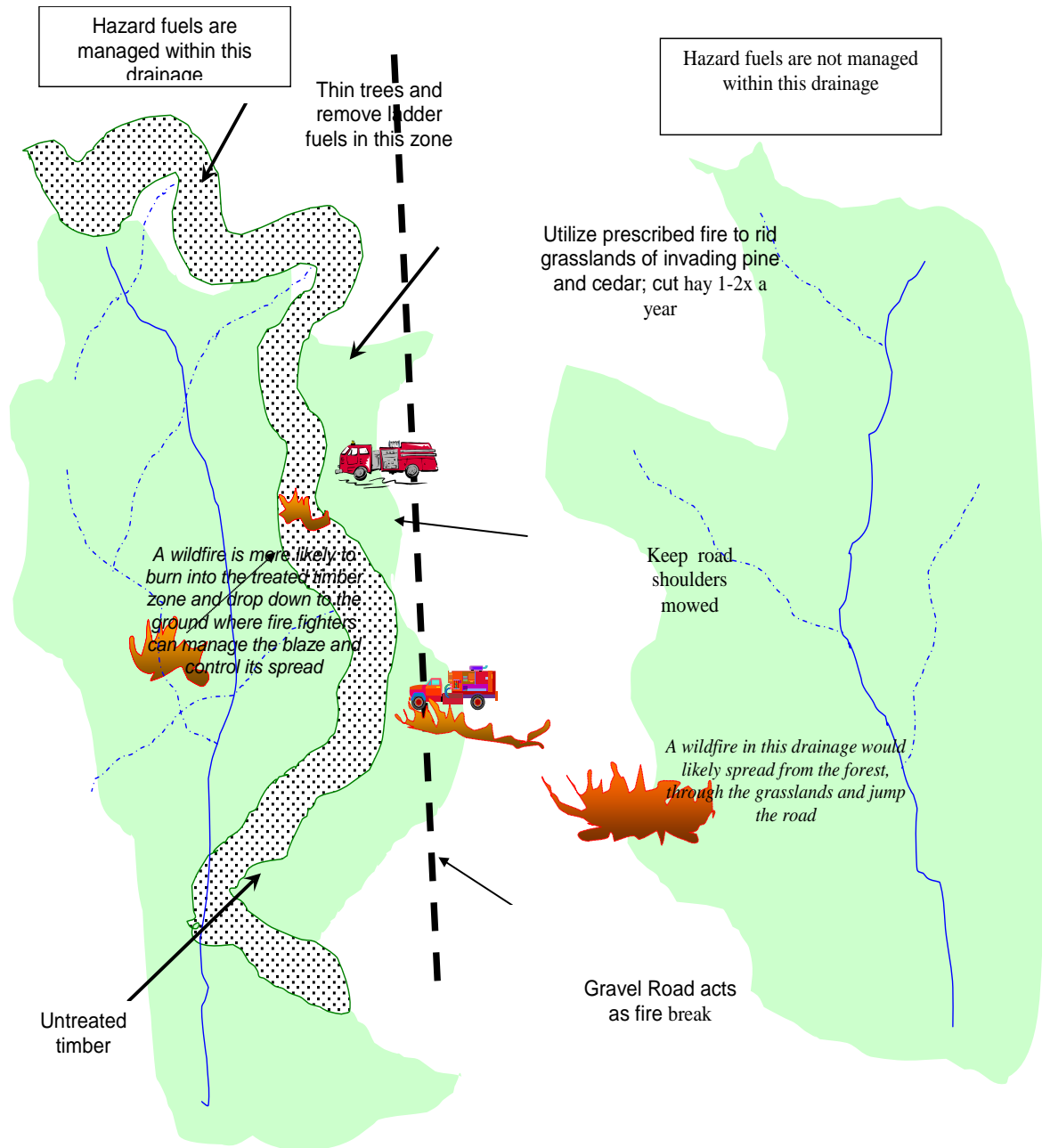
Signature: _____
Name: _____

Title: _____
Date: _____

APPENDIX O: Wildland Fire Suppression Flow Chart



APPENDIX P: Effectiveness of Fuel Treatments



National Fire Plan Glossary of Wildland Fire Terms

A

Agency: Any Federal, state, or county government organization participating with jurisdictional responsibilities.

Aspect: Direction toward which a slope faces.

B

Backfire: A fire set along the inner edge of a fireline to consume the fuel in the path of a wildland fire and/or change the direction of force of the fire's convection column.

Backpack Pump: A portable sprayer with hand-pump, fed from a liquid-filled container fitted with straps, used mainly in fire and pest control. (See also Bladder Bag.)

Behave: A system of interactive computer programs for modeling fuel and fire behavior that consists of two systems: BURN and FUEL.

Brush: A collective term that refers to stands of vegetation dominated by shrubby, woody plants, or low growing trees, usually of a type undesirable for livestock or timber management.

Brush Fire: A fire burning in vegetation that is predominantly shrubs, brush, and scrub growth.

Buffer Zones: An area of reduced vegetation that separates wildlands from vulnerable residential or business developments. This barrier is similar to a greenbelt in that it is usually used for another purpose such as agriculture, recreation areas, parks, or golf courses.

Burn Out: Setting fire inside a control line to widen it or consume fuel between the edge of the fire and the control line.

Burning Ban: A declared ban on open air burning within a specified area, usually due to sustained high fire danger.

Burning Conditions: The state of the combined factors of the environment that affect fire behavior in a specified fuel type.

Burning Index: An estimate of the potential difficulty of fire containment as it relates to the flame length at the most rapidly spreading portion of a fire's perimeter.

Burning Period: That part of each 24-hour period when fires spread most rapidly, typically from 10:00 a.m. to sundown.

C

Closure: Legal restriction, but not necessarily elimination of specified activities such as smoking, camping, or entry that might cause fires in a given area.

Command Staff: The command staff consists of the information officer, safety officer, and liaison officer. They report directly to the incident commander and may have assistants.

Complex: Two or more individual incidents located in the same general area, which are assigned to a single incident commander or unified command.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 96

Contain a fire: A fuel break around the fire has been completed. This break may include natural barriers or manually and/or mechanically constructed line.

Control a fire: The complete extinguishment of a fire, including spot fires. Fireline has been strengthened so that flare-ups from within the perimeter of the fire will not break through this line.

Control Line: All built or natural fire barriers and treated fire edge used to control a fire.

Cooperating Agency: An agency supplying assistance other than direct suppression, rescue, support, or service functions to the incident control effort; e.g., Red Cross, law enforcement agency, telephone company, etc.

Crew Boss: A person in supervisory charge of usually 16 to 21 firefighters and responsible for their performance, safety, and welfare.

Crown Fire (Crowning): The movement of fire through the crowns of trees or shrubs more or less independently of the surface fire.

Curing: Drying and browning of herbaceous vegetation or slash.

D

Dead Fuels: Fuels with no living tissue in which moisture content is governed almost entirely by atmospheric moisture (relative humidity and precipitation), dry-bulb temperature, and solar radiation.

Debris Burning: A fire spreading from any fire originally set for the purpose of clearing land or for rubbish, garbage, range, stubble, or meadow burning.

Defensible Space: An area either natural or manmade where material capable of causing a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildland fire and the loss to life, property, or resources. In practice, "defensible space" is defined as an area a minimum of 30 feet around a structure that is cleared of flammable brush or vegetation.

Detection: The act or system of discovering and locating fires.

Direct Attack: Any treatment of burning fuel, such as by wetting, smothering, or chemically quenching the fire or by physically separating burning from unburned fuel.

Dispatch: The implementation of a command decision to move a resource or resources from one place to another.

Dispatcher: A person employed who receives reports of discovery and status of fires, confirms their locations, takes action promptly to provide people and equipment likely to be needed for control in first attack, and sends them to the proper place.

Dispatch Center: A facility from which resources are directly assigned to an incident.

Division: Divisions are used to divide an incident into geographical areas of operation.

Divisions are established when the number of resources exceeds the span-of-control of the operations chief. A division is located with the incident command system between the branch and the task force/strike team.

Dozer: Any tracked vehicle with a front-mounted blade used for exposing mineral soil.

Dozer Line: Fire line constructed by the front blade of a dozer.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 97

Drip Torch: Hand-held device for igniting fires by dripping flaming liquid fuel on the materials to be burned; consists of a fuel fount, burner arm, and igniter. Fuel used is generally a mixture of diesel and gasoline.

Drought Index: A number representing net effect of evaporation, transpiration, and precipitation in producing cumulative moisture depletion in deep duff or upper soil layers.

Dry Lightning Storm: Thunderstorm in which negligible precipitation reaches the ground. Also called a dry storm.

Duff: The layer of decomposing organic materials lying below the litter layer of freshly fallen twigs, needles, leaves, and immediately above the mineral soil.

E

Engine: Any ground vehicle providing specified levels of pumping, water, and hose capacity.

Engine Crew: Firefighters assigned to an engine. The Fireline Handbook defines the minimum crew makeup by engine type.

Entrapment: A situation where personnel are unexpectedly caught in a fire behavior-related, life-threatening position where planned escape routes or safety zones are absent, inadequate, or compromised. An entrapment may or may not include deployment of a fire shelter for its intended purpose. These situations may or may not result in injury. They include "near misses."

Environmental Assessment (EA): EAs were authorized by the National Environmental Policy Act (NEPA) of 1969. They are concise, analytical documents prepared with public participation that determine if an environmental impact statement (EIS) is needed for a particular project or action. If an EA determines an EIS is not needed, the EA becomes the document allowing agency compliance with NEPA requirements.

Environmental Impact Statement (EIS): EIS's were authorized by the National Environmental Policy Act (NEPA) of 1969. Prepared with public participation, they assist decision makers by providing information, analysis, and an array of action alternatives allowing managers to see the probable effects of decisions on the environment. Generally, EIS's are written for large-scale actions or geographical areas.

Escape Route: A preplanned and understood route firefighters take to move to a safety zone or other low-risk area, such as an already burned area, previously constructed safety area, a meadow that will not burn, or natural rocky area that is large enough to take refuge without being burned. When escape routes deviate from a defined physical path, they should be clearly marked (flagged).

Escaped Fire: A fire that has exceeded or is expected to exceed initial attack capabilities or prescription.

Extended Attack Incident: A wildland fire that has not been contained or controlled by initial attack forces, and for which more firefighting resources are arriving, en route, or being ordered by the initial attack incident commander.

Extreme Fire Behavior: "Extreme" implies a level of fire behavior characteristics that ordinarily precludes methods of direct control action. One or more of the following is usually involved: high rate of spread, prolific crowning and/or spotting, presence of fire whirls, and strong

convection column. Predictability is difficult because such fires often exercise some degree of influence on their environment and behave erratically, sometimes dangerously.

F

Fine (Light) Fuels: Fast-drying fuels, generally with comparatively high surface area-to-volume ratios, which are less than 1/4-inch in diameter and have a time lag of one hour or less. These fuels readily ignite and are rapidly consumed by fire when dry.

Fire Behavior: The manner in which a fire reacts to the influences of fuel, weather, and topography.

Fire Behavior Forecast: Prediction of probable fire behavior, usually prepared by a fire behavior officer, in support of fire suppression or prescribed burning operations.

Fire Behavior Specialist: A person responsible to the planning section chief for collecting weather data and for developing fire behavior predictions based on fire history, fuel, weather, and topography.

Fire Break: A natural or constructed barrier used to stop or check fires that may occur, or to provide a control line from which to work.

Fire Cache: A supply of fire tools and equipment assembled in planned quantities or standard units at a strategic point for exclusive use in fire suppression.

Fire Crew: An organized group of firefighters under the leadership of a crew leader or other designated official.

Fire Front: The part of a fire within which continuous flaming combustion is taking place. Unless otherwise specified the fire front is assumed to be the leading edge of the fire perimeter. In ground fires, the fire front may be mainly smoldering combustion.

Fire Intensity: A general term relating to the heat energy released by a fire.

Fire Line: A linear fire barrier that is scraped or dug to mineral soil.

Fire Management Plan (FMP): A strategic plan that defines a program to manage wildland and prescribed fires, and documents the fire management program in the approved land use plan. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

Fire Perimeter: The entire outer edge or boundary of a fire.

Fire Season: 1) Period(s) of the year during which wildland fires are likely to occur, spread, and affect resource values sufficient to warrant organized fire management activities. 2) A legally enacted time during which burning activities is regulated by state or local authority.

Fire Shelter: An aluminized tent offering protection by means of reflecting radiant heat and providing a volume of breathable air in a fire entrapment situation. Fire shelters should only be used in life-threatening situations, as a last resort.

Fire Shelter Deployment: The removing of a fire shelter from its case and using it as protection against fire.

Fire Use Module (Prescribed Fire Module): A team of skilled and mobile personnel dedicated primarily to prescribed fire management. These are national and interagency resources, available throughout the prescribed fire season, that can ignite, hold, and monitor prescribed fires.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 99

Fire Weather: Weather conditions that influence fire ignition, behavior, and suppression.

Firefighting Resources: All people and major items of equipment that can or potentially could be assigned to fires.

Flame Height: The average maximum vertical extension of flames at the leading edge of the fire front. Occasional flashes that rise above the general level of flames are not considered. This distance is less than the flame length if flames are tilted due to wind or slope.

Flame Length: The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface); an indicator of fire intensity.

Flare-up: Any sudden acceleration of fire spread or intensification of a fire. Unlike a blow-up, a flare-up lasts a relatively short time and does not radically change control plans.

Flash Fuels: Fuels such as grass, leaves, draped pine needles, fern, tree moss and some kinds of slash that ignite readily and are consumed rapidly when dry. Also called fine fuels.

Forb: A plant with a soft, rather than permanent woody stem, that is not a grass or grass-like plant.

Fuel: Combustible material. Includes vegetation, such as grass, leaves, ground litter, plants, shrubs and trees that feed a fire. (See Surface Fuels.)

Fuel Bed: An array of fuels usually constructed with specific loading, depth and particle size to meet experimental requirements; also, commonly used to describe the fuel composition in natural settings.

Fuel Loading: The amount of fuel present expressed quantitatively in terms of weight of fuel per unit area.

Fuel Model: Simulated fuel complex (or combination of vegetation types) for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified.

Fuel Moisture (Fuel Moisture Content): The quantity of moisture in fuel expressed as a percentage of the weight when thoroughly dried at 212 degrees Fahrenheit.

Fuel Reduction: Manipulation, including combustion, or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control.

Fuel Type: An identifiable association of fuel elements of a distinctive plant species, form, size, arrangement, or other characteristics that will cause a predictable rate of fire spread or difficulty of control under specified weather conditions.

G

General Staff: The group of incident management personnel reporting to the incident commander. They may each have a deputy, as needed. Staff consists of operations section chief, planning section chief, logistics section chief, and finance/administration section chief.

Geographic Area: A political boundary designated by the wildland fire protection agencies, where these agencies work together in coordination and effective utilization.

Ground Fuel: All combustible materials below the surface litter, including duff, tree or shrub roots, punchy wood, peat, and sawdust that normally support a glowing combustion without flame.

H

Hand Line: A fireline built with hand tools.

Hazard Reduction: Any treatment of a hazard that reduces the threat of ignition and fire intensity or rate of spread.

Head of a Fire: The side of the fire having the fastest rate of spread.

Heavy Fuels: Fuels of large diameter such as snags, logs, and large limb wood that ignite and are consumed more slowly than flash fuels.

Helibase: The main location within the general incident area for parking, fueling, maintaining, and loading helicopters. The helibase is usually located at or near the incident base.

Holding Actions: Planned actions required to achieve wildland prescribed fire management objectives. These actions have specific implementation timeframes for fire use actions but can have less sensitive implementation demands for suppression actions.

Holding Resources: Firefighting personnel and equipment assigned to do all required fire suppression work following fireline construction but generally not including extensive mop-up.

I

Incident: A human-caused or natural occurrence, such as wildland fire, that requires emergency service action to prevent or reduce the loss of life or damage to property or natural resources.

Incident Action Plan (IAP): Contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period. The plan may be oral or written. When written, the plan may have a number of attachments, including: incident objectives, organization assignment list, division assignment, incident radio communication plan, medical plan, traffic plan, safety plan, and incident map.

Incident Command Post (ICP): Location at which primary command functions are executed. The ICP may be co-located with the incident base or other incident facilities.

Incident Command System (ICS): The combination of facilities, equipment, personnel, procedure and communications operating within a common organizational structure, with responsibility for the management of assigned resources to effectively accomplish stated objectives pertaining to an incident.

Incident Commander: Individual responsible for the management of all incident operations at the incident site.

Incident Management Team: The incident commander and appropriate general or command staff personnel assigned to manage an incident.

Incident Objectives: Statements of guidance and direction necessary for selection of appropriate strategy, and the tactical direction of resources. Incident objectives are based on realistic expectations of what can be accomplished when all allocated resources have been effectively deployed.

Initial Attack: The actions taken by the first resources to arrive at a wildland fire to protect lives and property, and prevent further extension of the fire.

J

K

Keech Byram Drought Index (KBDI): Commonly used drought index adapted for fire management applications, with a numerical range from 0 (no moisture deficiency) to 800 (maximum drought).

L

Ladder Fuels: Fuels that provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. They help initiate and assure the continuation of crowning.

Large Fire: 1) For statistical purposes, a fire burning more than a specified area of land e.g., 300 acres. 2) A fire burning with a size and intensity such that its behavior is determined by interaction between its own convection column and weather conditions above the surface.

Light (Fine) Fuels: Fast-drying fuels, generally with comparatively high surface area-to-volume ratios, which are less than 1/4-inch in diameter and have a time lag of one hour or less. These fuels readily ignite and are rapidly consumed by fire when dry.

Lightning Activity Level (LAL): A number, on a scale of 1 to 6, which reflects frequency and character of cloud-to-ground lightning. The scale is exponential, based on powers of 2 (i.e., LAL 3 indicates twice the lightning of LAL 2).

Litter: Top layer of the forest, scrubland, or grassland floor, directly above the fermentation layer, composed of loose debris of dead sticks, branches, twigs, and recently fallen leaves or needles, little altered in structure by decomposition.

Live Fuels: Living plants, such as trees, grasses, and shrubs, in which the seasonal moisture content cycle is controlled largely by internal physiological mechanisms, rather than by external weather influences.

M

Mineral Soil: Soil layers below the predominantly organic horizons; soil with little combustible material.

Mobilization: The process and procedures used by all organizations, Federal, state and local for activating, assembling, and transporting all resources that have been requested to respond to or support an incident.

Mop-up: To make a fire safe or reduce residual smoke after the fire has been controlled by extinguishing or removing burning material along or near the control line, felling snags, or moving logs so they will not roll downhill.

Multi-Agency Coordination (MAC): A generalized term which describes the functions and activities of representatives of involved agencies and/or jurisdictions who come together to make decisions regarding the prioritizing of incidents, and the sharing and use of critical resources. The MAC organization is not a part of the on-scene ICS and is not involved in developing incident strategy or tactics.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 102

Mutual Aid Agreement: Written agreement between agencies and/or jurisdictions in which they agree to assist one another upon request, by furnishing personnel and equipment.

N

National Environmental Policy Act (NEPA): NEPA is the basic national law for protection of the environment, passed by Congress in 1969. It sets policy and procedures for environmental protection, and authorizes environmental impact statements and environmental assessments to be used as analytical tools to help Federal managers make decisions.

National Fire Danger Rating System (NFDRS): A uniform fire danger rating system that focuses on the environmental factors that control the moisture content of fuels.

National Wildfire Coordinating Group: A group formed under the direction of the Secretaries of Agriculture and the Interior and comprised of representatives of the U.S. Forest Service, Bureau of Land Management, Bureau of Indian Affairs, National Park Service, U.S. Fish and Wildlife Service, and Association of State Foresters. The group's purpose is to facilitate coordination and effectiveness of wildland fire activities and provide a forum to discuss, recommend action, or resolve issues and problems of substantive nature. NWCG is the certifying body for all courses in the National Fire Curriculum.

Normal Fire Season: 1) A season when weather, fire danger, and number and distribution of fires are about average. 2) Period of the year that normally comprises the fire season.

O

Operational Period: The period of time scheduled for execution of a given set of tactical actions as specified in the incident action plan. Operational periods can be of various lengths, although usually not more than 24 hours.

P

Pack Test: Used to determine the aerobic capacity of fire suppression and support personnel, and assign physical fitness scores. The test consists of walking a specified distance, with or without a weighted pack, in a predetermined period of time, with altitude corrections.

Peak Fire Season: That period of the fire season during which fires are expected to ignite most readily, to burn with greater than average intensity, and to create damages at an unacceptable level.

Personnel Protective Equipment (PPE): All firefighting personnel must be equipped with proper equipment and clothing in order to mitigate the risk of injury from, or exposure to, hazardous conditions encountered while working. PPE includes, but is not limited to: 8-inch high-laced leather boots with lug soles, fire shelter, hard hat with chin strap, goggles, ear plugs, aramid shirts and trousers, leather gloves, and individual first aid kits.

Preparedness: Condition or degree of being ready to cope with a potential fire situation.

Prescribed Fire: Any fire ignited by management actions under certain, predetermined conditions to meet specific objectives related to hazardous fuels or habitat improvement.

A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition.

Prescribed Fire Plan (Burn Plan): This document provides the prescribed fire boss information needed to implement an individual prescribed fire project.

Prescription: Measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include safety, economic, public health, and environmental, geographic, administrative, social, or legal considerations.

Prevention: Activities directed at reducing the incidence of fires, including public education, law enforcement, personal contact, and reduction of fuel hazards.

Project Fire: A fire of such size or complexity that a large organization and prolonged activity is required to suppress it.

Pulaski: A combination chopping and trenching tool, which combines a single-bitted axe-blade with a narrow adze-like trenching blade fitted to a straight handle. Useful for grubbing or trenching in duff and matted roots. Well-balanced for chopping.

R

Rate of Spread: The relative activity of a fire in extending its horizontal dimensions. It is expressed as a rate of increase of the total perimeter of the fire, as rate of forward spread of the fire front, or as rate of increase in area, depending on the intended use of the information. Usually it is expressed in chains or acres per hour for a specific period in the fire's history.

Reburn: The burning of an area that has been previously burned but that contains flammable fuel that ignites when burning conditions are more favorable; an area that has re-burned.

Red Card: Fire qualification card issued to fire rated persons showing their training needs and their qualifications to fill specified fire suppression and support positions in a large fire suppression or incident organization.

Rehabilitation: The activities necessary to repair damage or disturbance caused by wildland fires or the fire suppression activity.

Relative Humidity (RH): The ratio of the amount of moisture in the air, to the maximum amount of moisture that air would contain if it were saturated. The ratio of the actual vapor pressure to the saturated vapor pressure.

Remote Automatic Weather Station (RAWS): An apparatus that automatically acquires, processes, and stores local weather data for later transmission to the GOES Satellite, from which the data is re-transmitted to an earth-receiving station for use in the National Fire Danger Rating System.

Resources: 1) Personnel, equipment, services, and supplies available, or potentially available, for assignment to incidents. 2) The natural resources of an area, such as timber, grass, watershed values, recreation values, and wildlife habitat.

Resource Management Plan (RMP): A document prepared by field office staff with public participation, and approved by field office managers that provides general guidance and direction for land management activities at a field office. The RMP identifies the need for fire in a particular area and for a specific benefit.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 104

Retardant: A substance or chemical agent that reduces the flammability of combustibles.

Run (of a fire): The rapid advance of the head of a fire with a marked change in fire line intensity and rate of spread from that noted before and after the advance.

Running: A rapidly spreading surface fire with a well-defined head.

S

Safety Zone: An area cleared of flammable materials used for escape in the event the line is outflanked, or in case a spot fire causes fuels outside the control line to render the line unsafe. In firing operations, crews progress so as to maintain a safety zone nearby allowing the fuels inside the control line to be consumed before going ahead. Safety zones may also be constructed as integral parts of fuel breaks; they are greatly enlarged areas, which can be used with relative safety by firefighters and their equipment in the event of a blowup in the vicinity.

Size-up: To evaluate a fire to determine a course of action for fire suppression.

Slash: Debris left after logging, pruning, thinning or brush cutting; includes logs, chips, bark, branches, stumps, and broken understory trees or brush.

Smoke Management: Application of fire intensities and meteorological processes to minimize degradation of air quality during prescribed fires.

Smoldering Fire: A fire burning without flame and barely spreading.

Snag: A standing dead tree or part of a dead tree from which at least the smaller branches have fallen.

Spot Fire: A fire ignited outside the perimeter of the main fire by flying sparks or embers.

Spot Weather Forecast: A special forecast issued to fit the time, topography, and weather of each specific fire. These forecasts are issued upon request of the user agency and are more detailed, timely, and specific than zone forecasts.

Spotting: Behavior of a fire producing sparks or embers that are carried by the wind and start new fires beyond the zone of direct ignition by the main fire.

Springbranch Canyon: A canyon or gully fed by a creek or rivulet whose water source is a spring and/or seep. Temperatures are often moderated and canyon bottoms moister, allowing for unusual vegetation such as paper birch, ferns, mosses, etc.

Staging Area: Locations set up at an incident where resources can be placed while awaiting a tactical assignment on a three-minute available basis. Staging areas are managed by the operations section.

Strategy: The science and art of command as applied to the overall planning and conduct of an incident.

Structure Fire: Fire originating in and burning any part or all of any building, shelter, or other structure.

Suppressant: An agent, such as water or foam, used to extinguish the flaming and glowing phases of combustion when direction applied to burning fuels.

Suppression: All the work of extinguishing or containing a fire, beginning with its discovery.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 105

Surface Fuels: Loose surface litter on the soil surface, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches that have not yet decayed enough to lose their identity; also grasses, forbs, low and medium shrubs, tree seedlings, heavier branch wood, downed logs, and stumps interspersed with or partially replacing the litter.

T

Tactics: Deploying and directing resources on an incident to accomplish the objectives designated by strategy.

Test Fire: A small fire ignited within the planned burn unit to determine the characteristic of the prescribed fire, such as fire behavior, detection performance, and control measures.

Time lag: Time needed under specified conditions for a fuel particle to lose about 63 percent of the difference between its initial moisture content and its equilibrium moisture content. If conditions remain unchanged, a fuel will reach 95 percent of its equilibrium moisture content after four time lag periods.

Torching: The ignition and flare-up of a tree or small group of trees, usually from bottom to top.

Two-way Radio: Radio equipment with transmitters in mobile units on the same frequency as the base station, permitting conversation in two directions using the same frequency in turn.

Type: The capability of a firefighting resource in comparison to another type. Type 1 usually means a greater capability due to power, size, or capacity.

U

Uncontrolled Fire: Any fire that threatens to destroy life, property, or natural resources,

Underburn: A fire that consumes surface fuels but not trees or shrubs. (See Surface Fuels.)

V

Volunteer Fire Department (VFD): A fire department of which some or all members are unpaid.

W

Weather Information and Management System (WIMS): An interactive computer system designed to accommodate the weather information needs of all Federal and state natural resource management agencies. Provides timely access to weather forecasts, current and historical weather data, the National Fire Danger Rating System (NFDRS), and the National Interagency Fire Management Integrated Database (NIFMID).

Wet Line: A line of water or water and chemical retardant, sprayed along the ground, that serves as a temporary control line from which to ignite or stop a low-intensity fire.

Wildland Fire: Any nonstructural fire, other than prescribed fire, that occurs in the wildland.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 106

Wildland Fire Implementation Plan (WFIP): A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire being managed for resource benefits.

Wildland Fire Situation Analysis (WFSA): A decision-making process that evaluates alternative suppression strategies against selected environmental, social, political, and economic criteria. Provides a record of decisions.

Wildland Fire Use: The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in fire management plans.

Wildland Urban Interface: The line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

General Glossary of acronyms and terms

AMR—Appropriate Management Response

BI – Burning Index

COE – Army Corps of Engineers, Department of Defense

DI-1202 – Individual Fire Report form

DO-18 – Director’s Order 18

DOD—Department of Defense\

DOI—Department of the Interior

EMS—Emergency Medical Services

EPMP-- Northern Great Plains Exotic Plant Management Plan

FIREPRO – National Park Service Fire Program

FMH -- Fire Monitoring Handbook

FMO -- Fire Management Office

FMP -- Fire Management Plan

FMU – Fire Management Unit

FPA—Fire Program Analysis

FWS – U.S. Fish and Wildlife Service, Department of Interior

GMP – General Management Plan

HFR – Hazardous Fuel Reduction

IQCS—Incident Qualifications Certification System

KBDI—Keetch Byram Drought Index

LAL – Lightning Activity Level

LCES – Lookouts, Communication, Escape Routes, and Safety Zones (the 4 Fire Orders)

MIST – Minimum Impact Suppression Tactics

MWRO – Midwest Regional Office

NEPA – National Environmental Policy Act

NHPA—National Historic Preservation Act

NIFC -- National Interagency Fire Center

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 107

NFDRS – National Fire Danger Rating System
NPS – National Park Service
NWCG – National Wildland fire Coordinating Group
PIO -- Public Information Officer
RAWS -- Remote Automated Weather Station
RFD – Rural Fire Districts
RM-18 – Reference Manual 18
SHPO – State Historic Preservation Office
USDA-United States Department of Agriculture
USDI-United States Department of the Interior
WFIP - Wildland Fire Implementation Plan
WFMI-- Wildland Fire Management Information (System)
WFSA - Wildland Fire Situation Analysis
WUI – Wildland Urban Interface

ADDITIONAL DEFINITIONS AND TERMS

Appropriate Management Response (AMR)	<p>The objective of putting the fire dead out by a certain time has been replaced by the need to make unique decisions with each fire start to consider the land, resource, and incident objectives, and to decide the appropriate management response and tactics that result in minimum cost and minimum resource damage.</p> <p>Fire management requires the fire manager and firefighter to select management tactics commensurate with the fire's existing or potential behavior while causing the least possible impact on the resource being protected.</p>
Comprehensive Strategy	<p>A logically organized and tracked sequence of activities designed to achieve and/or maintain the desired conditions.</p>
Consultation	<p>A discussion, conference, or forum in which advice or information is sought or given, or information or ideas are exchanged.</p> <p>Consultation can take place on an informal basis in some cases, but formal consultation requirements for compliance with some regulations, such as section 106 of NHPA as published in 36 CFR Part 800, demand written documentation of the process.</p> <p>Consultation with recognized tribes is done on a government-to-government basis, according to NPS Management Policies, 2006, p. 256. Consultation is also a part of NEPA with consultation commonly involving Section 7 of the Endangered Species Act and the Clean Water Act (Federal Water Pollution Control Act of 1972, as amended).</p>

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 109

	The optimal state of a resource or visitor experience. A description of the “ideal” resource conditions or visitor experience
Desired Conditions	opportunities to be achieved in a specific portion of a park (desired conditions are found in NIOB’s GMP).
Ecosystem	An interacting system of interdependent organisms
Ecosystem management	The careful and skillful use of ecological, economic, social, and managerial principles in managing ecosystems to produce, restore, or sustain ecosystem integrity and desired conditions over the long term.
Endangered Species Act (ESA)	Endangered Species Act of 1973, as amended
Ethnographic Resources	Objects and places, including sites, structures, landscapes, and natural resources with traditional cultural meaning and value to associated peoples. Research and consultation with associated people identifies and explains the places and things they find culturally meaningful.
Fire Management Plan (FMP)	A strategic plan that defines a program to manage wildland and prescribed fires, and documents the fire management program in the approved land use plan.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 110

Fire Management Unit (FMU)	Any land management area definable by objectives, topographic features, values-to-be-protected, fuel types, or major fire regimes, that sets it apart from management characteristics of another unit.
Fire regime	The pattern of fire across a landscape, characterized by frequency, intensity, and type and size of typical fire events, resulting from a unique combination of climate and vegetation.
Fundamental Resources and Values	Those resources identified in the foundation of planning and management that are critical to achieving NIOBs purpose and maintaining its significance. They may include systems, processes, features, visitor experiences, stories, scenes, sounds, smells or other resources and values.
Fuel	The materials burned in a fire: duff, litter, grass, dead branch wood, snags, logs, stumps, weeds, brush, foliage, and, to a limited degree, live vegetation.
Foundation for Planning and Decision-making (or Management)	A statement clearly defining the legal and policy requirements that mandate NIOBs basic management responsibilities, including the identification and comprehensive analysis of those resources and values determined to be critical to achieving NIOBs purpose and maintaining it significance, or to be otherwise important to park planning and management.

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 111

GMP, General Management Plan	<p>General management planning results in a shared understanding among NPS managers and the public about the kinds of resource conditions and visitor experiences that will best fulfill the purpose of NIOB.</p>
Guild	<p>A group of species that exploits the same class of environmental resources in a similar way.</p>
Hazard fuels	<p>Fuels which, when ignited, threaten: public safety, structures and facilities, cultural resources, natural resources, natural processes, or any other social, political, or economic value. In addition, fuels that permit the spread of wildland fires across administrative boundaries except as authorized by agreement.</p>
Implementation Plan	<p>Implementation plans tier off NIOBs general management plan, program plans, and strategic plan and describe in detail the high-priority actions that will be taken over the next several years to help achieve the desired conditions for NIOB.</p>
Initial Attack	<p>Wildland fires that are identified for suppression must receive appropriate initial attack action (IA) as defined in the fire management plan. The goal in all IA actions is to limit damage to values to be protected and to prevent the escape of the fire.</p>

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 112

Minimum Impact Suppression Tactics (MIST)	<p>The use of the minimum amount of forces necessary to effectively achieve the fire management protection objectives consistent with land and resource management objectives. It implies a greater sensitivity to the impacts of suppression tactics and their long-term effects when determining how to implement an appropriate suppression response.</p>
Mitigation actions	<p>Mitigation actions are considered to be those on-the-ground activities that serve to check, direct, or delay the spread of unwanted wildland fire and minimize threats to life, property, and resources. Mitigation actions may also refer to actions taken to protect values during suppression or in prescribed fire planning and implementation.</p>
National Fire Danger Rating System (NFDRS)	<p>A system to predict several measures of fire probability and resistance to control.</p>
National Historic Preservation Act of 1966, As amended through 2000 (NHPA)	<p>This Act became law on October 15, 1966 (Public Law 89-665, October 15, 1966; 16 U.S.C. 470 et seq.). Since enactment, there have been 22 amendments. The NHPA and its implementing regulations are the primary Federal historic preservation laws and regulations outlining the historic preservation responsibilities of the agencies.</p>

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 113

Natural Resource Inventory and Monitoring Program (Vital Signs)	<p>Natural resource inventory and monitoring provides site-specific information needed to understand and identify change in complex, variable, and imperfectly understood natural systems and to determine whether observed changes are within natural levels of variability or may be indicators of unwanted human influences. The monitoring is often referred to as “Vital Signs” monitoring, because it focuses on quantifying changes in indicators of ecosystem health.</p>
Other Important Resources and Values	<p>Significant resources and values that are not directly linked to NIOB purpose, but that support the Fundamental Resources and Values of NIOB or are part of resource stewardship because of policy, statute, or regulation, and are determined to be important to park planning and management.</p>
Park Purpose and Significance	<p>Statements of why, within a national, regional, and system wide context, NIOBs resources and values are important enough to warrant national park designation.</p>
Partner	<p>An agency, organization, or individual with whom the NPS has a documented agreement.</p>
Prescribed Fire	<p>Purposefully ignited fire intended to meet management objectives.</p>

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 114

Prescribed Fire [Burn] Plan	<p>Sets the objectives for and parameters by which a prescribed fire may be used to meet management objectives. Parameters include weather conditions, air quality objectives, holding actions, techniques and other specifics associated with a project implementation plan.</p>
Program Plan or Program Management Plan	<p>Park managers and staffs conduct various kinds of program planning to identify and recommend the best strategies for achieving the desired conditions and/or visitor experiences related to each particular program area (resource management, visitor use, facility management, etc.). Park-level program plans are not decision-making documents.</p>
Resources	<p>See Fundamental Resources and Values and Other Important Resources</p>
Resource Stewardship Strategy (RSS)	<p>This 15-20 year program management document provides a clear linkage between the qualitative desired conditions prescribed in the General Management Plan and the measurable performance outcomes and implementing actions identified in park strategic planning. These linkages include specific science- and scholarship-based Comprehensive Strategies that provide park managers with a logical sequence of activities necessary to achieve or maintain NIOBs desired conditions.</p>

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 115

State Historic Preservation Officer (SHPO)	<p>State Historic Preservation Officers (SHPO) administer the national historic preservation program at the State level, review National Register of Historic Places nominations, maintain data on historic properties that have been identified but not yet nominated, and consult with Federal agencies during Section 106 review.</p> <p>SHPO's are designated by the governor of their respective State or territory.</p>
Special Mandates	<p>Legal, regulatory, and policy requirements specific to NIOB or to the National Park Service generally. Protection of habitat for an endangered species in a park not set aside for that purpose exemplifies a special mandate.</p>
Stakeholders	<p>An individual, group, or other organization that can place a claim on our attention, resources, or output, or is affected by that output. In other words, a stakeholder has a stake in what we do and can exert significant influence on park or program mission and strategies. Examples include, citizens, higher level managers, special interest groups, and governing bodies (e.g., Congress).</p>
Structure (as a cultural resource)	<p>A constructed work, usually immovable by nature or design, consciously created to serve a human activity</p>

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 116

Suppression	<p>An appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire. All wildland fire suppression activities provide for firefighter and public safety as the highest consideration while minimizing loss of resource values, economic expenditures, and the use of critical firefighting resources.</p>
Tribal Historic Preservation Officer (THPO)	<p>In the Context of RSS efforts, the office that engages in the consultation for those tribes that have assumed SHPO responsibilities on their tribal lands and have been certified pursuant to Section 101(d)(2) of the NHPA. THPO's would be consulted in lieu of the SHPO, while non-certified tribes would be consulted in addition to the SHPO.</p>
Vital Signs (Vital Signs Monitoring)	<p>A set of indicators that, as with medical vital signs, give a general measure of ecosystem health.</p>
Wildland Fire	<p>Any non-structure fire, other than prescribed fire, that occurs in the wildland. This term encompasses fires previously called both wildland fires and prescribed natural fires.</p>
Wildland fire management program	<p>The full range of activities and functions necessary for planning, preparedness, emergency suppression operations, and emergency rehabilitation of wildland fires; prescribed fire operations; and non-fire fuels management to reduce risks to public safety and achieve resource management goals.</p>

North Central Nebraska Community Wildfire Protection Plan

Appendix A - 2009 Central Niobrara Watershed Final Fire Management Plan ♦ Page 117

Wildland Fire Situation Analysis (WFSA)	<p>The decision-making process that evaluates alternative management strategies against selected safety, environmental, social, economic, political, and resource management objectives. Also, the paperwork documenting this process.</p>
Wildland fire use (WFU)	<p>The management of naturally-ignited wildland fires to accomplish specific, pre-stated, resource management objectives in pre-defined geographic areas outlined in Fire Management Plans. It is not authorized in this FMP.</p>
Wildland-urban interface	<p>An area or zone where structures and other human development occur next to or within undeveloped wildland fuel complexes.</p>

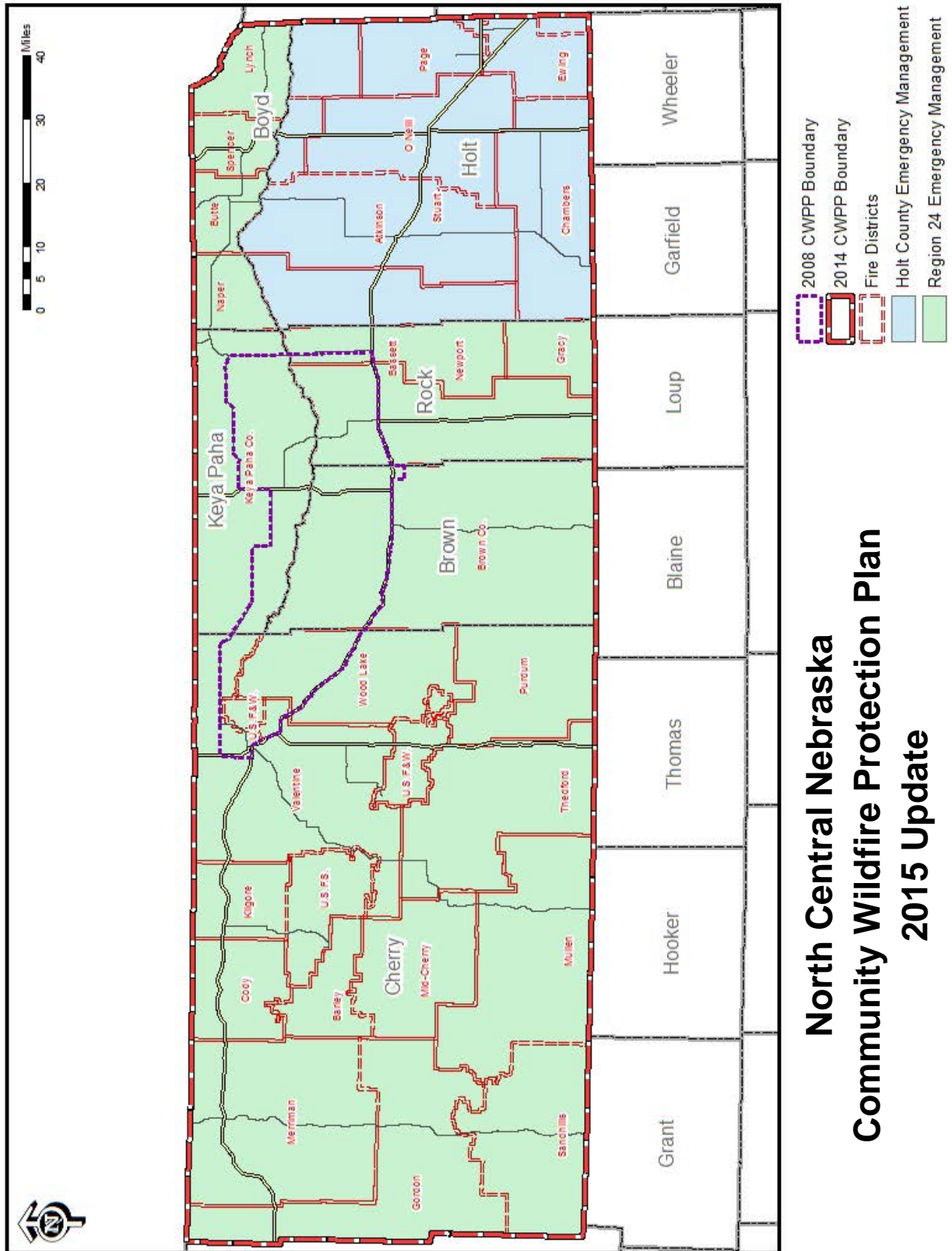
Appendix B

MAPS

1. CWPP Boundary Overview
2. Nebraska Natural Legacy Project: Biologically Unique Landscapes
3. County Aerial Photos with Volunteer Fire Department Boundaries and Historic Fires

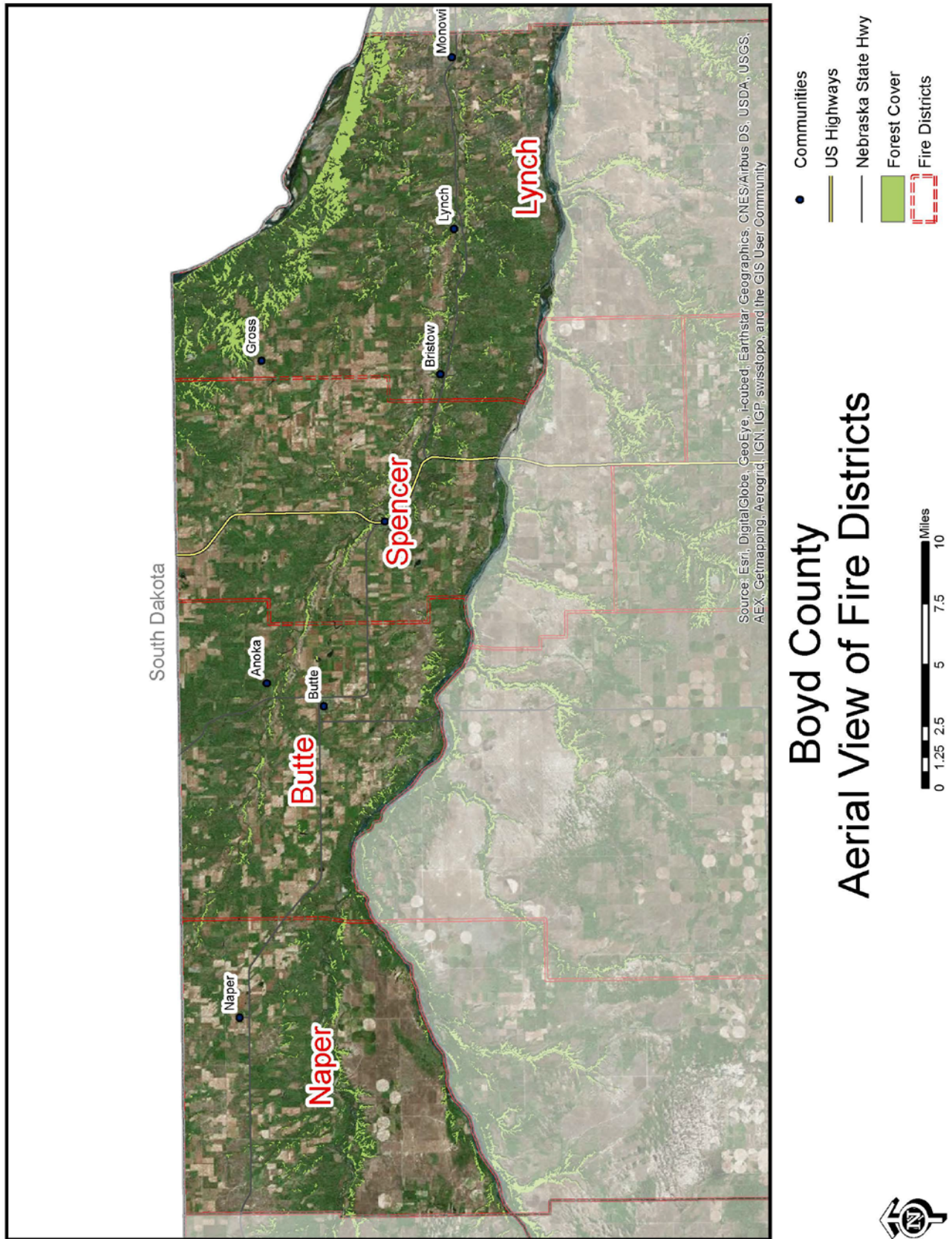
North Central Nebraska Community Wildfire Protection Plan

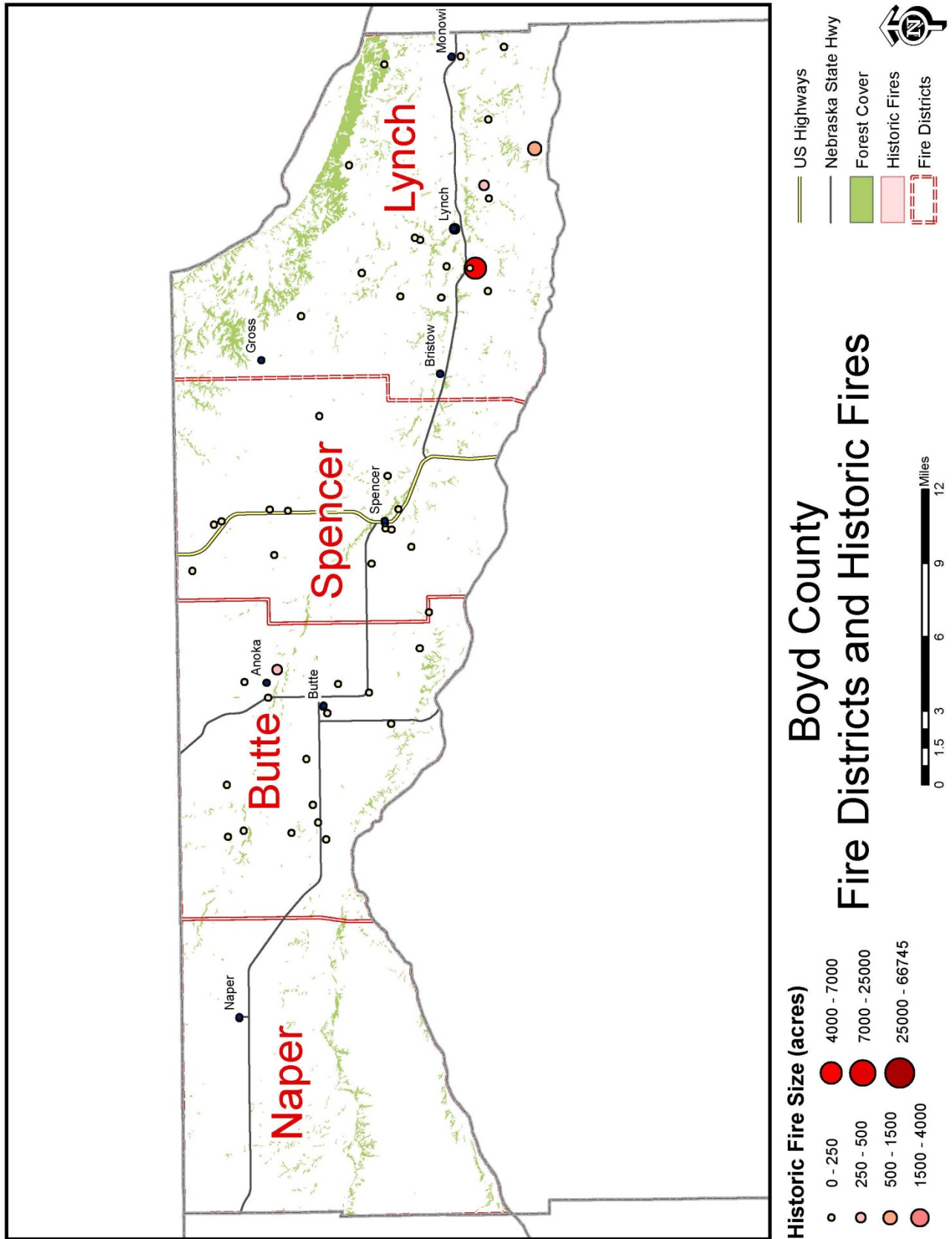
Appendix B - Maps ♦ Page 1

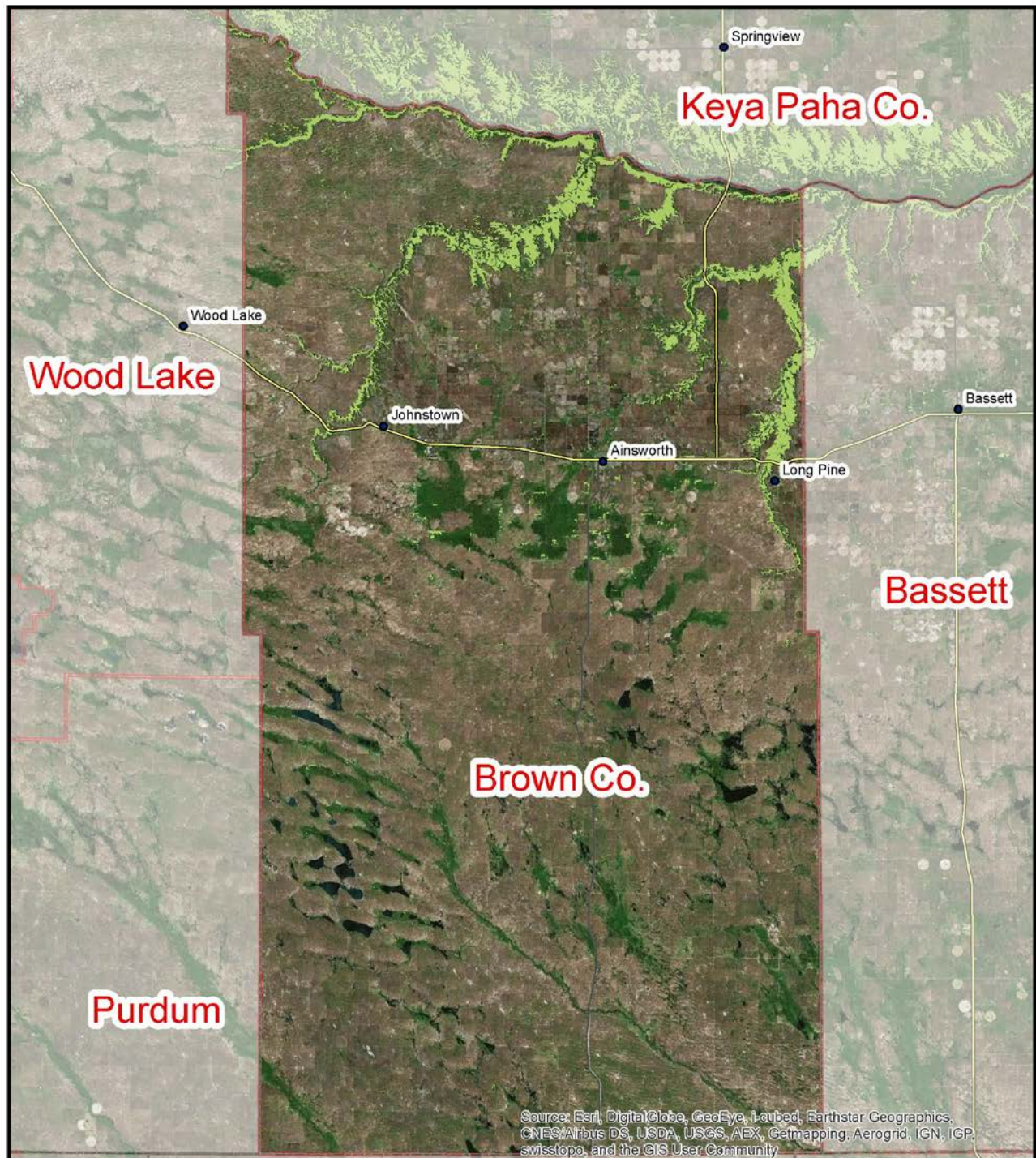


North Central Nebraska Community Wildfire Protection Plan 2015 Update









Brown County Aerial View of Fire Districts

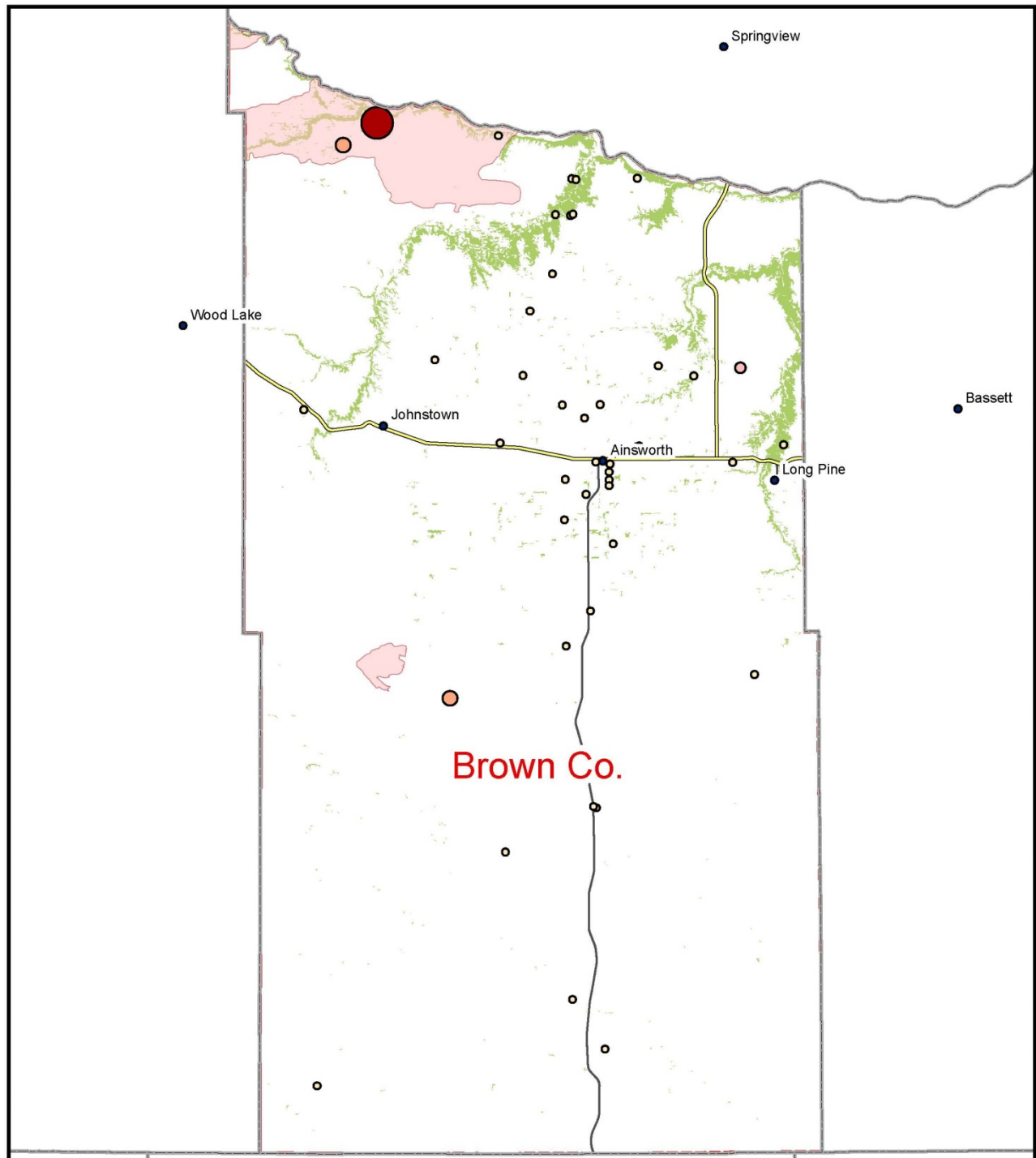


0 1.5 3 6 9 12 Miles

- Communities
- US Highways
- Nebraska State Hwy
- Forest Cover
- Fire Districts

North Central Nebraska Community Wildfire Protection Plan

Appendix B - Maps ♦ Page 6



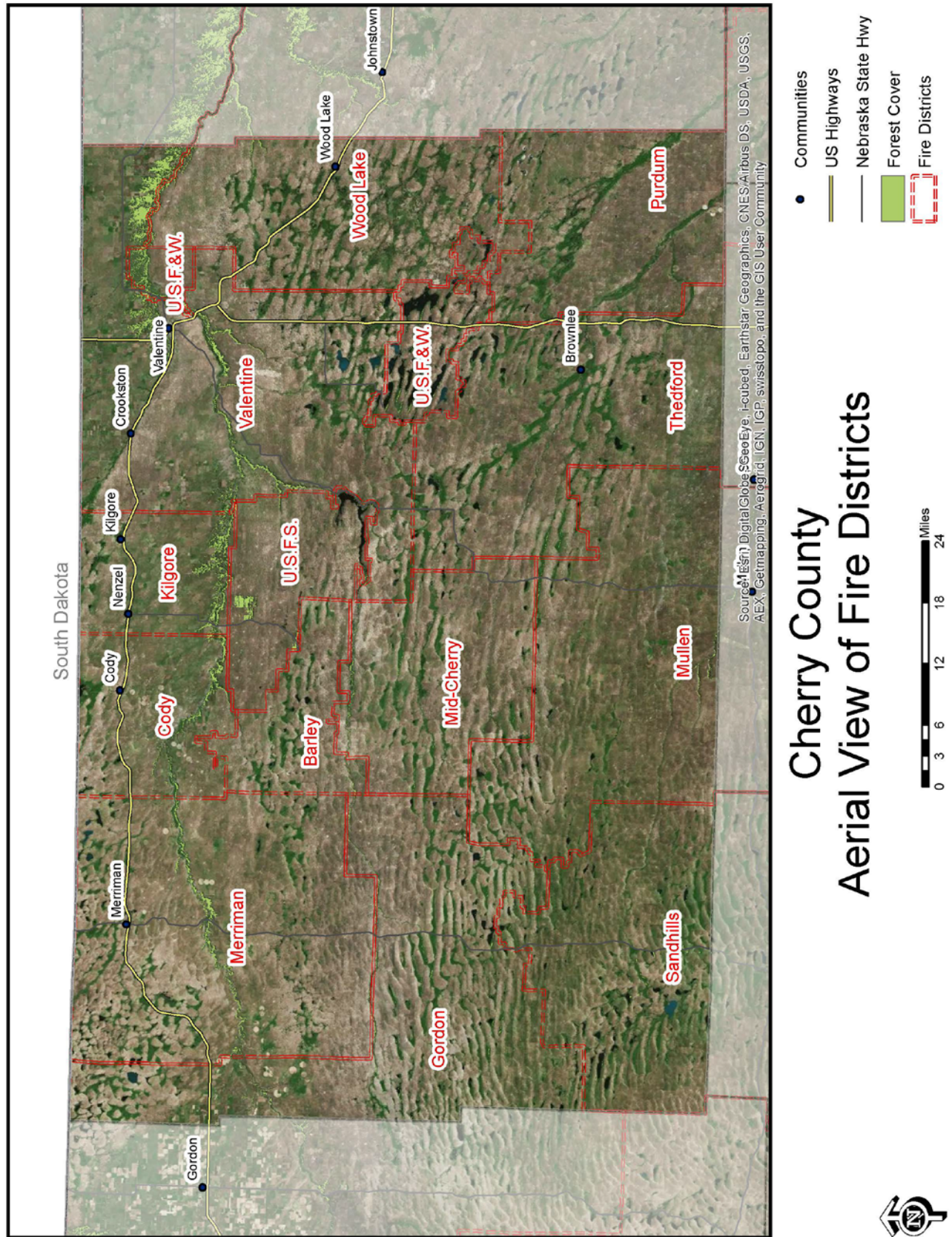
- Historic Fire Size (acres)**
- 0 - 250
 - 250 - 500
 - 500 - 1500
 - 1500 - 4000
 - 4000 - 7000
 - 7000 - 25000
 - 25000 - 66745

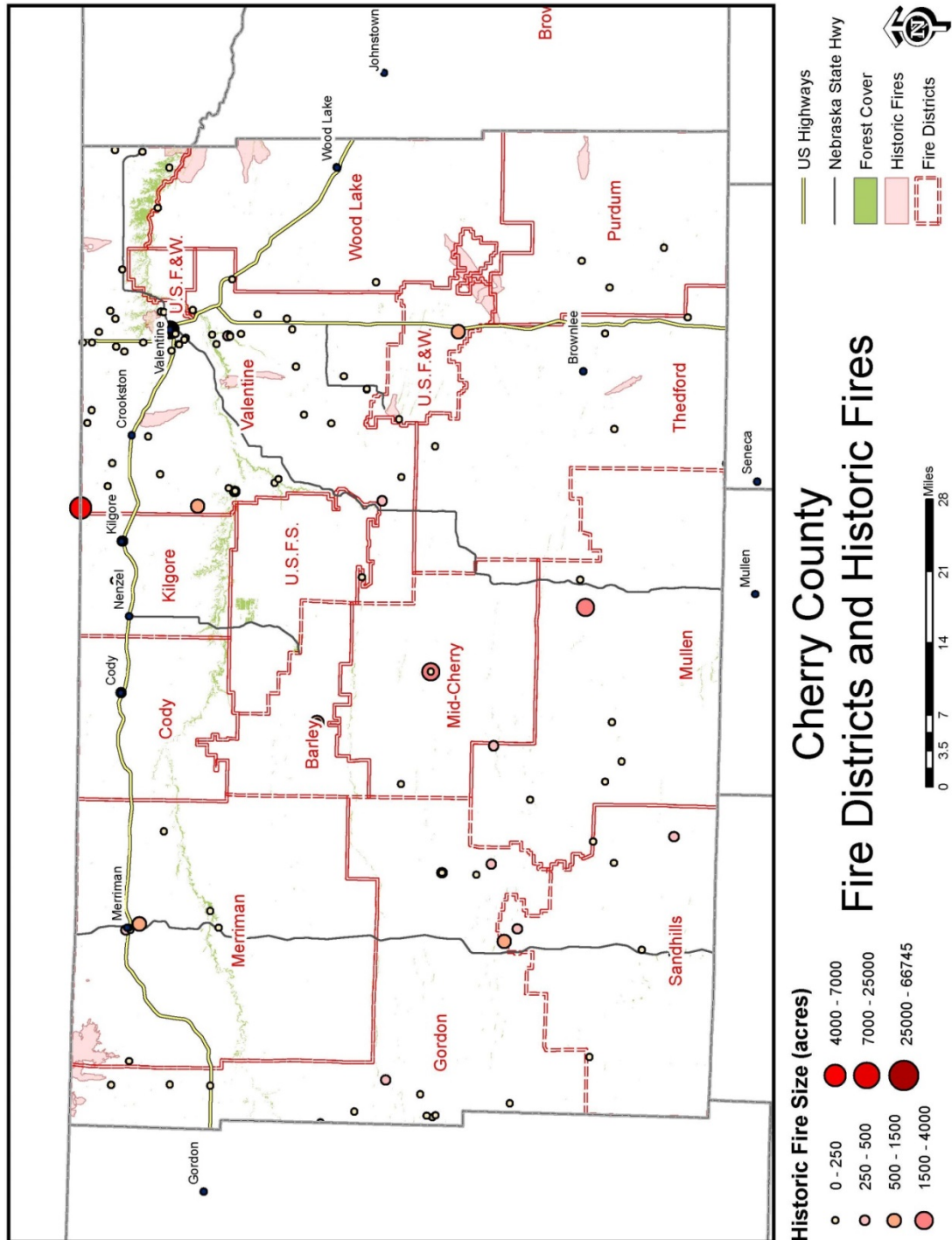
**Brown County
Fire Districts
and Historic Fires**

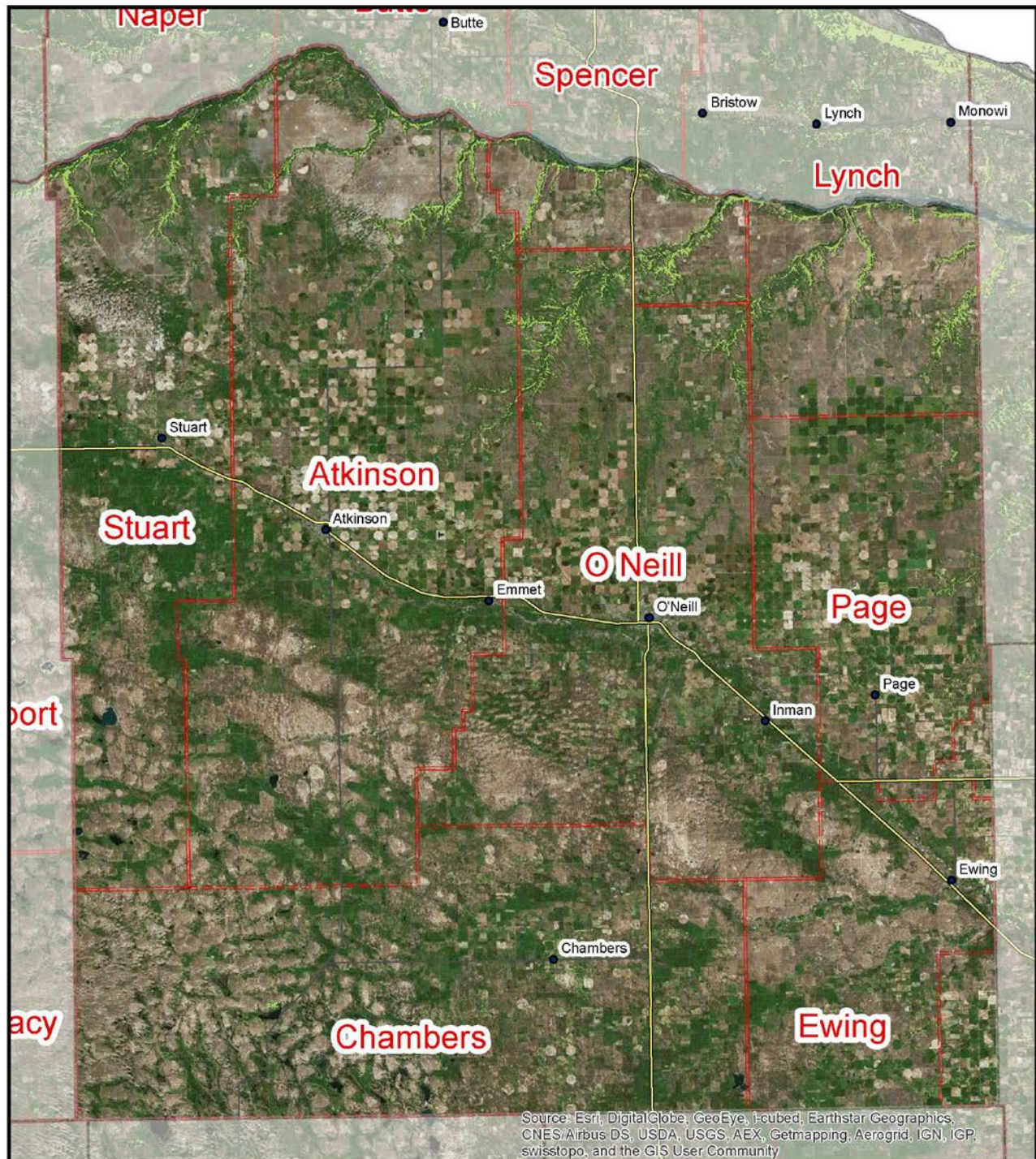
0 1.5 3 6 9 12 Miles

- US Highways
- Nebraska State Hwy
- Forest Cover
- Historic Fires
- Fire Districts









Holt County Aerial View of Fire Districts

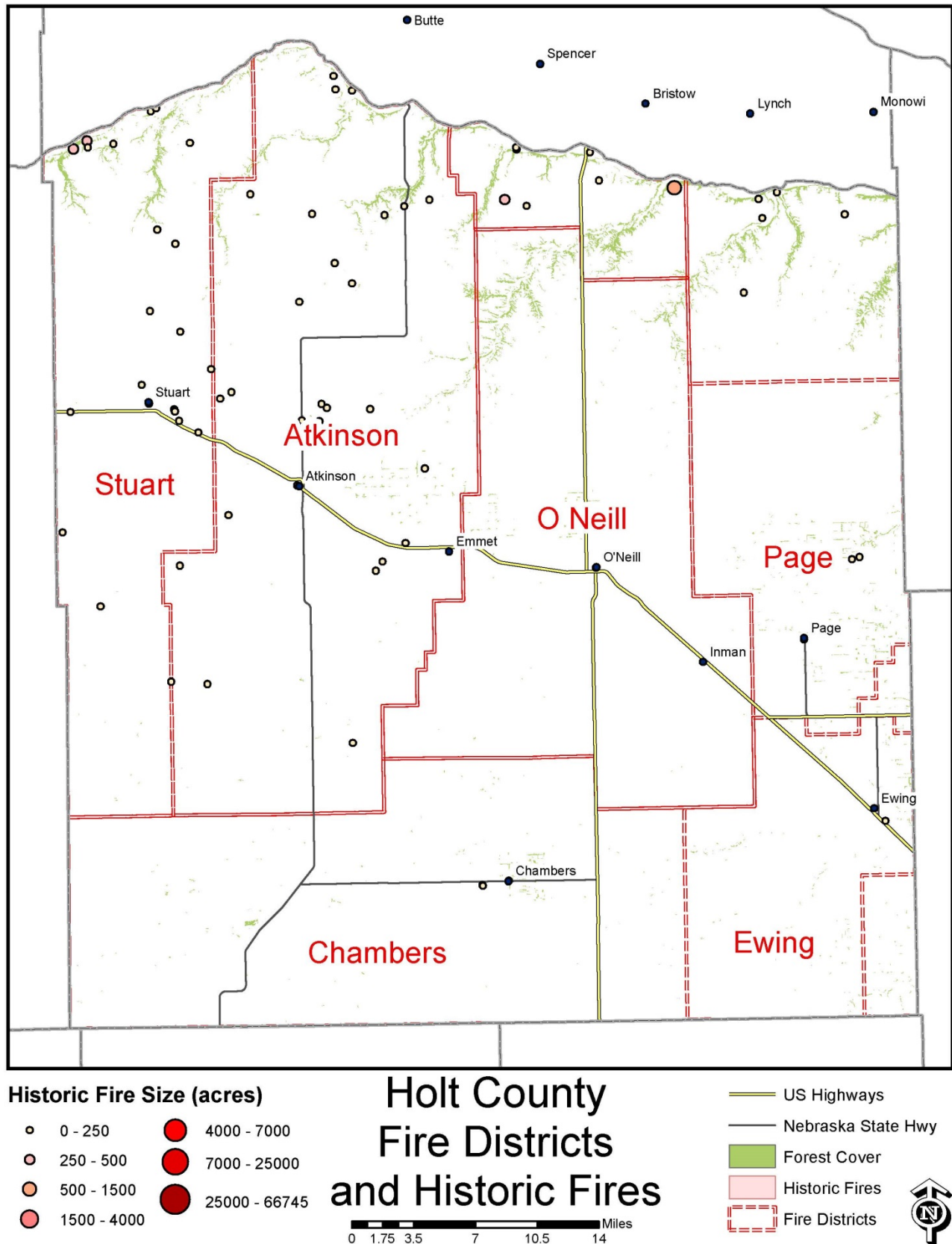


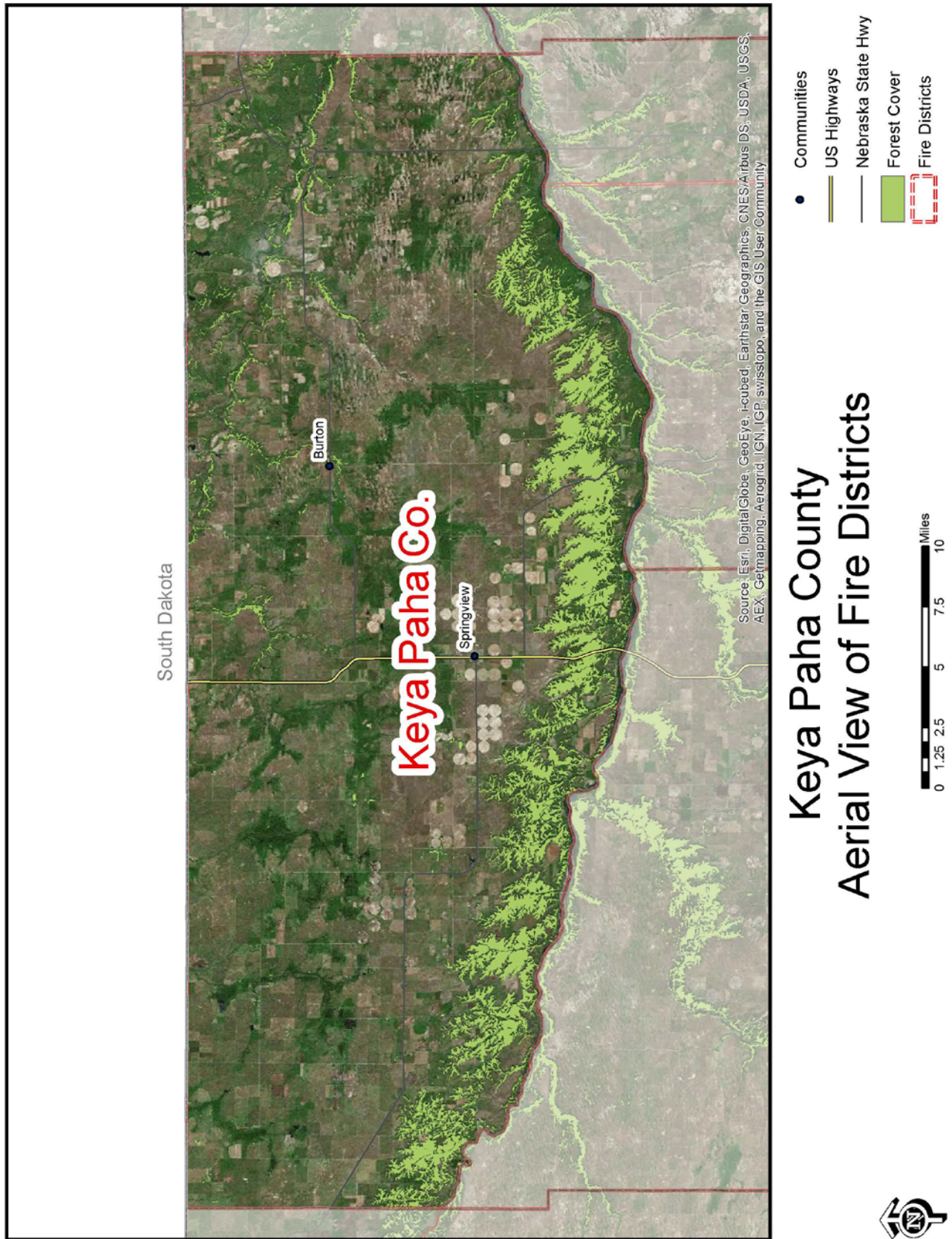
0 1.75 3.5 7 10.5 14 Miles

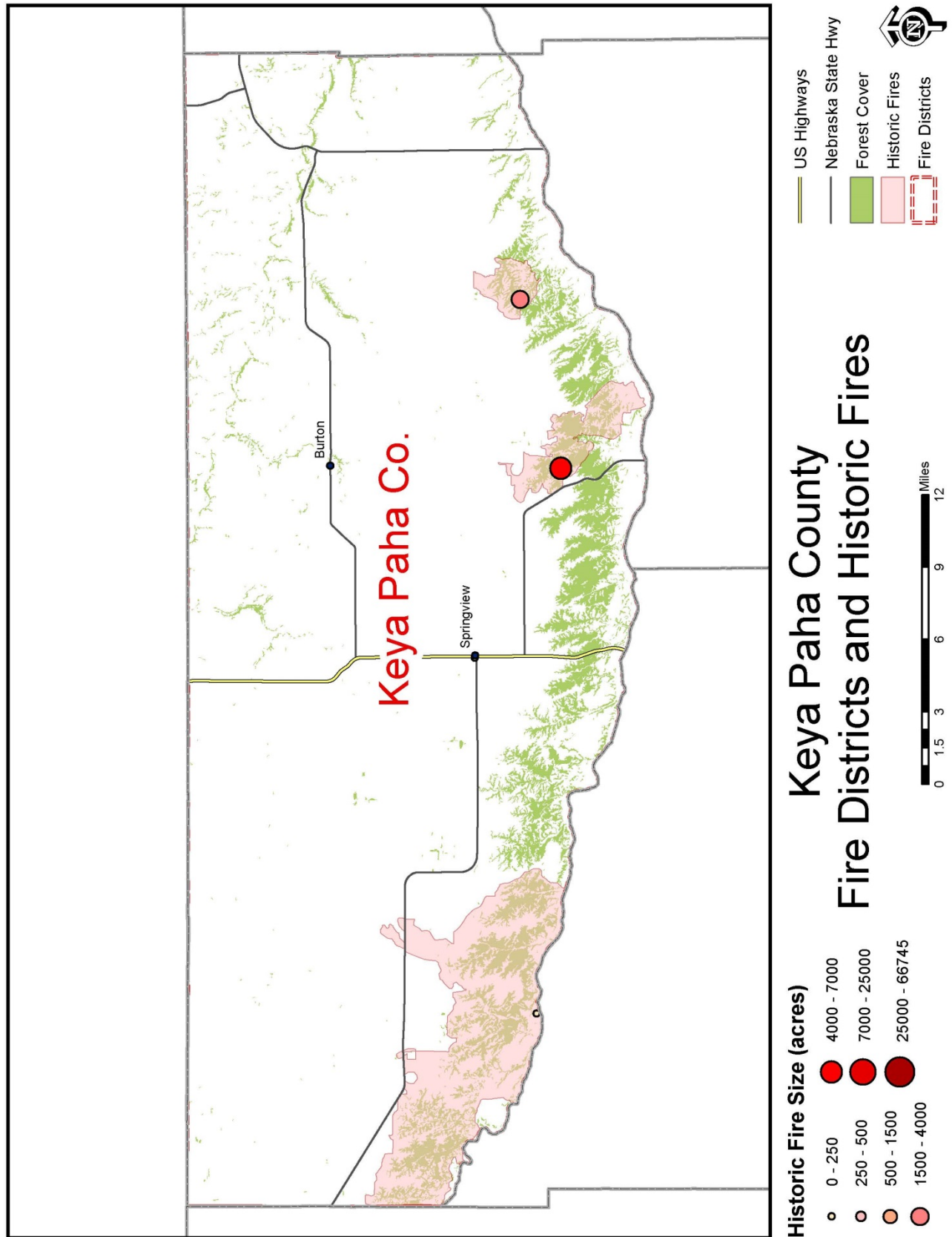
- Communities
- US Highways
- Nebraska State Hwy
- Forest Cover
- Fire Districts

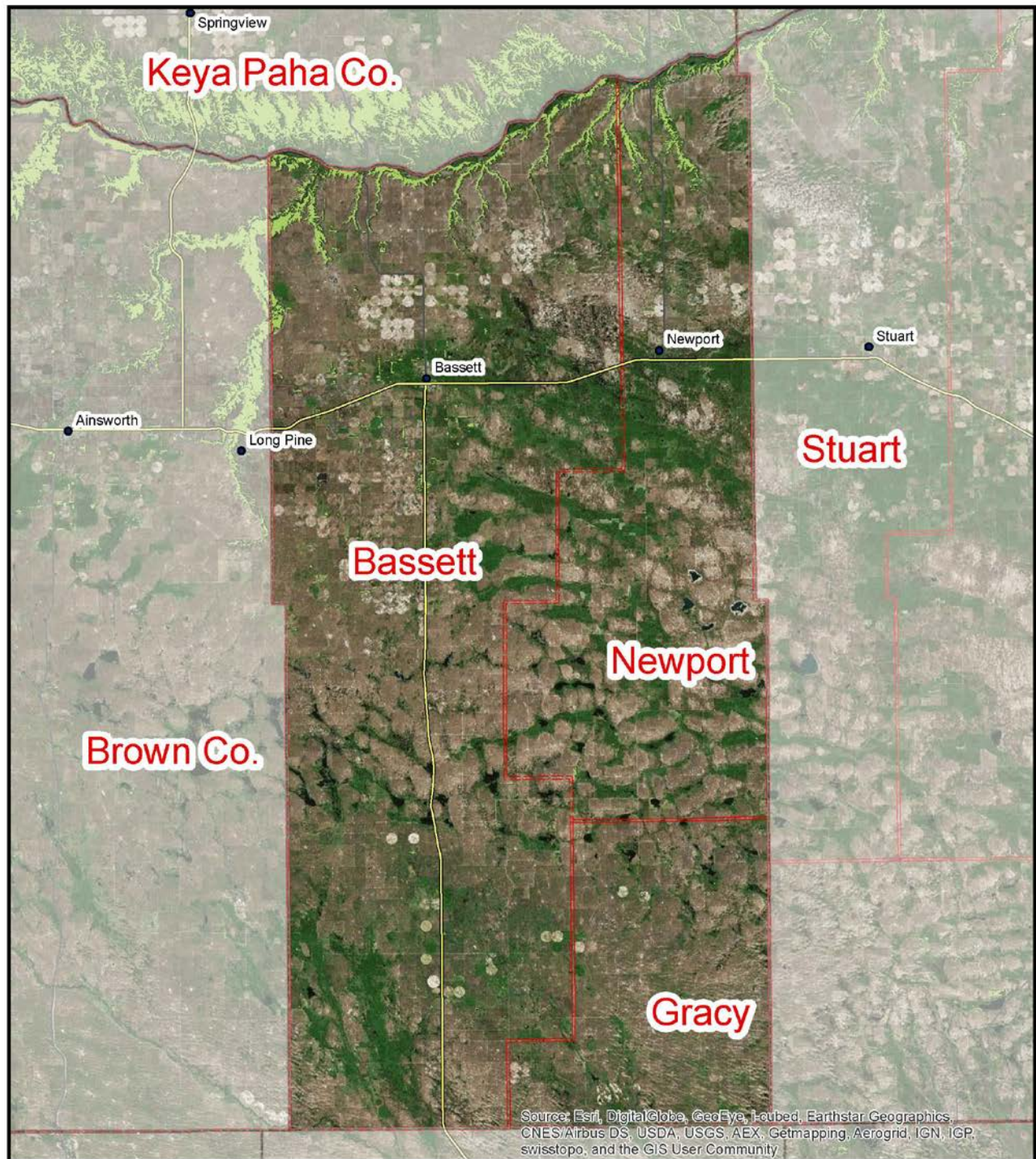
North Central Nebraska Community Wildfire Protection Plan

Appendix B - Maps ♦ Page 10









Rock County Aerial View of Fire Districts

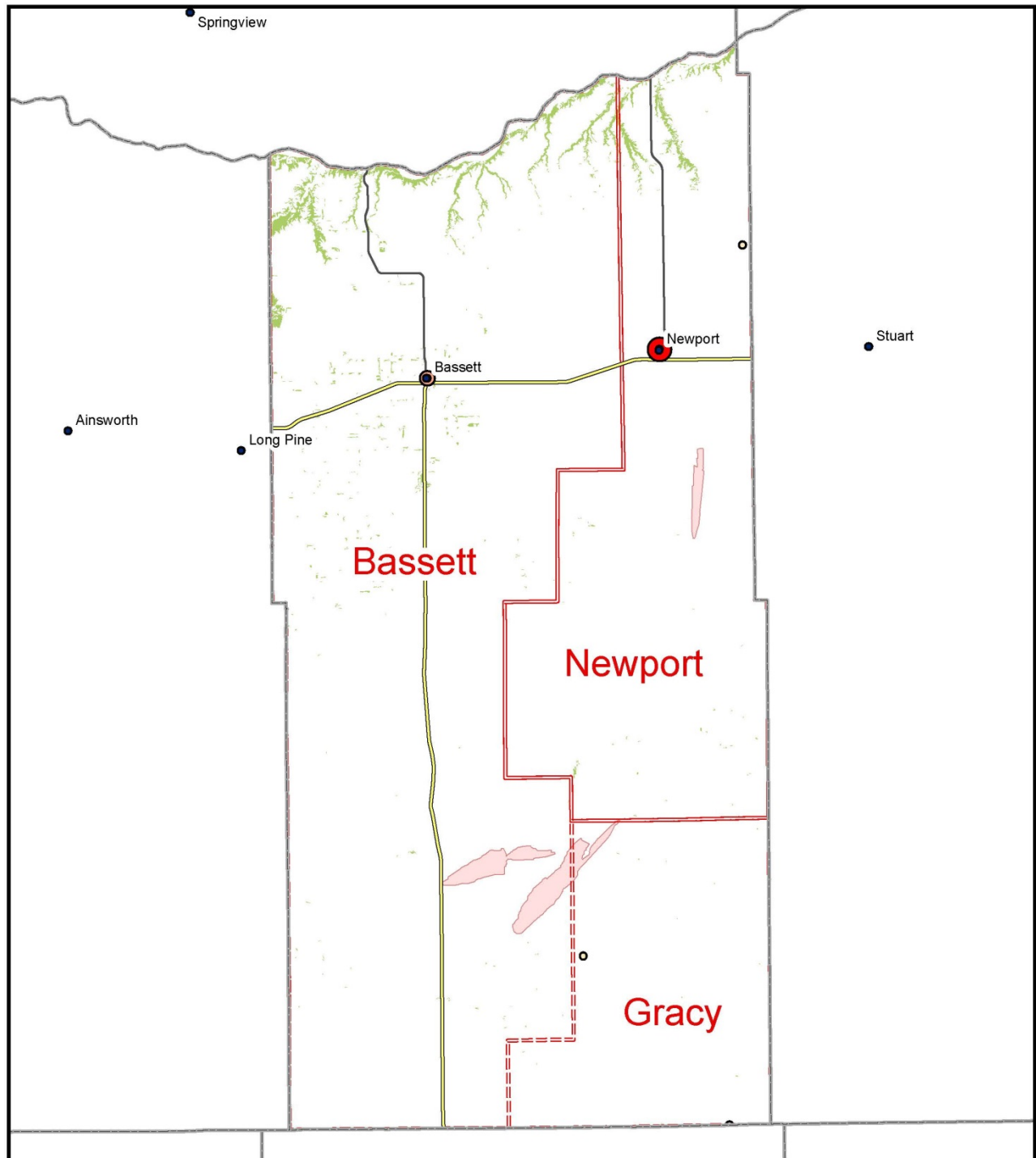


0 1.5 3 6 9 12 Miles

- Communities
- US Highways
- Nebraska State Hwy
- Forest Cover
- Fire Districts

North Central Nebraska Community Wildfire Protection Plan

Appendix B - Maps ♦ Page 14



Historic Fire Size (acres)

- | | |
|---------------|-----------------|
| ○ 0 - 250 | ● 4000 - 7000 |
| ○ 250 - 500 | ● 7000 - 25000 |
| ○ 500 - 1500 | ● 25000 - 66745 |
| ○ 1500 - 4000 | |

Rock County Fire Districts and Historic Fires

0 1.5 3 6 9 12 Miles

- US Highways
- Nebraska State Hwy
- Forest Cover
- Historic Fires
- - - Fire Districts



Appendix C

Region 24 Multi-Jurisdictional Hazard Mitigation Plan (2010) Wildfire Hazard Section

*The Region 24 Multi-Jurisdictional Hazard Mitigation Plan
is scheduled for update in 2015.*

North Central Nebraska Community Wildfire Protection Plan

WILDFIRES

Hazard Background

Wildfires, also known as brushfires, forest fires, or wildland fires, are any uncontrolled fire that occurs in the countryside or wildland. Wildland areas may include, but are not limited to, grasslands, forests, woodlands, agricultural fields, and other vegetated areas. Wildfires differs from other fires by their extensive size, the speed at which they can spread out from the original source, their ability to change direction unexpectedly, and to jump gaps, such as roads, rivers and fire breaks. While some wildfires burn in remote forested regions, they can cause extensive destruction of homes and other property located in the wildland-urban interface, the zone of transition between developed areas and undeveloped wilderness.

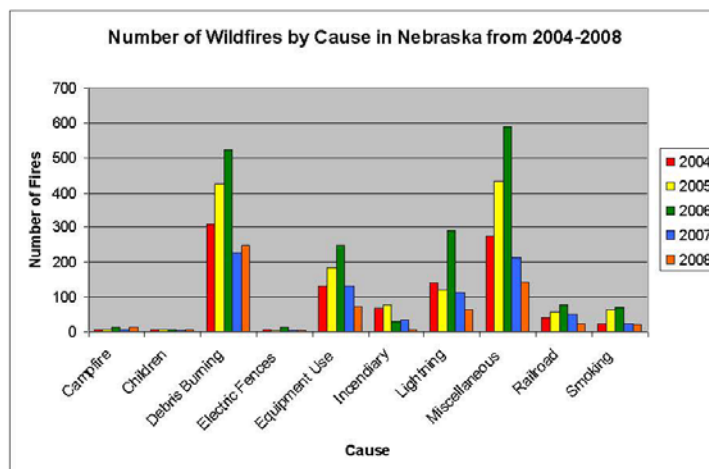
Lightning starts approximately 10,000 forest fires each year, yet four out of every five forest fires are started by humans.

Wildfires are a growing natural hazard in most regions of the United States, posing a threat to life and property, particularly where native ecosystems meet urban developed areas. Although fire is a natural and often beneficial process, fire suppression can lead to more severe fires due to the buildup of vegetation, which creates more fuel and increases the intensity and devastation of future fires.

According to FEMA, periods of drought and dry conditions throughout the year greatly increase the potential for wildland fires and contribute to extreme wildfires. During a severe drought, large wildfires are common with windy days and steep slopes, which can cause wildfires to spread rapidly and become out of control in a very short time period.

Annually throughout the United States wildfires on average consume 4.3 million acres, with the federal government spending approximately \$1 billion per year on fire suppression. Based on the Nebraska Forest Service's 'Wildfire by Cause' report, the most common causes of wildfires include lightning, debris burning, equipment use, and arson. Figures 19 and 20 illustrate the number of wildfires and acres burned by cause in Nebraska from 2004 to 2008. Figure 21 illustrates the location of wildfires in Nebraska between 1980 and 2007 that were greater than 100 acres.

FIGURE 19: NUMBER OF WILDFIRES BY CAUSE IN NEBRASKA FROM 2004 – 2008

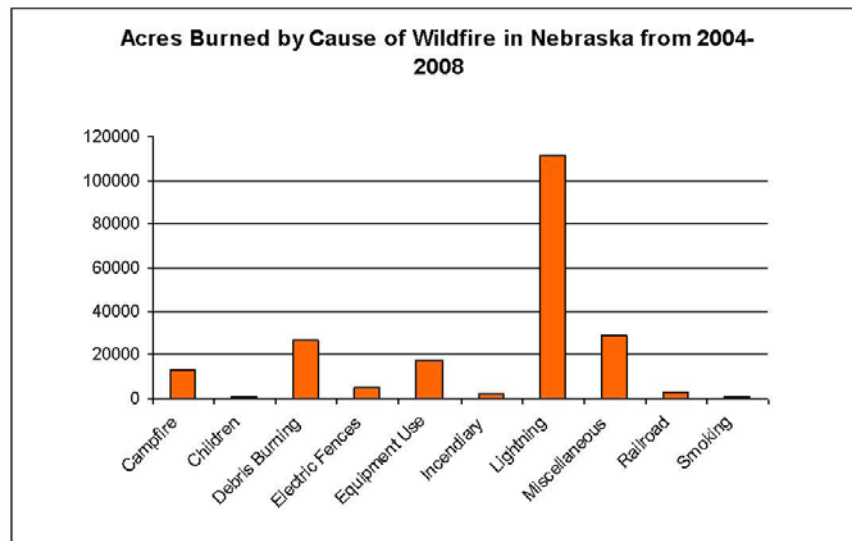


Source: Nebraska Forest Service

North Central Nebraska Community Wildfire Protection Plan

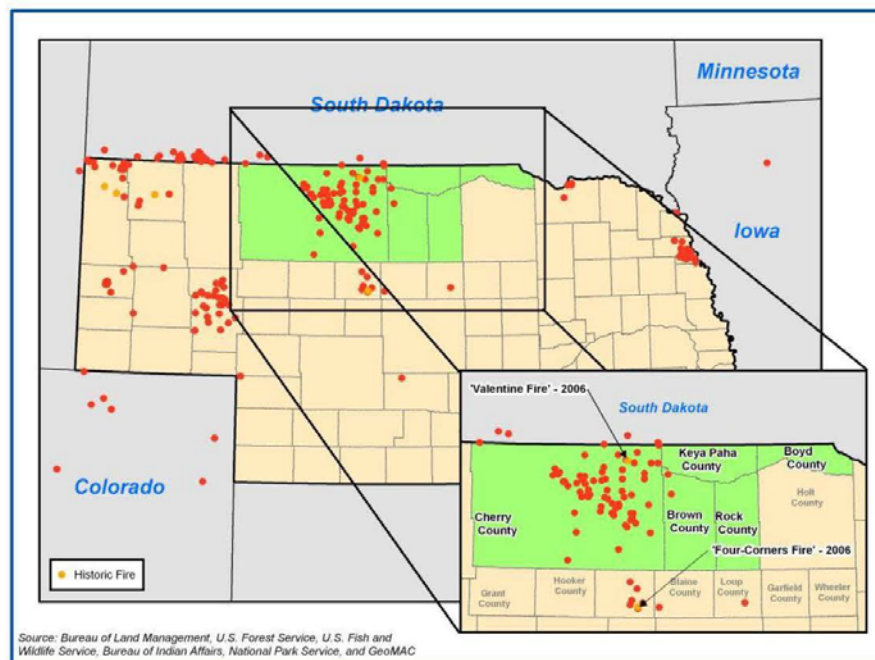
Appendix C Excerpt from Region 24 Emergency Management Multi-Jurisdictional Hazard Mitigation Plan ♦ Page 67

FIGURE 20: ACRES BURNED BY CAUSE IN NEBRASKA FROM 2004 – 2008



Source: Nebraska Forest Service

FIGURE 21: WILDFIRES GREATER THAN 100 ACRES IN NEBRASKA FROM 1980 – 2007



North Central Nebraska Community Wildfire Protection Plan

Wildfires are characterized in terms of their physical properties including topography, weather, and fuels. Wildfire behavior is often complex and variably dependent on factors such as fuel type, moisture content in the fuel, humidity, wind speed, topography, geographic location, ambient temperature, the effect of weather on the fire, and the cause of ignition. Fuel is the only physical property humans can control and is the target of most mitigation efforts.

Wildfires can cause extensive damage, both to property and human life. The damages caused by wildfires extend past the loss of building stock, recreation areas, timber, forage, wildlife habitat, and scenic views. In addition, the secondary effects of wildfires, including erosion, landslides, introduction of invasive species, and changes in water quality, all increase due to the exposure of bare ground and loss of vegetative cover following a wildfire, are often more disastrous than the fire itself.

The state of Nebraska, especially the western portion, is vulnerable to wildfires. While prairie and grassland fires are often associated with the Great Plains region of the state, large timber fires are not uncommon in the Pine Ridge, Niobrara Valley, and Missouri River bluff areas, the national forests, and any other forested areas located throughout the state. In 2006, ten homes were consumed during the 'Big Rock Fire' in Valentine, NE, which was Nebraska's first documented loss of homes due to wildfire. The same year, Nebraska received three (the only three to date) presidential declarations of disaster for wildfire.

In recent decades, as the population of the United States has decentralized and residents have moved farther away from the center of villages and cities, the area known as the wildland urban interface (WUI) has developed significantly, in both terms of population and building stock. The WUI is defined as the zone of transition between developed areas and undeveloped wilderness, where structures and other human development meet wildland. The expansion of the WUI increases the likelihood that wildfires will threaten people and homes, making it the focus of the majority of wildfire mitigation efforts.

Historical Occurrences

The NCDRC reported one total regional wildfire event for the entire jurisdiction of the Region 24 plan area from January 1950 to January 31, 2010 with \$1,500,000 in total property damages. No description of the event was provided.

The most destructive wildland fire was the "Big Rock Fire", also known as the "Valentine Fire", which started just north of Valentine on July 16, 2006. The fire burned over 3,000 acres and resulted in severe property and ecological damage. Low humidity, extreme temperatures, and high winds resulted in rapid spread into the north edge of town and along canyon rims, where ten homes were destroyed and numerous other buildings were damaged or destroyed. Severe fire conditions resulted in areas of complete stand replacement.

According to the Central Niobrara Watershed Fire Management Plan the largest local fire event in recent history occurred on September 17, 2000 when a lightning storm produced over 50 fires in Cherry County that burned over 100,000 acres in 36 hours. In 1999, the Thedford Fire occurred south of the Valentine National Wildlife Refuge (NWR) and burned 74,000 acres. In addition, NWR staff suppressed an average of thirteen wildland fires that burned 935 acres in each of the last ten years.

The following wildfire events were reported by participants at the public meetings.

- Summer 2006 – Wildfires damage a large area in and around Valentine. The schools were in the path; however, no damage occurred to school buildings. (Valentine Community Schools)
- Summer 2007 – 2009 – Wildfires have burned pasture land and damage personal property. (Brown County)
- 1968 – A large grassfire northeast of Bassett. No damage to school. (Rock County Public Schools)
- Summer 2007 – Prairie fires burned grasslands and damaged personal property. (Rock County)
- Annually – Fires commonly destroy CRP land, pastures, fences, and meadows. (Rock County)

North Central Nebraska Community Wildfire Protection Plan

- July 16, 2006 – The Big Rock Fire caused an estimated \$1.3 million in damage, approximately 3000 acres were burned, 10 homes destroyed and another 10 damaged, and at least 21 out buildings were damaged or destroyed (Cherry County).

TABLE 45: WILDFIRES COMPOSITE HAZARD IDENTIFICATION

HAZARD TYPE Wildfires	PREVIOUS OCCURRENCE? Yes/No	LIKELY TO EXPERIENCE? Yes/No	PROBABILITY Highly Likely/ Likely/Possible/Unlikely	EXTENT Catastrophic/Severe/Limited/None
Region 24 EM	Yes	Yes	Likely	Severe
Boyd County	Yes	Yes	Likely	Limited
Spencer	No	No	Unlikely	Limited
Butte	No	No	Possible	Catastrophic
Lynch	Yes	Yes	Likely	Limited
Bristow	No	No	Unlikely	None
Brown County	Yes	Yes	Likely	Severe
Ainsworth	No	No	Unlikely	None
Long Pine	Yes	Yes	Highly Likely	Severe
Johnstown	Yes	Yes	Highly Likely	Catastrophic
Cherry County	Yes	Yes	Highly Likely	Severe
Valentine	Yes	Yes	Possible	Limited
Cody	Yes	Yes	Highly Likely	Limited
Kilgore	Yes	Yes	Likely	Severe
Wood Lake	Yes	Yes	Highly Likely	Severe
Nenzel	Yes	Yes	Likely	Severe
Keya Paha County	Yes	Yes	Likely	Severe
Rock County	Yes	Yes	Likely	Severe
Bassett	Yes	Yes	Highly Likely	Severe
Newport	Yes	Yes	Possible	Severe

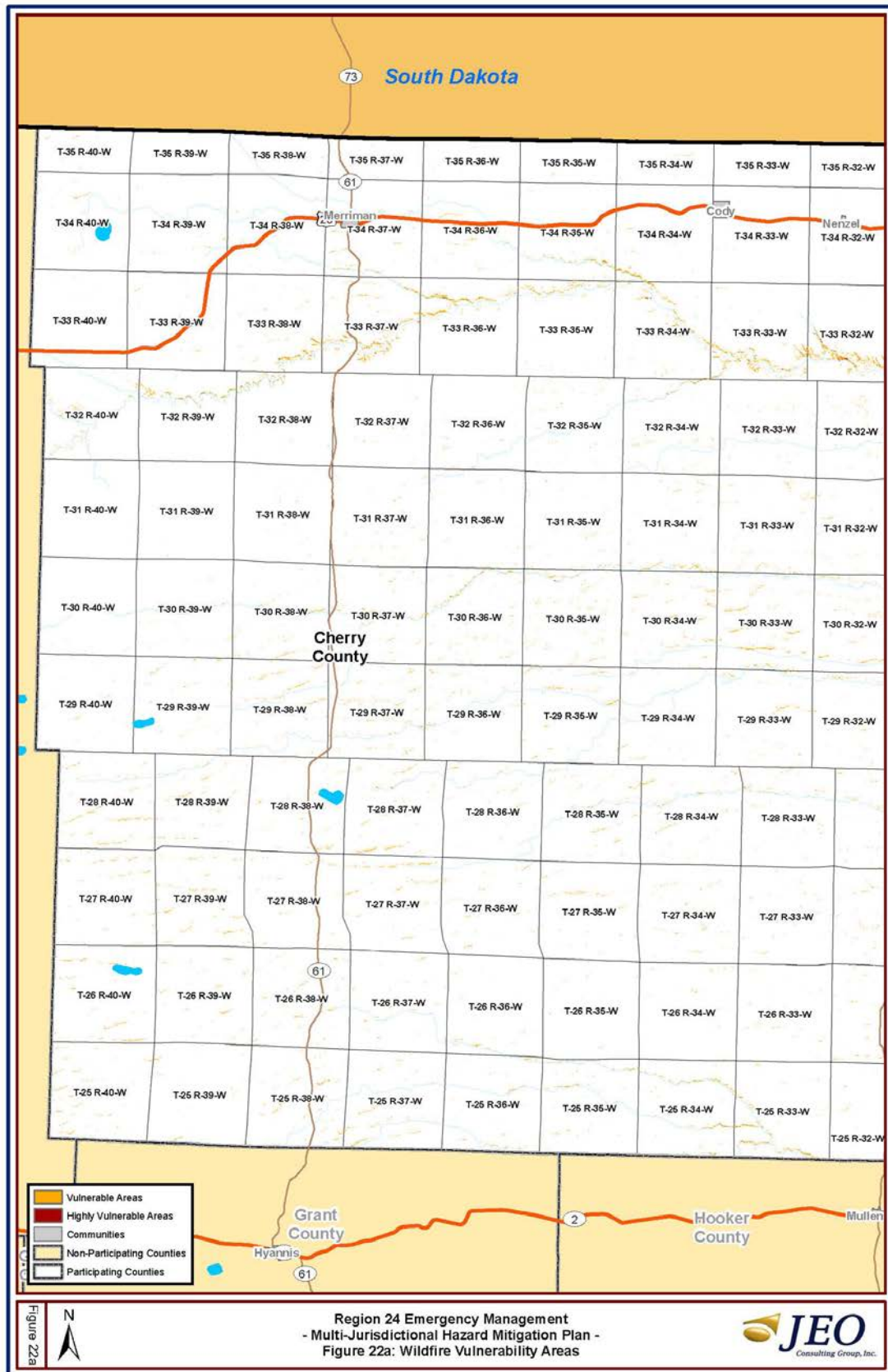
Vulnerability Assessment

Based on Table 45 above and research of historical occurrences, wildfires have previously occurred in the Region 24 plan area and the probability of a wildfire occurring again is 'likely', with between a ten to 100 percent chance in the next year or at least once in the next ten years. The extent of damage from a wildfire would be 'limited' region-wide, causing zero to 25 percent damage throughout the planning area. On the local scale, wildfires can cause 'severe' damage, affecting 25 to 50 percent of the community. Figure 22a-22d below displays the hazard boundaries for wildfires that have been determined by locations with higher risk fuel load, such as dense vegetation and heavily wooded areas.

The wildfire vulnerability maps for Region 24 were created using a weighted overlay analysis technique in ArcGIS. Land use data, slope, and aspect (direction of slope) were overlaid to determine the most vulnerable areas. For example, areas that were determined to be coniferous forest on a steep slope that was facing to the south were classified as vulnerable areas for wildfires to occur. This vulnerability analysis did not take into account for the human factors that contribute to the occurrence of wildfires, such as unmaintained camp fires and discarded cigarettes. This analysis mainly determines if the land conditions are favorable for the occurrence of wildfires. This map should be used as a reference for planning purposes only, as conditions that contribute to the cause of wildfires can change on an almost daily basis. The map was split into four regions and is found below in Figures 22a-22d.

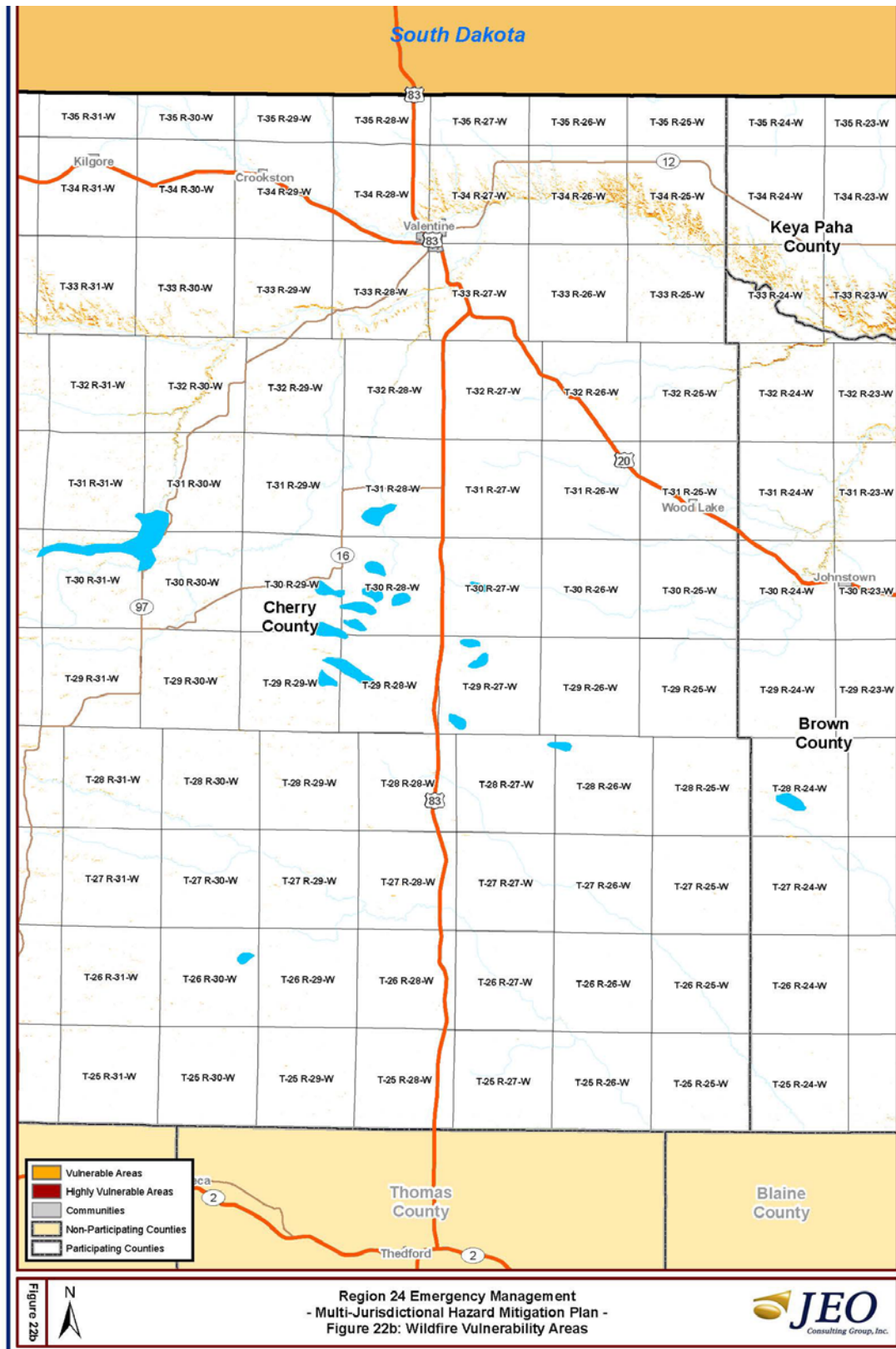
North Central Nebraska Community Wildfire Protection Plan

Appendix C - Excerpt from Region 24 Emergency Management Multi-Jurisdictional Hazard Mitigation Plan ♦ Page 70



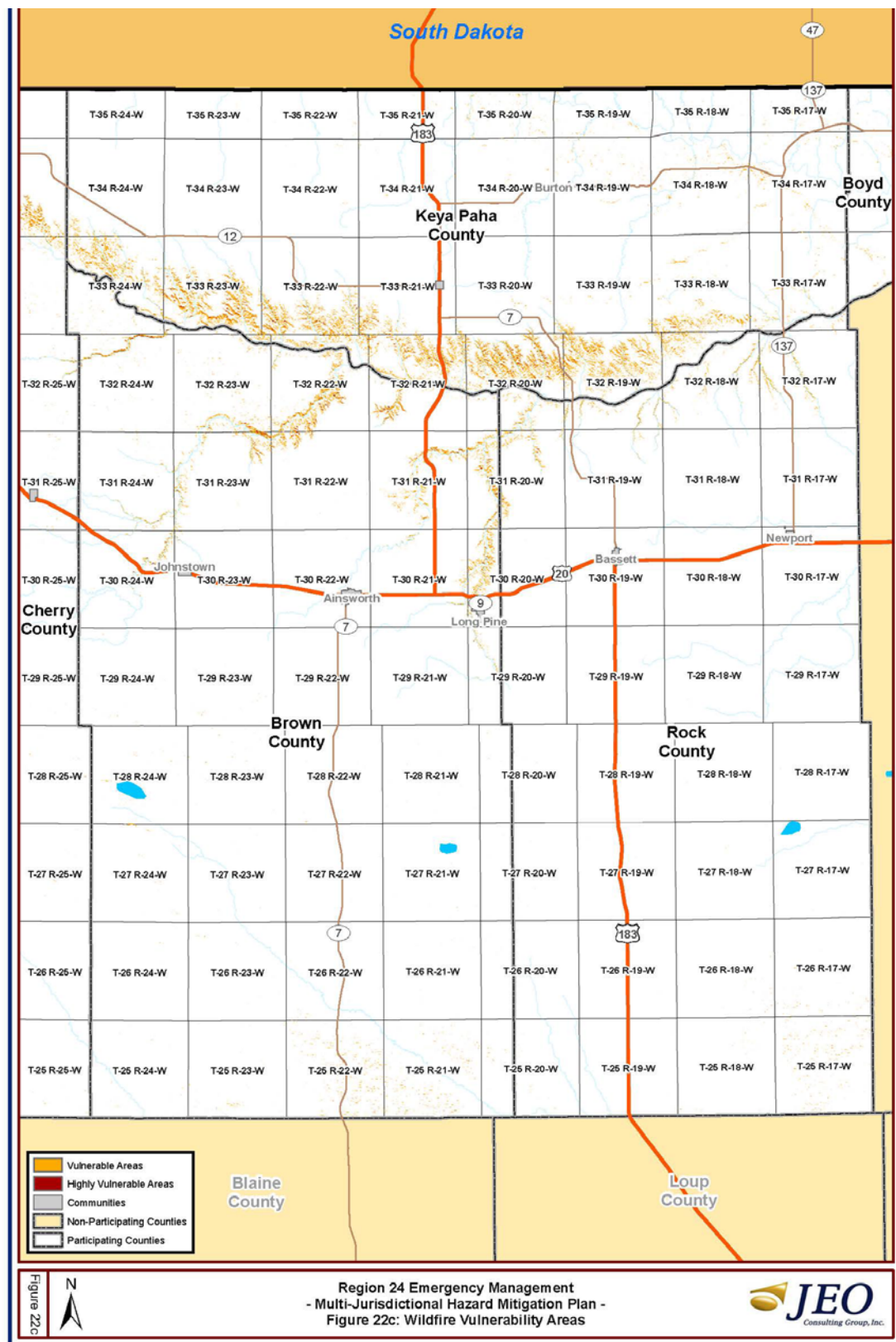
North Central Nebraska Community Wildfire Protection Plan

Appendix C Excerpt from Region 24 Emergency Management Multi-Jurisdictional Hazard Mitigation Plan ♦ Page 71



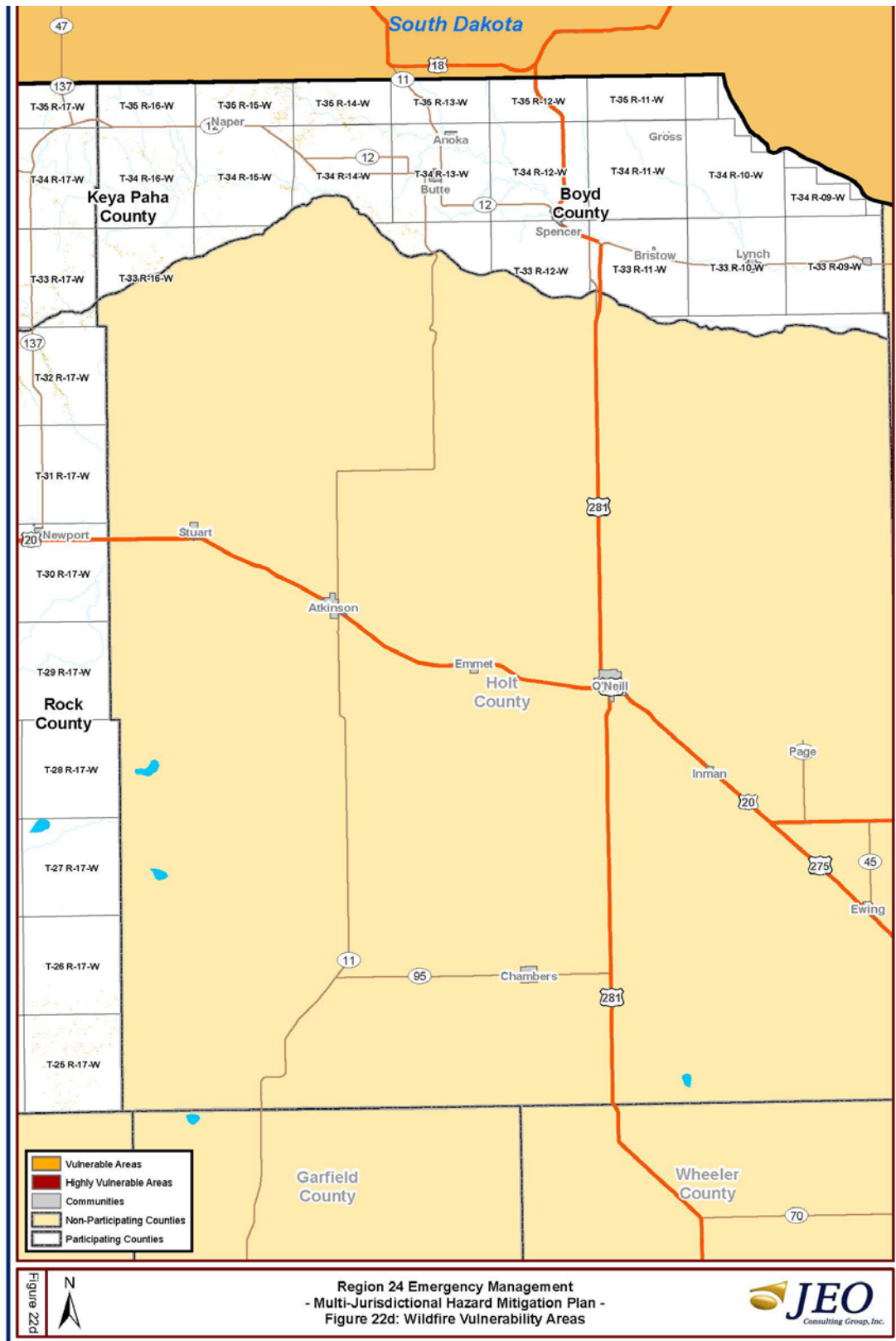
North Central Nebraska Community Wildfire Protection Plan

Appendix C Excerpt from Region 24 Emergency Management Multi-Jurisdictional Hazard Mitigation Plan ♦ Page 72



North Central Nebraska Community Wildfire Protection Plan

Appendix C Excerpt from Region 24 Emergency Management Multi-Jurisdictional Hazard Mitigation Plan ♦ Page 73



North Central Nebraska Community Wildfire Protection Plan

Potential losses

Wildfires vary greatly depending on the location and severity of the event. Wildfires in the Sandhills and Pine Ridge can cause extensive damage to both urban and rural building stock and properties including critical facilities and infrastructure, as well as crop and rangeland which support the local industry and economy. Wildfires can pose a significant threat to human life. Recreation areas, timber and forage land, wildlife habitat, and scenic views can also be threatened by wildfires.

The secondary effects of wildfires, including erosion, landslides, introduction of invasive species, and changes in water quality, all increase due to the exposure of bare ground and loss of vegetative cover following a wildfire. There are no monetary losses recorded in the historical occurrences, however potential losses could reach into the millions of dollars depending on the location and severity of the event. Due to a data gap, an estimated dollar value for potential losses from wildfires was not calculated, but may be considered for the five year plan update.

In addition, by directing the location of structures in relation to topography and fuels present as well as construction methods and materials, communities can guide growth and development to mitigate potential losses from wildfires.

Central Niobrara Watershed - Fire Management Plan

In 2009 the Central Niobrara Watershed (CNW) Fire Management Plan was completed to effectively manage fire and hazardous fuels within the four county area (Cherry, Brown, Rock, and Keya Paha Counties) to improve collaboration among, enhance communications between the various agencies and organizations who manage fire in the Central Niobrara Valley watershed, and to educate private landowners about the benefits of prescribed fire and hazardous fuel reduction. The CNW encompasses about 793,762 acres. Lands in private ownership comprise approximately 97% of the planning area with the US Fish and Wildlife Service, Nebraska Game and Parks Commission, the National Park Service, and local governments managing the remaining lands. As seen in Figure 23, the planning area consists of the area between Highway 12 to the north, Highway 137 to the east and Highway 20 to the south with three additional inclusions. These inclusions are the town of Long Pine and canyons to the south (also known as Hidden Paradise), Plum Creek State Wildlife Management Area, and the town of Valentine and the canyons to the north and west of Valentine. The major vegetation types include prairie, coniferous forest with ponderosa pine and eastern red cedar, eastern deciduous forest, mixed conifer and deciduous woodlands, and woody and herbaceous wetlands.

The goals of the plan are as follows:

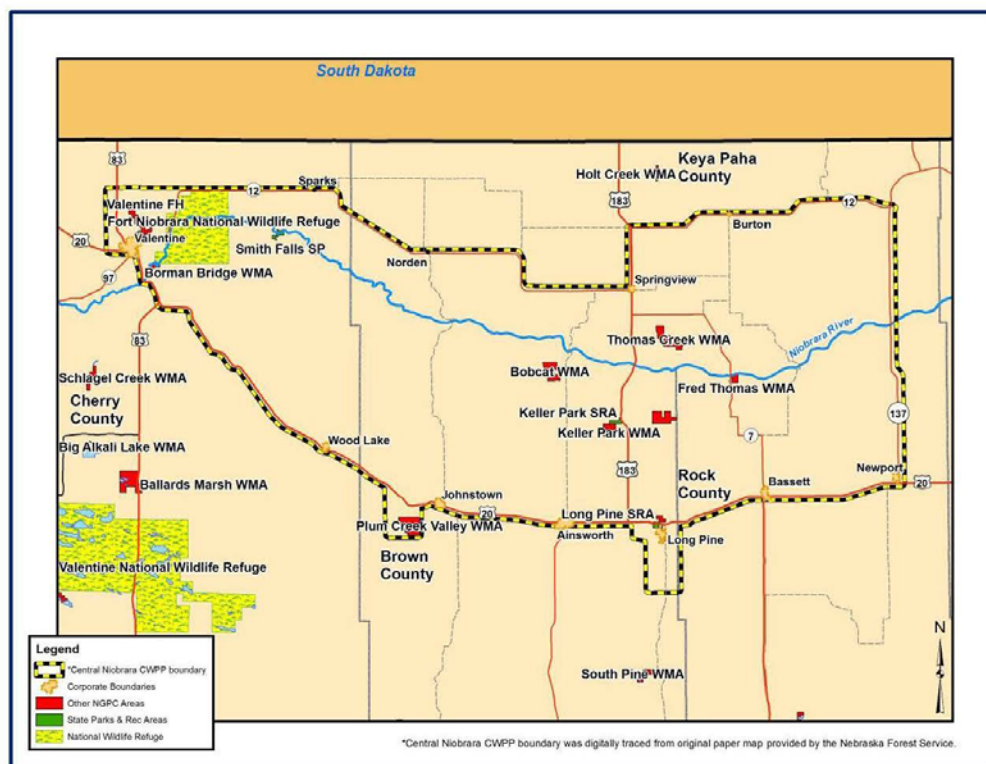
1. Ensure firefighter and public safety by implementing LCES, reviewing the 10 Standard Firefighting Orders and 18 Situations that Shout Watch Out, implementing temporary closures, and providing public information and education.
2. Suppress all unplanned ignitions to protect private property, natural, cultural, and paleontological resources from unacceptable impacts attributable to fire.
3. Identify and assess hazardous fuels that have the potential to affect targeted natural and cultural resources.
4. Utilize prescribed fire and/or other methods (e.g. mechanical) to reduce threats posed by hazardous fuels. Reduce fire hazards through construction of defensible fuel spaces that protect communities and resources. Protect the outstandingly remarkable values of the National Scenic River.
5. Utilize prescribed fire and/or other methods, as appropriate, to maintain long-term stability, diversity of fire-dependent vegetation communities, and improve the integrity of the ecosystem.
6. Cooperate with partners and other interested parties to incorporate their concerns and compatible resource objectives in fire management programs.
7. Enhance communications among agencies and organizations involved with fire management.
8. Develop the support and understanding of prescribed fire as a valuable management tool among communities, agencies and visitors through various educational efforts.

North Central Nebraska Community Wildfire Protection Plan

9. Ensure that fire management activities do not adversely affect adjacent communities.
10. Ensure smoke production from prescribed fires does not violate state and/or federal standards; minimize smoke impacts to neighbors and visitors to the watershed.
11. Ensure fire management actions are consistent with other planning documents.
12. Educate the public in *Firewise* landscaping and construction techniques.

Fire is a natural component of the Sandhills and Niobrara River valley environments and one of the conditions under which vegetation on the CNW evolved. A fire regime of infrequent fires has replaced a historic fire regime of frequent low intensity fuel-reducing surface fires with in ponderosa pine and mixed pine forests. This has led to increased fuel levels, and a greater probability of high intensity/stand replacement fires, which pose a greater threat to life, property, and resources, because such fires are difficult to suppress.

FIGURE 23: CENTRAL NIOBRARA COMMUNITY WILDFIRE PROTECTION PLAN BOUNDARY



Future Vulnerability and Losses

Any future development will be as vulnerable to losses from wildfires as is existing development, in particular development into the WUI.

Appendix D

WUI Mitigation Programs and Structural Ignitability Reduction Practices

North Central Nebraska Community Wildfire Protection Plan

Appendix D - Structural Ignitability Reduction Practices and WUI Mitigation Programs ♦ Page 1

Wildland Urban Interface Mitigation Strategies and Structural Ignitability Reduction Practices

- 1) Develop a program to increase awareness of Firewise® standards for community defensibility and designate, for firefighter safety, which homes and/or parts of communities are not defensible
- 2) Introduce and expand the understanding of the “Home Ignition Zone” and emphasize how survivability depends on maintenance necessary to reduce and manage home ignition potential
- 3) Create guidelines for developers and property owners who intend to construct roads, driveways and dwellings to provide the following:
 - a. Name, address, and GPS location for each road, driveway, and building site
 - b. Community fuel treatment standards for the areas between building sites
 - c. Evidence that Firewise® building standards and defensible space information has been provided to every lot and homebuyer or develop Firewise® based requirements for new building construction standards
 - d. Road construction and maintenance standards that accommodate emergency equipment
 - e. Require at least two access routes for developed areas and subdivisions
 - f. Designate locations for maintained safety zones and water facilities
- 4) Subdivision residents can work together to improve defensibility of their whole subdivision; this could include connecting home site defensible space areas and/or fuel hazard reduction and thinning 150 to 200 feet from buildings
- 5) Develop accurate maps for subdivisions and access roads
- 6) Treat fuels along strategic roads
- 7) Long driveways in wooded areas should be graveled and provided with terminus turnaround that has at least a 45-foot radius or a pull-in and pull-out facility
- 8) Mark driveways without turnaround or with steep slopes with a sign indicating limitations
- 9) Mark safety zones and helispots where fuel continuity is dense and zones are not obvious
- 10) Develop and implement a standard for signing roads and addressing and marking homes for more efficient emergency access

Web Sources: Wildfire Preparedness

FEMA: Plan, Prepare, Mitigate: <http://www.fema.gov/plan-prepare-mitigate>

Fire-Adapted Communities®: <http://www.fireadapted.org/>

Firewise Communities®: <http://www.firewise.org/>

Fire-Resistant Landscaping Plants: <http://firewise.org/wildfire-preparedness/firewise-landscaping-and-plant-lists.aspx?sso=0>

Nebraska Forest Service Wildland Fire Protection Program: <http://nfs.unl.edu/wildland-fire-protection>

Ready, Set, Go!: <http://www.wildlandfirersg.org/>

Appendix E

Stakeholder Survey and Distribution List

North Central Nebraska Community Wildfire Protection Plan

Appendix E - Stakeholder Survey and Distribution List ♦ Page 1

Community Wildfire Protection Plan Update Your Thoughts and Suggestions Count!

This sheet is intended to help you provide valuable input to the planning process. Please share your ideas and comments. Our editors can gather much of the information for each individual community mitigation plan from public sources. We particularly need information that only local people can provide to make the updated plan a useful tool for people who work with community preparedness, fire, and land management. If you need more room, feel free to write on the back of this sheet.

Name of Area: _____ **Submitted by:** _____

1. Please identify specific locations within your community, such as homes in densely wooded areas, which may be at high risk from wildfires.
2. Where are the high-risk ignition sources in your community?
3. Identify any specific areas with inadequate access, road/bridge limitations, or only one way in and out.
4. Are there any geographical gaps in cell phone coverage or other communications issues?
5. Identify potential staging and safety zones in the event of a large wildfire.
6. Identify the location of water sources and areas that lack water sources.
7. What mutual aid agreements currently exist in your community?
8. Are there any topics you would like to see added to the mitigation plans for each community?
9. Other comments?

Note: Rural fire departments will receive a list of contact information currently on file and a form for listing equipment available for mutual aid. Please make updates where needed and return to us.

Return questionnaires to Sandy Benson, Nebraska Forest Service, P.O. Box 130, Bassett, NE 68714
Or scan and e-mail to sbenson4@unl.edu

North Central Nebraska Community Wildfire Protection Plan

Appendix E - Stakeholder Survey and Distribution List ♦ Page 2

An invitation to participate was published in all of the local newspapers and put on the radio stations. The survey was sent to the following stakeholders by mail:

Fire Districts	County Boards	Municipalities
Ainsworth	Boyd	Ainsworth
Atkinson	Brown	Atkinson
Barley	Cherry	Bassett
Bassett	Holt	Butte
Brownlee	Keya Paha	Chambers
Butte	Rock	Cody
Chambers		Crookston
Cody	Emergency Managers	Emmet
Ewing	Boyd	Ewing
Gordon	Brown	Inman
Hyannis	Cherry	Johnstown
Johnstown	Holt	Kilgore
Kilgore	Keya Paha	Long Pine
Long Pine	Rock	Lynch
Lynch	Region 24	Merriman
Merriman		Naper
Mid Cherry	State Offices	Newport
Mullen	Board of Ed. Lands and Funds	O'Neill
Naper	Nebraska State Fire Marshal's Office	Page
Newport	Nebraska Forest Service	Spencer
O'Neill	NGPC in Bassett & Valentine	Springview
Page	Extension: Ainsworth, Valentine, O'Neill	Stuart
Purdum		Wood Lake
Shadbolt Fire	State Legislators	Valentine
Spencer	State Senator Al Davis	
Springview	State Senator Tyson Larson	Natural Resources Districts
Stuart		Lower Niobrara NRD
Thedford	501(c)3 Organizations & Other NGOs	Middle Niobrara NRD
Valentine	Audubon of Kansas (is a landowner)	Upper Elkhorn NRD
Wood Lake	Niobrara Council	Upper Loup NRD
	Niobrara Valley Rx Fire Assoc.	
	The Nature Conservancy: Niobrara Valley Preserve	
	Federal Agencies	
	FSA - Cherry County	
	FSA - Brown, Rock, Keya Paha Counties	
	FSA - Holt and Boyd Counties	
	NPS - Niobrara National Scenic River	
	NRCS - Brown, Keya Paha, Rock Counties	
	NRCS - Holt, Boyd, Keya Paha Counties	
	NRCS - Cherry County	
	USFS - Bessey Ranger District	
	USFWS - Fort Niobrara NWR	

Appendix F

NFS Thinning Prescriptions for the Middle Niobrara Watershed

North Central Nebraska Community Wildfire Protection Plan

Appendix F - NFS Thinning Prescriptions for the Middle Niobrara Watershed ♦ Page 1

THINNING PRESCRIPTIONS for the MIDDLE NIOBRARA WATERSHED

- Green & Black Forest: Ponderosa Pine, Mixed Hardwoods, Eastern Redcedar - Forest Fuels Treatment - Bark Beetle Control - Timber Stand Improvement

I. General

- A. All practices will adhere to Forestry Best Management Practices for Nebraska and NFS practice plans. Work only when soils are dry or frozen.
- B. Streamside Management Zone: leave a 50' to 100' buffer along live streams. Light thinning may occur in these areas using single tree selection; logs should be cabled, not skidded, in the SMZ. Remove any tops and limbs that fall into the stream. Do not remove trees growing on the stream bank itself.
- C. Clearcutting an area is not allowed, unless agreed upon, in writing, by both NFS and landowner prior to cutting; trees must be left to maintain forestland.
- D. Slopes of greater than or equal to 60%: depending on soils, aspect, and run of slope, these may be inoperable areas where trees will not be cut. On slopes that run only a short distance, workers may reach down from the top and up from the bottom as far as practical to reach trees without damaging soils or endangering people or equipment. Use Best Management Practices to ensure worker safety and environmental protection. Operability will vary with time of year, soil moisture, soil type and geographic and topographic barriers.

II. Characteristics of High Quality "Leave trees" for All Forest Types (trees NOT to be cut)

- 1) Selection of the highest quality leave trees is based on "what's left" not "what's cut."
- 2) The bole (stem) of any leave tree will generally be no closer than 5' to any other leave tree.
- 3) Groups of understory trees should be at least 20' from drip line of overstory leave trees.
- 4) Marked (flagged or painted) and unmarked leave trees are selected based on section IV and on the following characteristics:
 - a. Dominant – Well-developed crowns, extending above the general level of the forest stand canopy, receiving full sunlight from above & partial sunlight from the sides.
 - b. Co-dominant – Crowns that form the general level of the forest stand canopy and receive full sunlight from above, but comparatively little from the sides; usually with medium sized crowns more or less crowded on the sides.
 - c. Foliage – Healthy, long needles in pines, or full foliage in broadleaf trees, dark green in color (summer) with a full crown over one third or more of the tree.
 - d. Bole – Relatively straight bole for at least 8'; not bent, broken or severely leaning.
 - e. Form – Single terminal leader with no forked (split) top.
 - f. Physical – No physical damage from fire, animals, or weather on more than ½ the circumference of the bole or more than 3' in length along the bole.
 - g. Tree health – No disease or insect damage visible.
 - h. Wildlife Trees
 - i. Live, standing trees (1 tree/ac. if available) 10" DBH or larger, damaged by lightning or other natural forces, which have dried or pitchy sections for cavity nesting wildlife.
 - ii. Snags – Dead, standing trees (1 tree/ac. if available) 10" DBH or larger with visible signs or potential for cavity nesting activity; not needed in "green islands" surrounded by standing dead trees.
 - i. Seedlings less than 2' tall (except ERC seedlings, which may be removed from ponderosa pine and deciduous stands).

III. Characteristics of Low Quality "Cut Trees" – ponderosa pine and eastern redcedar trees to be cut are unmarked; selection is based on section IV and on the following characteristics:

A. Individual Tree Characteristics

- 1) Suppressed – Crowns below the general level of the forest stand canopy which receive only partial sunlight from above or from the sides; this includes leaning trees and trees with lopsided crowns.
- 2) Foliage – Sparse, unhealthy needles that are yellow, reddish and stunted; holes or gaps occupy a crown that is one third or less of the entire tree.

North Central Nebraska Community Wildfire Protection Plan

Appendix F - NFS Thinning Prescriptions for the Middle Niobrara Watershed ♦ Page 2

- 3) Bole – Severely bent, broken or deformed main stems so pronounced that a straight, 8' log cannot be cut from the tree.
- 4) Forked – Trees with 2 or more terminal leaders forming split tops.
- 5) Physical – Damage on ½ or more of the bole circumference and greater than 3' in length caused by equipment, falling trees, lightning, wind, snow, animals, etc.
- 6) Health – Damage from insects or disease that is likely to kill the tree.
- 7) Dead – Standing trees (ponderosa pine) 9.9" DBH and smaller down to 2' tall with red, brown, or no needles in the crown; all standing dead ERC 14" DBH and less.

B. Tree Size

- 1) Live ponderosa pine and ERC between 2' tall and 9.9" DBH will be cut unless they are "leave trees" needed to maintain the required spacing.
- 2) Standing dead ponderosa pine 10' or less in height and 9.9" DBH or less and standing dead ERC 14" DBH and less will be cut. When available, 1-2 snags per acre that are larger than these size specifications will not be cut or disturbed because they provide wildlife habitat (exceptions: burned areas or insect/disease-killed stands with many large, dead trees that create a fire hazard).

C. All ERC within 30' of any deciduous tree will be cut.

IV. Stand Silviculture

A. Pure ponderosa pine stands

- 1) Silvicultural target is based on uneven-aged regeneration using a "hybrid" 2-step shelterwood in combination with group seed tree selection (3-9 trees per group). Target spacing is 30-80 square feet of basal area/acre, adjusting within the desired range to leave the best trees.
- 2) In stands where a two-step shelterwood cut is applicable (NW, N, NE, E facing slopes), spacing between "leave trees" is determined by estimating the average DBH (inches) in the stand and adding 10 for the average distance (in feet) between trees.
- 3) Minimum spacing between trees is 5'. No tree less than 10" DBH should be left closer than 5' to any other tree.
- 4) Crowns may touch within the group, but crown separation (25-100') will be maintained between groups of trees.
- 5) Thinning will target all age and size classes in an effort to develop 3-5 age classes in the forest over the long term.
- 6) Where trees are joined at or near ground level, do not cut one and leave the other. Either cut both or leave both, depending on spacing requirements. Generally, both will be removed if enough other trees that meet specifications are present.
- 7) Remove ERC understory.

B. Pure eastern redcedar stands

- 1) Inaccessible areas (drainages with steep slopes) – no treatment.
- 2) Concentrate removals described below on female ERC trees and poor quality trees.
- 3) Higher quality sites with high stand density and mixed age classes: silvicultural target based on uneven-aged regeneration using small even-aged groups to establish 3-5 age or size classes in the stand over the long term.
 - a. Groups may be small (2-5 trees per group) and separated by 25-100' of open space or may be larger, left in strips 20-30' wide and varying lengths, separated by at 25-100' of open space; strips do not need to be geometric (straight sided) – work with the landscape.
 - b. Crowns may touch within the group, but crown separation (30-100') will be maintained between groups of trees.
 - c. Harvest sawlogs or posts.
- 4) Open grown or successional ERC stands on lower quality sites: options a., b., or c. below.
 - a. Conduct a one-time biomass harvest (clearcut) to promote other desirable vegetation.
 - b. Manage as perpetual biomass crop by patch clear-cut harvest followed by natural regeneration of ERC.
 - a. Grassland and ERC mix: clear ridgetops and leave ERC stands in drainages for mosaic effect.
 - c. Crop tree thin ERC on higher quality sites.
- c. Allow to develop a closed, high density mixed age-class stand and manage accordingly.

North Central Nebraska Community Wildfire Protection Plan

Appendix F - NFS Thinning Prescriptions for the Middle Niobrara Watershed ♦ Page 3

- C. Mixed conifer stands: eastern redcedar and ponderosa pine stands.
 - 1) Harvest ERC sawlogs and remove ladder fuels from under and around groups of ponderosa pine to reduce risk of and protect pines from catastrophic wildfire.
 - 2) Thin and prune remaining post and pole-sized ERC to 60-80 sq. ft. basal area in areas where pine is not present and where ERC does not generally pose a wildfire threat, favoring crop ERC trees.
 - a. Where ERC poses a wildfire threat, concentrate retention on ponderosa pine.
 - 3) Concentrate ERC removals on female (seed-producing) trees.
- D. Mixed deciduous and coniferous stands
 - 1) Deciduous trees are usually not cut during fuels reduction projects unless they are "hazard trees."
 - 2) Where hardwood stands are treated, they may be reduced to 60-100 BA (100-250 trees per acre), retaining healthy, well-formed trees of various sizes and species. Rule of thumb: Select best trees for retention (crop trees) and remove suppressed trees, according to section II.
 - 3) Remove ERC ladder fuels in and around hardwood groups or from under individuals to reduce fuel loads, protect from wildfire risk, and encourage regeneration.
 - a. Follow up treatments with prescribed fire (in bur oak stands) or mechanical means to reduce fuel loads and to encourage oak regeneration.
 - b. Harvest ERC sawlogs and thin remaining post and pole-sized ERC to target basal area where ERC is not interfering with targeted oak management; favor non-seed-bearing crop ERC trees for retention.
 - 4) Thin "doghair" ponderosa pine to remove ladder fuels, favoring dominant individuals. Keep retained pines at least 30' from desirable hardwoods.

V. Stump Height

- A. Stumps shall be cut at a flat, 90-degree angle perpendicular to the tree trunk, not to exceed 12" in height on the uphill side. Ground level is preferred.
- B. Trees shall be completely severed from the stump and cut below the lowest green branches.
- C. If stumps are mulched or shredded, they must be reduced to ground level.

VI. Utilization

- A. Utilization of merchantable material is encouraged (posts, poles, sawlogs).
- B. All cut trees under 10" DBH that are not utilized will be chipped, mulched, or shredded and scattered.
- C. Cut trees 10" and greater that are not utilized will be piled in accordance with section VII.

VII. Slash Treatment

- A. Pile unmerchantable material to be burned within 2 years; treat pine slash immediately (see item E below) if work occurs between Jan. 1 and Aug. 1. Compact slash piles as tightly as possible. Mulching, chipping, or shredding is an option to remove slash, but material must be utilized or spread (not piled).
- B. 4" - unlimited maximum DBH
 - 1) All whole trees and slash (green or brown needles) resulting from the thinning operation, prior timber harvest, past storm damage, and insect or disease mortality will be skidded and piled along roadside landings, in-woods openings and meadows.
 - 2) Old slash (gray, punky, loose bark and without needles) composed of dead or down trees from past storm damage or insect and disease mortality will be left in place; it will be driven over, crushed, and reduced onto the soil surface via skidding operations.
- C. 2' tall - 3.9" DBH
 - 1) All slash (green or brown needles) resulting from the thinning operation, prior timber harvest, past storm damage and insect and disease mortality may be "reduced" via chainsaw (conventional – lop and scatter) or logging equipment (mechanical - roller chop or mastication) to 18" or less.
 - a. Not to exceed 10% of project area and not to be left in continuous stream due to fire hazard. Alternatively, this material may be chipped, shredded, or mulched.
 - 2) Excessive tillage or incorporation of the slash into the soil will not be allowed
- D. All trees cut during thinning operations shall be felled so they lie on the ground.
 - 1) No hang-ups or "jack-strawing" will be allowed.
 - 2) No slash will be left up against "leave trees" – piles must be at least 30' away.

North Central Nebraska Community Wildfire Protection Plan

Appendix F - NFS Thinning Prescriptions for the Middle Niobrara Watershed ♦ Page 4

- 3) No slash will be piled in drainages or within 50' of live water.
- 4) "Stuffing" slash against residual trees for later burning is not permitted.
- E. Ips beetle slash treatment for ponderosa pine
 - 1) Ponderosa pine is susceptible to infestation by the ips (engraver) beetle. These insects breed in green pine slash, then infest nearby living pines, where they tunnel under the bark, killing the trees or the tops of the trees. When pines are stressed, such as during drought, ips can spread rapidly and kill or top-kill large number of trees. Infested trees that still have at least some green needles are likely to have ips larvae within. These trees should be removed and the slash treated immediately. Trees with all brown needles or no needles do not contain larvae and the slash does not require special treatment.
 - 2) Between Jan. 1 and July 31: Avoid creating pine slash during this time, but if such slash is created, the following practices will reduce the spread of the insect:
 - a. All green pine slash (branches and tops with green or partly green needles) must be chipped, mulched, or shredded and scattered (not piled) to dry.
 - b. Boles and branches larger than 4" diameter that are not chipped, mulched, or shredded must be chunked into lengths of 24" or less, scoring the bark systematically around each chunk. Then spread out the chunks to dry. Do not pile. If the chunks are near existing slash piles, they may be added to the piles when the piles are burned.
 - c. Material with active ips infestation must be debarked
 - 3) Between Aug. 1 and Dec. 31:
 - a. Green pine slash may be either chipped/shredded/mulched and spread or piled and burned.
 - b. Boles and branches larger than 4" diameter may be added to slash piles for burning. Alternatively, they may be chipped, shredded, or mulched. Chips and mulch must be spread, not piled.

VIII. Firebreaks (Roads, Pasture or Rangeland, Meadows or Cropland)

- A. Minimum width for road firebreaks is 150 feet from centerline and 300 feet total width. Minimum width for pasture or rangeland, meadows, or cropland firebreaks is 300 feet from edge.
- B. "Leave trees" with branch foliage (green or brown) will be pruned up (removal of side branches and trimming back low hanging branches) to 6' above ground. Pruning of branches 6' or less above ground will leave stubs no longer than ½" remaining; branches must be cut perpendicular to bole, leaving a round, not oblong, cut.
- C. All slash (green or brown needles and gray and punky without needles) shall be treated as described in section VI.
- D. Where applicable along county and state roads with a fenced right-of-way (ROW):
 - 1) All ERC (live or dead) 2' tall thru unlimited maximum DBH and ponderosa pine (live or dead) 2' tall thru 8" DBH may be cut inside ROW fencelines if permitted by the state or county with jurisdiction.
 - 2) Slash will be piled outside ROW fencelines.
 - 3) Broadleaf trees and shrubs will not be cut unless their removal is warranted for safety.

IX. Meadow Edges and Roads

- A. Meadow is defined as an opening in the forest canopy of ¼ acre or larger.
- B. Along all meadow edges, coniferous "leave trees" with branch foliage (green or brown) will be pruned up (removal of side branches and trimming back low hanging branches) to 6' above ground.
- C. Conifer branches that originate higher than 6' above ground with foliage (green or brown) 6' or less above ground will have that foliage cut from the branches.
- D. Pruned branches will leave stubs no longer than ½" remaining; branches must be cut perpendicular to bole, leaving a round, not oblong, cut.

X. Wildfire Defensible Space (Zones 1 & 2)

- A. Highest priority fuel reduction zones nearest the home or structure: 300 feet minimum and 600 feet maximum radius with home or structure in the center.
- B. Coniferous "leave trees" with branch foliage (green or brown) will be pruned up (removal of side branches and trimming back low hanging branches) to 6' above ground. Pruning of branches 6' or less above ground will have stubs no longer than ½" remaining; branches must be cut perpendicular to bole, leaving a round, not oblong, cut.

North Central Nebraska Community Wildfire Protection Plan

Appendix F - NFS Thinning Prescriptions for the Middle Niobrara Watershed ♦ Page 5

- C. All whole trees 2' tall thru unlimited maximum DBH and slash (green or brown needles and gray or punky without needles) resulting from the thinning operation, prior timber harvest, past storm damage and insect and disease mortality shall be piled and burned or chipped, shredded, or mulched/ scattered.

XI. Seed Tree Retention and Protection in Burned Ponderosa Pine Forest

- A. Live and viable seed trees are defined as:
 - 1) Minimum live, green crown = 25% of total live crown (before fire).
 - 2) No scorched cambium or visible evidence of bark beetles or sap on bark.
 - 3) Totally black or brown-needled trees do not qualify.
- B. Groups of live, green seed trees:
 - 1) Must contain minimum of three (3) green, live pines no greater than 30' apart.
 - 2) Maximum distance between groups = 300'.
 - 3) Remove all burned and unburned ERC within group.
 - 4) Forest fuel "buffer" = 300' around groups with all fire killed trees and slash (standing and down trees) within the buffer treated as per section VII.
- C. Larger "green islands" containing more than 10 seed trees:
 - 1) Remove all burned and unburned ERC within island.
 - 2) Remove live pines with insect, disease, physical damage, or deformities.
 - 3) If "doghair" pines exist within the island, thin to 60 BA.
 - 4) Forest fuel "buffer" = 300' around groups with all fire killed trees and slash (standing and down trees) within the buffer treated as per section VII.
- D. Within the treatment units, cut ladder fuels (ponderosa pine and ERC); limb up large residual pines with low, live limbs.
- E. Deciduous trees are not to be cut unless they present a hazard. Remove ERC under deciduous trees.
- F. All slash, unless shredded, will be removed from treatment units and treated as per section VII.

XII. Project Certification

- A. Projects will be certified when all units in a contract are completed to specifications. The actual treated acreage will be determined by a Nebraska Forest Service employee, using an NFS GPS unit, walking the boundary of cut stumps. No correction for slope. No partial units will be certified.
- B. The Nebraska Forest Service enters into contracts solely with the landowners, not with the contractor, unless the landowners are doing their own work. Payment is issued to the landowner once the project is certified and the landowner presents proof that the contractor has been paid.

Definitions:

BA: basal area; a measure of stand density; the cross-sectional area at breast height of trees; $BA (ft^2) = 0.005454 dbh^2 (in)$; i.e. in a healthy pine forest composed of 18" DBH trees the BA should be around 70.

DBH: diameter at breast height; diameter of a tree at 4.5' from the ground.

ERC: eastern redcedar.

Ladder fuels: fuels that create an avenue for a surface fire to reach tree crowns; trees located directly under large canopy trees.

SMZ: the Streamside Management Zone is a 50-100' buffer along live streams.

Two-Step Shelterwood System: involves control of competing understory vegetation and a shelterwood selection. Selected, less-desirable overstory and understory trees are harvested or removed to release established seedlings. The tree removal leaves the more desirable species and healthier trees to provide seed, protect young seedlings, and increase in volume for future timber harvest.

Appendix G

Rural Fire Department Contact Information and Equipment

North Central Nebraska Community Wildfire Protection Plan

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 1

Fire Departments included the North Central Nebraska CWPP Boundary as listed in the NFS statewide fire department database

Ainsworth Fire Department Chief: Brad Fiala PO Box 425 Ainsworth, NE 69210 402-760-1512 Bfiala83@yahoo.com	Barley Fire Department Chief: Rex Adamson 34979 Medicine Creek Dr. Cody, NE 69211 402-823-4334/402-389-0418C	Bassett Fire Department Chief: Jim Stout PO Box 603 Bassett, NE 68714 402-684-3906/402-684-2222
Butte Fire Department Chief: Scott Bernt PO Box 317 Butte, NE 68722 402-775-2670	Cody Fire Department Chief: Jordan Pitkin PO Box 66 Cody, NE 69211 402-823-4342/605-220-0409 carissa@gpcom.net	Gordon Fire Department Chief: Richard Haller PO Box 444 Gordon, NE 69343 308-360-1692
Gracy Fire Department Chief: Brian Jordan 84660 454th Ave. Burwell, NE 68823 402-750-2281C	Johnstown Fire Department Chief: Ben Burdick RR1 Box 317 Johnstown, NE 69214 402-722-4287	Kilgore Fire Department Chief: Todd Rothleutner PO Box 166 Kilgore, NE 69216 402-966-2111 bcrothleutner@hotmail.com
Long Pine Fire Department Chief: Dave Crooker PO Box 398 Long Pine, NE 69217 402-273-4391	Lynch Fire Department Chief: Brent Pritchett 50127 Utopia Rd. Lynch, NE 68746 402-569-3044	Merriman Fire Department Chief: Stuart Hopper PO Box 155 Merriman, NE 69218 308-684-3346
Mid-Cherry Fire Department Chief: Shane Kime 87413 Mule Deer Rd Nenzel, NE 69219 402-823-4070	Mullen Fire Department Chief: Dan Daly PO Box 583 Mullen, NE 69152 308-546-2400	Naper Fire Department Chief: Bryon Vogt 90468 470 th Ave. Naper, NE 68755 402-340-6451c; 402-832-5549
Newport Fire Department Chief: Kurt Micheel PO Box 136 Newport, NE 68759 402-244-5208	Purdum Fire Department Chief: Shane Keller 40227 Bluestem Rd. Valentine, NE 69201 308-834-3310/402-376-5831C	Sandhills Fire Protection Chief: Cliff Dailey PO Box 330 Hyannis, NE 69350 308-458-2356/877-450-2356
Spencer Fire Department Chief: Roger Angus PO Box 47 Spencer, NE 68777 402-589-1196/402-589-1377	Springview Fire Department Chief: Scott Hallock PO Box 264 Springview, NE 68778 402-497-3632 /402-760-1391C	Thedford Fire Department Chief: Russ Reiser PO Box 302 Thedford, NE 69166 402-322-0760 C
Valentine Fire Department Chief: Terry Engles 224 S Hall St Valentine, NE 69201 402-376-3100/402-376-1700	Wood Lake Fire Department Chief: Craig O'Kief PO Box 803 Wood Lake, NE 69221 402-967-3400	

North Central Nebraska Community Wildfire Protection Plan

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 2

List of equipment available for mutual aid from those departments that responded to the survey

<p>Ainsworth Fire Department A1: 1000 gal./min. pumper with 1000 gal. tank A33: 1200 gal./min. pumper with 1200 gal. tank A20: Rescue truck with air station & rescue tools A2: 900 gal. grass rig A4: 875 gal. grass rig A6: 975 gal. 6x6 grass rig A23: 400 gal. grass rig A28: 1200 gal. 5 ton all-wheel drive A48: 2250 gal. AWD tanker A61: 4WD command unit 8'x24' mobile command trailer 18' portable light trailer with generator 2 John Deere Gators (1 firefighting, 1 rescue) Infrared camera</p> <p>Bassett Fire Department 3 – 600 gal.+ grass rigs 5 – 250 gal. grass rigs; 1 ton 4x4 3 – tankers (2000 gal., 1800 gal. 6x6, and 1500 gal.) 1 – communication & equipment truck, 4 door 4x4 1 – 2 ton 4x4 extrication & equipment truck 1 – UTV with 60 gal. water tank & pump 50 gal. Class A foam</p> <p>Merriman Fire Department <u>Fire Hall</u> M-201: '85 Ford F350 4x4 Type 6 grass rig, 300 gal. M-204: '90 Chevy K3500 4x4 Type 6 grass rig, 300gal. M-209: '97 Ford Super Duty F450 4x4 Type 6 grass rig, 300 gal. M-40: '75 Military 5 ton 6x6, 1500 gal. tanker M-31: '92 IHC truck pumper 1250 gal. pump, 500 gal. tank, structures & extrication M-30: '77 Chevy K30 4x4 pumper, 300 gpm, 300 gal. tank</p> <p><u>On Ranches</u> M-202: '77 Chevy K3500 4x4 grass rig, 300 gal. Tom Neilson M-207: '87 Chevy 1¼ military 4x4, 200 gal. tank, Kelly Boomer M-208: '86 Chevy 1¼ military 4x4, 200 gal. tank, Don Wiley M-203: '75 2½ military 6x6, 400 gal. tank, Rex Adamson M-205: '75 2½ military 6x6, 600 gal. tank, Quentin Shadbolt M-206: '87 Chevy 4x4 1¼ military, 200 gal. tank, Zale Quible</p> <p>Mullen Fire Department <i>For Valentine/Wood Lake area</i> 2 Type 6 grass rigs 1 tanker <i>For the rest of the CWPP area:</i> 1 Type 6 grass rig</p>	<p>Page Fire Department Unit 60: equipment & grass rig Unit 3: tanker Unit 4: grass rig Tanker</p> <p>Valentine Fire Department (See list on following page)</p> <p style="text-align: center;">* * *</p> <p>The Niobrara Valley Preserve has provided the following equipment list update to replace the listing at 8.4-1 TNC in Appendix A:</p> <ul style="list-style-type: none"> • 1 - 1996 Ford F-350 300 Gallon Grass Rig • 2 - 225 Gallon Slip-On Units • 2 - ATVs with 20+ Gallon Tanks and Electric Pumps • 1 - UTV with 60 Gallon Tank and Electric Pump • Assorted Backpacks, Drip Torches, Hand Tools, and Nomex <p style="text-align: center;">* * *</p> <p>The Niobrara National Scenic River office in Valentine has provided the following equipment list update to replace the listing at 8.4-2 NPS in Appendix A:</p> <ul style="list-style-type: none"> • Hand tools (flappers, Pulaskis, Council rakes, axes, McLeods, shovels, etc.) • Portable hand pumps (backpack) • Belt Weather Kits • Firefighter Packs and PPE (yellow packs, sleeping bags/pads, water bottles, headlamps, files, flagging, fusees, personal first aid kits, headlamps, leather gloves, Nomex® shirts and pants.) • Educational materials (training manuals, forms, Fireline Handbooks, etc.)
---	---

North Central Nebraska Community Wildfire Protection Plan

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 3



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Rosebud Agency
P.O. Box 550
Rosebud, South Dakota 57570

In Reply Refer to:
Fire Management

Volunteer Fire Department Fire Engine Inventory

	License #	Year	Make	Model	Type	Tank Size (Gallon Capacity)	Pump Capacity	Engine Type	VFD Identifier
1	NE 26874	1966	Chevy	K-20	4x4	300	200	T-6	V-1
2	NE 26876	1970	Ford	F-250	4x4	300	200	T-6	V-2
3	NE43335	1988	Chevy	30	4x4	250	250	T-6	V-4
4	NE 44708	2012	Ford	550	4x4	500	250	T-5	V-5
5	NE 26879	1964	Ford	F250	4x4	250	250	T-6	V-6
6	NE 32787	1986	Ford	F-350	4x4	300	200	T-6	V-7
7	NE 34654	1992	Chevy	3500	4x4	300	200	T-6	V-8
8	NE 40880	2006	Ford	F-550	4x4	400	250	T-6	V-9
9	NE 41442	2008	Ford	F-550	4x4	430	250	T-5	V-10
10	NE 32161	1977	Chevy	Suburban	4x4			Support	V-22
11	NE 42571	1994	IHC			2600	250	T-1	V-31
12	NE 26878	1979	Ford	900		2000	250	T-1	V-33
13	NE 26877	1988	Peterbilt			3000	250	T-1	V-35
14	NE 41747	1971	AMC	5 Ton	6x6	1500	200	T-1	V-36
15	ATV	2012	Polaris	Ranger	6x6	80	100	T-6	Baby6

Page 1 of 2

North Central Nebraska Community Wildfire Protection Plan

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 4

Volunteer Fire Department Fire Engine City Inventory

CITY

	License	Year	Make	Model	Type	Tank Size (Gallon Capacity)	Pump Capacity	Engine Type	VFD Identifier
1	NE 6924	1980	Ford	700		750	750	T-5	T-1
2	NE 6927	1968	Ford/Pumper	CITY		750	750	T-5	T-2
3	NE 6925	1994	Chevy	Kodiak		RESERVED		SUPPORT	T-4
4	NE 20907	2000	PUMPER	CITY		1000	1250		T-5
5	NE 24930	1995	Chevy/Suburban	CITY				SUPPORT	V-21
6	NE 27041	1994	Pumper/Ladder	CITY	75'	300	1250		T-75
7									
8									
9									
10									
11									
12									
13									
14									
15									
V2 & V6 are rural		at	Merritt Dam						

Page 2 of 2

North Central Nebraska Community Wildfire Protection Plan

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 5

The following pages contain organizational information and fire resources listed in each individual county's local emergency operations plan.

BOYD COUNTY LEOP

ANNEX F

FIRE SERVICES

BRISTOW FIRE DEPARTMENT

BUTTE FIRE DEPARTMENT

LYNCH FIRE DEPARTMENT

NAPER FIRE DEPARTMENT

SPENCER FIRE DEPARTMENT

HOLT/BOYD
MUTUAL
AID
ASSOCIATION

STATE SUPPORT:
Emergency Support Functions
4, 5, 10,
Fire Suppression,
Emergency Management,
Environmental Quality

Lead Agencies:
State Fire Marshal

Nebraska Emergency Management Agency,

F-1

2011

North Central Nebraska Community Wildfire Protection Plan

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 6

BOYD COUNTY LEOP

ANNEX F
ATTACHMENT 1

BOYD COUNTY FIRE RESOURCES (List numbers of equipment)

FIRE DEPARTMENT	PHONE	AERIAL	PUMPER	TANKER	PUMPER/TANKER	GRASS-WEED TRUCK	UTILITY TRUCK	RESCUE UNITS	KINDS/TYPES/SPECIAL-TEAMS	KINDS/TYPES SPECIAL EQUIPMENT	RADIO-LOGICAL EQUIPMENT Yes / No
Bristow	402-583-9933		1								
Butte	402-775-2222		2	2		1		1			
Lynch	402-775-2222		3		2	1					
Naper	402-832-5656				1	2		1			
Spencer	402-589-1212		2	2		1		2			
Nearest HAZMAT Response Team											

F-11

2011

North Central Nebraska Community Wildfire Protection Plan

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 7

BROWN COUNTY LEOP

ANNEX F

FIRE SERVICES

AINSWORTH FIRE DEPARTMENT

JOHNSTOWN FIRE DEPARTMENT

LONG PINE FIRE DEPARTMENT

BROWN COUNTY RURAL FIRE DEPARTMENT

KBR & C
MUTUAL
AID
ASSOCIATION

STATE SUPPORT:
Emergency Support Functions
4, 5, 10,
Fire Suppression,
Emergency Management,
Environmental Quality

Lead Agencies:
State Fire Marshal

Nebraska Emergency Management Agency,

F-1

2011

North Central Nebraska Community Wildfire Protection Plan

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 8

BROWN COUNTY LEOP

ANNEX F
ATTACHMENT 1

BROWN COUNTY FIRE RESOURCES (List numbers of equipment)

FIRE DEPARTMENT	PHONE	AERIAL	PUMPER	TANKER	PUMPER/TANKER	GRASS-WEED TRUCK	UTILITY TRUCK	RESCUE UNITS	KINDS/TYPES/SPECIAL-TEAMS	KINDS/TYPES SPECIAL EQUIPMENT	RADIO-LOGICAL EQUIPMENT Yes / No
Ainsworth	911 or 402 387-1440		3	3			2	2			
Johnstown				2		3					
Long Pine			1		1	2		1			
Brown Co Rural			1			5					
Nearest HAZMAT Response Team											

F-11

2011

CHERRY COUNTY LEOP

ANNEX F

FIRE SERVICES

VALENTINE FIRE DEPARTMENT

CODY FIRE DEPARTMENT

KILGORE FIRE DEPARTMENT

MERRIMAN FIRE DEPARTMENT

WOODLAKE FIRE DEPARTMENT

KBR & C
MUTUAL
AID
ASSOCIATION

SANDHILLS
MUTUAL
AID
ASSOCIATION

STATE SUPPORT:
Emergency Support Functions
4, 5, 10,
Fire Suppression,
Emergency Management,
Environmental Quality

Lead Agencies:
State Fire Marshal

Nebraska Emergency Management Agency,

F-1

2011

North Central Nebraska Community Wildfire Protection Plan

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 10

CHERRY COUNTY LEOP

ANNEX F
ATTACHMENT 1

CHERRY COUNTY FIRE RESOURCES

(List numbers of equipment)

FIRE DEPARTMENT	PHONE	AERIAL	PUMPER	TANKER	PUMPER/TANKER	GRASS-WEED TRUCK	UTILITY TRUCK	RESCUE UNITS	KINDS/TYPES/SPECIAL-TEAMS	KINDS/TYPES SPECIAL EQUIPMENT	RADIO-LOGICAL EQUIPMENT Yes / No
Valentine	911, 402-376-1700		3	3		6		2			
Crookston	402-376-1700										
Merriman	911		1			3		1			
Mid-Cherry	911			2		2					
U.S. Fish & Wildlife	402-376-3789										
U.S. Forest Service											
Wood Lake	911, 402-967-3393		1	1		2	1				
Nearest HAZMAT Response Team	Norfolk FD										

F-11

2011

North Central Nebraska Community Wildfire Protection Plan

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 11

HOLT COUNTY LEOP

ANNEX F

FIRE SERVICES

O'NEILL FIRE DEPARTMENT

ATKINSON FIRE DEPARTMENT

CHAMBERS FIRE DEPARTMENT

EWING FIRE DEPARTMENT

STUART FIRE DEPARTMENT

PAGE FIRE DEPARTMENT

HOLT-BOYD
MUTUAL
AID
ASSOCIATION

STATE SUPPORT:
Emergency Support Functions
4, 5, 10,
Fire Suppression,
Emergency Management,
Environmental Quality

Lead Agencies:
State Fire Marshall,
Nebraska Emergency Management Agency,
Dept. of Environmental Quality

F-1

2009

North Central Nebraska Community Wildfire Protection Plan

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 12

HOLT COUNTY LEOP

ANNEX F
ATTACHMENT 1

HOLT COUNTY FIRE RESOURCES (List numbers of equipment)

FIRE DEPARTMENT	PHONE	AERIAL	PUMPER	TANKER	PUMPER/TANKER	GRASS-WEED TRUCK	UTILITY TRUCK	RESCUE UNITS	KINDS/TYPES/SPECIAL-TEAMS	KINDS/TYPES SPECIAL EQUIPMENT	RADIO-LOGICAL EQUIPMENT Yes / No
ATKINSON	CALL 911		2	1	2	4	1	3			NO
CHAMBERS	CALL 911		1		2	4	1	2			NO
EWING	CALL 911		1	1		3	1	2			NO
O'NEILL	CALL 911	1	3	1	2	4	1	3			NO
PAGE	CALL 911		1	1		2	1	1			NO
STUART	CALL 911		2	1	1	2	1	2			NO
Nearest HAZMAT Response Team											
Norfolk Fire Dept. (402) 844-2050											
			F-12								
									2009		

F-11

2009

North Central Nebraska Community Wildfire Protection Plan

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 13

KEYA PAHA COUNTY LEOP

ANNEX F

FIRE SERVICES

SPRINGVIEW FIRE DEPARTMENT

KBR& C
MUTUAL
AID
ASSOCIATION

STATE SUPPORT:
Emergency Support Functions
4, 5, 10,
Fire Suppression,
Emergency Management,
Environmental Quality

Lead Agencies:
State Fire Marshal

Nebraska Emergency Management Agency,

F-1

2011

North Central Nebraska Community Wildfire Protection Plan

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 14

KEYA PAHA COUNTY LEOP

ANNEX F
ATTACHMENT 1

KEYA PAHA COUNTY FIRE RESOURCES

(List numbers of equipment)

RADIO-LOGICAL EQUIPMENT Yes / No											
KINDS/TYPES SPECIAL EQUIPMENT											
KINDS/TYPES/ SPECIAL-TEAMS											
RESCUE UNITS	2										
UTILITY TRUCK											
GRASS-WEED TRUCK	1										
PUMPER/ TANKER											
TANKER	2										
PUMPER											
AERIAL											
PHONE	402-497-3331 or 911										
FIRE DEPARTMENT	Springview									Nearest HAZMAT Response Team- Norfolk	

F-11

2011

North Central Nebraska Community Wildfire Protection Plan

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 15

ROCK COUNTY LEOP

ANNEX F

FIRE SERVICES

ROCK COUNTY FIRE
DEPARTMENT

NEWPORT FIRE DEPARTMENT

GRACY FIRE DEPARTMENT

KBR & C
MUTUAL
AID
ASSOCIATION

STATE SUPPORT:
Emergency Support Functions
4, 5, 10,
Fire Suppression,
Emergency Management,
Environmental Quality

Lead Agencies:
State Fire Marshal

Nebraska Emergency Management Agency,

F-1

2011

Appendix G - Rural Fire Department Contact Information and Equipment ♦ Page 16

ANNEX F
ATTACHMENT 1

(List numbers of equipment)

[illegible]

2011

January 2015

2015 EMERGENCY ASSISTANCE FOR WILDFIRE CONTROL



SEAT T-475 at the Chadron SEAT base in 2014

NEBRASKA FOREST SERVICE

In cooperation with

NEBRASKA EMERGENCY MANAGEMENT AGENCY



In Memory of Mike Kratz



Pictured: Seth Peterson (left), Nebraska Forest Service and Mike Kratz (right), New Frontier Aviation

The Nebraska Forest Service would like to thank Mike Kratz, a 2014 SEAT pilot, for his service. He was killed in an aviation accident in Arizona on November 30, 2014. Mike flew on multiple Nebraska fires during the 2014 season. He had a great curiosity about the Nebraska area and loved to discuss what he did on the fires, with not only the SEAT base staff, but the volunteer firefighters who stopped by the base. Mike and his services will be missed as we enter the 2015 wildfire season. The Nebraska Forest Service extends our condolences to Mike's family, *New Frontier Aviation*, and his entire wildfire family.

It is the policy of the University of Nebraska-Lincoln not to discriminate based upon age, race, ethnicity, color, national origin, gender, sex, pregnancy, disability, sexual orientation, genetic information, veteran's status, marital status, religion or political affiliation.

EMERGENCY ASSISTANCE FOR WILDFIRE CONTROL

INTRODUCTION

This publication has been developed by the Wildland Fire Protection Section of the Nebraska Forest Service, as a description of the wildfire suppression resources available to the rural fire districts and the fire departments in the State of Nebraska for the control and suppression of wildfires. It can be used as a “quick reference” source for those resources available statewide. It is divided into three sections.

Section 1: Phone Directory, pages 4-6

This section contains the telephone numbers of several state, federal and private agencies which have emergency suppression resources or can provide technical expertise in the suppression of wildfires.

Section 2: Aerial Applicator and Foam Retardant Directory, pages 7-12

This section contains the following information concerning the Nebraska Forest Service Aerial Fire Suppression Program:

- The procedures which must be used to obtain aircraft for the suppression of wildfires.
- The names, locations, and phone numbers of cooperating aerial applicators.
- The number and size of aircraft available.
- Instructions for the use of and locations of Class A Foam.

Section 3: Local Resources, page 13

This section is reserved for the use of the individual fire departments to record local telephone numbers or other vital information in the Quick Reference section.

Section 4: SEAT Requests, page 14

This section contains deployment procedures you will need to follow to order a Single Engine Air Tanker (SEAT) in the shortest possible time.

Take time now, **BEFORE** you need this manual, to turn to **page 13** and fill in the local telephone numbers that you may need when a major wildfire strikes.

IMPORTANT NOTICE

- 1. If a major wildland fire occurs in your fire district and aerial applicators are used, the following must take place:**
 - * The incident commander or someone under his command must track the accrued expense of aircraft utilization (all aircraft used, not individually) for billing purposes.**
 - * As the cost nears \$25,000, the incident commander must make a second notification to NEMA. If it appears likely that there will be multiple flights, call the Nebraska Emergency Management Agency (NEMA).**
 - * NEMA must have permission from the governor's office and a Governor's Emergency Declaration to expend more than \$25,000.**
- 2. Should your wildland fire become large enough and/or threaten a community, the incident commander can request large air tankers or National Guard helicopters by contacting NEMA directly: 877-297-2368 or 402-499-1219.**
 - * This is the fastest and only means of requesting large air tankers and/or helicopters.**

North Central Nebraska Community Wildfire Protection Plan

Appendix H - 2015 Emergency Assistance for Wildfire Control Quick Reference ♦ Page 4

THIS MANUAL WAS PREPARED BY:

NEBRASKA FOREST SERVICE

Wildland Fire Protection Section

101 Forestry Hall, East Campus

University of Nebraska-Lincoln

Lincoln, Nebraska 68583-0815

Phone: 402-472-2944

Fax: 402-472-2964

IN COOPERATION WITH:

NEBRASKA EMERGENCY MANAGEMENT AGENCY

ASSISTANCE FOR MANAGING WILDFIRES	DAY PHONE	NIGHT PHONE
		<i>(if different from DAY)</i>
Nebraska Forest Service	402-472-2944	
Nebraska Emergency Management Agency (NEMA)	877-297-2368	402-499-1219
NEBRASKA AGENCIES		
Nebraska Emergency Management Agency (NEMA)	877-297-2368	402-499-1219
Nights, weekends, holidays		402-499-1219
Nebraska Forest Service		
• Don Westover, Fire Coordinator	402-472-6629	402-489-8803
• Casey McCoy, Wildland Trainer	402-472-6634	402-560-1766
• Scott Josiah, State Forester	402-472-1467	402-327-8140
• Lew Sieber, FEPP Manager	402-624-8061	402-499-2650
• Seth Peterson, Fire Management Specialist - Chadron	308-432-6132	402-366-3540
• Justin Nickless, Fire Management Specialist - Valentine	402-376-4513	402-376-4513
Fire Marshal	402-471-2027	
• District A - Lincoln	402-471-2590	
• Bob Sleight, Chief	402-366-5940	
• District B - Albion	402-395-2164	
• Sean Lindgren, Chief		402-750-0459
• Training Division, Grand Island	308-385-6892	
• Jim Heine, State Fire Marshal	402-471-2027	
State Patrol		
• Emergency	800-525-5555	
• HazMat Response	800-525-5555	
• Mobile Command Post	800-525-5555	
• Headquarters - Lincoln	402-471-4545	
• Troop A, Omaha	402-331-3333	

North Central Nebraska Community Wildfire Protection Plan

Appendix H - 2015 Emergency Assistance for Wildfire Control Quick Reference ♦ Page 5

• Troop B, Norfolk	402-370-3456	
• Troop C, Grand Island	308-385-6000	
• Troop D, North Platte	308-535-8047	
• Troop E, Scottsbluff	308-632-1211	
OTHER AGENCIES		
Northern Great Plains Interagency Dispatch Center - Rapid City, SD	605-399-3160	
Rocky Mountain Area Coordination Center - Lakewood, CO	303-445-4300	
National Interagency Coordination Center - Boise, ID	208-387-5400	
RAILROADS		
Burlington-Northern Railroad - Emergency	800-832-5452	
	<i>option 1</i>	
Nebraska Central Railroad - Train Dispatcher - Norfolk	402-371-9015	402-379-2262
NebKota Railroad - Train Dispatcher - Chadron	308-432-8378	
	DAY PHONE	NIGHT PHONE
RAILROADS (continued)		<i>(if different from DAY)</i>
Nebraska Northwestern - Train Dispatcher - Chadron	308-432-8378	
Nebraska-Kansas-Colorado Railway - Grant	800-331-3115	
Union Pacific Railroad – Emergency/Critical call	888-877-7267	
U.S. GOVERNMENT		
National Park Service		
Midwest Regional Office - Omaha	402-661-1736	
• Patricia Trap, Associate Regional Director	402-661-1522	
• Jim McMahon, Fire/Aviation Manager	402-661-1754	402-630-0685
• Dave Niemi, Wildland Fire Management	402-661-1762	402-250-1233
Agate Fossil Beds - Harrison	308-668-2211	308-436-9760
• James Hill, Supt.	308-436-9770	
Homestead National Monument - Beatrice		
• Mark Engler, Supt.	402-223-3514	
Missouri National Recreational River - Crofton		
• Richard Clark, Supt.	605-665-0209	
Niobrara National Scenic River - Valentine		
• Stephen Thede, Valentine	402-376-1901	605-454-5161
Scottsbluff Monument - Gering	308-436-9700	
• Ken Mabery, Supt.	308-436-9711	
• Bob Manasak, Fire Coordinator	308-436-9721	308-436-7767
U.S. Forest Service		
Nebraska National Forest - Chadron		

North Central Nebraska Community Wildfire Protection Plan

Appendix H - 2015 Emergency Assistance for Wildfire Control Quick Reference ♦ Page 6

• Jane Darnell, Forest Supervisor	308-432-0300	
• Timothy Buskirk, District Ranger	308-432-0393	
• Bessey Ranger District - Halsey	308-533-2257	
• Tedd Teahon, District Fire Manager	308-533-8108	

McKelvie Ranger District - Nenzel	308-553-2257	
Pine Ridge Ranger District - Chadron		
Timothy Buskirk, District Ranger	308-432-0393	
• Steve Ipswitch, Fire Manager	308-432-0355	308-430-0262
•		
U.S. Fish & Wildlife Service		
Rainwater Basin Management	308-263-3000	
Quivira National Wildlife Refuge - Stafford, KS		
Bill Waln, Fire Management Officer	620-486-2393	
• Crescent Lake NWR - Ellsworth		
Rod Wittenberg, Refuge Manager	308-762-4893	
• Chris Masson, Fire Program Specialist	308-762-4893	308-762-2028
•	DAY PHONE	NIGHT PHONE
U.S. Fish & Wildlife Service (continued)		<i>(if different from DAY)</i>
Fort Niobrara NWR		
Steve Hicks, Refuge Manager; Troy Davis, Fire Management	402-376-3789	
• Valentine NWR	402-376-1889	
NATIONAL WEATHER SERVICE		
Western Nebraska: Cheyenne, WY	800-269-6220	
• Banner, Box Butte, Cheyenne, Dawes, Kimball, Morrill, Scottsbluff, Sioux counties		
Southwest Nebraska: Goodland, KS	800-272-7811	
Dundy, Hitchcock, Red Willow counties		
• North Central Nebraska: North Platte, NE	800-603-3562	
Arthur, Blaine, Brown, Boyd, Chase, Cherry, Custer, Deuel, Frontier, Garden, Garfield, Grant, Hayes, Holt, Hooker, Keith, Keya Paha, Lincoln, Logan, Loup, McPherson, Perkins, Rock, Sheridan, Thomas, Wheeler counties		
• South Central Nebraska: Hastings, NE	800-528-2914	
Adams, Buffalo, Clay, Dawson, Fillmore, Franklin, Furnas, Gosper, Greeley, Hall, Hamilton, Harlan, Howard, Kearney, Merrick, Nance, Nuckolls, Phelps, Polk, Sherman, Thayer, Valley, Webster, York counties		
• Eastern Nebraska: Valley, NE	800-452-9074	

North Central Nebraska Community Wildfire Protection Plan

Appendix H - 2015 Emergency Assistance for Wildfire Control Quick Reference ♦ Page 7

Antelope, Boone, Burt, Butler, Cass, Cedar, Colfax, Cuming, Dodge, Douglas, Gage, Jefferson, Johnson, Knox, Lancaster, Madison, Nemaha, Otoe, Pawnee, Pierce, Platte, Richardson, Saline, Sarpy, Saunders, Seward, Stanton, Thurston, Washington, Wayne counties		
• Northeast Nebraska: Sioux Falls, SD	800-852-9470	
Dakota, Dixon counties		
•		

FIRE CONTROL FROM THE AIR

A number of aerial applicators across Nebraska are cooperating with the Nebraska Forest Service and Nebraska Emergency Management Agency to provide aerial application of retardants to combat wildfires. One or more aircraft are within practical flying distance of most areas. The aerial applicator is another tool available to a fire department and can often get to the fire before ground crews.

Dispatching Procedure: To use aircraft, the following guidelines **will** be used:

- 1. Dispatching:** The local fire chief or fire department officer is authorized to dispatch one or more aerial applicators to apply fire retardant on wildfires. Aircraft can fly from an airport other than their base of operations, therefore eliminating the possibility of an aircraft closest to a wildfire not being available due to maintenance down time, being on another wildfire, no pilot available, etc. In many instances, there will be an airport closer to the wildfire than there will be aircraft. Using the closest airport will also cut down on the turnaround time for each mission flown.
- 2. Notification:** The local fire chief, fire department officer, the county sheriff or the local emergency management director of the jurisdiction requesting aircraft **will call** the Nebraska Emergency Management Agency Emergency Operations Center (EOC) in Lincoln and inform them that aircraft have been requested. **The EOC must be notified immediately of the fire incident.** These requirements are necessary to allow for the use of the Governor's Emergency Fund to pay for the aircraft. **Failure to give proper notification and information will result in the local fire department paying for the aircraft.**
- 3. The Nebraska Forest Service must be notified within 48 hours of the fire.**
- 4. Reimbursement:** The Nebraska Emergency Management Agency (NEMA) has set the following rates:

Aircraft Load	Rate per Hour	Aircraft Load	Rate per Hour
50-150 gallons	\$500.00	451-600 gallons	\$2000.00
151-200 gallons	\$565.00	601-800 gallons	\$2200.00
201-300 gallons	\$825.00	801+ gallons	\$2400.00
301-450 gallons	\$1800.00	Effective July 1, 2013	

Billing: The aerial applicator should bill the requesting agency (the local fire department) but send the statement directly to:

Don Westover
Nebraska Forest Service, Wildland Fire Protection
P.O. Box 830815
Lincoln, NE 68583-0815

North Central Nebraska Community Wildfire Protection Plan

Appendix H - 2015 Emergency Assistance for Wildfire Control Quick Reference ♦ Page 8

Late Bills: Bills received more than thirty (30) days after the incident will not be paid. In the event of extenuating circumstances, the applicator may pursue payment after 30 days by:

- Appearing personally at the Nebraska Forest Service office in Lincoln **and**
- Providing documentation to justify processing the late bill.

This documentation will be sent to NEMA for further action.

Billing Statement Forms may be obtained by calling the Nebraska Forest Service at 402-472-2944.

SAFETY PRECAUTIONS FOR AIRCRAFT USAGE

Pilot Discretion: The decision to fly or not to fly a wildfire mission is that of the aircraft pilot **ONLY**. If the pilot determines that the flying conditions so warrant, he/she may refuse to fly. **The pilot's decision is final.**

Air Traffic: In those situations when *multiple* aircraft are used on a fire, it is essential that their activity be coordinated. We recommend that for large fires with multiple aircraft, the fire chief appoint a person (an aircraft supervisor is recommended) to be in charge of aerial operations. This person should have radio contact with both the aircraft and fire chief. Aircraft without radios should be kept clear of congested airspace around the fire. If aircraft without radios must be utilized, a person in radio contact with the fire chief will be physically present at the landing/refill site to direct pilots to the appropriate area of the fire and establish a safe route to and from that area. It may be necessary to hold them on the ground from time to time until airspace clears.

NOTE:

Aerial applicators will not be allowed to enter air space being utilized by air tankers under contract to Nebraska or the federal government. All aerial applicators must be removed from within ten air miles of the retardant drop area or grounded while federal air tankers are assigned to a wildfire.

AIRCRAFT SUPERVISORS

Several aerial applicators have volunteered their services to train fire departments and other applicators in the proper procedures for aircraft operations during a wildfire incident.

It is highly recommended that the local fire departments and aerial applicators contact one of the Aircraft Supervisors to receive training concerning the following:

1. Fire department activities around aircraft;
2. Safety procedures used when multiple aircraft are used;
3. The establishment of a staging area for air operations;
4. Pilot flight procedures for dropping fire retardant on a wildfire; and
5. Pilot responsibilities in conjunction with fire department operations.

North Central Nebraska Community Wildfire Protection Plan

Appendix H - 2015 Emergency Assistance for Wildfire Control Quick Reference ♦ Page 9

This training is also provided through the State Fire Marshal's office.

The following individuals are trained/certified Aircraft Supervisors:

- | | |
|---|---|
| 1. Flying J Aviation
Dahl Jungren
Broken Bow, NE
308-872-5901 | 2. Ag-Land Aviation
Ole Sihm
Grant, NE
308-352-2220 |
|---|---|

COOPERATING AERIAL APPLICATORS

The following aerial applicators are cooperating with the Nebraska Forest Service and the Nebraska Emergency Management Agency (NEMA) to provide aerial fire suppression to requesting fire departments. Get to know them before you have a fire.

- Try to use an aerial applicator as close as possible to the area of the fire.
- However, if the aerial applicator nearest the fire is unavailable, you may contact another aerial applicator who is within a reasonable distance of the fire.
- Make sure that you have determined the location of the nearest airport to the fire for use as a base of operations.
- If you are still unable to arrange for an aerial applicator to assist you with your wildfire suppression, contact the Nebraska Forest Service at 402-472-2944 during normal working hours.
- After hours, contact the Nebraska Emergency Management Agency EOC at 1-877-297-2368 or 402-499-1219.
- Advise the operator that you need assistance in obtaining an aerial applicator on your wildfire.

*** Please refer to the contact list on the following page.**

North Central Nebraska Community Wildfire Protection Plan

Appendix H - 2015 Emergency Assistance for Wildfire Control Quick Reference ♦ Page 10

2015 COOPERATING AERIAL APPLICATORS CONTACT LISTING

AIRPORT / TOWN COUNTY	BUSINESS NAME	OWNER / OPERATOR	DAY PHONE	ALTERNATE PHONE	# OF AIRCRAFT	CLASS A FOAM	RADIO FREQUENCY
Albion / Boone	Petersburg Flying Service	Kenneth Schmitz	402-394-1613	402-386-5579	1	Yes	122.925
Alliance / Box Butte	Johnson's Aero Ag Inc.	Doug Johnson	308-327-2306	402-318-2258			
Aurora / Hamilton	Traudt Aerial Service	James Jensen	402-694-3144	402-631-8880	1	Yes	122.925
Bloomfield / Knox	Bloomfield Ag & Aerial	Steve Barney	402-373-2452	402-640-4755	2	No	None
Broken Bow / Custer	Arrow Aviation	Casey Williams	308-872-5113	308-440-2709	1	Yes	122.925
Broken Bow / Custer	Flying J Aviation	Dahl Jungren	308-872-5901		1	Yes	122.925
Chadron / Dawes	Johnson's Aero Ag Inc.	Doug Johnson	308-327-2306	402-318-2258			
Cozad / Dawson	Mid State Aviation II Inc	Rod Donner	308-784-3868	308-529-3573	3	Yes	122.925
Gordon / Sheridan	Johnson's Aero Ag Inc.	Doug Johnson	308-327-2306	402-318-2258			
Grant / Perkins	Ag-Land Aviation Inc.	Ole Sihm	308-352-2220		1	Yes	122.925
Imperial / Chase	Aerial Farm Services LLC	Robert Aslesen	308-882-2950		2	Yes	122.925
Kearney / Buffalo	Buffalo Air Services	Sean Penner	308-237-3700	308-224-6119	3	No	122.925
Kearney / Buffalo	Woods Aviation, Inc.	Waylon Woods	308-224-6283	308-224-6720	2	No	122.925
Lexington / Dawson	Werth Aerial Spraying LLC	Lance Werth	308-325-2095	308-785-2100	3	No	122.925
McCook / Red Willow	Red Willow Aviation & Spraying	Griff Malleck	308-345-3635	308-345-3207	4	No	Bus Band Unicom
Milford / Seward	Roth Aerial Spraying Inc.	Dave & Jerrel Roth	402-761-2322	402-761-2671	4	No	122.925
Minden / Kearney	Pioneer Aerial Applicators	Brent Stewart	308-832-0853		1	Yes	122.925
Neligh / Antelope	Wilcox Flying Service	Brian Wilcox	402-640-4999		1	No	122.925
O'Neill / Holt	Wilcox Flying Service	Brian Wilcox	402-640-4999				
Red Cloud / Webster	Meyers Aerial Service	Luke Meyers	402-879-3006	402-879-5852			
Rushville / Sheridan	Johnson's Aero Ag Inc.	Doug Johnson	308-327-2306	402-318-2258	2	Yes	122.925
Scotia / Greeley	Wells Air Service	Garry Wells	308-245-4328	308-968-3456	1	Yes	None
S. Sioux City / Dakota	Sioux Air Inc.	Gene Martin	402-494-3667		1	Yes	122.925
Superior / Nuckolls	Meyers Aerial Service	Luke Meyers	402-879-3006	402-879-5852	2	Yes	122.925
Tekamah / Burt	Ag Werx Aviation Inc	Tim Hauder	402-374-2178	402-618-0660	2	Yes	122.925
Wallace / Lincoln	Wallace Aviation Inc.	Stuart VanBoening	800-222-4662	308-387-4615	3	Yes	None

USING CLASS A FOAM RETARDANT FROM THE AIR

Mixing Directions: The recommended mix ratio for this retardant is ½ %. If you plan to drop 100 gallons of the retardant, first fill the aircraft tank with 100 gallons of water and then add ½ gallon of foam concentrate. Always remember to add the foam concentrate last to avoid “sudsing” while filling. Some individuals recommend running the recirculation pump while en route to the fire to ensure proper mixing of the concentrate in the load. The following table shows how much foam concentrate to use for some common load sizes.

LOAD SIZE	FOAM	LOAD SIZE	FOAM
50 gallons	¼ gallon	450 gallons	2 ¼ gallons
100 gallons	½ gallon	500 gallons	2 ½ gallons
150 gallons	¾ gallons	550 gallons	2 ¾ gallons
200 gallons	1 gallon	600 gallons	3 gallons
250 gallons	1 ¼ gallons	650 gallons	3 ¼ gallons
300 gallons	1½ gallons	700 gallons	3 ½ gallons
350 gallons	1 ¾ gallons	750 gallons	3 ¾ gallons
400 gallons	2 gallons	800 gallons	4 gallons

Application: Class A Foam Retardant is a short-term retardant. Apply it no more than 15 minutes in advance of the fire. As it dries, its effectiveness is gone. On the other hand, applying it too close to the fire has some disadvantages too. These disadvantages are smoke, turbulence and inadequate drain time. Drain time relates to the tendency of the foam to slowly drain water into the fuel it is covering. After just a few minutes of draining, the foam will thoroughly wet the fuel it has been applied to. In contrast, plain water applied from the air will only surface-coat the fuel and then run off into the soil.

Foam is applied by partially opening the quick-dump gate on the aircraft. This will string out the load and apply it in a strip about 25-50 feet wide and 1000 feet long (depending on tank size and altitude).

The optimum altitude for dropping foam is said to be 30 feet. Dropping from higher altitudes will result in lighter foam that drifts and is not wet enough. Dropping from lower altitudes results in less air in the foam mix. This will give a narrower band of “wet water” retardant.

Coordination: Aerial retardant drops are an excellent way to complement ground attacks on wildfires. Both elements working together in a coordinated fashion are the best way to handle a large wildfire. Retardant drops normally do not put out wildfires. They do, however, give ground units an opportunity to get in close and extinguish a fire that has been slowed down and cooled off dramatically by the air drops. Communication plays a vital role in this unified effort.

North Central Nebraska Community Wildfire Protection Plan

For best results, fire departments and aerial applicators should meet and discuss coordination and communications in advance of the wildfire season. **If we wait until a fire is burning, there will be no opportunity for planning a coordinated effort.** There are several important questions which need to be answered at these meetings:

1. How will air/ground communications be handled?
2. Who will be responsible for getting the retardant to the loading site?
3. What do firefighters need to know about safety around the aircraft?

Precautions: While the foam retardant is far less corrosive than the 10-34-0 fertilizer retardant previously used, it is best to wash down the aircraft and flush the tank after using the foam. This product is a powerful wetting agent which will quickly soak through leather gloves and boots. Rubber boots and gloves are a good idea around the loading site, as are splash-proof goggles and first-aid eye wash solutions. Ground crews should also note that foam can cause slippery footing on certain surfaces.

FOAM RETARDANT LOCATIONS

LOCATION	CONTACT	DAY PHONE	NIGHT PHONE
			<i>(if different from day)</i>
Alliance	Fire Dept.	308-762-2151	
Bridgeport	State Fire Marshal	308-262-1292	
Broken Bow	Fire Dept.	308-872-6424	
Chadron	Fire Dept.	308-432-5506	
Curtis	Fire Dept.	308-367-4300	
Gothenburg	Fire Dept.	308-537-3321	
Grant	Ag-Land Aviation	308-352-2220	
Holdrege	Fire Dept.	308-995-4409	
Imperial	Fire Dept.	308-882-4444	
Keystone-Lemoyne	Fire Dept.	308-726-5715	308-284-2011
North Loup	Fire Dept.	308-496-4361	
O'Neill	Fire Dept.	402-336-1955	
Oshkosh	Fire Dept.	308-772-3540	
Rushville	Fire Dept.	308-327-2401	
Scottsbluff	Airport	308-635-4941	308-631-1591
South Sioux	Sioux Air Inc.	402-494-3667	
Superior	Nuckolls Co.	402-225-2361	402-879-7522
Tekamah	Fire Dept.	402-374-2121	
Thedford	Fire Dept.	308-645-2200	
Wallace	Wallace Aviation	800-222-4662	308-387-4615

NOTE:

North Central Nebraska Community Wildfire Protection Plan

Appendix H - 2015 Emergency Assistance for Wildfire Control Quick Reference ♦ Page 13

If you are listed as a foam location and use the 10 gallons of foam that is provided to you for use in aerial applicators; contact the Nebraska Forest Service Fire Shop at 402-624-8061 for replacement of that foam. We will trade empty buckets for full ones.

QUICK REFERENCE

(fill in blanks below)

NEBRASKA FOREST SERVICE **402-472-2944 / 402-489-8803**

NEBRASKA STATE PATROL **800-525-5555**

NEMA **877-297-2368 / 402-499-1219**

LOCAL EMERGENCY MANAGEMENT: _____

CLOSEST AERIAL APPLICATOR(S):

NAME OF APPLICATOR	PHONE NUMBER

NOTIFICATION CHECKLIST	PERSON NOTIFIED	DATE	TIME

North Central Nebraska Community Wildfire Protection Plan

Appendix H - 2015 Emergency Assistance for Wildfire Control Quick Reference ♦ Page 14

Deployment Procedures for the Nebraska Single Engine Aerial Tanker (SEAT)

LB 634 was passed by the Nebraska Unicameral and signed into Law by Governor Heinemann on June 3, 2013. This law tasks the Nebraska Forest Service (NFS) and the Nebraska Emergency Management Agency (NEMA) to jointly contract for and manage a SEAT to be based in Nebraska. The SEAT will be dispatched through the Great Plains Dispatch Center (GPDC), in Rapid City, SD.

REQUEST PROCEDURES

CALL NEMA! Fill in the five (5) blanks below and give information to Duty Officer:

1. A SEAT is the appropriate response for a wildfire burning in forested lands or grasslands approaching forested lands.
2. Local fire chiefs and incident commanders will first request local aerial applicators prior to requesting a SEAT unless the fire is out of control, and burning forested land or running into forested land.
3. If a Fire Chief or Incident Commander requests a SEAT directly from the GPDC in Rapid City, that jurisdiction will be responsible for the cost of the deployment.
4. GPDC **requires** the information listed below before deploying any air assets including the Nebraska SEAT. The local jurisdiction requesting the Nebraska SEAT **(call 877-297-2368 during office hours or 402-499-1219 after hours)** shall have the following information ready to give to the NEMA Duty Officer or Operations personnel NEMA:

a. Latitude and longitude of fire location: *(record below)*

b. Radio frequency that will be used for air-to-ground communications: *(record below)*

c. Name and location of the individual who will be responsible for air-to-ground communications and who will instruct the pilot where to start retardant application: *(record below)*

5. If this information is not quickly and readily available to NEMA from the fire scene, deployment of the SEAT will be delayed until it is available.

Name of person phoning the request to NEMA and call back number: *(record below)*

6. Record the **date and time** this information was transmitted to NEMA and **name of NEMA staff** receiving the information: *(record below)*

North Central Nebraska Community Wildfire Protection Plan

Appendix H - 2015 Emergency Assistance for Wildfire Control Quick Reference ♦ Page 15

