Strategic Fire Plan
Sonoma-Lake-Napa Unit
2013

UNIT STRATEGIC FIRE PLAN AMENDMENTS

SECTION/PAGE	DESCRIPTION OF UPDATE
COVER (1) -	Inserted higher resolution logos.
TABLE OF CONTENTS (2) -	Renumbered to include “UNIT STRATEGIC FIRE PLAN AMENDMENTS”.
SIGNATURE PAGE (3) -	Changed names to reflect new Unit Chief and new Pre-Fire Engineer.
UNIT OVERVIEW (6) -	Removed Maps, SRA/DPA Chart. Moved to Appendix.
PAGE (7) -	Removed map.
PAGE (10) -	Moved “Local Fire Department Agreements” to after “Why Inter-Agency Cooperation Is Essential”.
PAGE (13) -	Moved “Why Inter-Agency Cooperation Is Essential” to after “CAL FIRE Facilities”.
PAGE (15) -	Removed picture.
PAGE (16) -	Deleted entire page.
PAGE (17) -	Deleted “Assets At Risk Total Score” map.
PAGE (18) -	Deleted “Assets At Risk LNU Weighted” map.
PAGE (19) -	Deleted “LNU Surface Ranking” map.
PAGE (20) -	Deleted “LNU Planning Belts” map.
PAGE (21) -	Deleted “LNU Structure Density Ranking” map.
PAGE (24) -	Removed picture.
PAGE (25) -	Deleted all paragraphs.
PAGE (27) -	Removed picture. Deleted reference to Cortina Ridge VMP project.
PAGE (36) -	Deleted entire page.
PAGE (37) -	3rd paragraph, re-wrote section. 6th paragraph, re-wrote section.
PAGE (54) -	Moved Appendix B to Page 2.
PAGE (55) -	Re-wrote Appendix C.
PAGE (64-69) -	Replaced all maps with new ones from Calmapper.

Table of Contents

STRATEGIC FIRE PLAN AMENDMENTS 2

SIGNATURE PAGE 4

EXECUTIVE SUMMARY 5

SECTION I: UNIT OVERVIEW
- UNIT DESCRIPTION 7
- UNIT PREPAREDNESS AND FIREFIGHTING CAPABILITIES 8

SECTION II: COLLABORATION
- DEVELOPMENT TEAM 12

SECTION III: VALUES AT RISK
- IDENTIFICATION OF ASSETS AT RISK 14
- COMMUNITIES AT RISK 15

SECTION IV: PRE FIRE MANAGEMENT STRATEGIES
- FIRE PREVENTION 16
  - ❖ ENGINEERING & STRUCTURE IGNITABILITY 17
  - ❖ INFORMATION AND EDUCATION 19
- VEGETATION MANAGEMENT 20

SECTION V: PRE FIRE MANAGEMENT TACTICS
- DIVISION / BATTALION / PROGRAM PLANS 23

APPENDIX A: HIGH PRIORITY PRE FIRE PROJECTS 45

APPENDIX B: ANNUAL PRIORITY GOALS AND OBJECTIVES 46

APPENDICES C-Z: OPTIONAL 47

EXHIBITS: MAPS 52

SIGNATURE PAGE

Unit Strategic Fire Plan developed for the Sonoma-Lake-Napa Unit:

This Plan:

- Was collaboratively developed. Interested parties, Federal, State, City, and County agencies within the Unit have been consulted and are listed in the plan.
- Identifies and prioritizes pre fire and post fire management strategies and tactics meant to reduce the loss of values at risk within the Unit.
- Is intended for use as a planning and assessment tool only. It is the responsibility of those implementing the projects to ensure that all environmental compliance and permitting processes are met as necessary.

June 1, 2013

Unit Chief **Date**

Eric Hoffmann

June 1, 2013

Pre-Fire Engineer **Date**

Tom Knecht

EXECUTIVE SUMMARY

The Sonoma-Lake-Napa Unit Fire Management Plan's purpose is to identify the high value, high-risk areas within the six counties of Sonoma, Lake, Napa, Solano, Yolo, and Colusa to provide the planning basis for reducing the damaging effects of wildfire. Fire has shaped ecosystems throughout time; people and ecosystems have evolved with the presence of fire. For many years fire has been aggressively excluded to protect both public and private investments and to prevent what is considered the destruction of wildlands.

Through the history of the fire service in the CAL FIRE Sonoma-Lake-Napa Unit, this agency has been charged with the responsibility to effectively manage wildland fire prevention and suppression activities in an effort to protect life and property, reduce the financial loss to the communities and contain the increasing costs of fire suppression.

The Sonoma-Lake-Napa Unit Fire Plan outlines a comprehensive program designed to reduce total government costs and citizen losses from wildland fire in the unit. To accomplish this CAL FIRE continues to develop processes to address such factors as:

Firefighter and Public Safety

Wildland Urban Interface (WUI) Issues

Prescribed Fire

Suppression

Preparedness

Protection

Priorities

Inter-agency Cooperation

Throughout the process, the plan must:

- Consider and incorporate the cooperative interdependent relationships of wildland fire protection providers
- Provide for public stakeholder involvement
- Create a fiscal framework for policy analysis

Furthermore, the Sonoma-Lake-Napa Unit Fire Plan will develop and foster partnerships to gain concurrence on plan implementation.
The strategy, among other things, will:

- Include alternatives to reduce total costs and increase fire protection effectiveness
- Allow wildland fire service providers to focus on meaningful solutions for identified problem areas
- Identify cost-effective pre-fire management investments to reduce taxpayer and citizen losses from wildland fire

Key Objectives
Establish any relationships, partnerships and councils necessary to reduce wildfire risks and losses by emphasizing community-level resources and solutions. Leverage partners with common interests/or motivations.

Develop and sustain a portfolio of high-impact, least-cost, stakeholder-driven solutions for reducing wildfire risks and losses by creating and sustain new solutions, eliminate low-impact solutions, streamline high-cost solutions.

Develop the Fire Plan, using the key elements identified by CAL FIRE and supporting smaller communities with the development of their local CWPP.

Engage collaborative partners lead and drive the effort to protect communities from wildfire. The CAL FIRE role is transitioned into a support-oriented role, focusing primarily on active participation, facilitation and evaluation of program results.

Ensure the community understands, accepts responsibility and takes necessary action to mitigate wildfire risk, thereby preventing lives and property from being lost or damaged in wildfires.

SECTION I: UNIT OVERVIEW

A: UNIT DESCRIPTION

The Sonoma-Lake-Napa Unit (LNU) is one of twenty one (21) California Department of Forestry and Fire Protection (CAL FIRE) administrative units. The Unit was created in 1996 when the Sonoma Ranger Unit and the Lake-Napa Ranger Unit were merged into one unit. LNU has primary responsibility for more than 2.3 million acres of CAL FIRE Direct Protection Area (DPA) lands, more than any other unit. It has the third largest population living within CAL FIRE DPA, and ranks the third in average number of annual fires.

The Unit is divided into four divisions and ten field battalions. The boundaries of Sonoma County define the West Division, and are comprised of four field battalions. Napa County defines the South Division, and are comprised of three field battalions. Lake County defines the North Division, and are comprised of two field battalions. The remaining counties of Yolo, Solano, and Colusa define the East Division, and are comprised of a single battalion.

The Unit has The Mendocino National Forest as a boundary to our north, the Pacific Ocean to the west, the San Francisco Bay to our south, and the Sacramento Valley to the east.

Sonoma-Lake Napa Unit's Headquarters, including the Emergency Command Center (ECC) and the South Division offices are located just north of St. Helena in Napa County. Division specific offices are located in smaller facilities; Santa Rosa Station for the West Division, Konocti Camp for the North Division, and Delta Camp for the East Division.

The predominant fuel types in the Sonoma-Lake-Napa Unit are grass/oak woodland to decadent chaparral, with mixed conifer forests.

Elevation with the Sonoma-Lake-Napa Unit ranges from sea level to 7000 feet on the Mendocino National Forest. The topography consists of long valleys and ridges running North/South. Slopes generally increase as you go from drainage bottom to ridgeline. Steep slopes and drainages significantly hinder firefighting efforts. Disked vineyards, crops, roads and other manmade features provide a limited network of barriers that assist firefighting efforts.

A significant numbers of the unit's large and damaging fire history has occurred along the Highway 16 corridor through Rumsey Canyon. Because of poor access, steep slopes and strong north winds, these fires have burned up to 30,000 acres. Most of the Lake County has been burned by large fires in the last several decades. The largest known fire was the human caused Fork Fire that started in Middle Creek on the border of the Mendocino National Forest just North of Upperlake. The fire burned more than 83,000 acres of brush and timber in 1996. Previous to the Fork Fire was the Mendenhall Fire, which also started on the Mendocino National Forest by lightning and burned nearly 67,000 acres. Past fire history in Sonoma County has occurred on the Eastern side of the Santa Rosa Plain. These consist of major fires approximately every 10-12 years mostly occurring in the Geysers area consisting of 10,000-12,000 acres. The Hanley Fire started on Mt. St Helena in Napa County and burned all the way to Santa Rosa.

The Sonoma-Lake-Napa Unit consists of high, medium, and low priority landscapes per the California's Forests and Rangelands: 2010 Assessment.

The overall goal of this plan is to reduce the total costs and losses from a wildland fire through focused pre-fire management prescriptions and increase initial attack fire success.

B: UNIT PREPAREDNESS AND FIREFIGHTING CAPABILITIES

CAL FIRE Facilities

During peak fire season the Sonoma-Lake Napa Unit staffs 21 schedule B stations that house 31 wildland (ICS type III) engines and five bulldozers, one Helitack base (Copter 104), one air attack base with an air attack (Air Attack 140) and two air tankers, two Conservation Camps with California Department of Corrections and Rehabilitation (CDCR) inmates comprised of 11 handcrews.

The Unit has four Divisions North, South, East and West.

The North Division (Lake County) is comprised of three State Fire Stations (Middletown, Kelsey Cobb and Clearlake Oaks Station), that house 6 engines and 2 dozers, Boggs Mountain Helitack (Copter 104), and Konocti Conservation Camp (5 crews). In addition to the state facilities CAL FIRE has Schedule “A” contract with South Lake County Fire District that includes dispatching and paramedic services.

The South Division (Napa County) is comprised of 5 State and 2 County (Schedule “A”) Fire Stations (St. Helena, Las Posadas, Spanish Flat, Gordon Valley, Napa, Greenwood Ranch and Yountville Station)which house 8 Schedule “B” engines, 1 dozer, 4 Schedule “A” engines and a Schedule “A” truck. There is a Schedule “A” contract at Napa, Greenwood Ranch, Yountville and St. Helena Stations and “Amador” contracts at Napa and Spanish Flat Stations. Napa County Fire Department is also administratively run by Cal Fire and oversees nine volunteer departments.

The East Division (Colusa, Yolo and Solano Counties) is comprised of three State Fire Stations (Leeseville, Wilbur Springs, and Brooks Station’s) that house 3 engines, and Delta Conservation Camp with 6 crews.

The West Division (Sonoma County) is comprised of Sonoma Air Attack Base (Air Attack 140, Air Tankers 85 and 85), and 9 State Fire Stations (Santa Rosa, Occidental, The Sea Ranch, Cazadero, Hilton, Glen Ellen, Petaluma, Healdsburg, and Cloverdale Station, that house 14 engines and 2 dozers. The Sea Ranch contracts with CAL FIRE for Schedule “A” services, both Petaluma and Hilton Stations have an “Amador” contract through Sonoma County. Cal Fire dispatches for the City of Cloverdale.

WHY INTER-AGENCY COOPERATION IS ESSENTIAL

Fire as a process involves the proper combination of three elements: heat, oxygen, and fuel. A wildfire doesn't conform to jurisdictional boundaries. It burns wherever the three elements are present. Therefore, a wildfire, regardless of size, can impact a wide variety of stakeholders. A stakeholder can be any person, agency, or organization with a particular interest in fire safety and protection of assets from wildland fire. In LNU this includes, but isn't limited to, the fire protection professionals from more than 100 paid and volunteer fire departments, nearly one hundred active Volunteers-in-Prevention (VIP), planning staffs from the six counties, air quality staff from six separate air quality districts, and dozens of citizens groups, both formal and ad-hoc, that have engaged the issue of fire protection in their respective communities. LNU recognizes that such engagement takes many approaches**.** The stakeholders have taught that there is no such thing as a single "standard approach" to reducing costs and losses due to wildfire.

In some instances, concerned citizens have formed exclusively around the issue of fire, in which case they are known as "fire safe councils." In LNU, such councils have been formed at various levels of community and governance. For example, Fire Safe Sonoma encompasses the entire County of Sonoma, while the South Lake Fire Safe Council encompasses a portion of Lake County that has a common tradition resulting from a geographically influenced fire history and a fire protection district that evolved in response. At an even more refined level, the Mt. Veeder Fire Safe Council in Napa County is oriented toward a specific community with its' own unique fire safety concerns.

In other instances, long-established community groups are considered functionally equivalent to fire safe councils. Examples include the Hidden Valley Lake Homeowners Association in Lake County, the Berryessa Estate Homeowners Association and the Circle Oaks Homeowners Association in Napa County, and the Fountaingrove Open Space Maintenance Association and the Fitch Mountain Neighborhood Association in Sonoma County, all of which have worked for years with local CAL FIRE representatives to implement community defense wildfire protection projects. Neighborhood and homeowner groups like these have been in existence for many years and have a long history of addressing common problems of local land use and development, watershed issues, and other local community environmental concerns.

Typical The Sea Ranch Structure and Landscaping

On the northern Sonoma Coast, The Sea Ranch has its' own fire management plan dating back to the 1980s aimed at increasing community wildfire awareness, and the implementation of a combination of fuel breaks and fuel reduction to protect assets, mainly structures, at risk. Dealing with the challenges posed by wildfire is often consistent with these longstanding local approaches.

Other local stakeholders include public and private institutions, such as Pacific Union College, St. Helena Hospital and Health Center, and the California Veterans Home, all in Napa County; the Audubon Society in Yolo County; the Cal Pine Energy Corporation and the Northern California Power Authority, both geothermal energy producers in the Geysers area of Sonoma and Lake Counties; Pacific Gas & Electric, and numerous Resource Conservation Districts throughout the six county area. Unit staff has long worked with every one of these institutions to implement pre-fire management projects of various types.

Various local, state, and federal government agencies also have major stakes in fire safety and protection of assets from wildland fire. At the federal level, LNU has worked closely with the USDI Bureau of Land Management's (BLM) Ukiah Field Office, USDA Forest Service's (USFS) Mendocino National Forest, and the U.S. Army Corps of Engineers on numerous pre-fire management projects over the years. State agencies include the Department of Fish and Game, State Lands Commission, and the Department of Parks and Recreation. The Unit currently has either active or recently completed Vegetation Management Program (VMP) projects on lands administered by each of these agencies.

U.S. Army Corps Lake Sonoma Prescribed Burn in November 2002

The Unit works closely with more than 100 volunteer and paid fire departments. In Napa County, the unit fulfills a dual function as the Napa County Fire Department. The Unit is partnered with the county fire and planning departments of Napa and Sonoma Counties in co-sponsorship of a regional Fire Wise Community Workshop that engaged many of the stakeholders mentioned above in the unit's fire management planning process. This process continues today as the Napa FIREWISE Program, which has the full endorsement of the Napa County Board of Supervisors. This countywide program continues to receive federal wildland urban interface (WUI) grant funding. Over and over again, the key issue that arises in all these forums is the growing WUI problem and the related problem of decreasing availability and affordability of homeowner's insurance.

A second key issue in the unit is the unique class of assets at risk in the Geysers geothermal field. Here, capital improvements that are valued in excess of four billion dollars are vulnerable to some of the heaviest wildland fuel loadings in the unit. Not only are these facilities at risk to wildfire, they also pose the risk of ignition to themselves. This is due to numerous high-voltage transmission lines associated with the power plants that generate and deliver electricity to Californians daily.

Unit 18 in The Geysers

Local Fire Department Agreements

North Division

BLM-CAL FIRE Operating Plan
Lake County MTZ
South Lake Fire Contract
USFS Mutual Aid Mendocino N.F.
USFS Operating Plan Mendocino N.F.

South Division

American Canyon Auto Aid
Calistoga Auto Aid
Napa City Auto Aid
Napa County Contract
Yountville Contract
Napa County Airport Response
Napa Interagency Response Team
St. Helena City Auto Aid
Suisun Auto Aid
Napa Interagency Hazardous Incident Team Agreement

West Division

Cloverdale Auto Aid/MTZ
Forestville Auto Aid
Geyserville Auto Aid
Glen Ellen Auto Aid
Grayton Auto Aid
Healdsburg MTZ
Kenwood Auto Aid
Marin MTZ/Contract
Petaluma Auto Aid/MTZ
Rincon Valley Auto Aid
Russian River Auto Aid
Santa Rosa MTZ
Schelle Vista Auto Aid
The Sea Ranch Contract
Camp Meeker Auto Aid
Sonoma valley Auto Aid
Wilmar Auto Aid

East Division

None

Dispatching Agreements

Napa County Fire Department
St. Helena City Fire Department
Calistoga City Fire Department
Cloverdale Fire District
The Sea Ranch Fire Department
South Lake County Fire District

CAL EMA Napa County Fire Operational Area
CAL EMA Region II Alternate Dispatch

SECTION II: COLLABORATION

A: COMMUNITY / AGENCIES / FIRE SAFE COUNCILS

Representatives involved in the development of the unit Strategic Fire Plan are included in the following table. Their organization and title are indicated below:

Plan Development Team:

Organization	Representative (title)
Fire Safe Sonoma	Fire Safe Chair
Lake County Fire Safe Council	Fire Safe Chair
Circle Oaks Fire Safety Committee	Fire Safe Chair
Mount Veeder Fire Safe Council	Fire Safe Chair
Berryessa Estates Fire Safe Council	Fire Safe Chair
Tucker Acres Fire Safe Council	Fire Safe Chair
Madrone Knolls Fire Safe Committee	Fire Safe Chair
Fountaingrove Open Space Maintenance Association	Fire Safe Chair
Fitch Mountain Neighborhood Association	Fire Safe Chair
The Sea Ranch Fire Safe Council	Fire Safe Chair
BLM	BLM Representative
USFS	USFS Representative
American Canyon Fire Department	Fire Chief
Calistoga City Fire Department	Fire Chief
Napa City Fire Department	Fire Chief
Napa County Fire Department	Fire Chief
Napa County Airport	Airport Administrator
St. Helena City Fire Department	Fire Chief
Cloverdale Fire Protection District	Fire Chief

COMMUNITY / AGENCIES / FIRE SAFE COUNCILS continued:

Organization	Representative (title)
Forestville Fire Protection District	Fire Chief
Geyserville Fire Protection District	Fire Chief
Glen Ellen Fire Protection District	Fire Chief
Grayton Fire Protection District	Fire Chief
Healdsburg Fire Protection District	Fire Chief
Kenwood Fire Protection District	Fire Chief
Marin County Fire Department	Fire Chief
Rincon Valley Fire Protection District	Fire Chief
Russian River Fire Protection District	Fire Chief
Santa Rosa City Fire Department	Fire Chief
Schelle Vista Fire Protection District	Fire Chief
The Sea Ranch Fire Protection District	Fire Chief
Sonoma Valley Fire Protection District	Fire Chief
Wilmar Fire Protection District	Fire Chief
South Lake County Fire District	Fire Chief

SECTION III: VALUES AT RISK

A: VALUES AT RISK

The primary purpose of wildland fire protection is to safeguard the wide range of assets than can be threatened by wildfire. Assets at risk refer to values that have the potential to be burned or damaged by wildfire. In LNU, these assets include life and safety, structures, water and watershed values, agriculture, rangeland, recreation, air quality, soil resources, wildlife, unique scenic areas, cultural and historic resources. Among the unit's assets at risk are some of the world's most valuable agricultural lands, which are often interspersed with high-value real estate, both residential and commercial. Sixteen assets have been identified by the State Fire Plan and ranked as to their risk from wildfire.

The resident population within the unit is more than 1.2 million. Suburban populations are booming in the southern end of the unit, particularly in Solano County, along the Interstate 80 corridor that links San Francisco and Sacramento. As available Local Responsibility Area (LRA) lands are used for residential, industrial, and agricultural purposes, there is increasing pressure for development in SRA lands. Accelerated growth is occurring in the population centers of Santa Rosa, Petaluma, Windsor, Healdsburg, Cloverdale, Vacaville, Fairfield, Vallejo, and Lake County. All of these areas are characterized by a growing wildland urban interface (WUI) fire problem.

More than an estimated five million tourists travel through the unit each year, taking part in a wide variety of recreational activities from wine tasting to enjoying the waterways.

The Geysers geothermal field, which is located in the Clear Lake Volcanic Area straddling Sonoma and Lake Counties, is a unique asset at risk, and one that plays a large role in the unit's wildfire protection planning. The complex is comprised of dozens of high value structures, including 22 power generating plants scattered over 30,000 acres of remote, steep, and broken topography of the Mayacamas Mountains. This geothermal field is the largest and most productive in the world. It has an estimated electrical generating capacity of over 2,000 megawatts and supplies power to over one million California residents. More than four billion dollars in capital improvements is at risk to wildfire in the midst of some of the unit's most high hazard wildland fuels. The numerous power-generating activities are not only at risk to wildfire, but also have periodically been sources of ignition.

B: COMMUNITIES AT RISK

Sonoma County:

Agua Caliente	Annapolis	Asti	Bennett Valley
Bloomfield Camp	Bodega	Bodega Bay	Boyes Hot Spring
Meeker Duncan	Cazadero	Cloverdale	Cotati Forestville
Mills Geyserville	El Verano	Eldridge	Guerneville
Healdsburg Monte	Glen Ellen	Graton	Larkfield-Wikiup
Rio Rohnert Park	Jenner	Kenwood	Petaluma
South Santa Rosa	Oakmont	Occidental	Sonoma The
Timber Cove	Roseland	Santa Rosa	Sea Ranch
	Stewart Point Rancheria	Temelec	Windsor
	Two Rock Coast Guard	Valley Ford	

Lake County:

Anderson Springs	Blue Lakes	Clearlake	Clearlake Oaks
Cobb	Glenhaven	Hidden Valley Lake	Kelseyville
Lakeport	Loch Lomond	Lower Lake	Lucerne
Middletown	Nice	The Geysers	Upper Lake
Witter Springs			

Napa County:

American Canyon	Angwin	Berryessa Highlands	Calistoga
Capell Valley	Circle Oaks	Deer Park	Gordon Valley
Napa	Napa Soda Springs	Pope Valley	Saint Helena
Spanish Flat	Yountville		

Colusa County:

Arbuckle	Colusa	Lodoga	Sites
Stoneyford	Williams		

Yolo County:

Capay	Esparto	Guinda	Rumsey
West Sacramento	Winters		

Solano County:

Benicia Vallejo	Fairfield	Green Valley Estates	Vacaville

SECTION IV: PRE FIRE MANAGEMENT STRATEGIES

A: FIRE PREVENTION

Goals

The primary goal of the unit's Prevention Bureau is to limit the number of negligently caused fires. Through training and experience we will increase company officer investigations to reduce the amount of undetermined fires reported in the unit. The Fire Prevention Bureau will work closely with adjoining agencies to limit linkage blindness for serial arsonist activity.

Objectives

Build on and introduce new public information avenues focusing on LNU cause specific information to prevent ignitions i.e. equipment and debris burning.

Bi-lateral law enforcement and civil cost recovery levied on electrical utilities to encourage proper conductor maintenance thereby reducing ignitions.

By continuing to work towards all company officers being trained to the NWCG FI-210 standard, fewer wildland fires should be undetermined for a final cause allowing for even more accurate ignition problem identification for LNU.

Maintain memberships on Fire Investigation Task Forces within LNU to network with other agency investigators and to share intelligence on possible serial arson activity.

The ultimate goal is to reduce the number of ignitions.

The top five average fire causes are:
1. Undetermined, 24%
2. Equipment, 15%
3. Miscellaneous, 12%
4. Playing with fire, 7%
5. Arson, 7%

The primary cause category for fires within the Sonoma-Lake-Napa Unit is: Undetermined.

- ENGINEERING & STRUCTURE IGNITABILITY

One incomplete aspect of the previously discussed vegetative wildfire fuels analysis is the consideration of structures located within the wildland areas. To a wildfire, a structure is just another fuel. And as mentioned before, the only element of the three environmental elements that influence the behavior of wildfire that we, as humans, can change is fuel. If a structure is in the planning stages, design and construction material recommendations can be made to make the structure less prone to ignition by wildfire. However, if the structure is already built, the easiest factor to change may be to implement various fuel modifications around the structures in order to protect them from encroaching wildfires. Public Resources Code (PRC) 4291 addresses fuel modification and the concept of "defensible space." Defensible space can both be thought of for protecting a structure and also providing firefighters with a safe environment to position their fire apparatus and perform the necessary function to prevent the structure from igniting. Unfortunately, the proper building construction and defensible space cannot guarantee that the structure will survive all wildfire possibilities.

Development in Hazardous Areas

Development in the wildland urban interface provides for a myriad of issues that must be and are addressed through development standards and land use planning. Land use planning must recognize the hazards and treat them as constraints in the planning process.

Communities plan to minimize these fire hazards by requiring elevated development standards within especially vulnerable areas. These standards include the requirement for fire resistive construction materials, development of adequate emergency access routes, access to fire suppression water supplies (fire hydrants or water tanks), and defensible space around structures. The implementation of these standards help minimize, but not entirely eliminate, the hazards from wildland fires.

Wildland Urban Concerns

Example of good address signing

Example of poor road signing

Example of poor, overgrown road access

Example of fire protection water storage

Example of locked gate access

Example of poor overgrown access

INFORMATION AND EDUCATION

The Sonoma-Lake-Napa Unit is very engaged in public information and education activities. The Unit is asked to report their monthly prevention activities. Doing so gives us a clear picture of activity in the field with regards to public information and education. The Sonoma-Lake-Napa Unit dedicates an impressive amount of personnel hours towards information and education. These efforts are reported to the region monthly and reflected well on the unit. The Unit participates annually in over 2,000 hours of public education activities, making an estimated 41,500 public contacts.

Every contact with a member of the public is an opportunity to educate. The importance of fire safety, whether the message is defensible space, exit drills in the home (E.D.I.T.H), changing smoke detector batteries, or dialing 9-1-1; these messages must be delivered to the public whenever possible.

Beginning in 2011 Unit personnel and a hand full of Volunteers-In-Prevention were instrumental in creating the Sonoma County Safety PALS troupe whose mission is to educate the youth of Sonoma County in life safety and fire prevention skills. This theatrical troupe is made up of multiple public agency personnel with a common goal to provide out reach to the youth of the community. Each year the Sonoma County Safety PALS will educate kindergarten through third graders with their fun and engaging life safety performances, twice a year, at different locations throughout the county.

Department wide, the new website, readyforwildfire.org has progressed the department's defensible space message. Everyone should be aware of this website and its benefits for educating the public on defensible space and general fire resistive building construction.

For the rural landowner, the unit has created a defensible space mailer, to be delivered to an entire community, which provides information on creating and maintaining a defensible space around their structures. The information mailer also includes: creating a wildfire action plan, a self check-off list which directs the homeowner to focus on structure/property requirements to meet the State mandatory *Public Resource Code 4291* (defensible space around structures) and information to contact your nearest CAL FIRE station for additional information or education. CAL FIRE uses an internal form referred to as "LE-100" (Law Enforcement form #100) to complete PRC 4291 defensible space inspections. Common terminology for CAL FIRE personnel is "LE-100 inspections" or "defensible space" inspections.

Additional information regarding defensible space, PRC 4291, and local ordinances is available at CAL FIRE fire stations, and CAL FIRE's website (www.fire.ca.gov).

The Sonoma-Lake-Napa Unit is situated a major media market. This gives our Unit additional opportunities to deliver our fire prevention messages. By placing road signs in high traffic areas, and increasing our personal interaction, we are able to serve the message to a large amount of the general population. The fire service makes contact with people on the worst day of their lives, what we teach them about fire safety can reduce the impact of that worst day, or help avoid it entirely.

B: VEGETATION MANAGEMENT

The Vegetation Management Program (VMP) is a cost-sharing program that focuses on the use of prescribed fire, and mechanical means, for addressing wildland fire fuel hazards and other resource management issues on State Responsibility Area (SRA) lands. The use of prescribed fire mimics natural processes, restores fire to its historic role in wildland ecosystems, and provides significant fire hazard reduction benefits that enhance public and firefighter safety.

FUELS REDUCTION

LNU is actively conducting several fuels reduction projects throughout the unit. These consist of shaded fuel breaks in areas identified in the communities at risk section of this plan (these areas are also identified in appendix A “High Priority Pre Fire Projects”).

SUPPRESSION REPAIR

After a damaging wildland fire the unit will take every measure to assure the act of wildland fire suppression repair is completed. The objective of wildland fire suppression repair is to provide for prompt action following wildfire and associated fire suppression activities to minimize, to the extent practical:

1. Loss of soil and on-site productivity.
2. Discourage the spread of noxious weeds.
3. Deterioration of water quality and adverse change in runoff characteristics.

FOREST AND RANGE HEALTH

Unique to LNU, there are two State Forests managed by the Department on behalf of the public. Boggs Mountain Demonstration State Forest (BMDSF) is a 3,493-acre mixed conifer forest located in Lake County and Las Posadas Demonstration State Forest (LPDSF) is a 796-acre mixed conifer forest located in Napa County, which also incorporates the most eastern stand of redwood in California.

State Forests are working landscapes that are mandated to conduct research, demonstration, and education on sustainable forestry practices using active forest management, including periodic timber harvests. Management of the State Forests is required to protect values relating to recreation, watershed, wildlife, range and forage, fisheries, and aesthetic enjoyment. The concept of forest sustainability includes the protection of forest ecosystems, both terrestrial and aquatic. Important issues include stewardship of managed forestlands to maintain biodiversity and ecosystem functions thereby providing healthy forest and rangelands. Timber harvesting also significantly reduces the amount of fuel continuity on the State Forests through the removal of snags, providing shaded fuel breaks, burning slash debris, and restoring road systems to enable better egress and ingress for fire equipment and personnel.

BMDSF is managed as a working forest that facilitates research and demonstrates diverse timber management practices to private timberland owners and the public at large. BMDSF provides for healthy sustainable ecosystems as well as a financially viable timber management program. The Forest is managed over the long term for a dynamic mosaic of diverse habitats and high volume inventory.

LPDSF also provides for demonstration and research activities; however it is unique in the State Forest Program because merchantable timber harvesting is not allowed under the deed restriction and the Forest is not open to the public at large. Because of its diversity of terrain and ecosystem characteristics, the Forest provides for interesting research projects.

Fuel reduction projects are on going on both BMDSF and LPDSF. Such projects include vegetation management, broadcast burning, pre-commercial thinning, and the removal of dead, dying, and diseased trees. Both Forests have been impacted by forest pests such as western pine beetles, flat-headed woodborers, and annosus root disease. Treatment methods to reduce the brood material are practiced on both State Forests, such as lopping and scattering slash or burning slash to reduce the population of pine beetles.

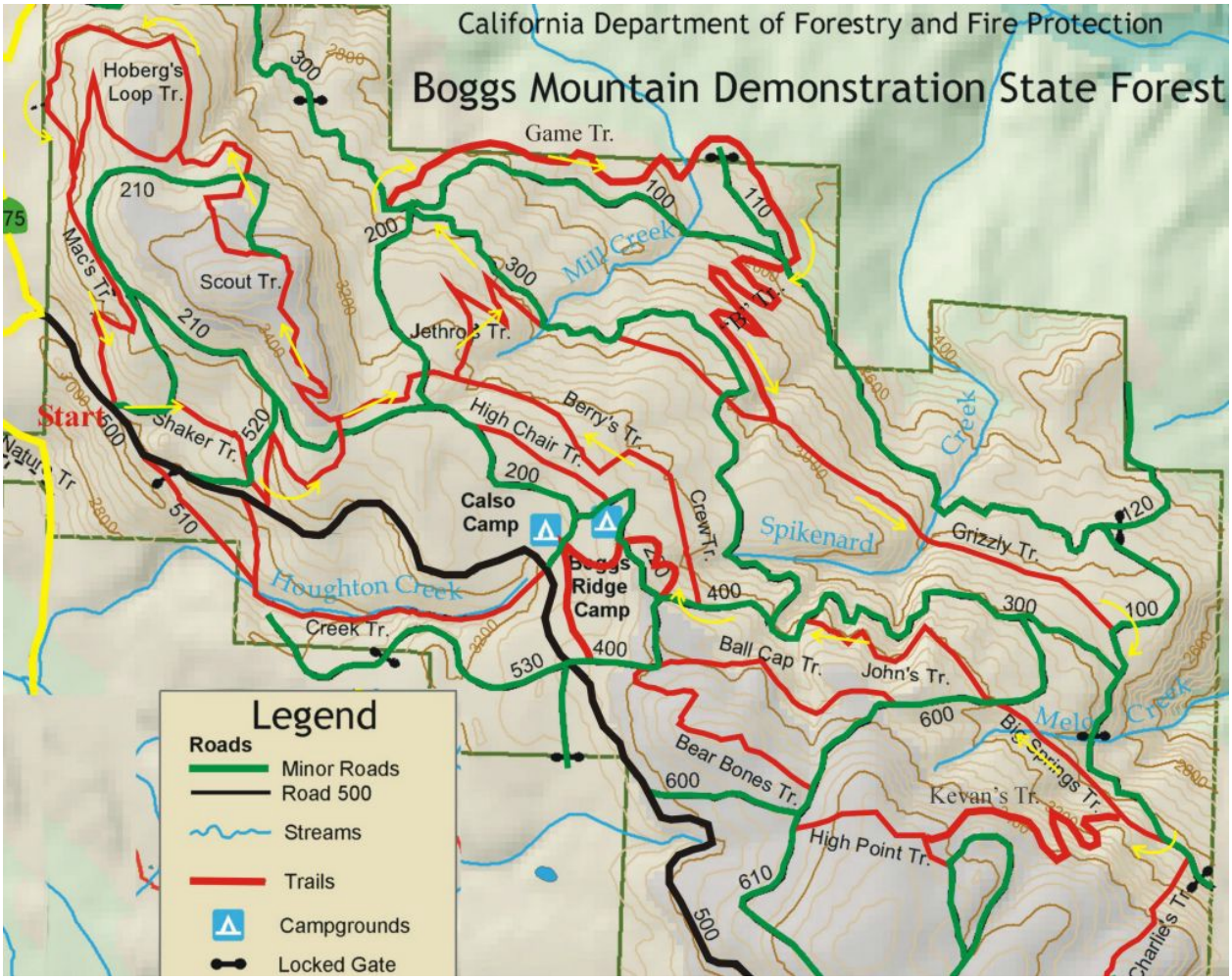
The objectives of such forest management include enhanced protection from wildfire impacts on the forestland resource and the developed interface lands of the rural residential communities adjacent to and near both State Forests. These objectives are accomplished through the reduction of flashy fuels, fuel accumulations, and fuel ladders that foster crown fires. The prescribed burning that occurs on the State Forests reduce ground fuels, reduce overgrown brush, and thin the understory to reduce vertical and horizontal continuity of fuels while protecting overstory conifers and hardwoods. The benefits of these low intensity fires include reducing the accumulation of hazardous fuels, enhancing wildlife habitat, control forest disease, provide new growth, and reducing the potential for catastrophic wildfires.

Outside of the State Forest Program, LNU is active in enforcing the Forest Practice Rules on private timberland where Timber Harvesting Plans (THPs) have been submitted. Most of the THP submitters are small non-industrial timberland managers and timber harvesting is common in Sonoma, Lake, and Napa Counties. While evaluating THPs in the field, the Forest Practice Inspector enforces the Public Resources Code and Forest Practice Rules, which provide protection for forest and rangelands. Such rules include provisions for the operation of fire causing equipment, use of hydrocarbon powered engines near forest, grass, or brush lands, and for the operation of chainsaws in the forest environment. The Forest Practice Rules provide specific protection to lakes and watercourses, wildlife, and plants through restrictions on silviculture methods, harvesting practices and erosion control, site preparation, hazard reduction, and fire protection.

Benefits from harvesting timber on private land are similar to those when harvesting timber on the State Forests, including the reduction of fuels, removing dead, dying or diseased trees, improving road networks, providing new growth by opening the stand to more sunlight, and controlling forest pests. A common forest disease found in Sonoma and Lake Counties is Sudden Oak Death. Many THPs are located within the Board of Forestry and Fire Protection Zone of Infestation. As a result, each THP must identify feasible measures to mitigate adverse impacts from the timber operation. The Forest Practice

Inspector also enforces these measures. Treatments typically include inspection of equipment on the timber operation site, unprocessed saw logs do not leave the Zone of Infestation, and non-merchantable material remains on-site. Such measures also help reduce the potential for catastrophic wildfires.

The enforcement of the Forest Practice Rules and Public Resources Code on private timberlands and the active forest management on the two State Forests within LNU provide healthy forest ecosystems and rangelands found throughout the unit. Maintaining the sustainability of the natural resources is the goal of the CAL FIRE Resource Management Program. The Department achieves this goal by demonstrating sound management practices on the State Forests, enforcing the California Forest Practice Act on all non-federal timberlands, providing research and educational outreach to the public on forest pests and pathogens, such as the Bark Beetle and Sudden Oak Death, and coordinating efforts for fuel reduction to reduce the risk of fire and improve the quality of California ecosystems.



Map of Boggs Mountain Trail System

SECTION V: PRE FIRE MANAGEMENT TACTICS

A: DIVISION / BATTALION / PROGRAM PLANS

Prevention Battalion

The Fire Prevention Bureau is involved in the broad spectrum of fire prevention activities in and outside of the unit. The Fire Prevention Bureau in conjunction with Volunteers in Prevention (VIP's) and other unit staff, participate in more than 2,000 hours of public education activities, contacting more than 41,500 people annually. Volunteers in Prevention and other unit personnel accomplish over 1,000 defensible space inspections, with approximately 60 violations reported annually. The Fire Prevention Bureau has taken an active role in the support of local Fire Safe Councils, partnering with them to standardize our defensible space and fire safety messages. The Fire Prevention Bureau is active in civil cost recovery at the unit level. The Fire Prevention Bureau has positive outcomes for civil cost recovery and law enforcement.

Training Bureau

The LNU Training Bureau administers the training programs for all personnel in the CAL FIRE Sonoma-Lake Napa Unit. The Unit Training Bureau coordinates both Unit training and Region training, administers JAC training, maintains training and DMV records, facilitates State Fire Marshal certifications and works cooperatively with numerous training agencies, colleges and neighboring departments.

Camp Programs

Both Delta and Konocti Conservation Camps are actively involved in several fuels reduction projects within the unit.

Delta Camp is working on three fuels reduction projects in the South Division as part of the Cooperative Fire Assistance Grant and Napa Communities Firewise Foundation (Berryessa Estates, Circle Oaks, Dry Creek-Lakoya). In the East Division (Solano County) crews will be working on shaded fuel breaks in the area known as Twin Sisters. Delta Camp also works on fuels reduction projects in neighboring communities and the Santa Clara Unit (East Bay Regional Parks, with multiple locations of shaded fuel breaks).

Konocti Camp is also assisting with the Cooperative Fire Assistance Grant and has completed two projects (Berryessa Estates and Las Posadas) and a shaded fuel break in Lake County on Soda Bay Road. Konocti Camp has recently finished a shaded fuel break on Bottle Rock Road in Lake County.

Fuels, Weather, Topography and Fire History per Division

North Division
Lake County

Fuels
There are a wide range of fuels in the North Division. Fuels range from Tule wetland and grass/oak woodland to decadent chaparral, to mixed conifer forests. The higher elevations are generally timbered while lower elevations tend to be chaparral or grassy oak woodland. Due to aggressive fire suppression tactics and lack of wildland fuels reduction, both the vertical arrangement and horizontal continuity of fuels will promote rapid fire growth. Where disked vineyards have been established in place of chaparral brush fields they can act as effective fuel breaks. Where vineyards have gone fallow, left untended, the fire will still spread through the vineyard. Critical concerns are when the chaparral dead-to-live ratio exceeds 50%, and live fuel moisture drops to near 60% in late summer and early Fall.

Weather
The weather is generally warm and dry during the day with good relative humidity recovery at night. Mid slope elevations may see poor humidity recovery due to inversions. Critical weather patterns are generally those that have higher temperatures and dryer conditions with poor nighttime humidity recovery such as North and East winds. When these conditions combine with the topography, expect extreme rates of spread, especially along exposed ridges and through constricted areas. Peak summer day temperatures generally range from 90-110 F, with relative humidity ranging between 10 – 25%. Temperatures and humidity moderate and winds tend to Increase immediately adjacent to Clearlake. Gradient winds are generally out of the west or northwest at 5-10 mph,

Topography
Elevation with the North Division ranges from 1500 feet near lake level to peaks reaching 5000 to 7000 feet on the Mendocino National Forest. The topography consists of broad rounded trending ridges running North/South spliting around Clearlake. Slopes generally increase as you go from ridgeline to drainage bottom. Steep slopes, drainages and timber fuels can significantly hinder firefighting efforts. Vineyards, roads and other manmade features provide a limited network of barriers that assist firefighting efforts. Road access off of well developed county roads can be sketchy at times with rough, narrow, often steep and rocky roads.

Fire History
Lake County has a significant fire history. Most of the county has been covered by large fire fires in the last several decades. The largest known fire was the human caused Fork Fire that started in Middle Creek on the border of the Mendocino National Forest just North of Upperlake. The fire burned more than 83,000 acres of brush and timber in 1996. Previous to the Fork Fire was the Mendenhall Fire in 1986 which also started on the Mendocino National Forest by lightning and burned nearly 67,000 acres. These large fires and many others burned under relatively normal northwest flow conditions. Fires in the geysers area have most recently burned under more extreme north and northeast wind conditions threatening power grid infrastructure. The eastern portion of the county is also greatly influenced by north and north east winds as the winds align with the topography on Walker ridge.

There is a Remote Automated Weather Station (Konocti RAWS) located at Konocti Conservation Camp. The station gives a good indication of current weather conditions. It can be accessed at http://raws.wrh.noaa.gov/roman/.

South Division

Napa County

Fuels

There are a wide range of fuels in the South Division. Fuels range from grass/oak woodland to 15 – 50 year old chaparral, to redwood forests, to stands of decadent brush and timber over 50 years old. Due to fire suppression and lack of aggressive wildland fuels management, both the vertical arrangement and horizontal continuity of fuels will promote rapid fire growth. These same conditions will also hinder conventional fire suppression tactics. Vertical arrangement is conducive to passive (single tree torching), and active crown fires. Where vineyards have been established, if a “no-till” management approach (mandated on certain slopes) has been implemented, the fire will still spread through the vineyard. Critical concerns are when the chaparral dead-to-live ratio exceeds 50%, and live fuel moisture approaches 60% in late Summer and early Fall.

Weather

The weather is generally warm and dry during the day with good relative humidity recovery at night helped by the coastal onshore flow. Fog often returns to the area each night from the south, and dissipates by 11:00 am the following morning. If a critical weather pattern exists such as a Foehn North Wind, or a cold front passage, the daily diurnal weather variation will be subdued. When these critical weather patterns align with the topography, extreme fire behavior, especially along exposed ridges and through constricted areas is expected. Peak summer day temperatures are generally 80 – 90 degrees F, with relative humidity ranging between 20 – 35%. Gradient winds are generally out of the S/SW 5-10 mph, strengthening in the afternoon with a 10-15 mph wind in the late afternoon diminishing by dark. Upper elevations experience east winds in the early afternoon between 5 – 10 mph. Also, be aware of normal northwest winds (downslope/downvalley) after dark as the flow reverses. There is a Remote Activated Weather Station (RAWS) for this area on the top of Atlas Peak Road approximately 1 mile west of Turtle Rock near Lake Berryessa. This site provides accurate conditions for the entire South Division.

Topography

Elevation with the South Division ranges from 0 – 80% slope with a two dominate north/south orientated ridges. Disked vineyards and other manmade features provide a network of barriers that will need to be connected to create an effective fireline. There are two main valleys within the South Division that can provide the opportunity for wind to be funneled even under local wind conditions; this situation will be compounded during critical weather conditions.

Fire History

Past fire history on the Western side of the Napa Valley (Dry Creek-Lakoya) is limited with major fires 40 – 70 years ago burning well into Sonoma County within 1-3 days. Eastern slopes have not burned since the 1920s and fuels on the Western aspects are generally lighter drier.

Past fire History on the Eastern side of the Napa Valley is limited with major fires 25-50 years ago burning along the Silverado Trail into Atlas Peak (Silverado Country Club) and from Monticello Road to Wild Horse Valley Road within 1-2 days.

In 1964 a major fire started on Mt. St Helena and burned to Santa Rosa. In the 1960’s and again in 2008, fires occurred on and were generally held to, the western aspect between the communities of Angwin and Deer Park.

East Division
Colusa and Yolo Counties

Fuels
There are a wide range of fuels in the East Division. Fuels range from agricultural farmland (wheat, safflower, cut stubble), annual grasses, oak woodland, 15 – 50 year old chaparral, large stands of decadent brush and timber in the higher elevations of the battalion. Due to aggressive fire suppression tactics and lack of aggressive wildland fuels management, both the vertical arrangement and horizontal continuity of fuels, have and will promote rapid fire growth. These same conditions will also hinder conventional fire suppression tactics. Critical concerns are when the chaparral dead-to-live ratio exceeds 50%, and live fuel moisture approaches 60% in late Summer and early Fall. 10 hour fuel moistures average from 4-7, dropping to 3 quite often.

Weather
The weather is generally warm and dry during the day with a slight relative humidity recovery at night. If a critical weather pattern exists such as a Foehn North Wind, or a cold front passage, the daily diurnal weather variation will be subdued. If these critical weather patterns align with the topography, expect extreme rates of spread, especially along exposed ridges and through constricted areas. Peak summer day temperatures are generally 95°-105°F, cooling to 50°-60°F at night, with relative humidity ranging between 20% – 35% or less. Gradient winds are generally out of the N/NW 5-10 mph, strengthening in the afternoon with a 10-15 mph wind in the late afternoon diminishing by dark. Strong evening to early morning winds occur occasionally in the Capay Valley with normal winds (down slope/down valley) after dark as the flow reverses.

There is a Remote Automated Weather Station (Brooks RAWS) located at Brooks Fire Station. The station gives a good indication of current weather conditions. It can be accessed at http://raws.wrh.noaa.gov/roman/.

Topography
Elevation within the East Division ranges from 250’ to 3000’ with slopes ranging from 0 – 80%. There are two dominate North/South orientated ridges; Blue Ridge, running from the Yolo/Solano county line north to Rumsey Canyon and Walker Ridge, running from Hwy 20 to central Colusa county. These main ridges keep the coastal influence weather from being a factor. There are also two smaller ridges that can play a significant role to fire spread; Capay Hills and Cortina Ridge. Farmlands, ranches, rural and major roads along with other manmade features provide a network of barriers that will need to be connected to create an effective fire line. Capay Valley and Bear Valley are wide valleys that provide the opportunity for wind to be funneled even under local wind conditions; this situation will be compounded during critical weather conditions.

Fire History
There have been many large and destructive fires in the past in the East Division. Many of the fires have occurred along the Highway 16 corridor through Rumsey Canyon. Because of poor access, steep slopes and strong North winds, these fires have burned upwards of 40,000 acres. Other large fires have occurred along Walker Ridge. Past fires have also occurred along the Highway 20 and Highway 128 corridors.

Solano County

Fuels

There are a wide range of fuels in the Solano County area of LNU ranging from agricultural farmland, annual grasses, oak woodlands intermixed with chemise and coastal chaparral's in the western areas of the Vaca mountains to marshland tulles in the East along the Sacramento river delta. Large areas of Solano county fall within the Mutual Threat Zone (MTZ) and offer the potential for structure protection issues if a fire were to start in these areas. Due to aggressive fire suppression efforts and lack of local wildland fuels management, both vertical and horizontal continuity of fuels will and have promoted rapid fire growth. Numerous Riparian zones are located throughout the county as well.

Weather

The weather is generally warm and dry with a great portion of the valley being marine influenced keeping areas to the south west seasonally cooler. With average day time temps ranging from 85 – 105 degrees in the summer, night time lows average to between 50-60 degrees with the marine influence comes a lot of fog which can and does influence temperature dramatically. Daily winds known locally as the Delta breeze range from 5-15 mph from the west act as a cooling effect throughout the south west increasing fuel moisture and recoveries. The area is also subject to Foehn North winds which range in speed from 25- 75 MPH with these winds expect high rates of spread and control problems.

Topography

Elevations within Solano County range from 21' ASL – 2818' ASL (Mt. Vaca) slopes range from 0% - 80%+.There is one prominent North/South ridge located within the Vaca mountains known as Blue Ridge running from Yolo/Solano counties. There are two topographic features of note within the county, Mt. Vaca and the Montezuma hills. There are numerous ridges located within these areas which influence the landscape dramatically and can and will contribute to fire spread. Narrow canyons and valleys with heavy fuel loading with numerous narrow man made roads offer several control issues, but do offer points to consider as control lines.

Fire History

Solano County does have a history of large wildland fires two of note are the 1965 Kaiser Fire when a fire started in the drought dried seasonal grasses and spread rapidly from Soscol Ridge off Hwy 29 to American Canyon. Reaching a final acreage of 25, 888 the other was the Mix Canyon Fire which reached an approximate 35,000 acres. The fire period of note was in 1965 which was referred to as black Thursday in which the county was under siege from the east to the west with several fires burning at the same time the largest becoming the above noted Kaiser Fire.

West Division
Sonoma County

Fuels
There are a wide range of fuels in the West Division. Approximately the southern 1/3 of the county is grass or oak/woodland, and areas adjacent to the Napa/Sonoma and Lake/Sonoma county lines are knobcone and chaparral. The coastal strip from Bodega north, inland to Graton and Forestville is conifer forests. Fuels range from coastal grasses along the coast to grass/oak woodland to 15 – 50 year old chaparral, to redwood/douglas fir forests, to stands of decadent brush and timber over 50 years old. Sonoma County does have stands of sudden oak death. Due to fire suppression and lack of aggressive wildland fuels management, both the vertical arrangement and horizontal continuity of fuels will promote rapid fire growth. These same conditions will also hinder conventional fire suppression tactics. Vertical arrangement is conducive to passive (single tree torching), and active crown fires. Where vineyards have been established, if a “no-till” management approach has been implemented, the fire will still spread through the vineyard. Critical concerns are when the chaparral dead-to-live ratio exceeds 50%, and live fuel moisture approaches 60% in late Summer and early Fall.

Weather
The weather is generally warm and dry during the day with good relative humidity recovery at night helped by the coastal onshore flow. Fog often returns to the area each night from the south, and dissipates by 11:00 am the following morning. The fog layer depth is between 1,000 and 1,500 feet, so elevations above this do not experience fog. If a critical weather pattern exists such as a North Wind, or a cold front passage, the daily diurnal weather variation will be subdued. If these critical weather patterns align with the topography, expect extreme rates of spread, especially along exposed ridges and through constricted areas. Peak summer day temperatures are generally 80 – 100 F, with relative humidity ranging between 20 – 35%. Gradient winds are generally out of the S/SW 5-10 mph, strengthening in the afternoon with a 10-15 mph wind in the late afternoon diminishing by dark. Upper elevations experience East winds in the early afternoon between 5 – 10 mph. Also, be aware of normal Northwest winds (downslope/downvalley) after dark as the flow reverses. There is a Remote Activated Weather Station (RAWS) located in the NE corner of the Division in the “Geysers” area and in the Santa Rosa plain. These sites provide accurate conditions for the interior of the West Division. There is also a private lookout (Pole Mtn) located midway along the coast between Mendocino and Marin counties. Their weather observations help fill in the coastal strip area for fire weather for the West Division.

Topography
Elevation within the West Division ranges from sea level – 4,500 feet. Slopes range from 0-80% throughout the Division. Vineyards and other manmade features provide a network of barriers that will need to be connected to create an effective fireline. In the western and northwestern portions of the county there are not a lot of barriers. There is one main valley within the West Division that can provide the opportunity for wind to be funneled even under local wind conditions; this situation will be compounded during critical weather conditions.

Fire History
Past fire history on the Western side of the Santa Rosa Plain is limited with major fires 30 – 70 years ago in connection to the logging industry and more individuals being in the woods. Past fire History on the Eastern side of the Santa Rosa Plain consists of major fires approximately every 10-12 years mostly occurring in the Geysers area consisting of 10,000-12,000 acres. There have been major fires in the Sonoma area also, although to a lesser degree.In 1964 the Hanley Fire (52,000 acres) started on Mt. St Helena and burned in to the Santa Rosa area. Most of the significant fires have burned under critical fire weather conditions (North winds), but the possibility exists for a fuels and topography influenced fire to occur in the late summer and fall periods. The West Division does experience a few lightning caused fires every 3 - 5 years.

Battalion 1410 Santa Rosa (West Division)

Battalion 1410 spans from the Pacific Ocean to the top Napa County Line running with the width of Sonoma County. The battalion is characterized by a Local Responsibility Area (LRA) valley floor, the Santa Rosa plain, with State Responsibility Area (SRA) on both sides. There are many paid local government fire departments and the largest city in the unit, Santa Rosa, is located within the battalion. There are three CAL FIRE fire engines, one at Santa Rosa station and two at Occidental.

Every wildfire incident becomes a mulit-agency cooperative effort and often involves structures being threatened. The perimeter of the 1964 Hanley fire when placed over the footprint of the current Santa Rosa City and the adjacent area encompasses over 1,000 structures.

Past Projects

The West Sonoma Firesafe Council, which helps the rural area of western Sonoma County surrounding the community of Occidental, provides a “free” chipper with operator to residents who cleared vegetation around their residence. Previously, chipping was done along Joy Road. Battalion 1410 continues to work with the Foothill Homeowners’ Association to help them understand the risk of fire and the importance of defensible space, and also advised them on areas for fuels reduction and evacuation advice.

Current Projects

Battalion 1410 personnel will work with the local government fire agencies on defensible space projects in conjunction with LE-100 inspection in the SRA. Staff are currently working with Santa Rosa City FD and Rincon Valley FPD on structure protection preplans for the Riebli Rd, Fountain Grove area.

Annually, each Battalion within Sonoma County will target 100-200 residences per year for Mailers, followed up by inspections as needed. Within Battalion 1410 the first target areas are Joy Rd in the Occidental area and the SRA portion of Wikiup Village, Northeast of the City of Santa Rosa and located in the Central Fire Authority of Sonoma County (a new JPA between the Windsor and Rincon Valley Fire District. The primary threat to this intermix area is a fire approaching from the Shiloh Region Park under the influence of a North wind which will immediately threaten 50-100 residences.

Future Projects and Priority Rankings

Future projects will focus on areas identified as high risk/high hazard, support the West Sonoma Fire Safe Council and the City of Santa Rosa. Next Priority for LE-100 program is in the Redwood Hill and Gates Rd area.

Battalion 1411 Russian River (West Division)

Battalion 1411, the Russian River Battalion, encompasses the northern Sonoma County coast from Mendocino County to just south of the Russian River, and inland to the Guerneville community. The entire Battalion, approximately 245,000 acres is all CAL FIRE Direct Protection Area, with all being State Responsibility Area except for several small areas of Bureau of Land Management ownership. The dominant fuel model is Mixed Conifer (Light), but fuels range from Coastal prairies to old growth Redwood, and chaparral to small pine plantations.

Most of the Battalion can be considered remote, as areas away from Highways 1 and 116, and county roads, can be difficult to access because of fire roads that have not been maintained, bridges that cannot support fire apparatus, steep topography, and lack of road signs and posted addresses. Fire suppression resources are not familiar with the road network, local landmarks, and fire environment because there have not been frequent large and damaging wildfires. This road network will hinder emergency response as well as evacuation of the Public. In some areas, shelter in place, or assembling in temporary refuge areas may be a preferred method instead of evacuations.

Battalion 1411 is comprised of three State funded fire stations. These stations house four State funded fire engines, and a local government (Schedule A) funded two-person engine company serving The Sea Ranch area. Battalion 1411 headquarters is at the Hilton fire station located east of Rio Nido along River Road. Hilton fire station also houses two State funded fire engines and a utility vehicle. Cazadero fire station is south of the Cazadero community along Cazadero Highway, staffed with one State funded fire engine. The Sea Ranch community has two fire stations. The “North” fire station is along Highway 1 between Whale Bone Reach and Bosun’s Reach, and is not regularly staffed. The “Main” station is State owned, located along Annapolis Road near Verdant View. The Main station is the headquarters for the locally funded engine company, and also is the quarters for one State funded fire engine.

CAL FIRE closed the Black Mountain Conversation Camp, which was located along Fort Ross Road near Brain Ridge Road, in 1992. Since the closure of Black Mountain, the nearest camps serving Battalion 1411 are in Mendocino County east of Fort Bragg (Parlin Fork), Solano County near Travis Air Force Base (Delta), and Lake County near Lakeport (Konocti), all several hour drive times. These crews are not a viable option for fuels reduction and other projects in Battalion 1411 due to the extended travel times. Crews also have an increased response time to emergencies unless they are working in other parts of Sonoma County, as is usual during most days of the year.

There have been no large and damaging wildland fires since the Creighton Ridge fire in August of 1978. Most fires are contained and controlled within the first few hours of detection. Because of the amount and type of fuels that wildland fires in Battalion 1411 consume, resources are often required to remain on scene of wildland fires through the night and during the followings days to ensure the fire does not escape established control lines. Prior to the Creighton Ridge fire, significant fires occurred in the 1950s and 1960s, including fires along Highway 116 in the Russian River area. Other notable fire which required an extended commitment of resources were:

- 1993 Gerstle Fire, Salt Point State Park, 460 acres
- 1997 Yardham Fire, The Sea Ranch, 300 acres

Weather along the Coast during the summer months is generally characterized by fog and moderate temperatures. Sunny days are more common during the Spring and Fall season. Fog does not usually extend above 1,000 – 1,500 feet, and does not intrude inland past the first ridge adjacent to the ocean. This allows the interior portions of the Battalion to remain warm and dry throughout the day and night. Some of the canyons are narrow and filled with large trees and can remain cool and moist through the Summer and Fall seasons.

Critical fire weather patterns characterized by hot, dry, and windy conditions are not very common along the Coast, and are on average, three to four days a year. These conditions will result in rapid fire growth, including crown fires, and spotting. All property owners, residents, and fire fighters need to be prepared for this “rare” event that can result in a large and damaging wildland fire. The most damage will occur within the first several hours of the fire as the fire outpaces the deployment of fire suppression resources.

Spotting could establish fires in multiple drainages and ignite structures before the fire front reaches them.

The interior portions of the Battalion have conditions that support the development of a large and damaging wildfire such as steep slopes, and accumulation of fuels. This area is sparsely populated with residents understanding the risks of a wildland fire. This has resulted in few ignitions and kept the area from experiencing a large and damaging wildfire.

Battalion 1411 has areas of Sudden Oak Death (SOD). Aerial surveys have been conducted by the united State Forest Service, and it appears the rate of infestation has slowed. SOD has killed trees, opened closed canopy forests, and increased the amount of surface fuels. It is unknown exactly how SOD will affect fire behavior, but weakened trees have fallen and blocked roads.

The scenario exists for a wildland fire to burn undetected for a period of time, with difficult access, as a critical fire weather pattern is developing or occurring. Another possibility is the passing of a lightning storm resulting in fires that cannot all simultaneously be contained. These scenarios could lead to a large and damaging wildland fire.

The Battalion boundaries are defined by the boundaries of several local government fire agencies.

- The Sea Ranch Volunteer Fire Company
- Annapolis Volunteer Fire Company
- Fort Ross Volunteer Fire Company.
- Timber Cove Fire Protection District
- Cazadero Community Service District
- Monte Rio Fire Protection District
- Russian River Fire Protection District

These agencies and CAL FIRE maintain a cooperative working relationship and assist each other on a daily basis. A majority of incidents, regardless of type, in the Battalion result in multi-agency responses including non fire service response. These agencies include:

- California Department of Parks and Recreation
- California Highway Patrol
- Sonoma County Department of Fire and Emergency Services
- Sonoma County Sheriffs Department
- Sonoma County Regional Parks

CAL FIRE is also able to accomplish projects in consultation and coordination with community members and homeowner associations such as The Timber Cove Homeowners Association (TCHOA), The Sea Ranch Association (TSRA), and FIRESAFE councils at the County and community based level.

There are many State and Regional Parks, and open space preserves in the Battalion. These present issues because there is a lack of fuels management and development of emergency response infrastructure (roads, fire breaks, etc.).

Pole Mountain Lookout is a privately funded lookout post between Muniz Ranch Road and the Cazadero community. The lookout is operated by the Pole Mountain Fire Lookout Association (Incorporated), staffed daily during the summer, and supervised by a CAL FIRE battalion chief. Pole Mountain is able to provide critical early detection of wildland fires in areas lacking cell phone coverage, and are not heavily populated.

Past Projects

The unit has had a series of VMP projects in The Sea Ranch Area. CAL FIRE staff worked with the TSRA in development of their Fire Management Plan. Since that plan was adopted, the wildland-urban interface fire problem has evolved with the construction of more homes, an increase in understory fuels, the invasion of grasslands by shrub species, and a decline in the health of non-native pine trees. TSRA hired a consultant and using their own Association funds have begun to implement fuel reduction projects. Emphasis is placed on the lands adjacent and grasslands west of Highway 1.

In the Timber Cove area, a fuel reduction project funded by BLM through the Community Based Wildfire Prevention Grants Program created a shaded fuelbreak along Ruoff Road between Highway 1 and Timber Cove Road. Ruoff Road transects an area of timbered wildland that has been developed. The road provides access to many homes, and was not passable to two-way traffic in many locations because of the narrow paving and encroaching vegetation. The fuelbreak will provide for evacuation, access for firefighting resources, and a possible "line" to halt a fire. The grant was sponsored through Fire Safe Sonoma, with staff support provided by CAL FIRE and the Sonoma County Department of Fire Emergency Services.

The Fort Ross Volunteer Fire Company has been active in the reduction of fuel loading through coordinated chipping and formation of shaded fuelbreaks, through the same funding mechanism and administration as the Timber Cove area. A California Conservation Corps (CCC) crew was used in place of a private contractor to compete the work. The CCC crew worked with the residents to clear and chip several shaded fuelbreaks.

CAL FIRE personnel continue to advise and work with The Sea Ranch Association for fuels reduction and defensible space inspections.

Present Projects

CAL FIRE has hosted community based meetings in The Sea Ranch, Timber Cove, Cazadero, and Armstrong Redwoods area the past summers.

Battalion 1411 personnel post fire preventions signs in high profile locations, conduct defensible space inspections in target areas, maintain a presence at large community events, and participate in many other forms of public education.

Battalion 1411 personnel continues working with the California Department of Parks and Recreation to conduct prescribed control burns in the State Parks. Plans are being formulated to carry out additional control burns in the future, and expand the burning program. The intent of these burns are to manage fuels in the State Parks, including fuel reduction to reduce fire behavior, and decrease the spread of invasive species. These control burns also offer a training opportunity for CAL FIRE and cooperating agencies, helping us work better together during emergencies.

Battalion 1411 personnel participate in defensible space inspections programs. Defensible space inspections allow CAL FIRE to interact with homeowners and discuss fire prevention and mitigation plans. Battalion personnel also become more familiar with assets at risks, access, and concerns that residents may have.

Future Projects and Ranking

Battalion 1411 personnel will continue to host community meetings and rotate locations to have exposure to the largest amounts of people. The purposes of these meetings are to increase the awareness level of preparing for wildland fire, defensible space, and actions to take during a wildland fire. Other approaches to accomplishing the same goal are being formulated. These include submitting letters and articles to homeowners groups, media, and other publications.

B1411 personnel will engage in the development of pre-fire response plans and other related documents, and maps for wildland areas, some remote, with high density structures such as Brushy Ridge Loop in Annapolis, and the Timber Cove area.

Battalion 1411 personnel will also support grants undertaken by Fire Safe Sonoma, and other community groups.

Battalion 1412 Glen Ellen/Petaluma (West Division)

Battalion 1412 encompasses southern Sonoma County; the Sonoma Valley and the Petaluma area, separated by Sonoma Mountain. Within the battalion are several full-time local government fire departments as well as volunteer based fire departments. There are two CAL FIRE fire stations, one just west of Petaluma staffed with one fire engine, and the other along Highway 12 south of Kenwood that houses two fire engines and a bulldozer.

Past Projects

Past projects have been funded through BLM's Community Based Wildfire Prevention Grants Program using a variety of methods to get the actual work completed. Near Glen Ellen, a grant was sponsored through Fire Safe Sonoma, to establish a safety corridor and a secondary ingress and egress route in a high hazard area adjacent to Annadel State Park. Another project, also sponsored by Fire Safe Sonoma used Sonoma County work crews to clear roadways that had been overgrown by vegetation. And along five miles Trinity Road in the Mayacamas Mountains east of Glen Ellen, a shaded fuelbreak was created using CAL FIRE Fire Crews, residents, and county work crews. The Trinity Road fuelbreak was funded by the Forest Stewardship, a previous program similar to BLM's Community Based Wildfire Prevention Grant Program. Additionally, focused LE 100 inspections have been done in the area east of the town of Glen Ellen, in the Cavedale/Trinity road area. Approximately 300 inspections a year have been accomplished in this area. Other past projects include the "East Sonoma Pre Attack Fire Plan." This pre attack plan consists of a two sided tri-fold brochure that contains map a Contingency map on one side and Operational Safety Briefing, Staging Arears and Escape routes description on the other side. This pre attack plan will be beneficial to cooperating fire agencies along with Department resources in event of large scale wildfires occur in the area.

Present Projects

Present projects consist of small community events. CAL FIRE apparatus and personnel also participate in other community events such as parades in the town of Kenwood, Valley of the Moon and Sonoma. Each year, CAL FIRE commits fire prevention and suppression resources to large events at Sonoma Raceway located near Sears Point along Highway 37. The raceway holds several races during the summer months that attract sometimes upwards of over 100,000 spectators for a race.

Future Projects and Priority Rankings

The plan is to do a focused LE-100 program in the area to the Northeast of the city of Sonoma. Up to 200 LE-100 will be mailed out to the residents allowing them to do upgrades to their defensible space and return the self-regulated mailer back. At that time, CAL FIRE personnel will go out and to spot inspections on those returned mailers, and inspect all that were not initially returned.

Battalion 1413 Healdsburg/Cloverdale (West Division)

Northeastern Sonoma County, including the unique Geysers geothermal area, and the united State Army Corps' Lake Sonoma Project, are within Battalion 1413. Most of the battalion is very rural, with only two incorporated cities, Cloverdale and Healdsburg. The burn permit process generates over one hundred public contacts each year, giving Battalion 1413 personnel the opportunity to both educate and inform agricultural industry related personnel and residents about wildfires. The battalion stations are Healdsburg with two engines and a bulldozer, and Cloverdale staffed with two engines.

Past Projects

The battalion has been very busy with pre-fire management programs in the past ranging from vegetation management program (VMP) control burns in the Geysers Geothermal area in Northeaster Sonoma County to homeowners working with CAL FIRE and the local fire department to reduce fuels in the Fitch Mountain Area in Healdsburg, the Vineyard Subdivision in Geyserville and the Palomino Lakes subdivision in Cloverdale.

Previously, the City of Healdsburg Fire Department contacted CAL FIRE for advice on its' growing wildland/urban interface fire hazard, particularly on the City's north and east flanks. This area compromises the steepest and highest elevations in the city, on Fitch Mountain, and area adjacent to it, which is SRA. Working with FireSafe Sonoma, Healdsburg Fire Department, and the Sonoma County Department of Emergency Services, a plan was developed for a multi-phase fire environment modification. Funding was secured through a Western Wildland Urban Interface Grant administered by the USDA Forest Service. This project was implemented with LE-100 defensible space inspections, a community chipper program, and the re-establishment of an alternative fire access road. California Conservation Corps (CCC) crews were also used.

In the Palomino Lakes subdivision, CAL FIRE and the Cloverdale Fire Protection District coordinated with the Palomino Homeowners' Association to reduce fuel loading. The Palomino Lakes subdivision has experienced damaging fires in the past. Private contractors were used to clear vegetation along roads, and chip over seventy-five cubic yards of vegetation. Along with the work, a community meeting was held.

CAL FIRE maintains an agreement with the Army Corps for wildland fire protection. Each year under this agreement, a meeting is held to discuss the contract. Part of CAL FIRE's responsibility is to train the Army Corps' staff in wildland firefighting, discuss fire prevention issues, and pre-plan emergency response. Much of the lake's campgrounds are remote and access is only via a boat and/or fire roads. CAL FIRE fire crews are used to construct precautionary handlines around the campsites prior to fire season, and bulldozers and graders are used to maintain the fire roads on a rotating basis. A fire prevention display is kept at the visitors' center as well as a fire prevention sign and fire danger rating sign along the roadway leading to the lake's main access. Each year CAL FIRE coordinates and participates in burning off the 80 acre dam face with many local departments participating, making it a valuable training tool for all.

The Battalion Chief works closely with local government cooperators, annually holding a multi-agency drill that replicates a wildland-urban interface wildfire response. This event while providing training for CAL FIRE and local government personnel increases wildfire awareness and prevention in the community in which the drill is held. The image of a fire engine backed in a driveway, with fire fighters in full personnel protective equipment and fire hoses deployed generates discussion amongst homeowners and CAL FIRE. Additional benefits include area orientation and pre-planning for fire fighters, the opportunity for homeowners to approach fire fighters, and for personnel from different fire departments the opportunity to interact.

Battalion 1413 personnel also complete over 200 LE-100 defensible space inspections each year. The Battalion Chief targets an area for each station to complete inspections, using direct mailers asking for volunteer compliance or self-inspection. CAL FIRE personnel then complete follow-up work to ensure compliance. This LE-100 approach in conjunction with the aforementioned multi-agency drill bodes well for promoting the concept of defensible space in the designated area.

Present Projects

Battalion 1413 contiues to work with CalPine to continue the VMP burning projects on the lands they control. Brush species will be targeted with the burning most likely to occur in the fall, early winter and located close to the infrastructure (structures and power lines) in the Geothermal area.

Battalion 1413 personnel actively participate in community events, such as the Healdsburg Future Farms of America (FFA) parade held on Memorial Weekend of each year and the Cloverdale Citrus parade held in February.

Future Projects and Priority Rankings

Upcoming focus will be on the Fitch Mtn. area in Healdsburg and the Pine Mountain area in Cloverdale. The current Battalion Chief has met with homeowner groups in both areas numerous times and have prepared them for what to expect for the LE-100 program and future inspections and how to prepare their homes if a fire is in their area. Multi-agency drills will be held in the Fitch Mtn. area as well as the Pine Mtn. area in the coming years.

Battalion 1414 St. Helena (South Division)

Battalion 1414 covers northern Napa County from the small community of Rutherford to the top of Mt. St. Helena and east to Angwin. Highway 29 is the major traffic corridor through the battalion. Las Posadas State Forest is within the confines of the battalion, and there is a fire station on the forest property with one fire engine. Other CAL FIRE fire resources in the battalion are two CAL FIRE fire engines, and a CAL FIRE Schedule "A" funded two person engine company at St. Helena.

Many contacts with the public are generated through the burn permit process. Most of the Napa Valley floor, and some of the hillsides, are planted with grapevines. This industry has a heavy reliance on burning to dispose of agricultural trimmings.

Battalions 1414, 1415 and 1416, assist Napa County Fire Department volunteer fire companies. Assigned to Battalion 1414 are Deer Park, Angwin, and Rutherford. St. Helena and Calistoga cities also have their own organized fire departments and respond with CAL FIRE daily to incidents. All three battalions, are included in the Napa FIREWISE program, a cooperative effort between CAL FIRE, Napa City, Napa County, Resource Conservation District, and local FireSafe Councils.

Past Projects

A majority of past projects have been in the wildland-urban interface areas on the west aspect of the Napa County. There are two communities, Deer Park and Angwin, and many other clusters of homes in this Wildland-Urban-Interface (WUI) area.

The Pacific Union College VMP (Rx North-049-LNU) was located in the wildland urban interface area just to the north and east of the town of Angwin. The project's objective was to reduce the flashy fuel accumulation near structures and other assets at risk while protecting timber and wildlife resources. The primary method to accomplish this objective was through manual and mechanical treatment using CAL FIRE Fire Crews from Konocti Conservation Camp. Fuels were removed manually and either chipped, piled and burned, or broadcast burned. Over one hundred acres were treated, including the Howell Mountain Road corridor.

St. Helena Hospital VMP (Rx North-051-LNU) was adjacent to the grounds of St. Helena Hospital, a steep hillside complex in the community of Deer Park. The objective of this project was to reduce the heavy brush fuel load that could contribute to a fast moving, high intensity wildfire that would endanger a major health care complex and the surrounding residential communities. Work was performed by CAL FIRE Fire Crews from Konocti Conservation Camp to prune trees, cut brush, and remove dead woody ground material. Removed fuels are chipped and spread onsite, or burned in small piles during the winter months. Eighty acres were treated.

In the early 1990's a VMP project was completed in the Crestmont area of Deer Park. The Deer Fire of 2008 burnt in the footprint of this project and assisted with fire suppression efforts.

The small neighborhood of Madrone Knolls which is located just off of and above Silverado Trail, has worked with CAL FIRE to establish a shaded fuelbreak using personnel from the Civilian Conservation Corps. The intent is to use periodic grazing with goats to maintain the shaded fuelbreak. Silverado Trail parallels Highway 29 on the east side of Napa Valley, and as such attracts motorists attempting to avoid traffic congestion on Highway 29. These motorists represent possible wildfire ignitions that would burn uphill into the Madrone Knolls area.

Present Projects

Currently hand crews are working with a Cooperative Fire Assistance Grant establishing a 70 acre shaded fuel break at Las Posadas State Forest.

One prominent project has been the development of the "Angwin/Deer Park Pre-Attack Fire Plan." This includes the development of proposed Contingency Areas for the containment of wildfires. Also included in this plan are strategy and tactics, staging areas, command and tactical frequencies, and other information critical to containing and suppressing a wildland fire in the Angwin and Deer Park Communities.

Angwin and Deer Park are participating in the Napa County FIREWISE chipping program.

Future Projects and Priority Rankings

Future project priorities include the continuation or extension of the use of goats for fuel reduction, Napa FIREWISE chipping program, and the use of CAL FIRE Fire Crews to maintain and extend the interface clearance.

Battalion 1414 is placing emphasis on the reduction of fuels in Los Posadas State Forest due to its' current condition and proximity to structures.

Battalion 1415 Lake Berryessa (South Division)

The eastern edge of Napa County including Lake Berryessa makes up the LNU South Division portion of Battalion 1415. Lake Berryessa is a recreational destination and generates many medical related calls for service and the potential for large wildfires. Surrounding the lake, and along the roadways leading to the lake, are rural subdivisions, such as Circle Oaks, Berryessa Highlands and the Berryessa Estates, which increase the assets at risk.

There are two CAL FIRE stations in Battalion 1415, Spanish Flat with two fire engines and a bulldozer near Lake Berryessa and a single engine station on Gordon Valley Road near the Napa/Solano county line.

Battalion 1415 administers the volunteer fire companies of Pope Valley, Capell Valley, and Gordon Valley. CAL FIRE Spanish Flat Station is the only paid fire department in this area of Napa County.

Past Projects

Past projects have been around two of the developed subdivisions. In the 338-lot Circle Oaks subdivision, a multi-year fuel modification project is being funded, in part, by the BLM through the Community-Based Wildfire Prevention Grants Program. Circle Oaks represents the largest concentration of people and houses in Napa County. In 2002 they completed a Fire Safe and Fuel Management Plan.

The Circle Oaks subdivision is located along Highway 121 between the City of Napa and Lake Berryessa. The fuel modification aims at making it possible to contain vegetation fires that start within the subdivision to the subdivision, and to protect the subdivision from any encroaching wildfire. Shaded fuel-breaks were created along Napa County roadway easements. Over 2,500 tons of fuels have been removed from the perimeter greenbelt defensible space zone, and almost 300 tons of additional vegetation from vacant lots. An estimated 800 cubic yards of vegetation was removed from around structures following a LE-100 defensible space inspection program, and right-of-way clearance was accomplished along seven miles of road.

Berryessa Estates is a remote subdivision in the northeastern portion of Napa County consisting of 160 lots. Due to many factors including remote location causing long response times, one-way access, high-density flammable fuels with intermixed structures, this subdivision has been designated as an area of concern regarding wildfire. CAL FIRE personnel along with Pope Valley volunteers, and the Napa County Road Department worked with the Berryessa Estates Homeowners Association (BEHOA) to have members of the Association clear fuels around their homes to then be chipped. A total of fifty piles were chipped. The BEHOA has expressed interest in created a fire safe council.

Present Projects

Berryessa Estates, Circle Oaks, and now Berryessa Highlands are the high density high wild fire risk communities that continue to need the most hazard reduction attention in the battalion. All three areas are heavily supported by the Napa Communities Firewise Foundation (NCFF) and the LNU Pre-Fire Engineering division through pre-planning, the free chipping service, and grant awards.

The community of Berryessa Estates Fire Safe Council works very hard to improve the wildland fire survivability of their community. With strong support from NCFF, BLM, and CAL FIRE, they have completed a 2 mile by 100 foot wide fuel break around the entire community that is the largest fuel break of its kind in Napa County. The fuel break was accomplished by the combined use of a mechanical brush masticator, CAL FIRE inmate fire crews, and supported by the NCFF chipping program. Project funding is a combination of direct BLM funds, along with NCFF and the California Fire Safe Council sponsored federal grant money. The community of Berryessa Estates through NCFF was also able to secure a federal grant as well. With the help of Circle Oaks, they also began using an automated calling tree service (Call-Em-All) to help with fire safety communication, Fire Safe Council announcements, and emergency notification.

Circle Oaks has continued to be the most progressive community with the longest history of intense wildland fire hazard mitigation efforts in Napa County. Through the leadership of their homes association and fire safe committee, along with NCFF and CAL FIRE, they have become the first and only nationally

recognized Firewise USA Community in the County. They have on-going success with federal grant funding awards, along with expanding and maintaining fuel reduction projects, and have since completed and official CWPP. Their latest project is a continuous shaded fuel break surrounding the entire subdivision. Circle Oaks continues to do their own defensible space inspections with the help of CAL FIRE/ Napa Co Fire as needed, and they do a great job of wildland fire safety and education with the residents. The automated calling tree service continues to be a good tool in communicating their fire safety related messages.

Berryessa Highlands located at the South end of the Lake Berryessa, has become the latest community in the battalion to concentrate on improving wildland fire safety. In a cooperative effort with the NCFF, CAL FIRE, US Bureau of Reclamation, Napa County Public Works, and a core group of residents, the Berryessa Highlands Fire Safe Council was formed in 2011. This group prioritized the fire safe projects in the area, is working on creating a CWPP, and will pursue future grant funding. The first fuel projects completed included an infrastructure (community water treatment plant) fuel break, community entrance road side fuel break, and strategic interior one hundred foot fuel breaks below homes on steep slopes. CAL FIRE inmate hand crews were used on these projects with the support of the NCFF chipper and grant funding. The 100 foot fuel break started 100 feet below the homes with the residents being responsible for their required defensible space. Due to the steep slope and chimneys it was determined that an additional one hundred feet was needed. Permission was received from the large parcel owner and notification was made to the nearby subdivision parcel owners that inmate would be doing the work with a second crew supervisor present. The priority for these interior fuel projects is to clear the brush first on the south and west slopes then provide shaded fuel breaks under the oaks on the north and east slopes.

Future Projects and Priority Rankings

Priority for projects will continue to be placed on those sponsored or supported by the Napa Communities Firewise Foundation (NCFF), and in communities that show an interest in taking the lead to improve their fire safety. With federal grant funding being less available through the NCFF it must become a priority for each of the communities in the battalion to assist with fundraising in order to continue the support of programs like the free residential chipping.

Controlled burns and fuel break projects are being planned between CAL FIRE, The Bureau of Reclamation (BOR), and The Department of Fish and Game around Lake Berryessa. Recently the BOR has transitioned the recreational areas around the lake to a more traditional recreational and less permanent resident model. The Pensus Group has won the concessioner's bid to manage the recreational facilities. There is on-going planning and negotiations with the BOR and Pensus to address the changing wildland fire and emergency operations requirements for the future of the lake as well.

Battalion 1416 Napa/Yountville (South Division)

Battalion 1416 is a “combination” battalion in that it consists of both CAL FIRE staffed Schedule “A” county owned structural fire engines and a truck, and CAL FIRE wildland orientated fire engines. Even though they are funded through different sources, the day-to-day operations are seamless. Three facilities are in the battalion. Yountville station, near the Yountville Veterans Home, houses a Schedule “A” structural fire engine and ladder truck. Napa station is housed with a Schedule “A” structural fire engine and a CAL FIRE fire engine, and Greenwood Ranch, near the Napa County airport, staffed with a Schedule “A” structural fire engine and a CAL FIRE fire engine.

Dry Creek-Lokoya, Carneros and Soda Canyon volunteer fire companies are assigned to Battalion 1416. Career fire departments within the Battalion are Napa City, American Canyon Fire Protection District, and Napa State Hospital.

The Mt. Veeder Fire Safe Council is located in the battalion. It incorporates the same space as the Dry Creek-Lokoya volunteer fire company, or the mountainous terrain west of Yountville near the Napa-Sonoma county line. The volunteer fire company provides office space and supports the Council. The Council has received two grants, one for startup supplies such as office supplies and equipment, letterhead, mapping services, and to conduct community forums. The second was for a chipper program, which is described under past projects.

Past Projects

In the past, following LE-100 defensible space inspections, a community chipper program was completed using funds from a BLM grant. The inspections along with public education, strived at getting voluntary compliance with defensible space laws. Fifty-two piles were produced by local residents and chipped by a team consisting of CAL FIRE, Napa County Fire Department, Mt. Veeder Fire Safe Council, Napa County Road Department, and Civilian Conservation Corps personnel.

Several Pre-Attack maps have been created for several highly populated communities in and the Napa Valley.

Present Projects

All present projects are being administered through the Napa FIREWISE program and the Mt. Veeder Fire Safe Council.

Future Projects and Priority Rankings

As with the present projects, future projects and their associated ranking are being administered through the Napa FIREWISE program and the Mt. Veeder Fire Safe Council.

Battalion 1417 Middletown (North Division)

Battalion 17 covers most of the southern portion of Lake County. A large portion of the battalion is also the South Lake Fire Protection District which is a schedule "A" contract with Cal Fire. The District also has the South Lake County Fire Safe Council. Highway 29 is the major traffic corridor through the Battalion with heavy commuter traffic to Sonoma and Napa counties.

The CAL FIRE facility in this battalion is Middletown Station, equipped with two engines and a dozer. The cooperative fire protection contract with the South Lake Fire Protection District to staff three Schedule "A" stations and one Volunteer station. Two paramedic units one near Cobb and the other in the Hidden Valley Lake subdivision are staff utilizing CAL FIRE paramedics. The district operates two additional fire stations using a combination of career and volunteers to staff.

This South Lake County Fire Safe Council is active. It covers an area of approximately 258 square miles. They have received funds through BLM several times over the past few years for various projects. The Council coordinates a chipping program, community meetings, public service announcements, fire prevention and safety related signs throughout the area.

Hidden Valley Lake is an approximately 3,000-parcel subdivision, along Highway 29 and is a gated community that has incorporated Public Resources Code 4290 and 4291 defensible space laws into their homeowners' code of conduct and regulations. They also maintain a fuel break around the subdivision, as well as completing fuel reduction for the "common" areas of undeveloped land.

Past Projects

Following is a list of completed past projects performed by the South Lake Fire Safe Council:

Evacuation Plan
Community meetings
Public Service Announcements on radio, cable, and in newspaper focusing on Fire Safety

Present Projects

- Continue with the Chipping Program
- New Cal Fire Prevention sign placed on the major traffic routes
- Numerous grants have been submitted for fuels reduction projects through the local fire safe council
- Control burns at Boggs Mountain State Forest
- New Fire Station to be built at Cobb Station (62)
- LE 100 program being implemented
- Large Animal Evacuation Program being established
- Vegetation Management continued with UC Davis and Fish and Game
- Working with the Care and Shelter Group of Lake County
- Meeting with landowners to established fire access routes and Helibase locations in the event of wildfires and other emergencies
- Community meetings/Education
- Continue with Fuel Breaks
  - Shenandoah Fuel Break
  - Bottle Rock Fuel Break

Future Projects and Priority Rankings

- Continue with all current Projects and see them to completion
- Updating Disaster Plan in the Battalion
- Continued fuel reduction in Middletown Battalion

Battalion 1418 Kelseyville/Clearlake Oaks (North Division)

Battalion 1418 is located in Northern Lake County and borders the Mendocino National Forest. Because of the immediate proximity to the National Forest, Battalion 1418 works frequently with them, and their resources are incorporated into CAL FIRE initial attack dispatches.

Battalion 1418 also provides direct protection to BLM lands located within the battalion including Cow Mtn., Cache Creek, and the Black Forest.

In addition, B1418 provides direct protection to the Clear Lake State Park, and the Mount Konocti County Park, both near Kelseyville.

Battalion 1418 fire stations are Kelsey-Cobb, located along Highway 175, and Clear Lake Oaks, which is on Highway 20. Kelsey-Cobb is staffed with two fire engines, and Clear Lake Oaks is staffed with two engines and a bulldozer. The Konocti Lookout is also within the battalion, and is staffed during periods of critical fire weather.

Past Projects

Battalion 1418 projects focus mainly on prescribed burning and fuel breaks. Recent past projects include Cow Mountain and Judge Davis Canyon.

The Cow Mountain (Rx North-047-LNU) project burned brush to lessen the fuel loading, protect assets at risk, improve wildlife habitat, and increase water yield. The project was located in mountainous terrain near the Lake/Mendocino County Line. Fifty acres were burned in November of 2002.

The Judge Davis Canyon (Rx North-052-LNU) project was located in Lake County ten miles east of Clearlake in the Rocky Creek-Cache Creek Wilderness Study Area, which is managed by the BLM. Vegetation is primarily chemise and mixed chaparral and has historically been the site of periodic wildfires. Project objectives were to reduce fuel loading, improve wildlife habitat, and increase water yield.

Recent Projects

A fuel break incorporating the re-establishment of fire truck trails was accomplished during a training exercise for Dozer Boss students. The break is west of Thurston Lake, and runs north/south between Highway 29 and Pt. Lakeview Road, near the community of Lower Lake. Additional work will be completed this year to improve access into this part of the battalion.

CEQA documentation for the Soda Bay Road Shaded Fuel Break was recently completed. This project is being done jointly with the Lake County Fire Safe Council and other stakeholders. Once completed the fuel break will improve the access/egress for emergency vehicles and provide for safer evacuations from several neighborhood communities located along an 8-mile stretch of Soda Bay Road near the community of Kelseyville. This project was identified in the 2009 CWPP for Lake County. Phase I of the Soda Bay Fuel Break was completed in 2011, providing a twenty foot fuel break on both sides of the road for four (4) miles.

Future Projects and Priority Rankings

Battalion Chief 1418 is working with the County of Lake to establish a fire plan for the new Mt. Konocti Public Lands, located on top of Mt. Konocti. The county acquired approximately 1,600 acres from a private landowner and will be opening the land for public use during the summer of 2011. These lands are adjacent to land owned by the BLM, and not too far from the Clear Lake State Park. The Mt. Konocti County Park opened to the public in September 2011. The development of the fire plan is still on-going.

BC 1418 is working on CEQA documentation for a training site along Highway 175 west of Lakeport that will provide opportunity for training for heavy fire equipment operators and conservations fire crews. The added benefit of this site is that it is one of the few places to access the brush covered lands south of the highway. There is a network of old fire roads in the area that extend south/west to the Donovan Valley/Highland Springs area, many of which are in poor condition and/or overgrown with brush. Re-establishing this area will enhance the fire protection capabilities in the area

A possible project is in the planning stages in the Cow Mountain Area for prescribed burning called the Pyramid Ridge VMP. The BLM is currently updating the NEPA documentation prior to proceeding. They have completed their NEPA process and plan to conduct burns in 2013.

The battalion conducts the PRC 4290 program for the central part of Lake County. Station personnel perform plan reviews and conduct field inspections. Battalion 1418 continues to have a strong working relationship with the Lake County Fire Safe Council and its various partners. As the Soda Bay Fuel Break wraps up in the next year, additional projects will be identified based on the priorities identified in the 2009 CWPP.

Fire Problem

Historically over 50% of the fire causes in the battalion were from three causes: vehicle (23%), electrical (16%), and equipment use (16%). In recent years several fires were caused by mowing activities. New fire prevention road signs that focus on mowing have been received and will be in place during fire season.

Mitigations

LE -100 inspections were conducted by both fire stations. Target areas included North Lakeport, the Clearlake Riviera's near Kelseyville, Lucerne, Clearlake Oaks, and Spring Valley.

The North Shore Fire Protection District (NSFPD) passed a weed abatement ordinance and began inspections. They conducted 189 inspections in the heart of the Spring Valley subdivision, all in the SRA. The Clearlake Riviera Homeowners Association enforces CCRs that promote defensible space, and issued a fire safety message in their summer newsletter, in conjunction with CAL FIRE and Kelseyville FPD.

Battalion 1419 Brooks/Wilbur Springs/Leesville (East Division)

Battalion 1419 runs along the eastern edge of LNU, running the length of Colusa and Yolo Counties. There are three single engine fire stations located near Leesville (Colusa County), Wilbur Springs (Colusa County) and Brooks (Yolo County). The battalion is very rural, with many large landowners. There are a number of intermix and mutual threat areas in all three counties. These include SRA lands that are adjacent to numerous local government fire districts and departments. Battalion 19 consists of over 454,026 acres of SRA, LRA and FRA lands.

Highway 16, which runs from Highway 20 to Interstate 505, has had an above average number of fire ignitions in the area referred to as Rumsey Canyon. The above average number of fire ignitions was primarily due to an arson problem that has been mitigated due to arrests. A significant Wildland Urban Intermix potential exists in areas such as the Century Ranch (Colusa County), Wilbur Hot Springs (Colusa County) and Along Hwy 16 in the Capay Valley (Yolo County).

Past Projects

CAL FIRE has been able to take advantage of the rural setting and large landowners to complete many prescribed burns over the past 20 years. Over the years, specific high fire danger areas have been identified and the focus has been to educate the public on how to improve their land so to protect their homes from Wildfire.

Present Projects

After working with the CAL FIRE Prevention Bureau, It has been identified that debris burning is one of the leading ignition sources in the Capay Valley. Education through proper signage has significantly reduced the number of debris caused fires.

The Cortina Vegetation Management Project was developed in conjunction with local land owners. The process has been started and after all proper documentation is completed actual burning can begin. The goal is to, over a three-year period starting in the fall of 2013 / spring of 2013, burn brush to decrease the fuel loading. This will potentially save the State money by creating modified fuels breaks to limit and decrease fire spread.

Other projects have included the Bobcat Ranch burn (near the town of Winters), various small burns with Williams Fire Dept., Capay Valley Fire Dept. and Yoche DeHe Fire Dept. Assist with annual Yolo County Fire Departments training burn in Dunnigan. Cal Fire's Northern Region firing class is held near Arbuckle each year. Besides offering training for Cal Fire personnel it creates a firebreak between the SRA mountains and the LRA valley floor. All of these projects are in accordance to proper CEQA requirements.

Education is a key focus for Battalion 19. Any interaction with the public offers an opportunity to educate in a positive, proactive manner. Fire Captains within the Battalion go to schools to educate students at various ages. After May 1st and until the declared burn ban is in effect, burn permits from the State are required (LE-5). This offers another opportunity for either the Engine crew or Battalion Chief to meet with the public first hand. This again is a time for us to serve the public and educate them on Wildland Fire Safety and how they can protect their home.

LE 100 Inspections

LE-100's will be focused in areas where the greatest population and benefit can be obtained. This enables interaction between CAL FIRE personnel and the public in a positive manner. LE 100 inspections will to be done in the following high risk areas: Century Ranch (Colusa county), Wilbur Hot Springs Area (Colusa county) and in the Capay Valley (Yolo county). CAL FIRE will continue to educate the public through the use of the LE 100 program.

APPENDIX A: HIGH PRIORITY PRE FIRE PROJECTS

Batt	Project Number	Project Name	Status	Estimated Completion Year	Projec t Type	Net Acres
14		Las Posadas Shaded Fuel	C		SFB	166.8
15		Berryessa Estates Shaded Fuel	C		SFB	79.5
15		Circle Oaks Shaded Fuel	C		SFB	57.6
15		Berryessa Highland Shaded Fuel	C		SFB	40
17		Bottle Rock Road Shaded Fuel	C		SFB	40
18		Soda Bay Shaded Fuel Break	C		SFB	
12		Sonoma Valley Pre-Attack Plan	C		Map	
14		Angwin-Deer Park Pre-Attack	C		Map	
15		North Lake Berryessa Pre-	C		Map	
15		South Lake Berryessa Pre-	C		Map	
16		Dry Creek-Lakoya Pre-Attack	C		Map	
16		Soda Cyn-Monticello Pre-	C		Map	

Status Guide: A = Active, P = Planning, C = Completed, O = Ongoing, M = Maintenance.

APPENDIX B: PRIORITY GOALS AND OBJECTIVES FOR 2013

CAL FIRE Units were asked to identify two or more priority objectives under each goal in the 2010 Strategic Fire Plan for California. The Units' priorities are identified in bold and a measurement criteria are provided for each of the identified objectives. Throughout the next year, the units will implement the identified priorities and report on the measurement criteria by June 2014.

A. UNITS ONLY

Goal 1: Integrate fire and fuels management practices with landowner priorities and multiple jurisdictional efforts within local, state and federal responsibility areas.

Objectives:

a) Support the availability and utilization of CAL FIRE hand crews and other CAL FIRE resources, as well as public and private sector resources, for fuels management activities, including ongoing maintenance.

Measurement Criteria: *CAL FIRE will report to the Board on the number of crews available each year with a description of projects, including acres treated, completed by each Unit. Report the number of agreements and/or amount of funding and acres treated that involve grants or partnerships with federal agencies, resource conservation districts, local FSCs, fire districts, watershed groups or other non-profit or community groups that support the ability to carry out fuels reduction projects.*

Goal 2: Address post-fire responsibilities for natural resource recovery, including watershed protection reforestation, and ecosystem restoration.

Objectives:

a) Assist landowners and local government in the evaluation of the need to retain and utilize features (e.g., roads, firelines, water sources) developed during a fire suppression effort, taking into consideration those identified in previous planning efforts.

Measurement Criteria: *CAL FIRE (utilizing Incident Command Teams) to schedule a post-fire review of the planning documents that cover the area affected by the fire. Review the goals, objectives and projects (implemented and planned) to identify successes and failures. Review the features developed during the fire and incorporate them into the existing Unit fire plan documents. This objective will only be reported when a fire occurs in an area with an existing Unit fire plan document. Incident command teams may conduct this post fire assessment under the direction of the unit Chief.*

APPENDICES C-Z

LNU MULTIPLE INCIDENT MANAGEMENT PLAN (MIMP)

INTRODUCTION

This plan is designed to assist the unit in managing multiple incidents in a safe, efficient and expedient manner.

OBJECTIVES:

- **Identify and prioritize multiple incidents in a timely manner.**
- **Provide a standard method of managing multiple incidents that may have the potential of escalating and causing immediate draw down of personnel and equipment within the unit.**
- **Reduce the workload on the ECC.**
- **Provide an effective method of managing the unit's resources.**
- **Minimize resource draw down by committing local government resources.**
- **Provide proper management of radio frequencies.**

ACTIVATION

Activation of this plan will occur under two circumstances:

1. **Intelligence received forecasts the high probability that multiple incidents will have a significant impact on the unit. (Predicted lightning, flooding, etc)**
2. **It is obvious the increasing number of incidents are creating an immediate draw down of resources and/or the ECC can no longer support all incidents.**

ORGANIZATION

The Multiple Incident Management Plan will be operated in accordance with the Incident Command System.

1. **The Unit Duty Chief will function as such for contacts with the Region Duty Chief, the unit Chief, the ICs and the ECC Chief.**
2. **The North, South, East, and West Division Chiefs or their designee will function as Incident Commanders of their respective Divisions. (North IC, South IC, East IC, West IC).**
3. **The Unit will function into Operational Battalions in those affected battalions. (13 Operations--Healdsburg Battalion, 17 Operations—Middletown Battalion, 14 Operations—St. Helena Battalion, etc). The Battalion boundaries will define the Operational Area perimeters unless circumstances require otherwise.**
4. **Numbering and naming of incidents will be by Battalion number followed by a sequential number. (Bat. 13—Inc. 13-1, 13-2, 13-3, etc.)**
5. **A Logistics Chief will be assigned to each Division activated and coordinate with the Service Center to provide logistical support within that Division.**
6. **Two additional vehicles per Division will be staffed with division/group qualified personnel.**
7. **Pre-designated staging areas will be identified. (Healdsburg FFS, Lake Sonoma Visitor Center, Konocti Camp, Calistoga Fairgrounds, etc.)**

DUTY CHIEF

1. **Coordinate with North, South, East, and West IC's on Divisional needs and priorities.**
2. **Determines need for plan activation**
3. **Coordinates with Region Duty Chief and Unit Chief on Unit needs and priorities.**
4. **Coordinates with ECC on draw down and Unit needs**
5. **Ensure callback of all DCs, BCs, Logistical Sec. Chief, Div/Group, ECC Support, Air Attack personnel and Unit Support Team.**

INCIDENT COMMANDER

1. **Determine need for plan activation within their Division.**
2. **Prioritize incidents within their Division.**
3. **Assign Operations Chiefs and coordinate their resource needs.**
4. **Coordinates assignment of resources to Operational Battalions.**
5. **Liaison with local government entities on incident status.**
6. **Track and assign Multiple Incident Management Plan number to incidents within their Division.**

OPERATIONS

1. **Coordinate with Incident Commander.**
2. **Determine Operational Battalion resource needs.**
3. **Prioritize Operational Battalion incidents.**
4. **Manages and assign resources.**
5. **Maintain situation unit information on FC 34.**
6. **Ensures staging and logistical support.**
7. **Ensure accurate tracking of incidents within their Operational Battalion.**

COMMUNICATIONS

1. **ECC will assign frequencies to each IC for use in each Division.**
2. **ECC ensures ICs have incident numbers for all incidents assigned in their Division.**
3. **ECC coordinates airtanker assignments until an IC or Air Ops is activated.**
4. **ECC will keep ICs informed of weather forecasts.**
5. **ECC will dispatch all new non-MIMP incidents and request resources from appropriate divisional IC.**

INTELLIGENCE AND DETECTION

The ICs and Operational Battalions will request and use any resources needed for planning or detection of incidents. Air attack will be activated and used in conjunction with fixed detection, suppression and air tanker operations by IC request. Supplemental aircraft will be utilized when needs arise to free air attack for operational needs.

1. **Lookouts will report all smokes within SRA to the ECC, identifying type of smoke, bearing , distance, landmarks and location. The ECC will then notify the appropriate IC of the incident.**
2. **Aerial Recon will be activated and used in conjunction with fixed detection, suppression and air tanker operations.**
3. **ECC will advise recon aircraft of target areas after checking with ICs.**

4. **Air Recon will plot smokes using Lat and Longs and report them to the ECC until advised to report directly to the ICs.**
5. **The ECC or SAAB will order additional recon aircraft as early as possible.**
6. **Consideration should be given to using a Call When Needed (CWN) aircraft when recon flights are ordered.**

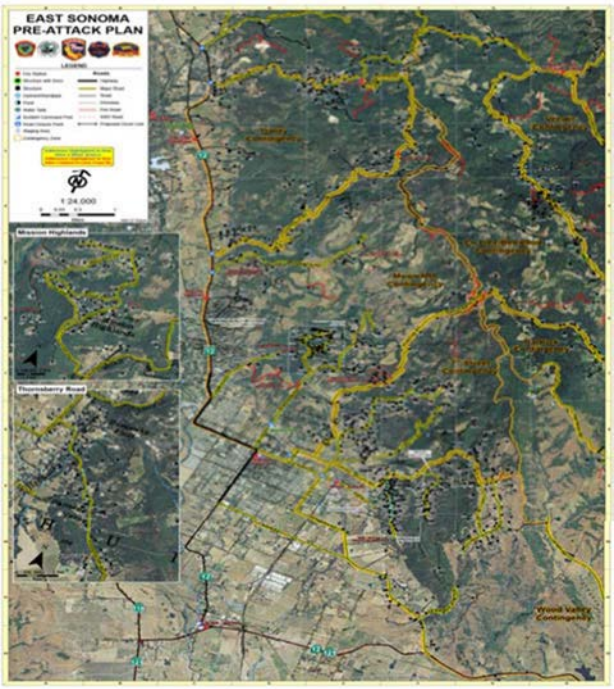
ESCALATING INCIDENT

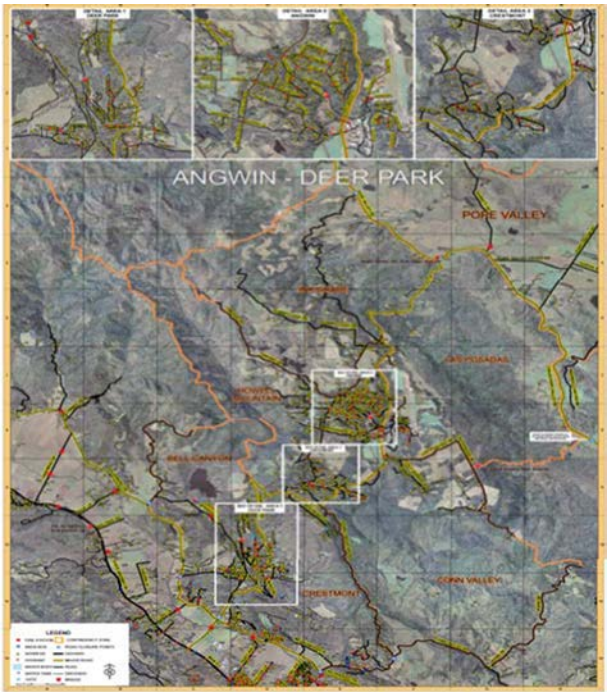
Any incident that is predicted or escalates beyond the support capabilities of the Operational Battalion, will become a separate incident from that IC's responsibilities. An Incident Commander will be assigned and all requests for resources will go through the normal ECC channels and will be run as a separate incident.

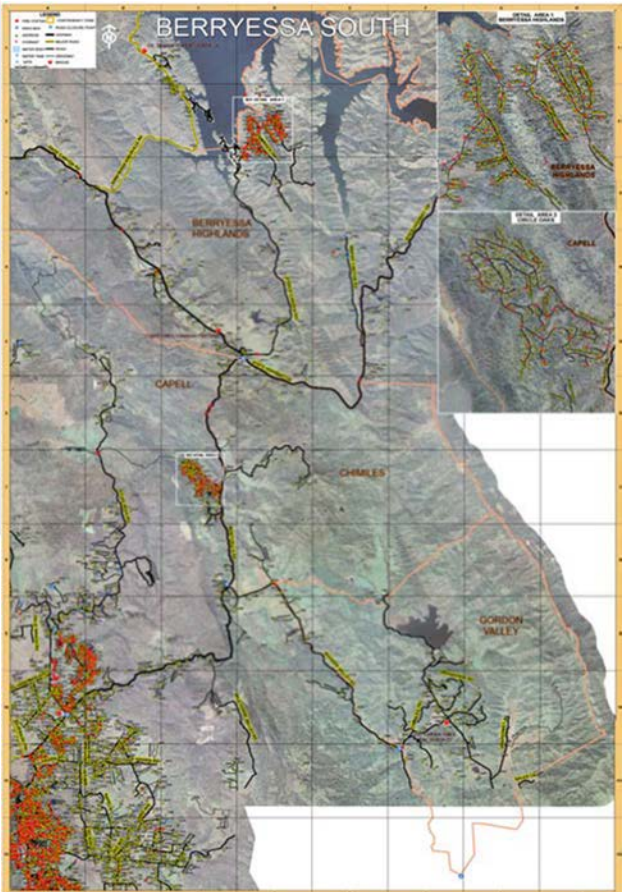
DEACTIVATION

A joint decision will be made between Operational Battalions, ICs, Duty Chief and the ECC to deactivate the appropriate Operational Battalion, IC or Plan.

Pre-Attack Map Product examples:







ADDENDUM: 2013

SRA and DPA Figures per LNU County

County	SRA Acres	SRA Persons	SRA Houses	DPA Acres	DPA Persons	DPA Houses
Colusa	270,899	708	392	297,360	610	356
Lake	390,084	20,409	11,276	481,598	20,286	11,205
Napa	370,084	17,498	6,741	433,510	17,500	6,742
Solano	93,820	10,751	3,884	96,643	10,751	3,884
Sonoma	793,793	59,030	28,162	817,929	59,041	28,165
Yolo	183,127	1,564	661	209,406	1,564	661
TOTAL:	**2,101,807**	**109,960**	**51,116**	**2,336,446**	**109,752**	**51,013**

State Responsibility Area (SRA) is the area of the state where the State of California is financially responsible for the prevention and suppression of wildfires. SRA does not include lands within city boundaries or in federal ownership.

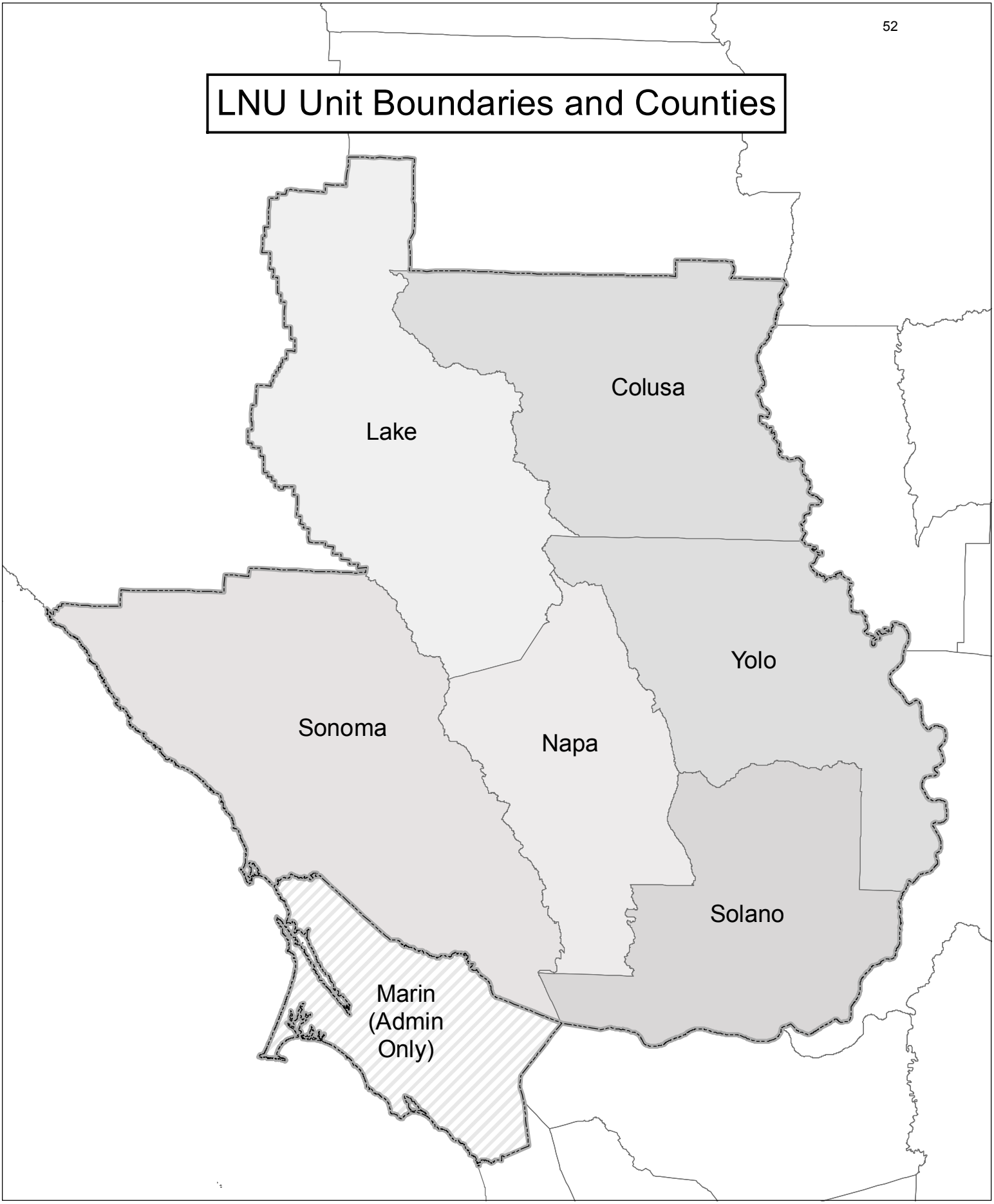
Direct Protection Area (DPA) is the area for which a particular fire protection organization has the primary responsibility for attacking an uncontrolled fire and for directing the suppression action, regardless of Responsibility Area.

Map assets at risk

Assessment of the type, magnitude, and location of assets at risk to wildfire is a critical element of pre-fire management. Because fire protection resources are limited, it is prudent to allocate them based, at least in part, on the value of the assets at risk. The total Assets at Risk map on the following page (Figure 1& 2) represent an attempt to involve stakeholders in the evaluation of the unit's wildfire protection system. All assets at risk are equally weighted and included in the modeling. The Q81st are then color-coded corresponding to the percentile in which they belong; i.e. the upper 5% is red.

Areas with a high cumulative asset values can be further evaluated for wildfire hazard. The resulting high risk, high hazard map can be used to prioritize management activities. The initial risk ranking is a somewhat subjective process, though it benefits from the professional judgment and knowledge of the unit's fire professional staff. In this initial assessment, structures were given the highest weight, timber, infrastructure, water storage, and water supply were given a moderate weight, and all other assets were weighted at relatively low risk from wildfire. The resulting map is currently undergoing wide stakeholder review, and is subject to change over time. Refer to Figures 3 and 5.

LNU Unit Boundaries and Counties



LNU Unit Boudaries and Counties

Map Created By: Tom Knecht, FC-PFE
4/24/2013 , NAD 1983. Map not to scale.

0 4 8 16 24 32 Miles

Map Legend

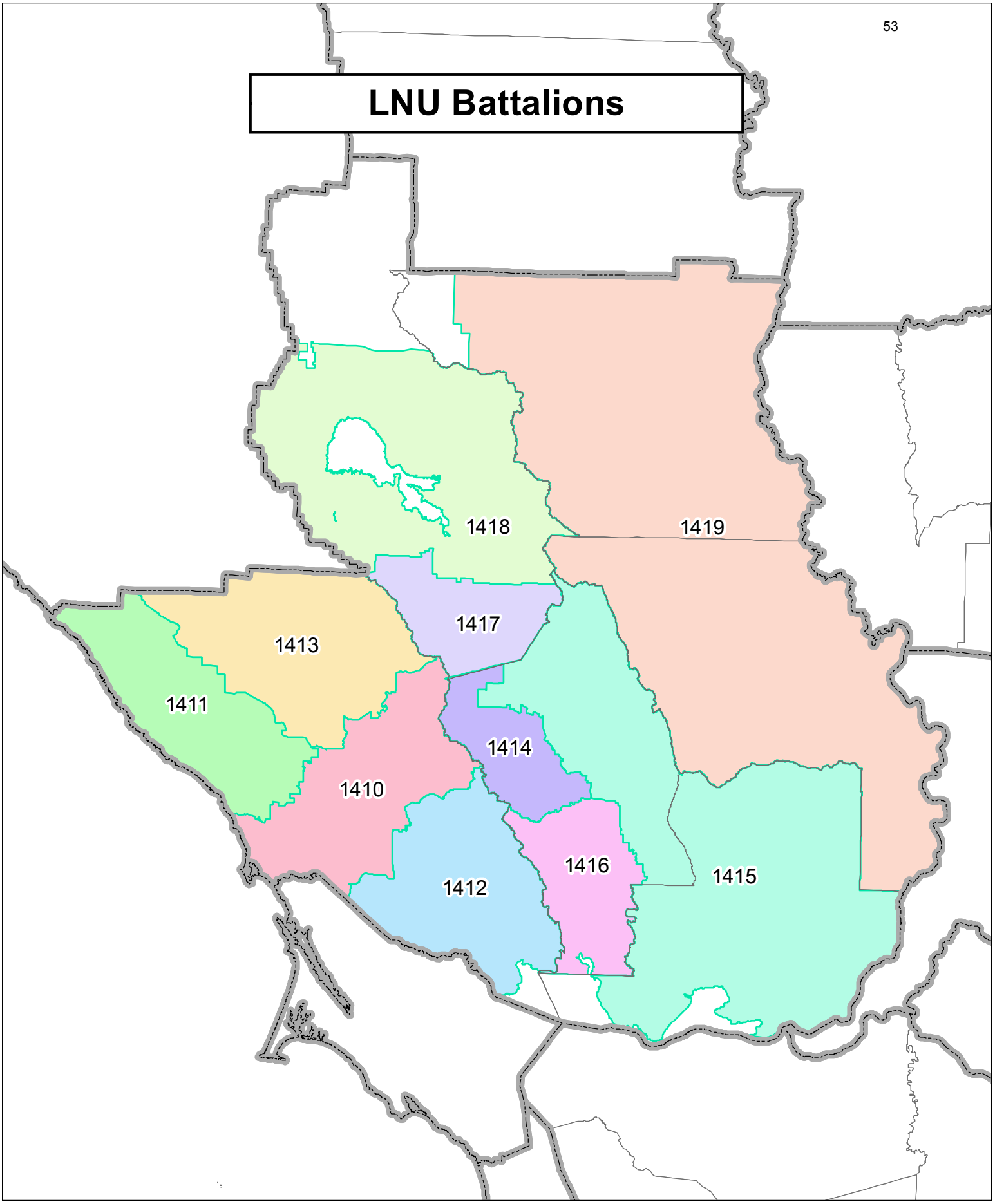
LNU
MRN
Colusa
Lake
Marin (Admin Only)
Napa
Solano
Sonoma
Yolo

LNU

1:950,000

1 inch = 79,167 feet

LNU Battalions



LNU Battalions

Map Created By: Tom Knecht, FC-PFE
4/26/2013 , NAD 1983. Map not to scale.

0 4 8 16 24 32 Miles

LNU Battalions

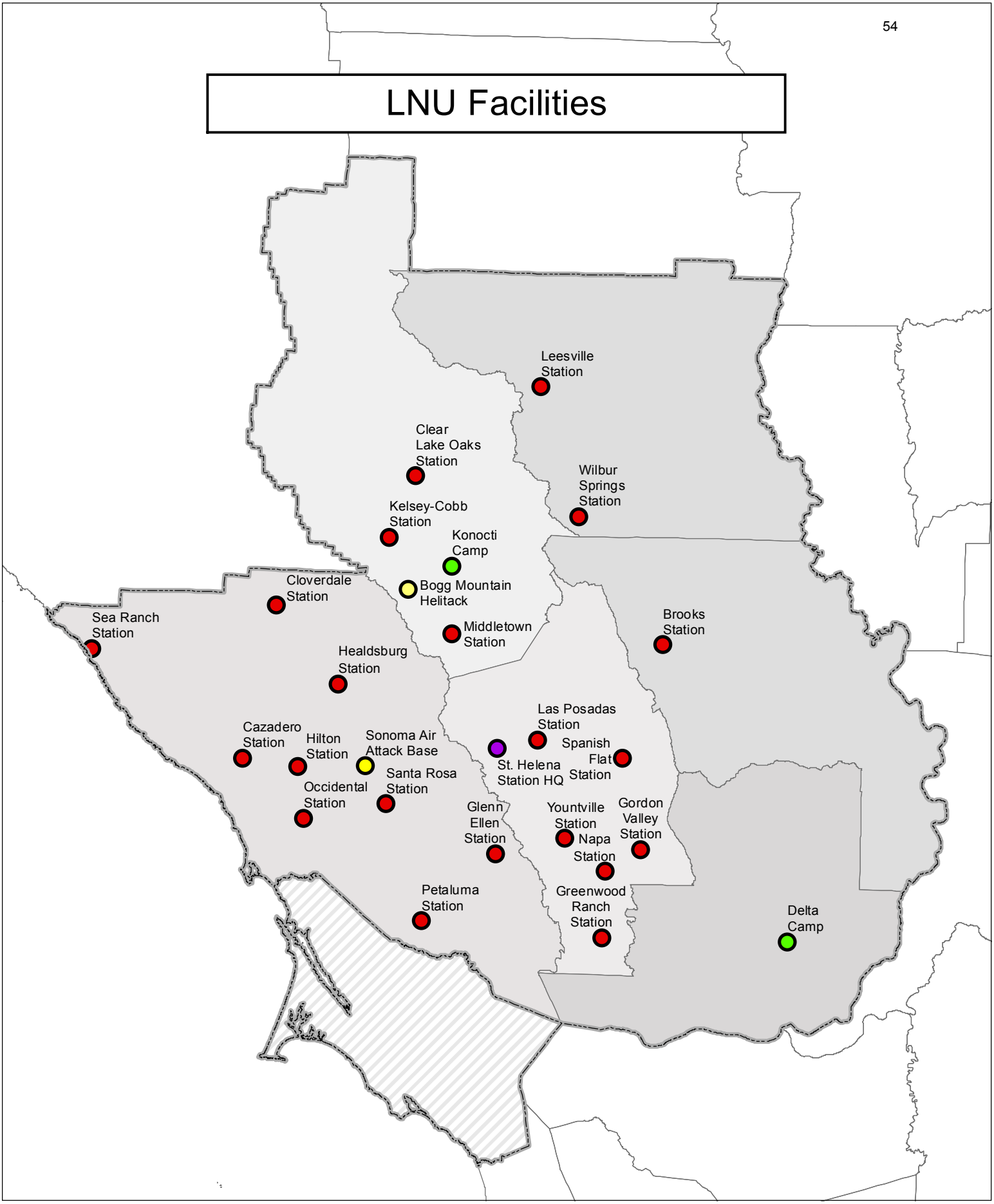
1410 1412 1414 1416 1418
1411 1413 1415 1417 1419

LNU

1:950,000

1 inch = 79,167 feet

LNU Facilities



LNU Facilities

Map Created By: Tom Knecht, FC-PFE
4/26/2013 , NAD 1983. Map not to scale.

0 4 8 16 24 32 Miles

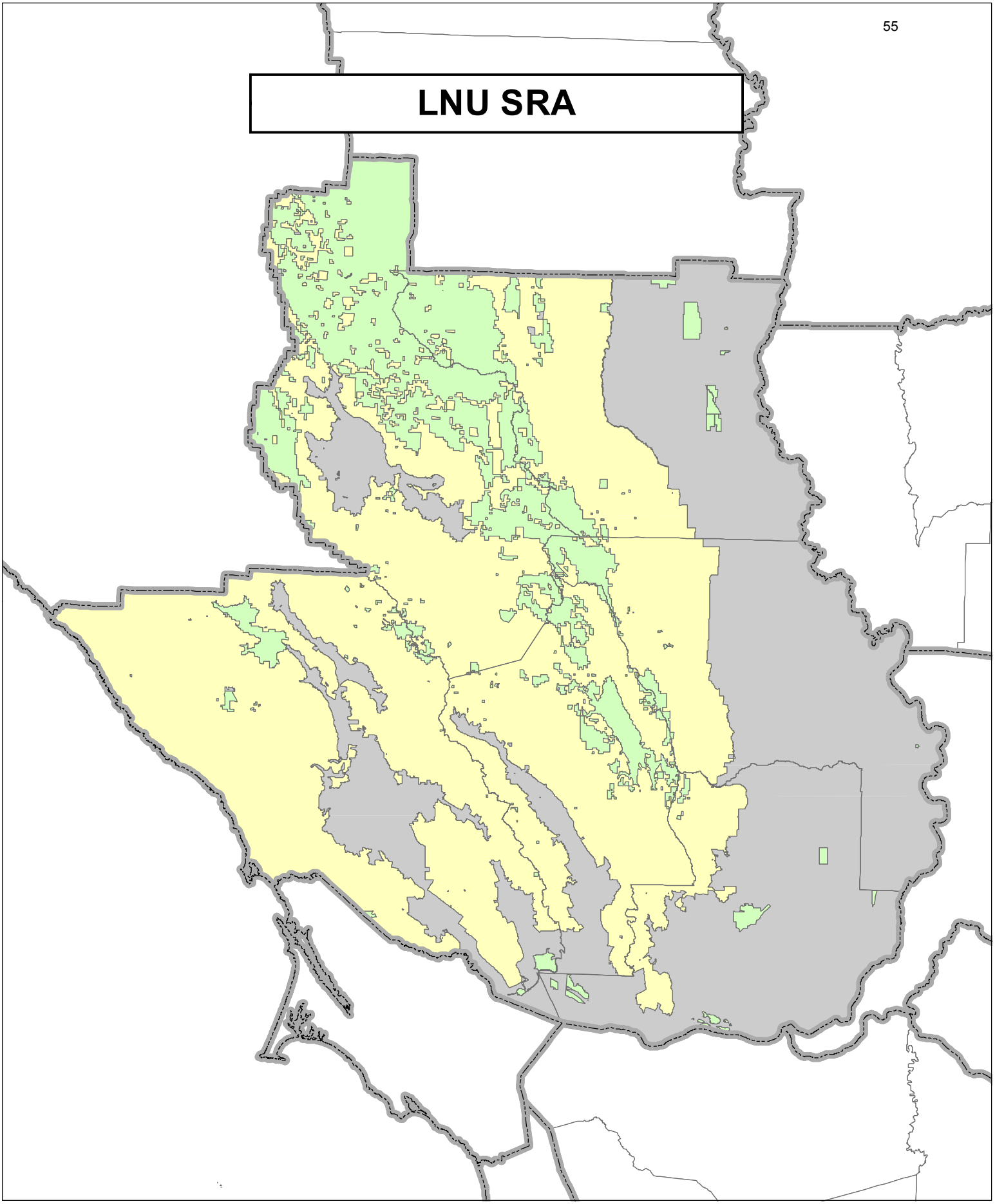
Fire Station
Camp
Headquarters
Air Program

LNU

1:950,000

1 inch = 79,167 feet

LNU SRA



LNU SRA

Map Created By: Tom Knecht, FC-PFE
4/25/2013 , NAD 1983. Map not to scale.

0 4 8 16 24 32 Miles

LNU SRA

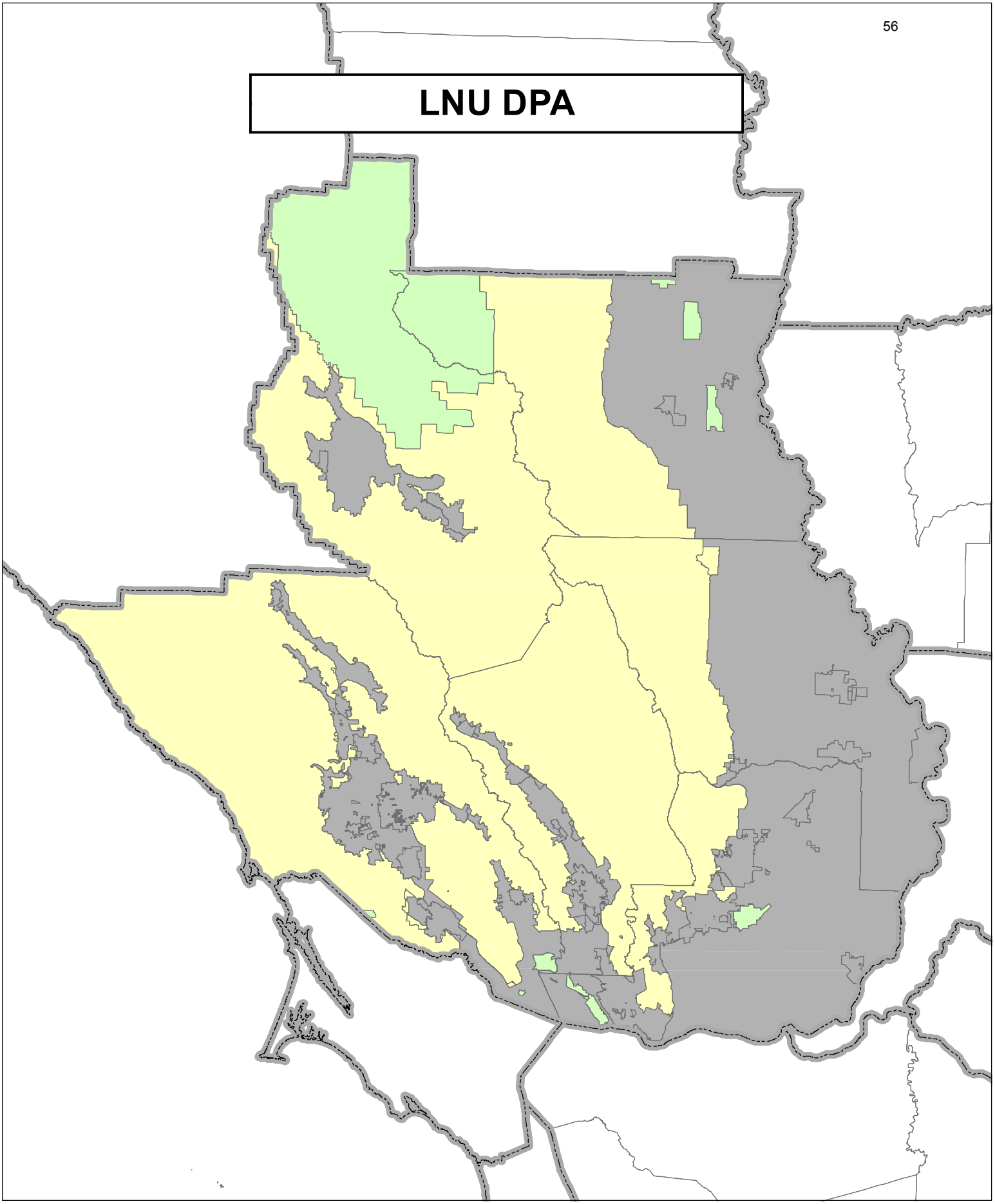
FRA LRA SRA

LNU

1:950,000

1 inch = 79,167 feet

LNU DPA



LNU DPA

Map Created By: Tom Knecht, FC-PFE
4/25/2013 , NAD 1983. Map not to scale.

0 125 250 500 750 1,000 Miles

LNU SRA

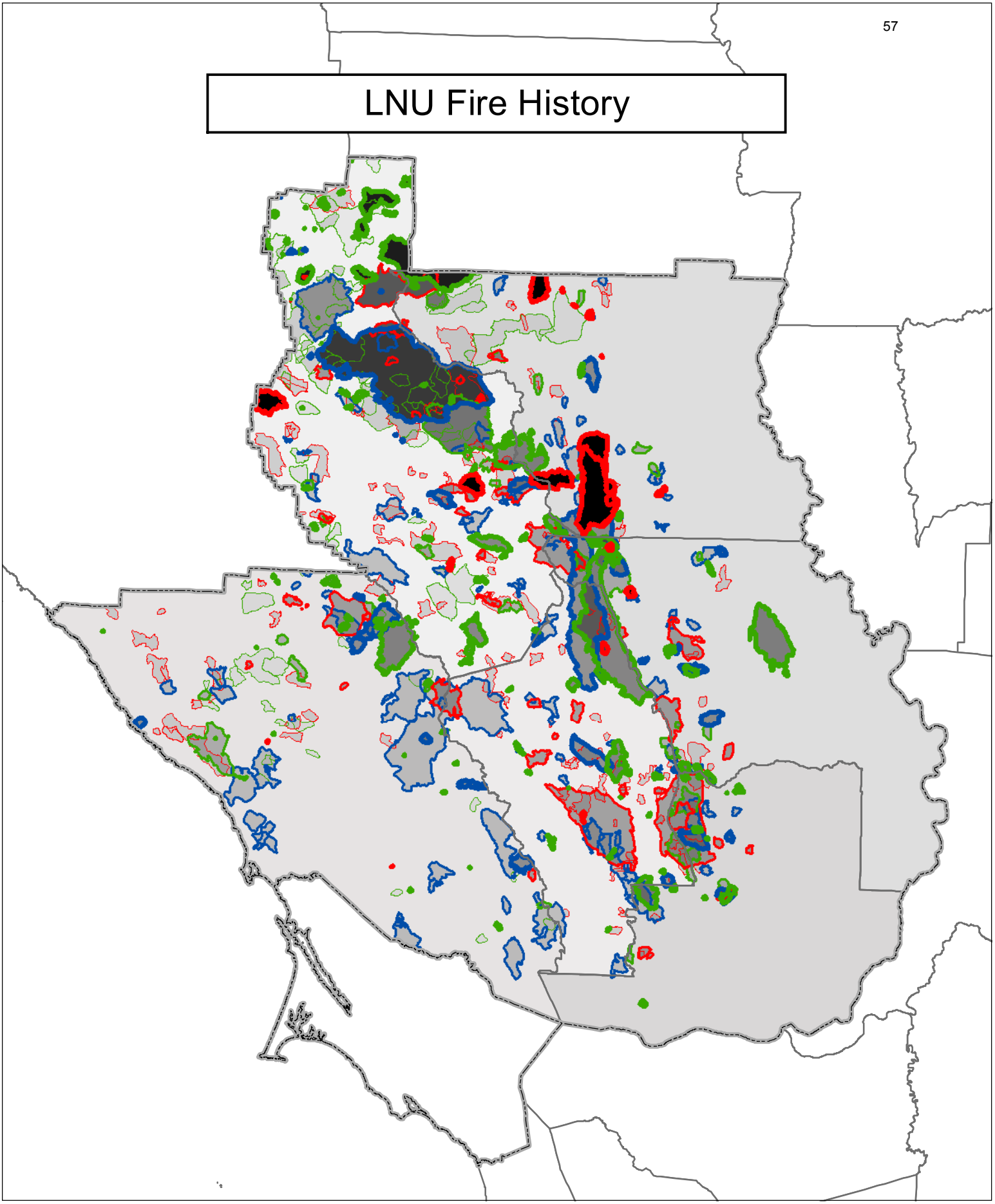
FEDERAL LOCAL STATE

LNU

1:950,000

1 inch = 79,167 feet

LNU Fire History



LNU Fire History

Map Created By: Tom Knecht, FC-PFE
4/24/2013 , NAD 1983. Map not to scale.

0 4 8 16 24 32 Miles

Map Legend

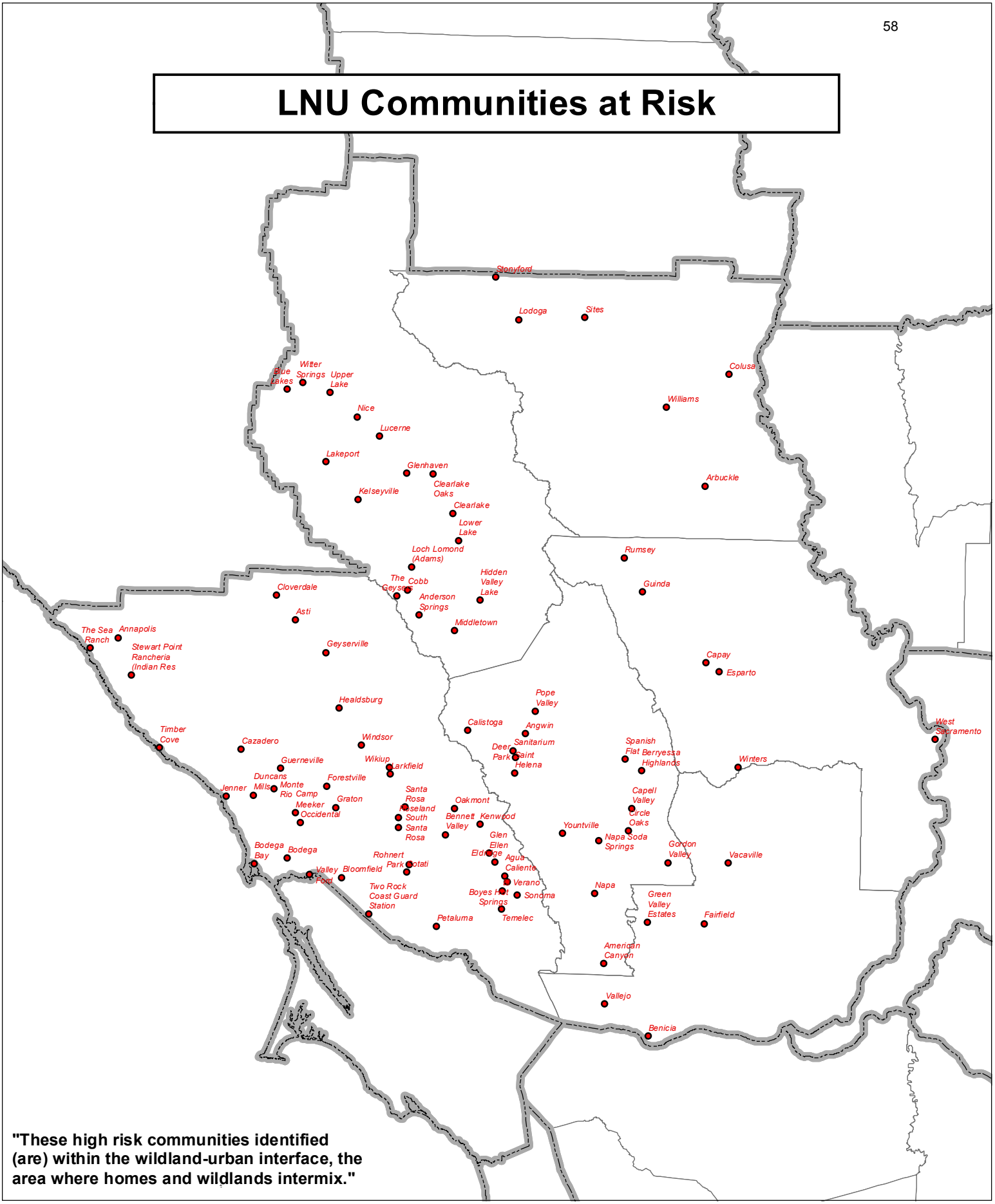
2012 · 2010's · 2000's · 1990's · 1980's · 1970's · 1960's · 1950's · 1940's · 1930's

LNU

1:950,000

1 inch = 79,167 feet

LNU Communities at Risk



"These high risk communities identified (are) within the wildland-urban interface, the area where homes and wildlands intermix."

LNU Communities at Risk

Map Created By: Tom Knecht, FC-PFE
4/25/2013 , NAD 1983. Map not to scale.

0 4 8 16 24 32 Miles

Communities At Risk

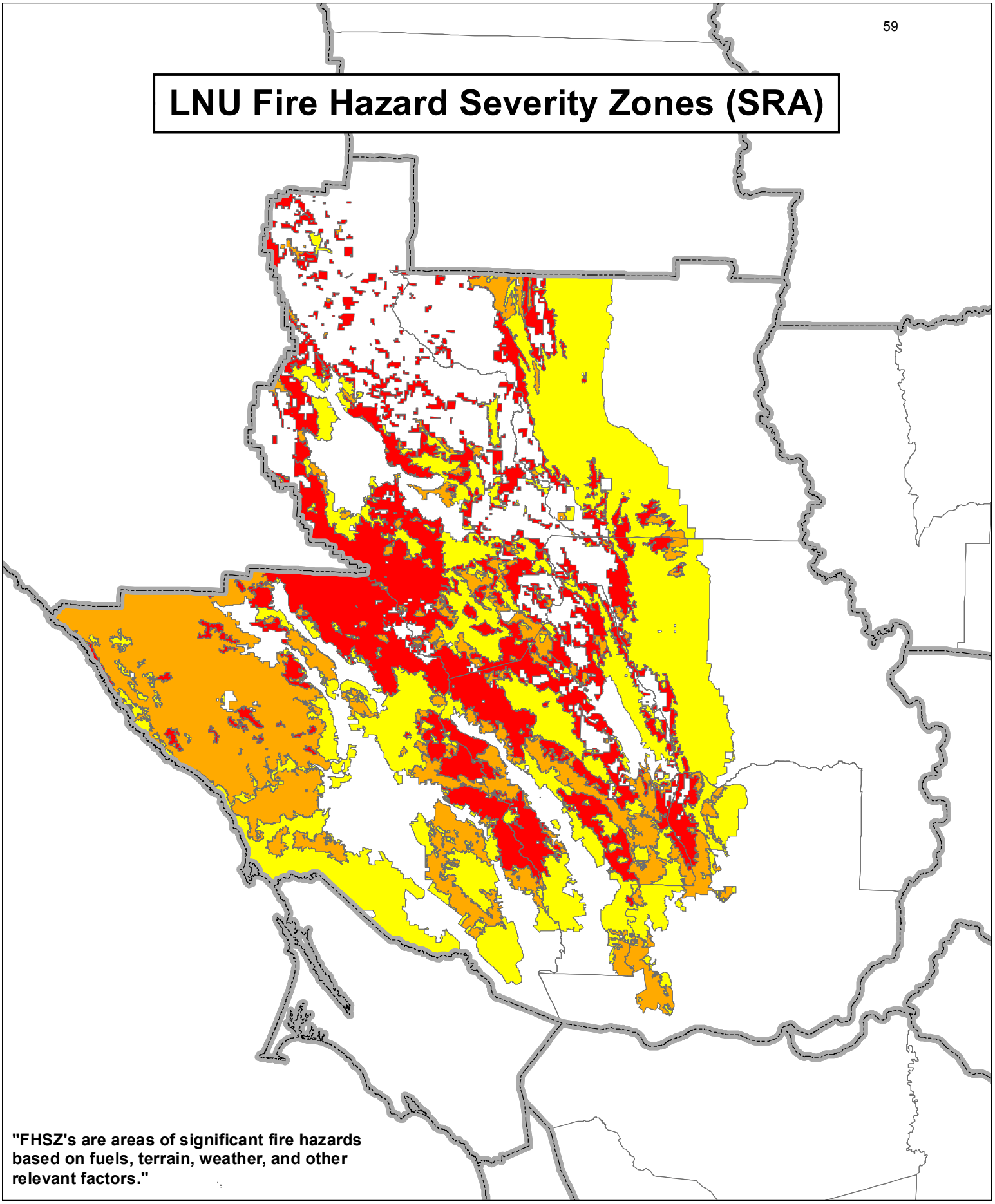
Community At Risk

LNU

1:950,000

1 inch = 79,167 feet

LNU Fire Hazard Severity Zones (SRA)



"FHSZ's are areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors."

LNU Fire Hazard Severity Zones (SRA)

Map Created By: Tom Knecht, FC-PFE
4/25/2013 , NAD 1983. Map not to scale.

0 4 8 16 24 32 Miles

Fire Hazard Severity Zones

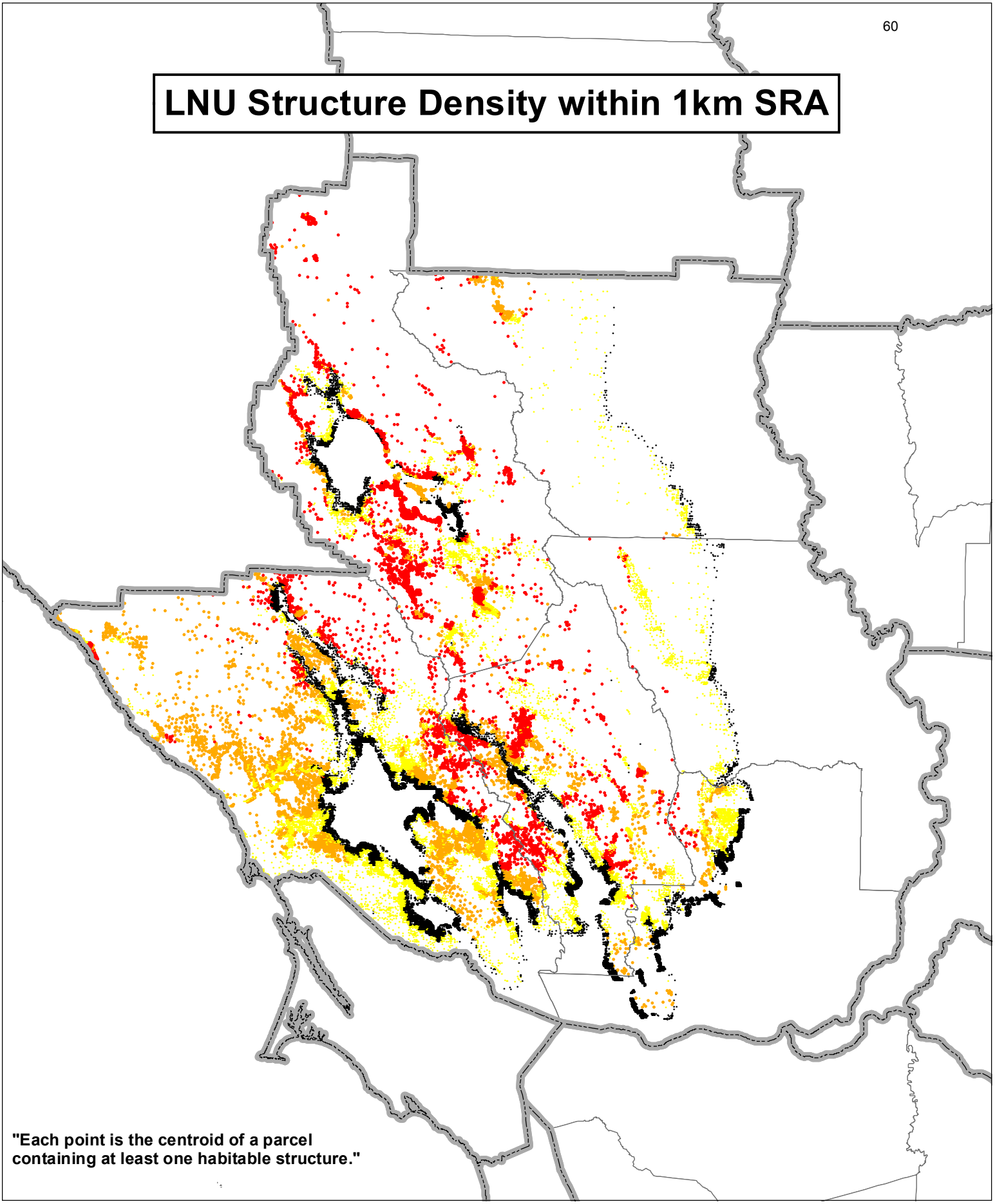
Moderate High Very High

LNU

1:950,000

1 inch = 79,167 feet

LNU Structure Density within 1km SRA



"Each point is the centroid of a parcel containing at least one habitable structure."

LNU Structure Density within 1km SRA

Map Created By: Tom Knecht, FC-PFE
4/25/2013 , NAD 1983. Map not to scale.

0 4 8 16 24 32 Miles

Structures in Fire Hazard Severity Zone

- Not Rated
- High
- Very High
- Moderate

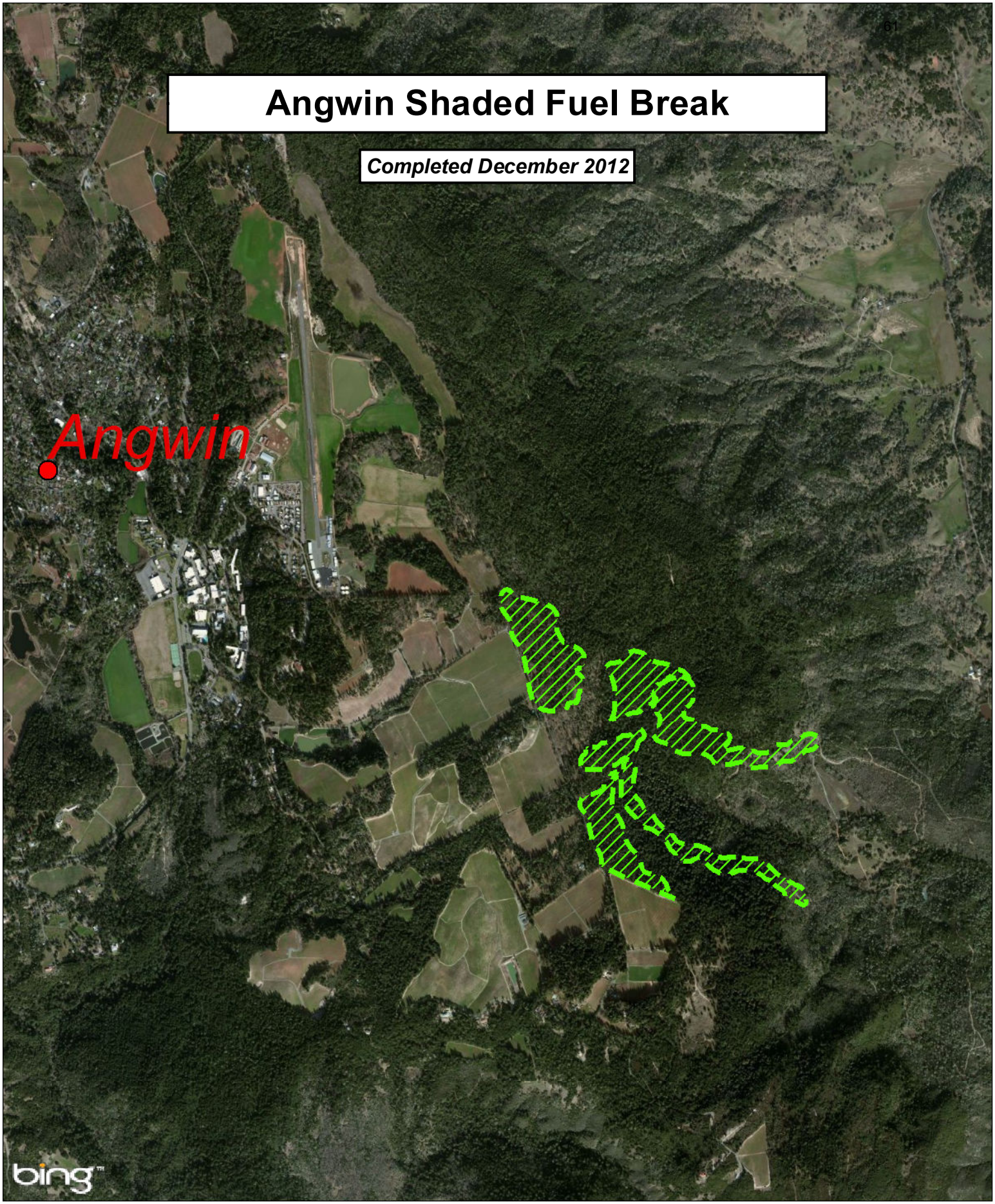
LNU

1:950,000

1 inch = 79,167 feet

Angwin Shaded Fuel Break

Completed December 2012



Angwin Shaded Fuel Break

Map Created By: Tom Knecht, FC-PFE
4/25/2013 , NAD 1983. Map not to scale.

0 40 80 160 240 320 Miles

Shaded Fuel Break Project

Shaded Fuel Break

Community At Risk

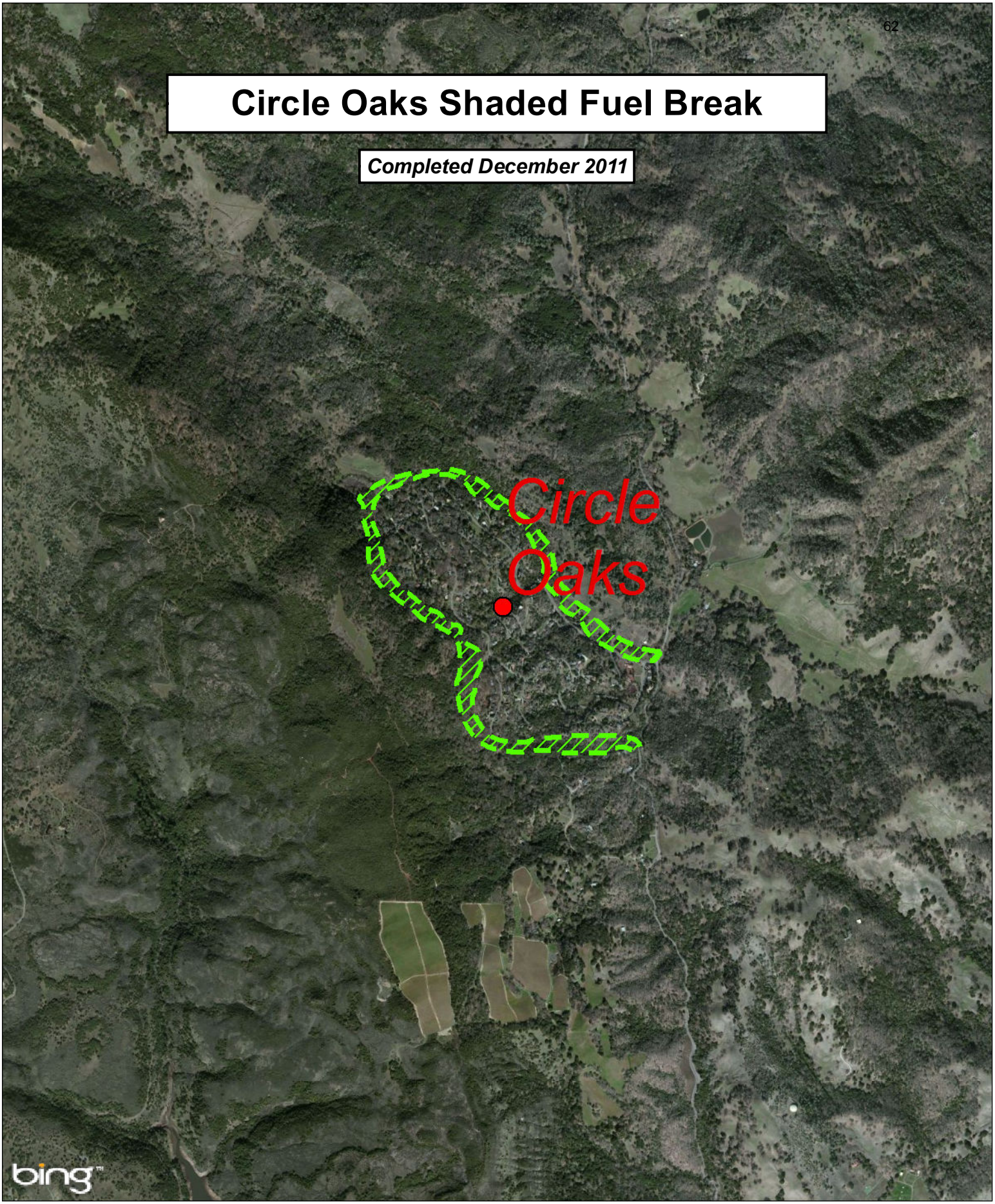
LNU

1:24,000

1 inch = 2,000 feet

Circle Oaks Shaded Fuel Break

Completed December 2011



CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION
CAL FIRE
SINCE 1885

N
W E
S

Circle Oaks Shaded Fuel Break

Map Created By: Tom Knecht, FC-PFE
4/25/2013 , NAD 1983. Map not to scale.

0 40 80 160 240 320 Miles

Shaded Fuel Break Project

Shaded Fuel Break

Community At Risk

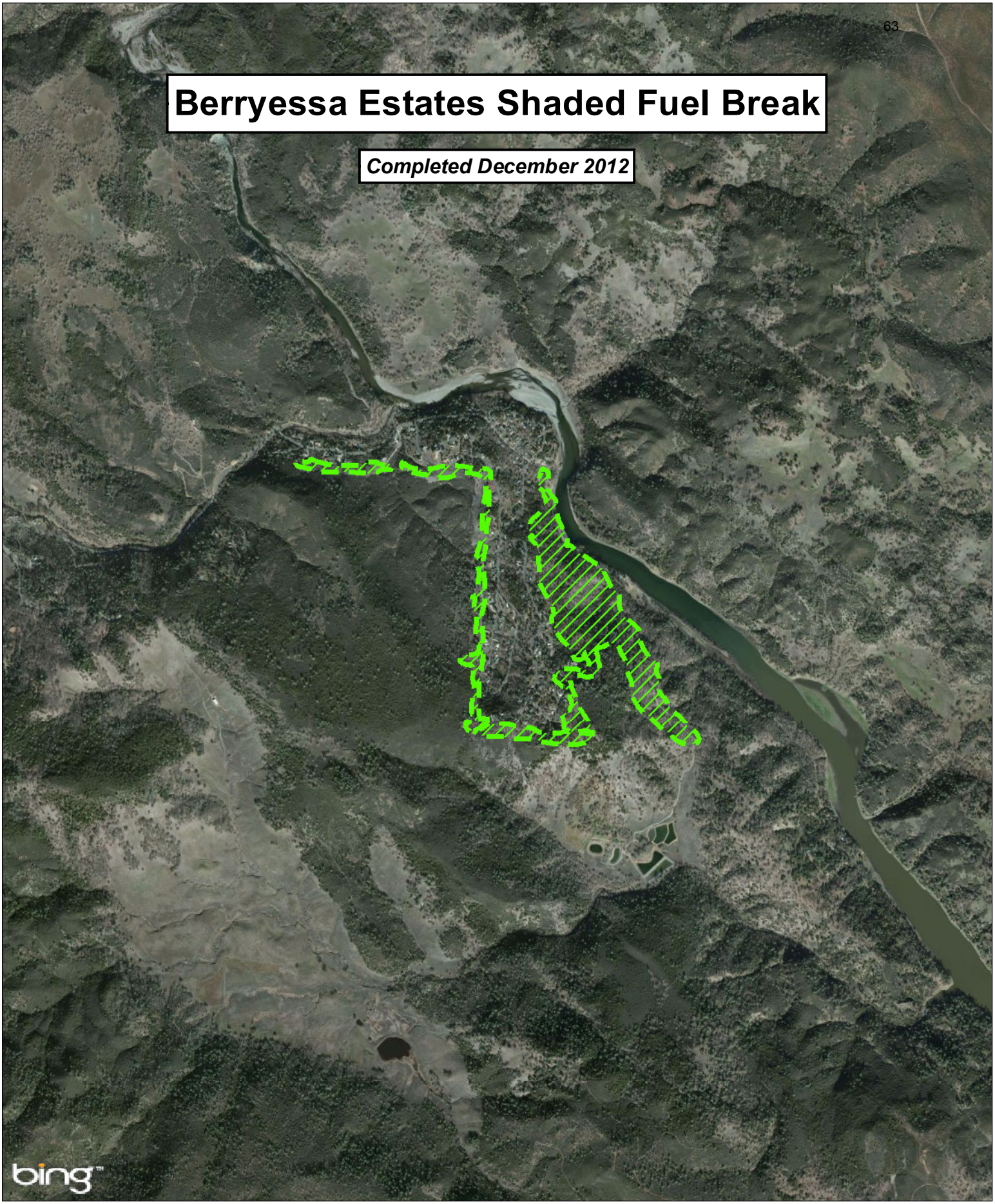
LNU

1:24,000

1 inch = 2,000 feet

Berryessa Estates Shaded Fuel Break

Completed December 2012



CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION
CAL FIRE
SINCE 1885

N
W E
S

Berryessa Estates Shaded Fuel Break

Map Created By: Tom Knecht, FC-PFE
4/25/2013 , NAD 1983. Map not to scale.

0 40 80 160 240 320 Miles

Shaded Fuel Break Project

Shaded Fuel Break

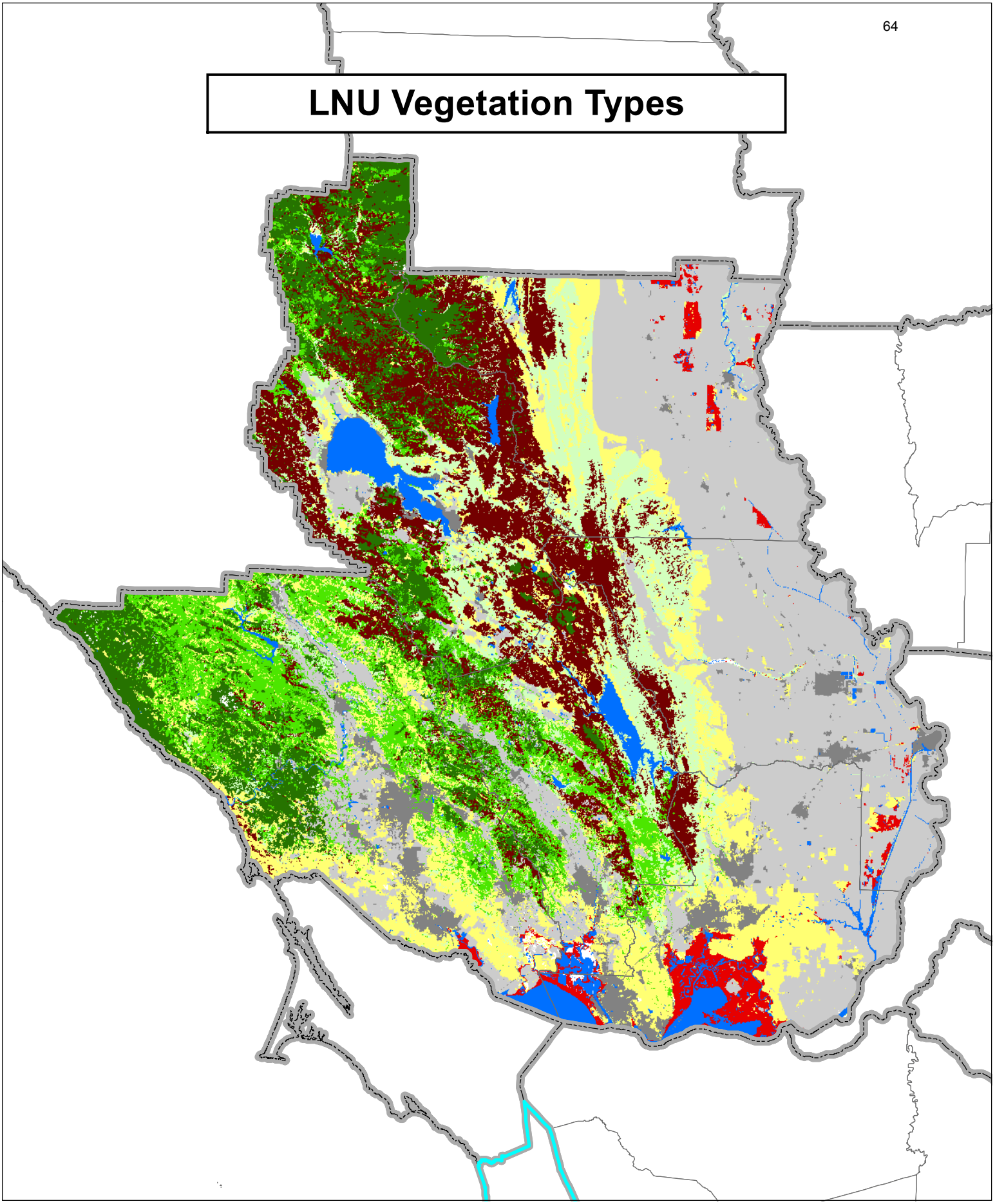
Community At Risk

LNU

1:24,000

1 inch = 2,000 feet

LNU Vegetation Types



LNU Vegetation Types

Map Created By: Tom Knecht, FC-PFE
4/24/2013 , NAD 1983. Map not to scale.

0 260 520 1,040 1,560 2,080 Miles

Vegetation Types

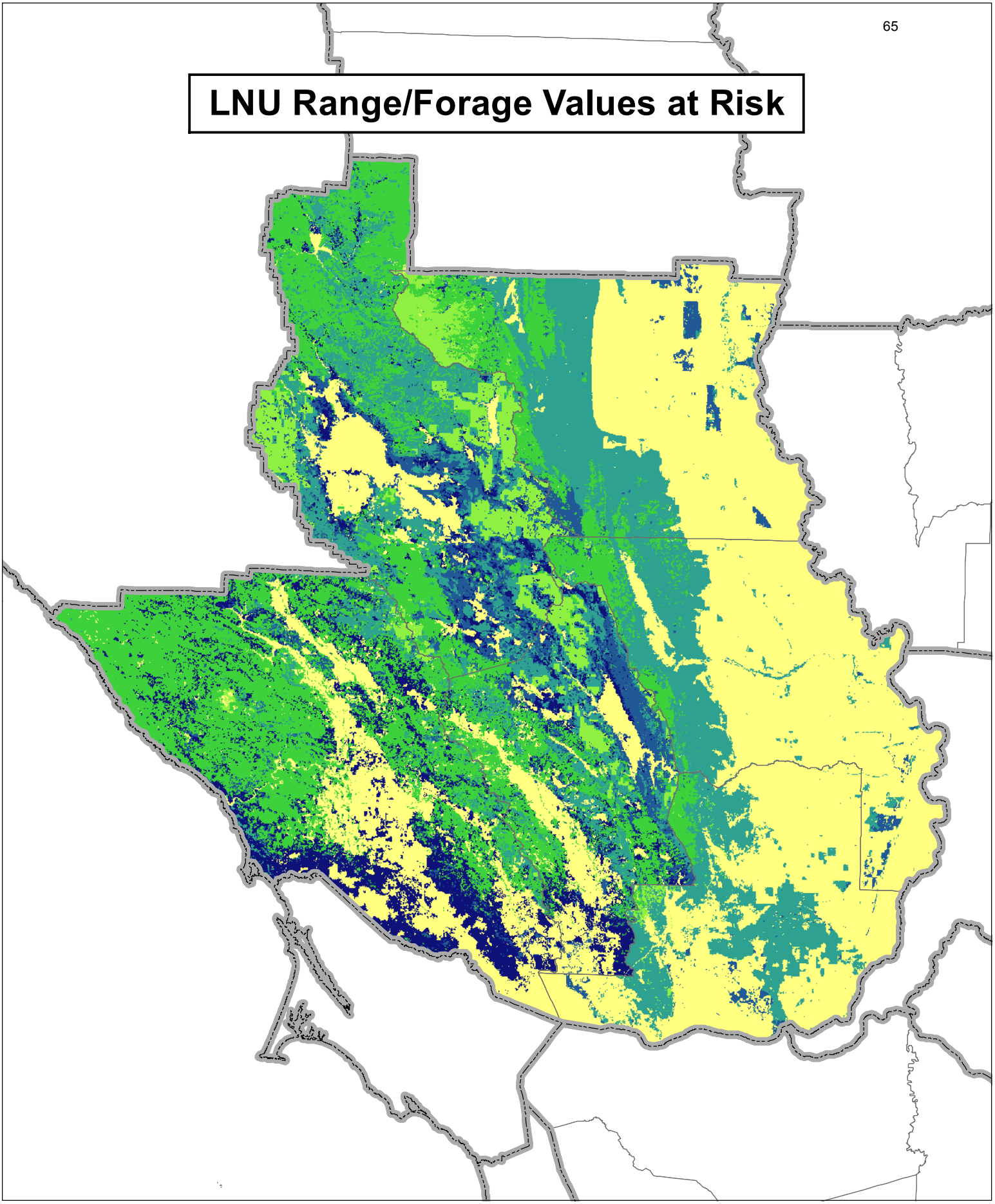
- Agriculture
- Barren/Other
- Conifer Forest
- Conifer Woodland
- Desert Shrub
- Desert Woodland
- Hardwood Forest
- Hardwood Woodland
- Herbaceous
- Shrub
- Urban
- Water
- Wetland

LNU

1:950,000

1 inch = 79,167 feet

LNU Range/Forage Values at Risk



LNU Range/Forage Values at Risk

Map Created By: Tom Knecht, FC-PFE
4/24/2013 , NAD 1983. Map not to scale.

0 260 520 1,040 1,560 2,080 Miles

Range Forage Values

- $0
- $0 - $10
- $10 - $30
- $30 - $50
- $50 - $100
- > $100

LNU

1:950,000

1 inch = 79,167 feet