Texas Wildfire Risk Assessment Summary Report for NWACA

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NWACA

AUSTIN FIRE WILDFIRE DIVISION

Texas A&M Forest Service

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Introduction

TXWRAP/ Austin Fire Department Community Risk Summary Report

Welcome to the Texas Wildfire Risk Assessment Summary Report for NWACA. This report contains a set of selected products developed by the Texas Wildfire Risk Assessment project, which have been summarized explicitly for the NWACA project area.

The **Texas Wildfire Risk Assessment** (TWRA) provides a consistent, comparable set of scientific results to be used as a foundation for wildfire mitigation planning in Texas. Results of the assessment can be used to help prioritize areas in the state where tactical analyses, community interaction and education, or mitigation treatments might be necessary to reduce risk from wildfires. The TWRA products included in this report are designed to provide the information needed to support the following key priorities:

- Identify areas that are most prone to wildfire
- Identify areas that may require additional tactical planning, specifically related to mitigation projects and Community Wildfire Protection Planning
- Increase communication with local residents and the public to address community priorities and needs
- Plan for response and suppression resource needs
- Plan and prioritize hazardous fuel treatment programs

Overview of Findings

At the request of the Northwest Austin Civic Association (NWACA) Wildfire Prevention Committee, the Austin Fire Department's Wildfire Mitigation Division conducted a Wildfire Risk Assessment for the NWACA proper. Wildfire risk assessments are intended to provide baseline information to support grass roots community wildfire preparedness efforts. The assessment and identification of risk factors are not intended to supersede any city ordinance, deed restrictions and or covenants. The assessment methodology consisted of GIS analysis and field observations of key factors relating to wildfire risk. Included in the assessment is an evaluation of ingress and egress, predominant home construction features and fuel hazards.

The assessment site includes the boundaries of NWACA in addition to a 1 mile buffer zone around the community. The buffer zone is established to illustrate WUI Protection Zones where mitigation efforts would have the greatest impact on community wildfire resiliency.

The Association boundaries encompass many subdivisions, including: Highland Hills, Shinoak Valley, Cat Mountain, Cat Mountain Villas, Northwest Hills, Meadow Mountain, North Cat Mountain, Lakewood Village, Lakewood Park, Parkhill, and Vista West. The NWACA mission aligns well with the tenets of Firewise Communities USA as reflected in their organization goals listed below. It is therefore recommended that NWACA assist in providing coordination of Firewise efforts at the subdivision level.

NWACA serves as an advocate on civic issues and concerns, helping residents

- stay informed about what's happening in the neighborhood
- monitor key municipal issues including zoning and planning
- address fire safety, transportation concerns, preventing crime, preventing and containing oak wilt, controlling wildlife, and other matters as they arise
- meet others in the neighborhood
- select association leadership

http://www.nwaca.org/committee-overview/wildfire-prevention

Field Observations

Home Ignition

Major components of home composition such as roofing and siding in the assessment area are predominately constructed of ignition resistant materials. This will aid in reducing the overall potential for homes to ignite. However many of the homes observed also have combustible attachments such as decks and fences which can act as fuel if left unmitigated. Another factor prevalent throughout the community is the use of foundation plantings around the perimeter of homes; this practice can contribute to increase risk due to the vegetation igniting and radiating, exposing the home to significant heat. This factor is especially significant in relation to vegetation located adjacent to windows, under decks, and under eaves.

The community is fortunate in that it has significant canopy cover of mature trees throughout the assessment area. Large landscape tree provide shade, increase ambient humidity levels, and provide cooler temperatures which may aid in reducing overall ignition potential.

However with large trees there is a higher potential for leaf litter to accumulate on roofs, gutters, and landscaped areas; therefore it is recommended that this litter is removed on a regular and ongoing basis.

Vegetative Hazards

The TXWRAP Fire Type –Extreme, which the NWACA area exhibits, represents the potential fire type under the extreme percentile weather category. Under these conditions over 25% of the acres in the assessment area have the potential to experience Crown Fire type. This type of fire behavior is very difficult to suppress with traditional firefighting apparatus. Fortunately the conditions for this type of fire behavior aren't in place much of the year, but they do occur frequently enough to necessitate preparedness. The most effective strategy for reducing the impact of extreme fire behavior lies in maintaining an effective Home Ignition Zone.

It was observed during the assessment that some home sites are disposing of vegetation in a manner that exacerbates wildfire risk. Debris thrown over fences adds kindling often necessary to initiate a fire and can lead to other secondary problems as well. Engaging homeowners in an effort to properly dispose of vegetative debris will go a long way towards reducing wildfire risk along the perimeter of the community. Where fuel build up is already in existence, it is recommended that the property owner be notified of the situation.

Should the community choose to engage in projects to reduce hazardous fuels accumulation, consider giving priority to efforts such as community clean up days that promote effectively reducing fuels under the control of homeowners and homeowners associations.

Ingress/Egress

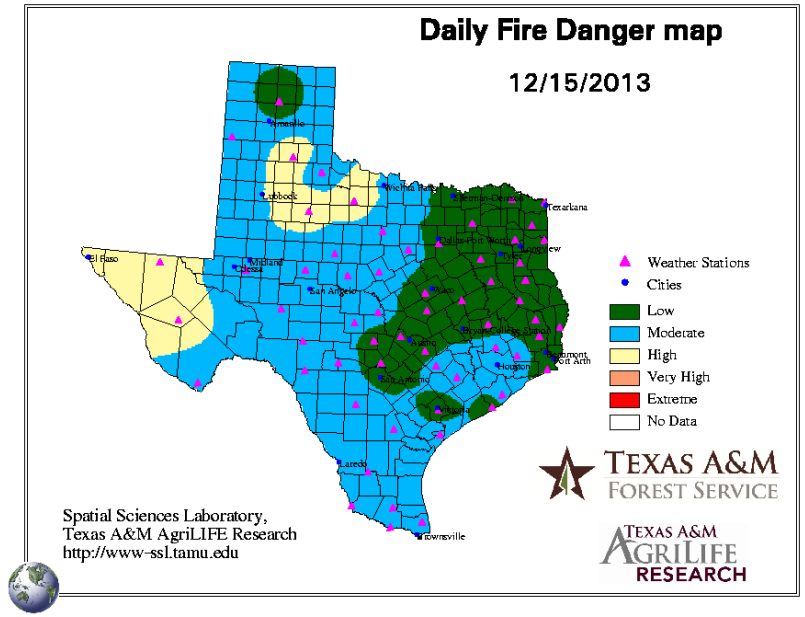
Evaluation of the need for fuels management along primary ingress and egress corridors will help ensure that a safe evacuation is possible. It can also illuminate routes that may not be a safe evacuation corridor.

The community has multiple routes for evacuation, the primary internal routes being Spicewood Springs Road, FM 2222, and Mesa Drive. The majority of the community is platted in a grid formation, however there are numerous long winding cul-de-sacs located on the western fringe of the assessment area. Many of those streets are located on a ridgeline further exacerbating the wildfire risk. Residents in these areas would benefit from receiving information directly on the Ready Set Go program as they are likely to be the first residents to be evacuated should a wildfire threaten the community. In addition consideration should be given to ensuring primary evacuation routes have adequate clearance to facilitate access by first responders while providing for residential egress.

A list of the areas where residents need to be advised about ingress and egress should be created, and that list provided to local firefighters for their information. Some factors to consider when evaluating the suitability of a given route for egress are:

Road width, road grade, the amount of vegetation adjacent to roadways, and the amount of time it takes to navigate route.

Adding a daily fire danger forecast to the NWACA website would aid in building situational awareness.
http://ticc.tamu.edu/PredictiveServices/FuelsFireDanger.htm



Wildland Urban Interface

Description

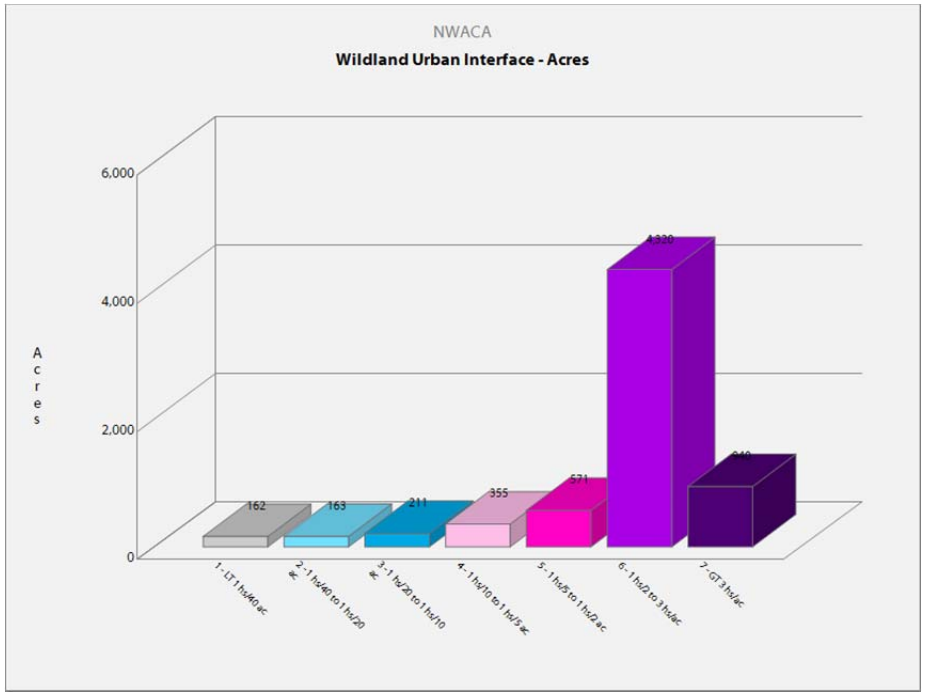
Texas is one of the fastest growing states in the Nation, with much of this growth occurring adjacent to metropolitan areas. This increase in population across the state will impact counties and communities that are located within the Wildland Urban Interface (WUI). The WUI is described as the area where structures and other human improvements meet and intermingle with undeveloped wildland or vegetative fuels. Population growth within the WUI substantially increases the risk from wildfire. In Texas nearly 85 percent of wildfires occur within two miles of a community.

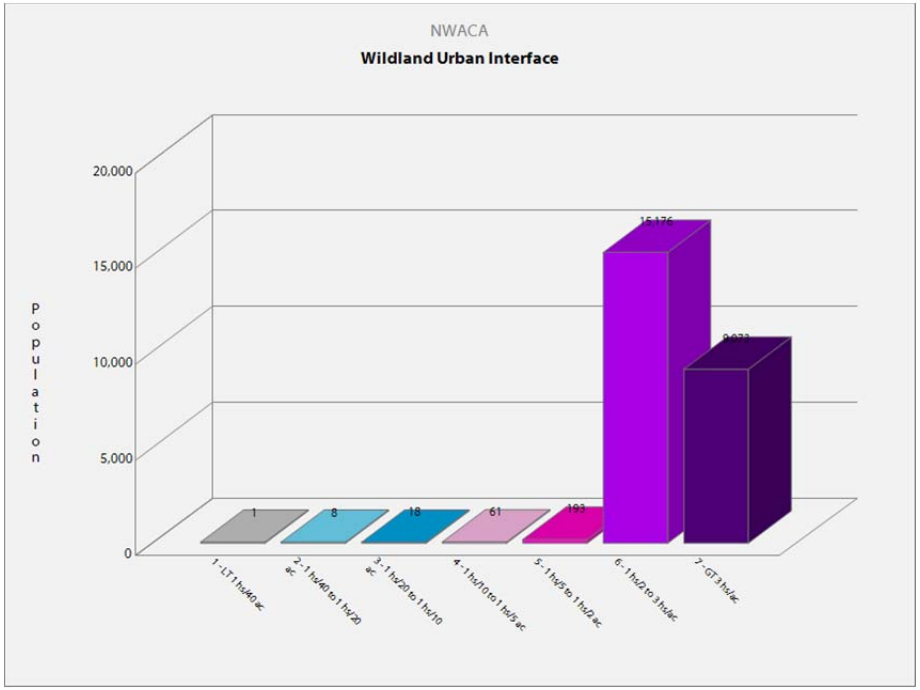
For the **NWACA** project area (NWACA plus a 1-mile buffer on all sides), it is estimated that **24,530** people or **42 percent** of the total project area population (57,829) live within the WUI. WUI housing density is categorized based on the standard Federal Register and U.S. Forest Service SILVIS data set categories.

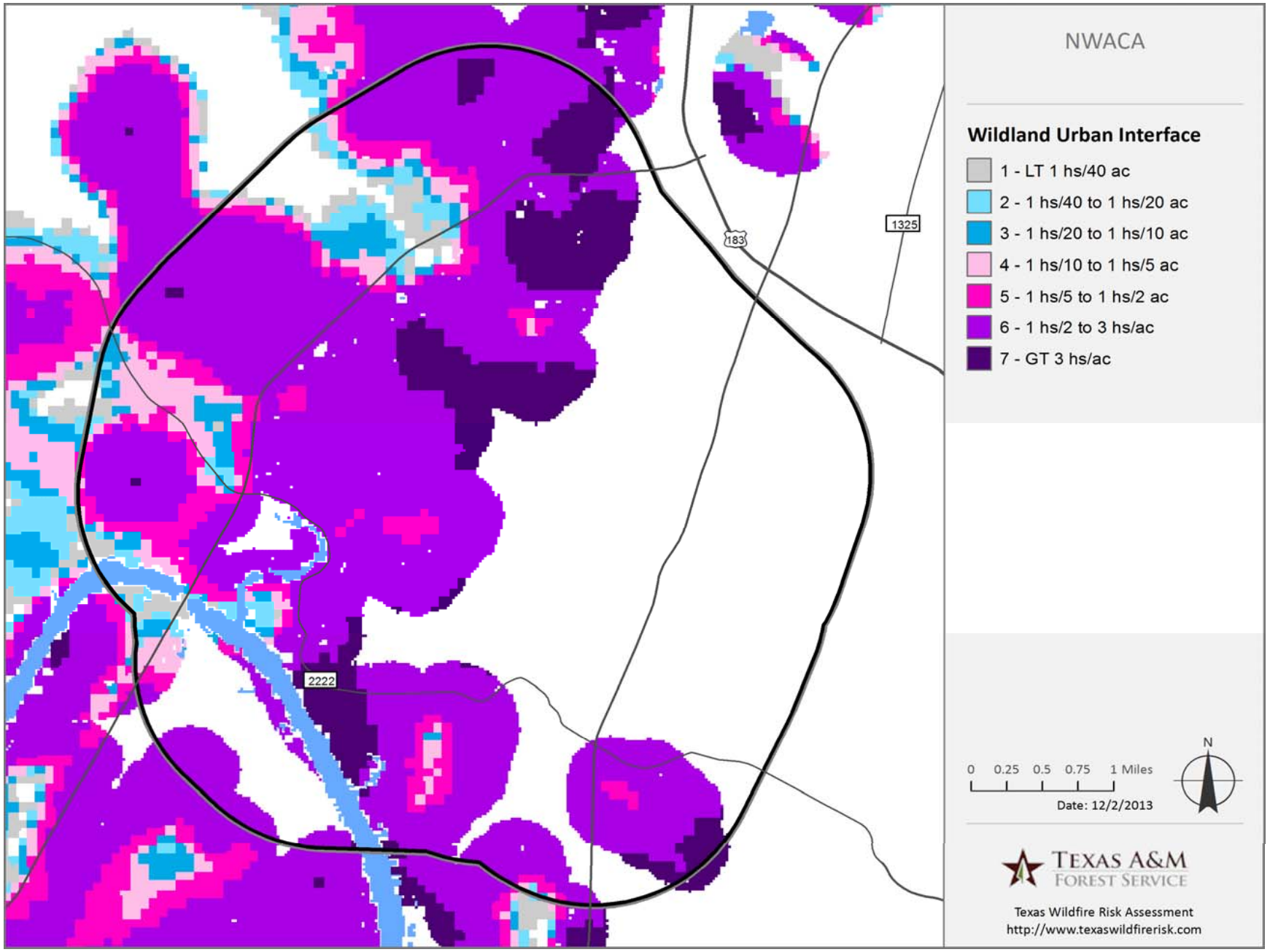
Tables on the next page show population and acreage for the NWACA project area, drawn from <need the source>

The Wildland Urban Interface (WUI) layer reflects housing density depicting where humans and their structures meet or intermix with wildland fuels.

Housing Density	WUI Population	Percent of WUI Population	WUI Acres	Percent of WUI Acres
LT 1hs/40ac	1	0.0%	162	2.4%
1hs/40ac to 1hs/20ac	8	0.0%	163	2.4%
1hs/20ac to 1hs/10ac	18	0.1%	211	3.1%
1hs/10ac to 1hs/5ac	61	0.2%	355	5.3%
1hs/5ac to 1hs/2ac	193	0.8%	571	8.5%
1hs/2ac to 3hs/1ac	15,176	61.9%	4,320	64.3%
GT 3hs/1ac	9,073	37.0%	940	14.0%
Total	**24,530**	**100.0%**	**6,721**	**100.0%**





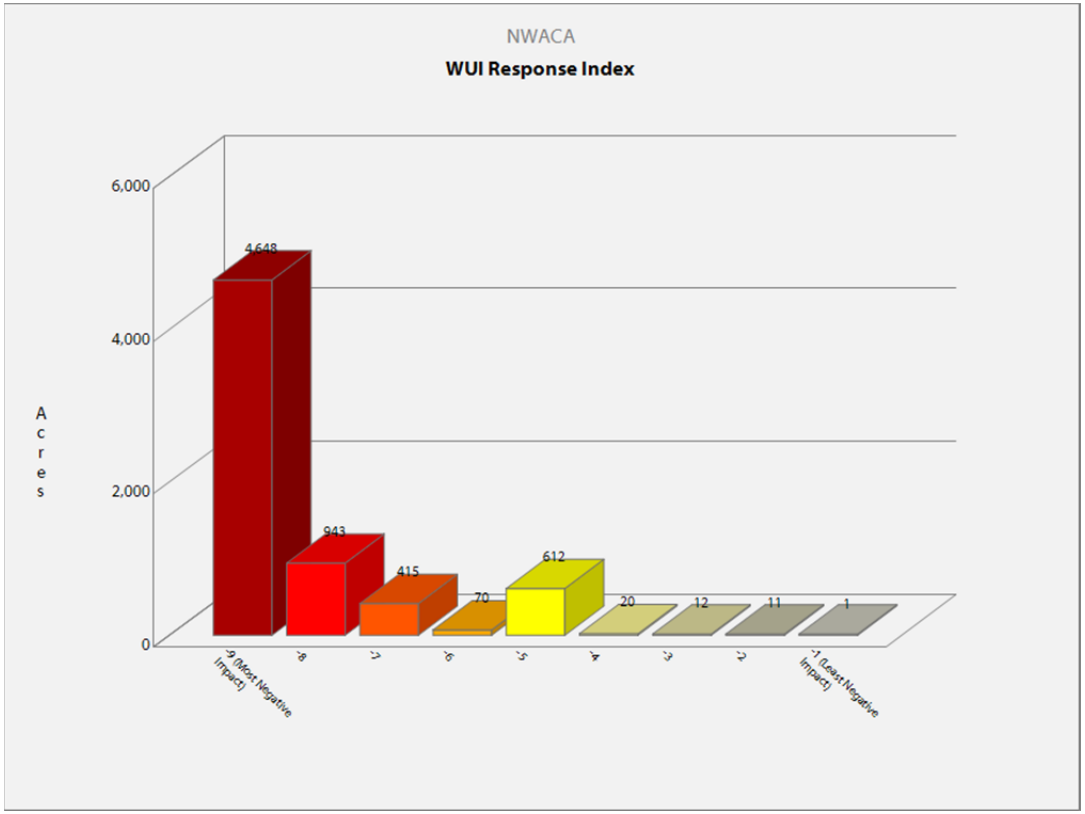

NWACA
Wildland Urban Interface
1 - LT 1 hs/40 ac
2 - 1 hs/40 to 1 hs/20 ac
3 - 1 hs/20 to 1 hs/10 ac
4 - 1 hs/10 to 1 hs/5 ac
5 - 1 hs/5 to 1 hs/2 ac
6 - 1 hs/2 to 3 hs/ac
7 - GT 3 hs/ac
183
1325
2222
0 0.25 0.5 0.75 1 Miles
N
Date: 12/2/2013
Texas A&M Forest Service
Texas Wildfire Risk Assessment
http://www.texaswildfirerisk.com

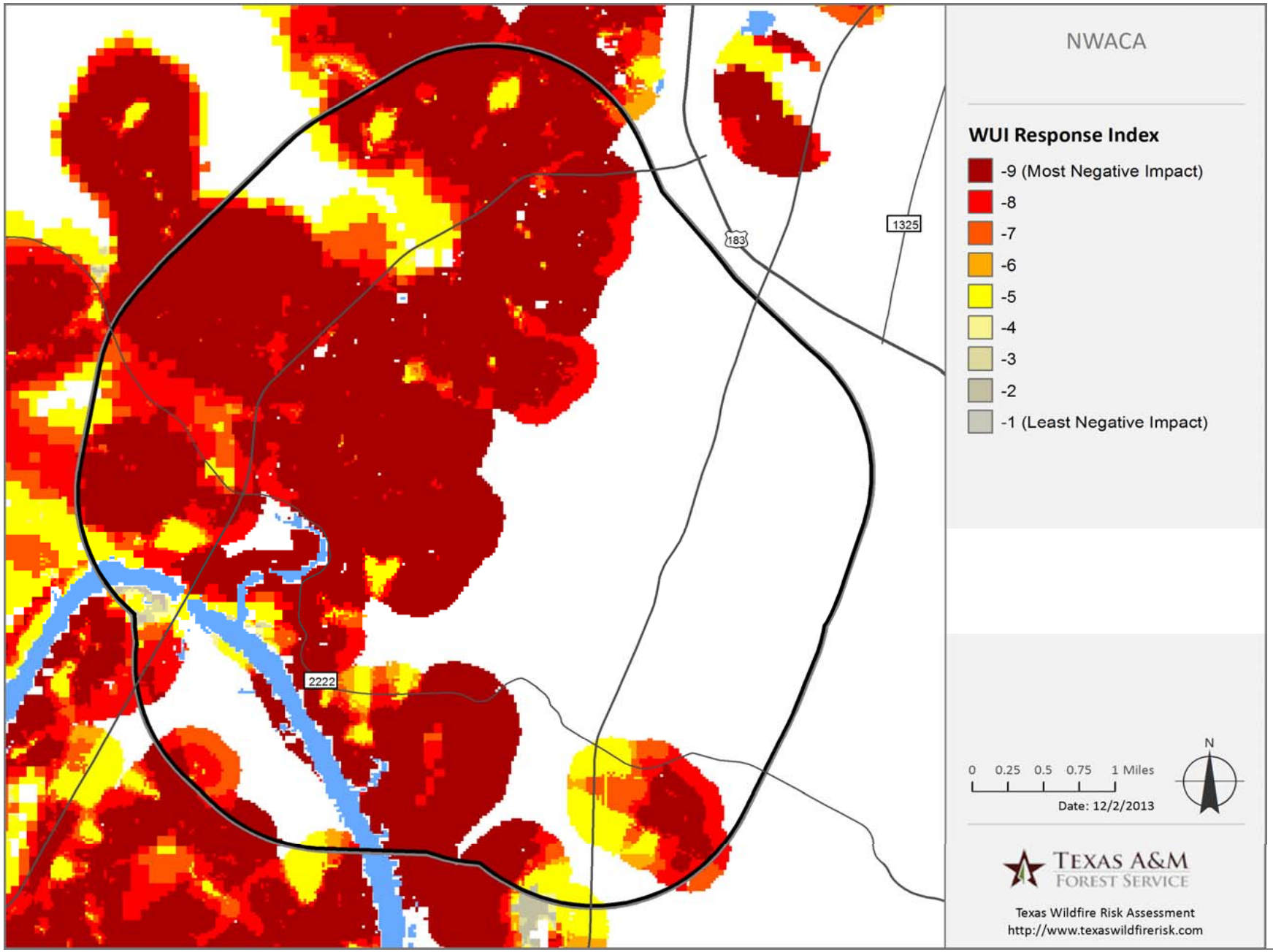
WUI Response Index

Description

The Wildland Urban Interface (WUI) Response Index layer is a rating of the potential impact of a wildfire on people and their homes.

Class	Acres	Percent
-9 (Most Negative Impact)	4,648	69.0%
-8	943	14.0%
-7	415	6.2%
-6	70	1.0%
-5	612	9.1%
-4	20	0.3%
-3	12	0.2%
-2	11	0.2%
-1 (Least Negative Impact)	1	0.0%
Total	**6,732**	**100.0%**

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Community Protection Zones

Description

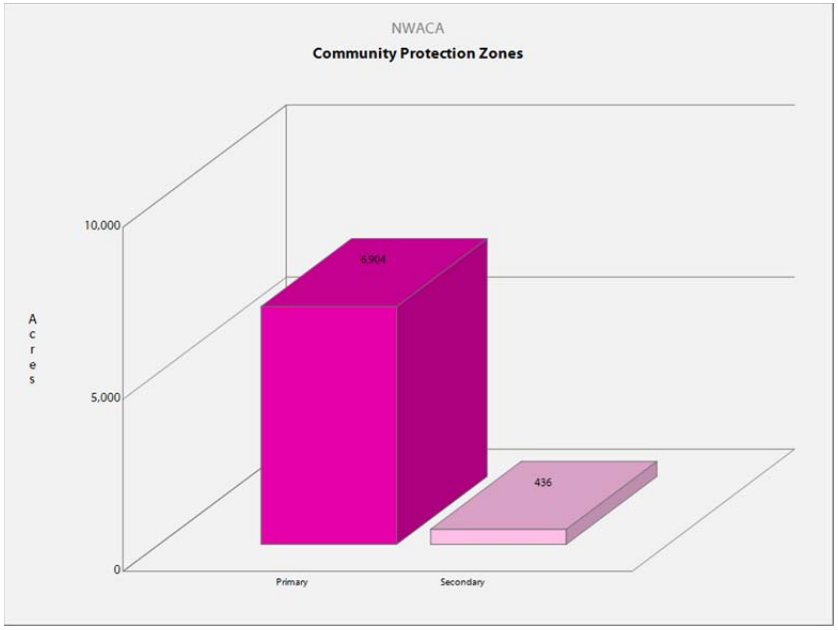
Community Protection Zones (CPZ) represent those areas considered highest priority for mitigation planning activities. CPZs are based on an analysis of the Where People Live housing density data and surrounding fire behavior potential. Rate of Spread data is used to determine the areas of concern around populated areas that are within a 2-hour fire spread distance.

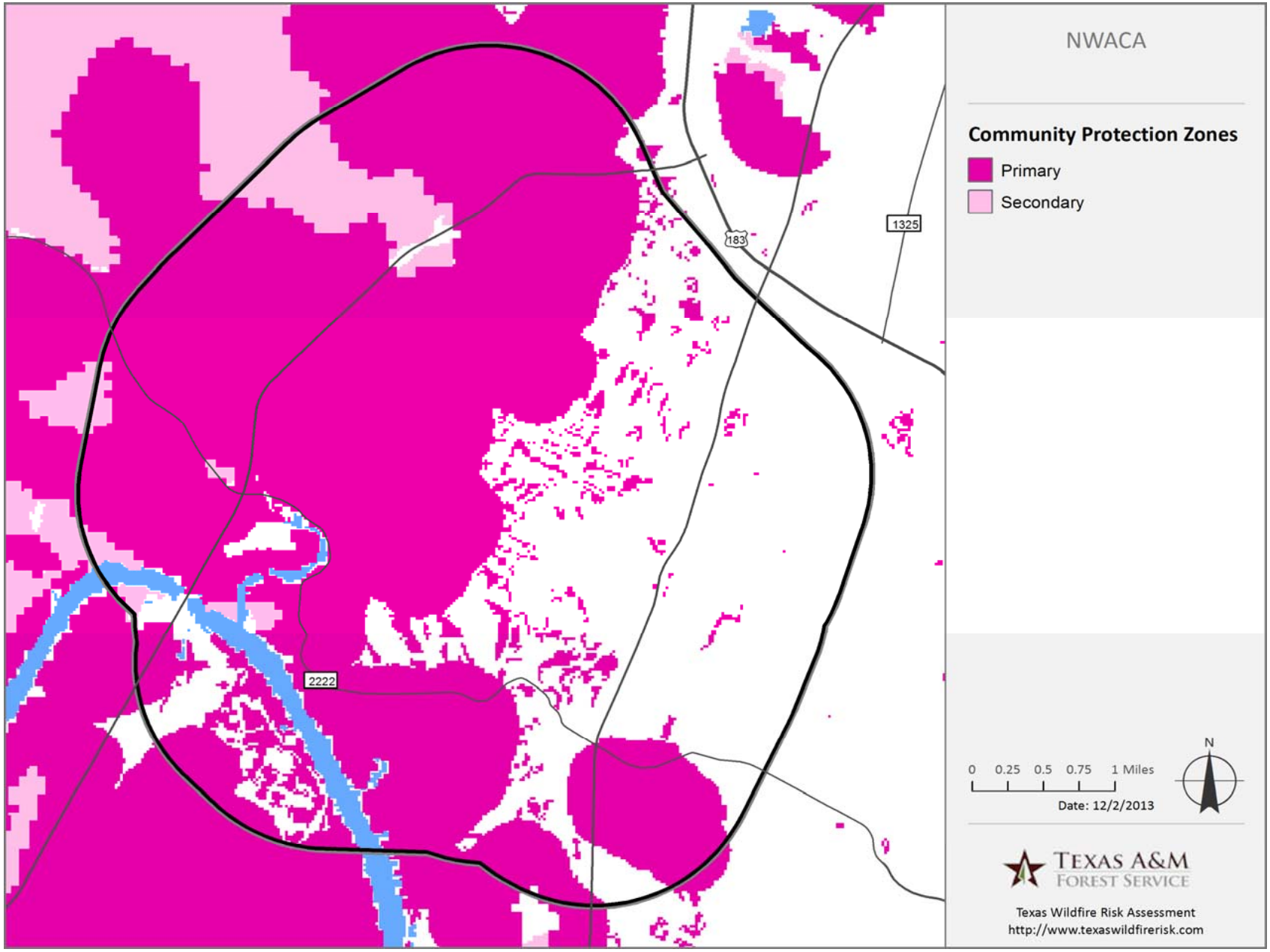
For the NWACA project area, about 30% of the WUI area (7340 acres) is CPZ.

General consensus among fire planners is that for fuel mitigation treatments to be effective in reducing wildfire hazard, they must be conducted within a close distance of a community (the CPZ).

Community Protection Zones - Acres

Class	Acres	Percent
Primary	6,904	94.1%
Secondary	436	5.9%
Total	**7,340**	**100.0%**

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Fire Type - Extreme

The NWACA project area is classified as being of Fire Type Extreme, in which several kinds of fire occur:

Surface Fire
A fire that spreads through surface fuel without consuming any overlying canopy fuel. Surface fuels include grass, timber litter, shrub/brush, slash and other dead or live vegetation within about 6 feet of the ground.

Passive Canopy Fire
A type of crown fire in which the crowns of individual trees or small groups of trees burn, but solid flaming in the canopy cannot be maintained except for short periods (Scott & Reinhardt, 2001).

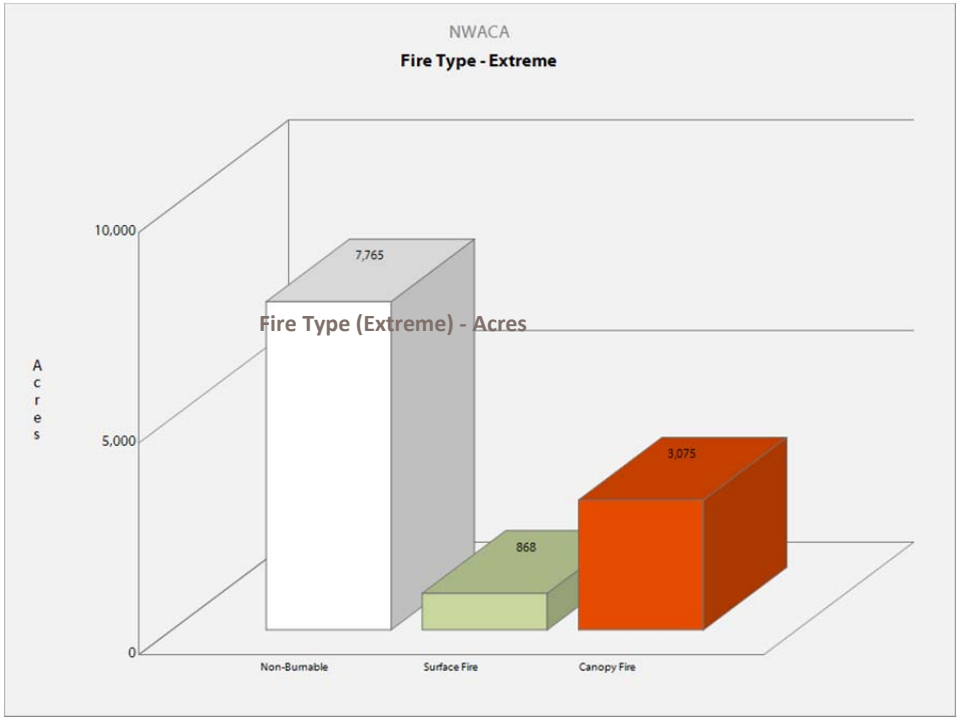
Active Canopy Fire
A crown fire in which the entire fuel complex (canopy) is involved in flame, but the crowning phase remains dependent on heat released from surface fuel for continued spread (Scott & Reinhardt, 2001).

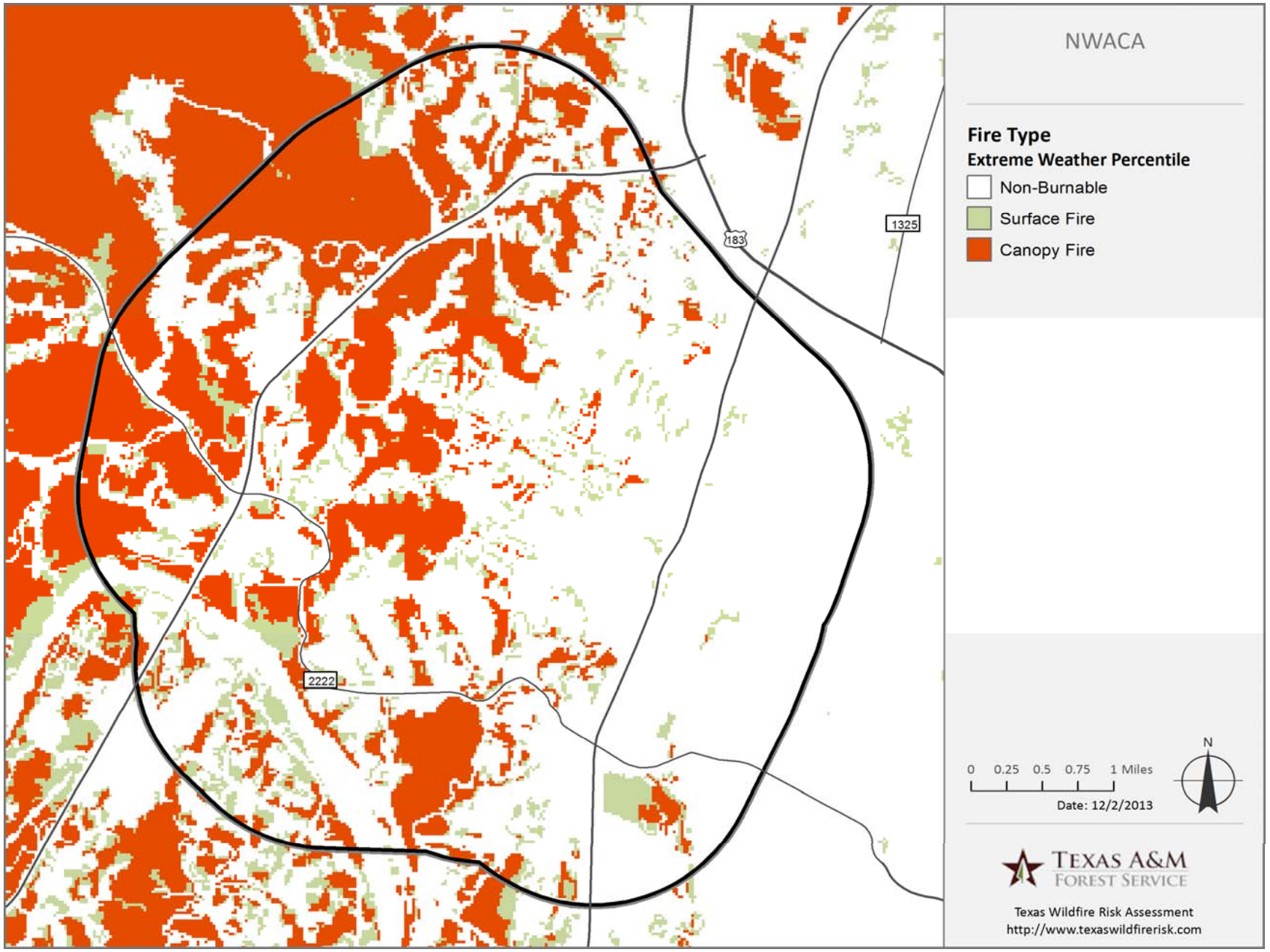
Fire Type – Extreme represents the potential fire type under the extreme percentile weather category. The extreme percentile weather category represents the average weather based on the top three percent fire weather days in the analysis period. It is not intended to represent a worst case scenario weather event. Accordingly, the potential fire type is based on fuel conditions, extreme percentile weather, and topography.

Canopy fires are very dangerous, destructive and difficult to control due to their high fire intensity. From a planning perspective, it is important to identify where these conditions are likely to occur on the landscape so that special preparedness measure can be taken if necessary. The Fire Type – Extreme layer shows the footprint of where these areas are most likely to occur. However, it is important to note that canopy fires are not restricted to these areas. Under the right conditions, it can occur in other canopied areas.

The fire type - extreme map is derived at a 30-meter resolution. This scale of data was chosen to be consistent with the accuracy of the primary surface fuels dataset used in the assessment. While not appropriate for site specific analysis, it is appropriate for regional, county or local planning efforts.

	Fire Type	Acres	Percent
	Non-Burnable	7,765	66.3%
	Surface Fire	868	7.4%
	Canopy Fire	3,075	26.3%
	Total	**11,708**	**100.0%**




NWACA
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Summary

This risk report was developed in an effort to provide NWACA with situational awareness that can enhance their efforts to reduce wildfire risk throughout the planning area.

The NWACA project area is an area of extreme risk, designated Fire Type – Extreme. Key considerations for the neighborhood as they develop their CWPP include

- Identifying areas where homeowners have left brush and trimmings that now serve as wildfire fuel and getting those removed
- Identifying areas of problematic ingress and egress, educating neighbors in those areas about their alternatives, and notifying AFD about the areas
- Promoting sound practices of groundcover plantings around homes and identifying places where changes are needed
- Working with AFD and the State of Texas to remove wildfire fuel in the WUI

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