Wildfire Hazard Assessment Guide For Florida Homeowners

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The below-listed Division of Forestry employees worked as a committee to make this booklet possible.
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September 2002

This booklet was partially funded by a grant provided by the USDA Forest Service, Southern Region.

A Message For The Homeowner

For thousands of years, fire has shaped and defined the landscape we now know as Florida. Most of the plants and animals that we recognize as native species adapted to periodic fires and, in many cases, have actually become dependent on fire for their survival.

Our growing population continues to spread from our communities into outlying areas where homes and wildland fuels intermingle. Unfortunately, homeowners who have moved to these areas to enjoy the benefits of being "close to nature" typically do not understand that the safety of their family, home and neighborhood may well depend on action they take before wildfire occurs. Homeowners must, in essence, become partners with the fire protection agencies.

This Wildfire Hazard Assessment Guide for Florida Homeowners was developed to help Florida neighborhoods: (1) determine if a wildfire hazard exists for their neighborhood or subdivision, (2) evaluate the wildfire risk to the neighborhood and (3) take action to mitigate the existing wildfire hazard, thereby reducing the risk to an acceptable level. This process will be most successful if your Homeowners Association involves representatives from the Florida Division of Forestry, your local Fire Department, the Cooperative Extension Service and Office of Emergency Management. These professionals will be glad to meet with you and your neighbors to assist with the assessment process.

Many factors contribute to make homes and other structures vulnerable to wildfire. There are no guarantees, but by using this booklet, you and your neighbors can make significant progress toward a neighborhood safer from wildfire.

Charles H. Bronson
Commissioner of Agriculture

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THE NATURAL ROLE OF FIRE

Fires have been a recurring phenomenon in Florida for thousands of years. Each year, seasons cycle from "wet" (June to November) to "dry" (December to May) with abundant sunshine throughout. These ideal conditions for plant growth produce huge volumes of vegetative material each year and as this material accumulates it becomes fuel for wildfires. That which is not consumed or decomposed continues to accumulate until *something* removes it. In most Florida ecosystems, fire is the phenomenon that regularly cleans out this accumulated fuel.

Prescribed fire mimics the natural role of fire

Like hurricanes, fires have helped to shape Florida's landscape and determine the native plant and animal species. Most native plants and animals are well adapted to and some species are actually dependent on periodic fires for their existence. Longleaf Pine (*Pinus palustris)* once dominated the landscape because the species is adapted to a fire-prone environment. A thick bark insulates the tree from fire and an abundance of green needles protect seedlings in its characteristic "grass stage." We humans must also adapt if we are to live and work in Florida's fire-prone environment.

Scientists believe that prior to human habitation of the peninsula, lightning was a major factor in fire ecology. Lightning started fires with such frequency that most areas of Florida were probably visited by fire every 3 to 7 years. These were usually low intensity surface fires limited to the grasslands and forest floor. Due to the frequency of these fires, large amounts of vegetative fuel did not accumulate and disastrous fires were rare.

Today we are still learning how to live safely in Florida's fire-prone environment. Our growing population continues to move from our towns and cities and build in areas that have historically been forest or wildland. This expansion into what has become known as the "wildland/urban interface" (WUI) has resulted in an increased number of homes threatened by wildfire. We must become "Firewise" by learning how to protect our families, our homes and our property from wildfire.

HAZARD RATING FACTORS

Although there are many factors that affect the survivability of homes during wildfires, the following have been shown to be important in Florida.

Access

How a subdivision is designed and the resulting infrastructure are major factors in determining how safe it is from wildfire. Roadway and shoulder widths, road maintenance standards, turnarounds and road surface materials affect how quickly emergency crews can respond, as well as how quickly and safely residents can evacuate. Bridges designed for residential traffic may collapse under the weight of heavy firefighting equipment. Long dead-end roads may require that residents pass through a fire area in order to evacuate. Dead-end roads also increase the chance that firefighters will be cut off from their escape route.

This bridge provides safe access for firefighting equipment

Highly visible, non-flammable street signs and clearly marked home addresses (visible from both directions) make it easier for firefighters to locate and quickly reach threatened structures. This is a requirement of most local governments that, unfortunately, is not always enforced. Wooden street signs may burn during wildfires making emergency fire response difficult at best and nearly impossible for fire departments not familiar with the layout of the roads.

Because the terrain is so flat, many subdivisions in Florida have extensive drainage systems, including deep canals that are impossible to cross with firefighting equipment. This requires that firefighters use valuable time (sometimes going miles out of their way) to seek alternative routes to access an advancing wildfire.

Vegetation

Wildland vegetation (wildland fuel) in Florida is highly variable both in amount and type and burns differently at different times of the year. Generally speaking, native vegetation

is more likely to burn during the winter months when grasses and weeds (herbaceous vegetation) have been killed by frosts and freezing temperatures. In addition, many plants found in Florida ecosystems have waxy leaf surfaces or resinous sap. These plants can burn even though the leaves are still green… a situation that usually occurs during the dry months of the spring and early summer. Both dead and live fuels also tend to dry more rapidly in areas where extensive drainage systems have been constructed for development.

Vegetation of the pine flatwoods is especially hazardous and can support an intense wildfire that has the potential to threaten subdivisions and destroy homes. Pine flatwoods are common in coastal areas of Florida and are typically dominated by palmetto and gallberry shrubs with a canopy (overstory) of pines.

A Florida home surrounded by heavy fuels

Fires in grasses and oak leaf fuels are faster moving, but are less intense. Native plants associated with this fuel type include wiregrass, broomsedge and sawgrass. A non-native grass fuel that is becoming a significant fire problem in Florida is cogongrass. This highly flammable, highly invasive species has spread to many counties in Florida.

Swamp fuels can become a serious problem during periods of extended drought. Cypress swamps in particular can burn very intensely when dry. The difficultly of access with heavy firefighting equipment compounds the problem.

Dense pine stands are especially hazardous when high winds and low humidity cause a wildfire to spread from treetop (crown) to treetop. Pine trees must be close together for a crown fire to occur.

When assessing wildland/urban interface fuels, the biggest concern should be how close this wildland vegetation (fuel) is to structures. Of critical concern is the area immediately around the structure. This area is a major factor in determining whether a threatened structure will survive until firefighters arrive. It can be used as “defensible space” to protect the home from wildfires. Defensible space should be landscaped with carefully selected plants (plants known to be less flammable than others) that are widely spaced

and pruned of dead limbs and branches to a height of six to ten feet. Studies of Florida wildfires have shown that structures that have at least 30 feet of defensible space are twice as likely to survive a wildfire.

Before you begin your "firewise landscaping," be sure to review your subdivision covenants and any landscaping or tree protection ordinances in your area that might regulate tree and shrub removal on residential property. You can contact your county extension specialist or the local office of the Division of Forestry for information on local ordinances and "firewise" plants suitable for your area.

Beautifully landscaped defensible space protects this home

Defensible space also allows firefighters to safely get between the home and the wildfire to protect the structure. When a subdivision is impacted by a wildfire, firefighters must quickly determine which structures can be saved. As firefighters are asking themselves if homes can be saved, they triage threatened structures as follows:

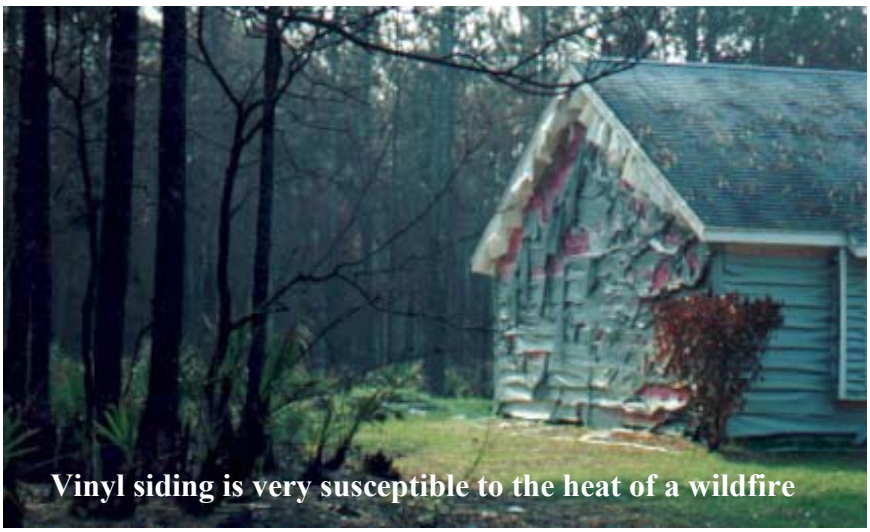
- ✓ **Needs little or no attention for now**
- ✓ **Is hopeless**
- ✓ **Needs protection, but is savable**

Individual homeowners can and should take responsibility for protecting their homes by becoming partners in wildfire protection to insure their home is not triaged as "Is Hopeless" during a wildfire disaster.

Building Construction

Construction materials such as vinyl soffits and siding and wood shake shingles have a greater potential for damage from wildfire than fire resistant building materials. Vinyl soffits will soften when exposed to heat or flames from a wildfire and fall away from the roof trusses. When this occurs, windblown embers (fire brands) can enter the attic area and ignite the ceiling and/or roof.

Wood shake shingles will quickly ignite when exposed to flames or firebrands. A wood shake or wood shingle roof also increases the chance that the fire will spread to other structures by producing airborne flaming shingles that land on other flammable surfaces.



Vinyl siding is very susceptible to the heat of a wildfire

Raised homes (mobile homes or modular homes) without skirting are more vulnerable to wildfire because hot embers (fire brands) can be blown under the floor, increasing the possibility of ignition of accumulated debris and eventually, the flooring itself.

Fire Protection

A wildfire threatening a subdivision can easily overwhelm a fire department's initial attack force. Like a high-rise fire, a large number of trained personnel and equipment are required to effectively suppress a fire of this type. Because of the duration and complexity of fires in interface areas, emergency personnel and resources may be committed for many hours or even days. This can severely impact a jurisdiction's ability to handle other emergencies (like emergency medical calls).

The key to successfully controlling any wildfire is starting suppression action (attacking the wildfire) while it is still small. In remote areas this may require support from helicopters and fixed-wing aircraft. In Florida, helicopters are commonly used to drop water to slow fast-moving fires. The proximity of lakes, ponds or canals suitable as water sources for helicopters is key to the effectiveness of this suppression method. Helicopters can drop from 100 to over 1,000 gallons of water per load and are very effective in protecting homes during wildland/urban interface fires.

Firefighter access to a dedicated supply of water is also an important factor. A reliable water source that will be unaffected by a sudden power loss is much better than relying on individual residential well systems and "trucked in" water to fight a wildfire and protect homes. Numerous structures may be threatened simultaneously, requiring large quantities of water. In the absence of a pressurized hydrant system, suitable drafting sites (like swimming pools and ponds) strategically located throughout the development provide a reliable source of water.

Utilities

Above ground utilities can be both a cause of wildfire and also a hindrance to effective suppression. Overhead power lines have caused numerous wildfires in Florida when windblown trees came into contact with charged lines. During wildfires, radiant heat can cause overhead power lines to stretch, arc or break, endangering firefighters. Service entrance lines (power drops) from power poles to homes are low, and may create clearance problems for firefighting equipment.

Due to the predominant use of crawler tractors (heavy dozers) and fire plows to fight wildfires in Florida, anything buried underground that is not clearly marked is a potential hazard to firefighters. Dozers may actually fall into septic tanks or sever buried lines that have 'floated up' since installation as a result of fluctuating water tables. If firefighters cannot respond or are delayed because of these hazards, there is a greater chance that threatened structures will be lost.

Additional Rating Factors

Where a structure is located may make it significantly more vulnerable to a wildfire. Major structural losses have occurred in Florida when wildfires started in wildlands where the fuels were not managed with prescribed fire. These fires burned into populated areas because the fire could not be stopped in the wildlands.

How a subdivision develops can also have a significant role in wildfire protection. If lots are sold with no deadline for developing them, undeveloped lots will be intermingled with developed lots. This creates a wildland/urban intermix. A large percentage of undeveloped lots will allow a wildfire to burn deep into the subdivision and endanger many homes. This places great stress on firefighters who can be faced with not having enough fire equipment to defend all the structures that need protection. Experience has shown that more homes are usually lost in intermix subdivisions.

If no organized homeowners association (HOA) exists, it will be more difficult to initiate effective mitigation and wildfire prevention action. Unfortunately many people move into wildland/urban interface areas for privacy and are reluctant to get involved in community issues like fire protection. A well organized and motivated homeowners association working as partners with fire protection agencies is a recipe for success…and a reduced wildfire risk.

WILDFIRE HAZARD & RISK ASSESSMENT

The process for assessing your subdivision or neighborhood can be divided into five distinct steps. Each is necessary to efficiently and accurately perform the assessment. The steps should be completed in order; however, Step 5 can be completed separately from the rest of the assessment. In completing your assessment, you will need to use the FLORIDA WILDFIRE HAZARD & RISK ASSESSMENT CHECKLIST found in Appendix A (pages 19-22).

Step 1 – Identify Areas to be Evaluated

There are two types of subdivisions that are at risk from a wildfire – boundary interface subdivisions and intermix interface subdivisions. Fully developed subdivisions whose lots form a distinct boundary with wildlands are called *boundary interfaces*. Subdivisions where undeveloped lots (wildlands) are interspersed with developed lots are referred to as *intermix interfaces*.


An intermix interface home

If the number of undeveloped lots within an intermix interface subdivision are few, the danger of a wildfire burning into the subdivision is greatly reduced. This usually occurs once the subdivision is more that 75% built out (three out of four lots are developed). Subdivisions where this occurs need not be assessed unless they also have a boundary interface component **or** the vegetation found on the undeveloped lots is rated extreme hazard. Wildlands less than 5 acres in size and completely surrounded by development are referred to as "occluded interface" areas and need not be assessed unless it is felt that the undeveloped parcels pose a high risk to neighboring structures because of high fuel loads or high flammability characteristics of the structures.

Once the wildland/urban interface area to be assessed has been determined, give it a name (like "Bay Woods Unit South") and delineate the area on a map. If the subdivision is very large, divide it into neighborhoods, especially if the characteristics of the subdivision are not uniform throughout (for example: an area of the subdivision with 5- to 7-acre lots may be assessed as a unit).

Step 2 – Identify the Risk

Determine if the immediate area (within five miles) has had a higher than average occurrence of wildfires. This can mean either a history of wildfires burning into the subdivision or a higher than average number of wildfires starting in the area. Your local Division of Forestry office can help you determine how this compares with the average for the county. If the immediate area does indeed have a higher than average occurrence of wildfires, you will need to assign risk points on the checklist in Section F of the Wildfire Hazard and Risk Assessment Checklist found on page 22.

Step 3 – Identify the Fuel Hazard Type

Use the pictorial guide in Appendix B (pages 23-32) of this booklet to determine the vegetation types (fuel) within intermix areas and along the interface boundary. If there is a mixture of vegetation types in the area, you should select the vegetation type most likely to do structural damage. This will probably be the vegetation type that is closest to the structures. Be sure to look beyond the edge of the vegetation boundary. Plants tend to be bigger along the edge of open areas in response to increased sunlight. You will get a better picture of the average vegetation heights by looking past the edge into the interior of the undeveloped area.

Once the vegetation type has been determined, assign the adjective (low, medium, high or extreme) that accurately describes the fuel. Convert your selected vegetation type to points in Section B of the Wildfire Hazard and Risk Assessment checklist.

Step 4 – Complete the Wildfire Hazard & Risk Assessment Checklist

(Included as Appendix A-pages 19-22)

Evaluate the Access (Section A), Fire Protection (Section D) and Utilities (Section E) by looking at the characteristics of the subdivision as a whole.

In order to score Defensible Space (Section B.2) and Building Construction (Section C), assess **all** structures along the interface boundary and 25 percent of the additional structures within 300 feet of this boundary. If assessing an **intermix** interface, inspect a 25-50 percent sample of all structures that border wildland vegetation. Average the individual scores to determine an overall rating.

Step 5 – Identify Critical Facilities to be Protected

Critical facilities are those facilities that will need special protection from wildfire. This may be because the facilities are necessary to maintain infrastructure function, are smoke sensitive or would be very hazardous if ignited by an encroaching wildfire. A power substation, for example, may need additional brush clearance to provide adequate defensible space. In the case of a nursing home, a wildfire evacuation plan may also be necessary in order to quickly and efficiently transport patients out of smoky conditions. *This process can be completed at any stage of the assessment.*

Seek the help of local fire service professionals and community leaders in identifying critical facilities and developing a plan to eliminate hazards that threaten these facilities.

The below-listed facilities will need special consideration for protection from wildfire in order to maintain infrastructure function:

- ✓ power plants/substations
- ✓ power transmission lines
- ✓ water plants/well fields
- ✓ water treatment plants/lift stations
- ✓ fire and law enforcement stations
- ✓ communication towers

The below-listed facilities will need special protection due to their flammability:

- ✓ flammable liquid storage tanks
- ✓ landfills/dumps/junk yards
- ✓ sawmills and lumberyards
- ✓ hazardous materials storage areas

The below-listed facilities are smoke-sensitive:

- ✓ schools/day care centers
- ✓ nursing homes/assisted living facilities
- ✓ medical facilities
- ✓ airports
- ✓ correctional facilities
- ✓ roadways

DEVELOPING AN ACTION PLAN TO MITIGATE IDENTIFIED HAZARDS

Mechanical fuel reduction in the Widland/Urban Interface

The purpose of completing a Wildfire Hazard and Risk Assessment is to determine the current risk to the subdivision. The next step is to develop a plan to mitigate (reduce) the hazard and/or develop a fire response/evacuation plan. Mitigation and fire response plans should be developed first for areas assessed as "extreme hazard" or "high hazard." The local office of emergency management can provide guidance in developing an evacuation plan. Strategies that can be used for hazard mitigation include fuel reduction, community education and regulation (revising subdivision covenants or local building codes). Fuel (vegetation) reduction techniques that have proven useful include:

- ✓ prescribed burning
- ✓ brush mowing/disking/chopping
- ✓ herbicide treatment
- ✓ tree thinning
- ✓ livestock grazing
- ✓ clearing

Because interface problems frequently cross jurisdictional lines, it is essential that all stake holders work together to solve them. By soliciting the cooperation of private and public land managers, builders and developers, homeowners and lot owners, an effective mitigation program can be implemented that will allow residents to live safely in the wildland/urban interface.

FREQUENCY OF REASSESSMENT

The dynamic nature of both vegetative management and development within interface areas requires that areas be periodically re-evaluated. Typical fuel management techniques such as mowing or prescribed burning are temporary treatments and will be effective in substantially reducing the wildfire hazard for only 3 to 5 years. Additional treatments will be required. Conversely, as structures are built in intermix areas, the wildfire hazard will become so low that hazard mitigation treatments are no longer needed (typically once they are more than 75 percent built out).

Because of these changing conditions, interface areas should be re-evaluated every three years. For boundary interface areas, this can be as simple as reassessing the wildland vegetation (fuels). Intermix areas may require an assessment of fuels and structural components at regular intervals.

The Wildfire Hazard & Risk Assessment Checklist is also an excellent tool to use in assessing subdivision plans prior to development to assure that new development is designed with wildfire safety in mind.

INDIVIDUAL STRUCTURES

A HOME PROTECTED AGAINST WILDFIRE HAS…

- ✓ Defensible Space between 30 feet (minimum) and 100 feet depending on the type and flammability of adjacent wildland vegetation.
- ✓ Irrigated landscaping that is composed of fire-resistant plant species that are well pruned and widely spaced to inhibit the spread of a ground fire from the wildland to the structure. Landscape plants that have a high moisture content and low oil or resin content and exhibit some drought resistance are best (it does not matter whether the plants are native or non-native).
- ✓ Firewood storage and LP gas containers at least 50 feet away from any portion of the home or structure with at least 15 feet of cleared space around them.
- ✓ Non-combustible street numbers at least four inches high, reflectorized, on a contrasting background, at each driveway entrance, and visible from both directions.
- ✓ Non-combustible, corrosion-resistant screening with a mesh size no greater than 1/8 inch covering the attic and sub-floor vents. Vent openings do not exceed 144 square inches at each vent.
- ✓ Spark arrestors installed in all chimneys.
- ✓ Eaves that are boxed with ½" nominal sheathing or non-combustible materials. Soffit vents are of a non-combustible material (vinyl soffit vents can melt and allow firebrands access into the attic area of a house).
- ✓ Above ground decks and balconies enclosed underneath with lattice reinforced with non-combustible, corrosion resistant screen with minimum 1/8 inch mesh.
- ✓ A roof of Class-A asphalt/fiberglass shingles, slate or clay tiles, metal, cement or concrete products or terra-cotta tiles. (Wood shake and wood shingles can quickly ignite from airborne firebrands and are not recommended.)
- ✓ Exterior windows with double-paned glass.
- ✓ Smaller exterior glass doors and skylights of double-paned, tempered glass.
- ✓ Gutters and downspouts of non-combustible materials that are kept free of leaves and other combustible debris.

INDIVIDUAL STRUCTURES (cont.)

A HOME PROTECTED AGAINST WILDFIRE HAS…

- ✓ Exterior wall assemblies like stucco, brick, concrete block or stone with a one-hour fire resistant rating with non-combustible exterior surfaces (vinyl siding can melt and is not recommended).
- ✓ Smoke alarms that are checked regularly. Batteries are replaced every six months.
- ✓ Driveways at least 12 feet wide with at least 14.5 feet of vertical clearance.
- ✓ If gated, a gate that opens inward, that has an entrance two feet wider than the driveway itself and is located at least 30 feet from the road. If secured, the gate must have a keybox of a type providing ready access to fire department personnel.
- ✓ Trees within the defensible space that are widely spaced so crowns do not touch.
- ✓ No vegetation within 15 feet of a chimney outlet and no limbs overhanging the roof.
- ✓ A 10- to 12-foot section of non-flammable fencing (concrete, brick or metal) between the home and any wood fence that connects to a wildland area.
- ✓ Trees within the area of defensible space that are pruned of limbs to a height of six to ten feet.
- ✓ Coarse gravel, lava stone or chunky bark used (instead of a flammable material like pine straw or shredded wood chips) as a mulch for shrubbery within five feet of the structure.
- ✓ A family evacuation plan.
- ✓ An emergency “Disaster Supplies Kit” which includes food and water for 3 days, first aid supplies, a portable radio, a flashlight, clothing and blankets.
- ✓ A ladder, shovel, rake and multiple water hoses readily accessible (that will reach all parts of the structure).

FIREWISE COMMUNITIES USA

As your neighborhood begins assessing the wildfire hazard and then the bigger process of taking action to reduce the associated risk, you may wish to join with neighborhoods and communities across the country that are taking similar steps toward wildfire protection.

Firewise Communities USA is a project of the National Wildfire Coordinating Group's (NWCG) Wildland/Urban Interface Fire Working Team. The program recognizes those communities or neighborhoods which demonstrate the spirit, resolve and willingness to take responsibility as a partner in wildfire protection. ***Firewise Communities USA*** is a way to help prevent and reduce losses to wildland/urban interface fire and foster community participation in applying Firewise principles. The program is administered in Florida by the Division of Forestry.

In order to become a ***Firewise Community USA*** a community or neighborhood must:

- ✓ Enlist a wildland/urban interface specialist to complete a wildfire hazard assessment and create a plan that identifies locally agreed-upon solutions that the community can implement.

- ✓ Sponsor a local Firewise task force, committee, commission or department which maintains the Firewise Community USA program and tracks its progress or status.

- ✓ Observe a Firewise Communities USA Day each spring that is dedicated to a local Firewise project.

- ✓ Invest a minimum of $2.00 per capita annually in local Firewise Communities USA efforts. (Work by municipal employees or volunteers using municipal and other equipment can be included, as can state or federal grants dedicated to that purpose.)

- ✓ Submit an annual report to Firewise Communities USA, documenting continuing compliance with the program.

Contact your local Division of Forestry office for more information on how your Community or neighborhood can participate in the ***Firewise Communities USA*** program.

GLOSSARY OF FIRE TERMINOLOGY

Crawler Tractor – A tracked vehicle (typically with a front-mounted blade and rear-attached plow) used to suppress wildfire.

Crown Fire – A wildfire that spreads across the tops (crowns) of trees, more or less independent of any fire on the ground.

Defensible space – The area between wildland fuels and structures (typically a width of 30 feet or more) that allows firefighters to protect the structure from wildfire. In the absence of firefighters, this safety zone increases the likelihood that the structure will survive on its own.

Dry Hydrant – A non-pressurized pipe connected to a water source that can be accessed by a fire protection agency to draft water.

Firewise Construction – The use of materials and systems in the design and construction of a building or structure to safeguard against the spread of fire within the building or structure as well as the spread of fire to other buildings or structures or to adjacent natural areas.

Firewise Landscaping – Vegetation placed around a home or other structure in a manner so as to reduce the exposure of the building to an encroaching wildfire, or slow/inhibit the spread of fire from an adjacent wildland area to the building or from the building to the wildland area.

Fuel – Native vegetation that is available to burn in a wildfire.

Infrastructure – The physical support systems of a subdivision, including roads, power lines, and central water and sewerage.

Ladder Fuels – Fuels that provide vertical continuity between strata, thereby allowing fire to move from surface fuels to the crowns of trees (or to structures) with relative ease.

Mitigation – An action that moderates the severity of a wildfire hazard or risk.

Occluded Interface – Islands of forest or wildland surrounded by development.

Overstory – The portion of trees in a forest that form the uppermost layer (treetops).

Prescribed Burning/Prescribed Fires – Carefully controlled fires set by land managers to reduce hazardous accumulations of wildland vegetation (fuel), control forest insects and diseases, improve forage for livestock, improve wildlife habitat and maintain healthy ecosystems.

Skirting – A type of barrier used to keep debris from accumulating underneath a structure whose floor is raised off the ground.

Shoulder – The road right-of-way immediately adjacent to the outside traffic lane.

Soffit – The area under the eaves (roof overhang) of a structure that typically allows ventilation of the attic.

Turnaround – A portion of a roadway, unobstructed by parking where emergency vehicles can safely reverse directions.

Wildfire – A fire that burns out of control in forest or wildland areas damaging or destroying natural resources and sometimes threatening or destroying life and property.

Wildland – An unimproved area in which development is essentially non-existent that is covered with natural vegetation, including grasses, shrubs and/or trees.

Wildland/Urban Interface – An area where improved property and wildlands meet at a well defined boundary.

Wildland/Urban Intermix – An area where improved property and wildlands intermingle with no clearly defined boundary.

APPENDIX A

Florida Wildfire Hazard and Risk Assessment Checklist

FLORIDA WILDFIRE HAZARD & RISK ASSESSMENT CHECKLIST

A. Access		
1. Ingress and Egress		
Two or more roads in/out	0	
One road in/out (entrance and exit is the same)	7	
2. Road Width		
Road width is ≥ 24 feet	0	
Road width is ≥ 20 feet and < 24 feet	2	
Road width is < 20 feet	4	
3. Road Accessibility		
Hard surface all-weather road with drivable shoulders	0	
Hard surface road without drivable shoulders	2	
Graded dirt road	3	
Non maintained dirt road	5	
4. Secondary road terminus		
Majority of dead end roads ≤ 300 feet long	0	
Majority of dead-end roads > 300 feet long	3	
5. Cul-de-sac turnarounds		
Outside radius ≥ 50 feet	0	
Outside radius < 50 feet	3	
6. Street signs		
Present w/ non-combustible materials	0	
Present w/ combustible materials	3	
Not present	5	
B. Vegetation		
1. Vegetation Types (see color plates of wildland fuel types in Appendix B)		
a. Low fire hazard	5	
✓ Grasses to 4 feet tall (except cogongrass) ✓ Blowy leaves ✓ Hardwood swamps ✓ Palmetto/gallberry less than 3 feet		
b. Medium fire hazards	10	
✓ Sand pine scrub less than 6 feet ✓ Palmetto/gallberry 3 to 6 feet ✓ Cypress swamp ✓ Grasses over 6 feet tall/cogongrass ✓ Dense pine 20-60 feet tall		

c. High fire hazards	20	
✓ Palmetto/gallberry over 6 feet ✓ Palmetto/gallberry 3 to 6 feet w/ dense pine overstory* ✓ Sand pine scrub over 6 feet		
d. Extreme fire hazard	25	
✓ Palmetto/gallberry over 6 feet with dense pine overstory* ✓ Sand pine scrub with dense pine overstory* ✓ Dense melaleuca Note: *Pine canopy must have at least 75% crown closure to be considered dense pine.		
2. Defensible Space (average for structures in subdivision that are adjacent to wildland fuels)		
More than 100 feet	0	
Between 30 and 100 feet	10	
Less than 30 feet	25	
C. Building Construction		
1. Roof Material		
>75% of homes have Class A asphalt or fiberglass shingles, slate or clay tiles, cement, concrete or metal roofing or terra-cotta tiles	0	
50%-75% of homes have Class A asphalt or fiberglass shingles, slate or clay tiles, cement, concrete or metal roofing or terra-cotta tiles	10	
< 50% of homes have Class A asphalt or fiberglass shingles, slate or clay tiles, cement, concrete or metal roofing or terra-cotta tiles	15	
2. Soffits / Siding		
75-100% of homes have non-combustible or fire resistant siding and soffits	0	
50-74% of homes have non-combustible or fire resistant siding and soffits	5	
< 50% of homes have non-combustible or fire resistant siding and soffits	10	
3. Skirting(skip if not applicable)		
>75% of homes have skirting underneath raised floors/decks	0	
50-75% of homes have skirting underneath	5	
<50% of homes have skirting underneath	10	
D. Fire Protection		
1. Helicopter dip spots (minimum 4 feet water depth year round with 45 feet radius obstruction clearance and 75 feet approach clearance in at least one direction)		
Under 2 minute turnaround (< 1 mi.)	0	
Within 4 minute turnaround (1-2 mi.)	2	
Within 6 minute turnaround (2-3 mi.)	4	
Beyond 6-minute turnaround (greater than 3 miles) or unavailable	7	
2. Structural Fire Protection		
5 miles or less from staffed fire department	0	
More than 5 miles from staffed fire department	5	
3. Water Supply		
a. Pressurized Hydrants		
Hydrants with min. 500 GPM present at < 1000 foot spacing (municipal)	0	
Hydrants with < 500 GPM present at < 1000 foot spacing	5	
No pressurized hydrants present	10	

b. Other Water Sources * **NOTE: If a pressurized system is present, skip this section.**		
Dry hydrants available year round within subdivision	0	
Other accessible draft sources (min. 3,000 gal.) exist within subdivision	1	
Draft or pressure sources available within 5 miles via all weather roads	3	
No draft or pressure sources available within 5 miles	10	
E. Utilities		
1. Gas (skip if not applicable)		
Underground/Clearly Marked	0	
Underground/Not Marked	3	
Above Ground with 15 feet brush clearance and >50 feet from structure	1	
Above Ground with no brush clearance or within 50 feet of structure	3	
2. Electric		
Underground/Clearly Marked	0	
Underground/Not Marked	3	
Overhead with 20 feet wide maintained Right-of-Way (ROW)	1	
Overhead but R.O.W. is overgrown/not maintained	5	
3. Septic Tank/Drain Field Systems (skip if not applicable)		
Present and Clearly Marked	1	
Present, Not Clearly Marked	3	
F. Additional Rating Factors *		
1. Large adjacent areas of forest or wildlands with accumulated wildland fuels and no prescribed burning program for fuel management.	0-10	
2. Homeowner association lacks the organizational structure for a sustained fire prevention and mitigation effort.	0-5	
3. Extensive canal or ditch system impedes cross-country access to wildfires in and around the subdivision.	0-10	
4. Closeness of adjacent structures may contribute to fire spread from structure to structure.	0-5	
5. Less than two thirds of the lots have been developed and the undeveloped lots have large accumulations of wildland fuels, making it difficult to stop the spread of the fire through the subdivision.	0-10	
6. History of wildfire occurrence is higher than surrounding areas due to lightning, arson, debris burning, etc.	0-10	
TOTAL		

*Score, only if applicable

HAZARD ASSESSMENT	POINT RANGE
Low Hazard	***less than 50***
Moderate Hazard	***50-74***
High Hazard	***75-99***
Very High Hazard	***100-120***
Extreme Hazard	***more than 120***

APPENDIX B

Color Plates of Wildland Fuel Types

Low Fire Hazard

Short grasses – Broomsedge

Fire Behavior Prediction System Model 1

Short grasses – Wiregrass

Fire Behavior Prediction System Model 2

This fuel type is characterized by a continuous ground cover of broomsedge, wiregrass, maidencane, bluestem and other 1-4 foot tall grasses typically found growing in on old fields, recently site prepared areas or in areas regularly burned. An overstory of trees may or may not be present.

Low Fire Hazard

Blowy Leaves

Fire Behavior Prediction System Model 1

This fuel type is characterized by a groundcover of grasses, occasional shrubs and turkey oak leaves with an overstory consisting primarily of turkey oak and longleaf pine with occasional live oaks. Fire would be carried by the grasses and oak leaves.

Hardwood Swamp

Fire Behavior Prediction System Model 8

This fuel type is characterized by dense overstory of hardwood trees, including deciduous maples, water oaks, sweetgums, elms, and tupelos as well as evergreen hardwoods such as bays. Cabbage palms and magnolia are present in areas not frequently flooded. Understory shrubs include ferns, buttonbush and sawgrass. Standing water will be present in this plant community except during times of drought.

Low Fire Hazard

Palmetto-Gallberry (less than 3 feet tall)

Fire Behavior Prediction System Model 6

Palmetto and gallberry shrubs averaging less than 3 feet tall characterize this fuel type. This is usually the result of frequent burning or grazing, recent site preparation, or very poor soils. Other associated shrubs include runner oak and grasses. There may or may not be an overstory of trees.

Medium Fire Hazard

Sand Pine Scrub (less than 6 feet tall)

Fire Behavior Prediction System Model 7

This fuel type is characterized by an understory of scrub oaks, scattered palmetto, scattered grasses and cacti in open areas. It is usually associated with a sand pine overstory, although if recently burned, the sand pine may constitute part of the shrub layer. On very dry sites, rosemary and deer moss ground cover will be evident.

Medium Fire Hazard

Palmetto-Gallberry (3 to 6 feet tall)

Fire Behavior Prediction System Model 7

This fuel is characterized by a shrub layer of saw palmetto and gallberry averaging 3 to 6 feet high. Other shrubs include fetterbush, wax myrtle, runner oak and lyonia. Ground cover is usually sparse with grasses. Unless recently burned there will be an accumulation of dead palmetto fronds under the live fronds that will contribute to increased fire behavior. A scattered overstory of pine, oak, or bay trees may be present.

Cypress Swamp

Fire Behavior Prediction System Model 8

This fuel is characterized by pure to nearly pure stands of cypress trees with an understory of cypress knees, grasses, ferns and occasional wetland shrubs. Cypress is easily identified by the light colored stringy bark and feather-like to scale-like foliage that drops off during the winter months.

Medium Fire Hazard

Tall Grasses (over 4 feet tall)

Fire Behavior Prediction System Model 3

This fuel type is characterized by a continuous ground cover of sawgrass, switchgrass or cordgrass typically found growing in marshy or other wet depressional areas. Usually found in pure stands but can be mixed with cypress, melaleuca or other aquatic shrubs. Average height of grass will be 4 to 6 feet or higher. A continuous ground cover of wiregrass that has not been burned in four or more years would also be included in this fuel type.

Cogongrass

Fire Behavior Prediction System Model 3

This fuel type is characterized by a continuous ground cover of cogongrass that may also be associated with a pine/oak overstory. Grass averages 3 to 4 feet tall and is easily identified by its bright green color and off center midrib.

Medium Fire Hazard

Dense Pine (20 to 60 feet tall)

Fire Behavior Prediction System Model 9

This fuel type is characterized by a dense overstory of pine trees with a pine needle and grass understory. Scattered palmetto and gallberry shrubs may also be present.

High Fire Hazard

Palmetto-Gallberry (over 6 feet tall)

Fire Behavior Prediction System Model 4

Palmetto and Gallberry shrubs averaging over 6 feet tall characterize this fuel type. Other associated shrubs include yaupon, fetterbush, runner oak and grasses. An overstory of scattered trees may or may not be present.

High Fire Hazard

Palmetto-Gallberry (3 to 6 feet tall) with Dense Pine

Fire Behavior Prediction System Model 7

Palmetto and gallberry shrubs averaging 3 to 6 feet tall under a dense pine canopy characterize this fuel type. Other associated shrubs include yaupon, fetterbush, runner oak and grasses. A canopy that covers at least 75 percent of the ground is considered a dense pine canopy.

Sand Pine Scrub (over 6 feet tall)

Fire Behavior Prediction System Model 8

This fuel type is characterized by a dense understory of scrub oaks, scattered palmetto, scattered grasses and cacti in open areas. It is usually associated with a sand pine overstory, although if recently burned, the sand pine may constitute part of the shrub layer. On very dry sites, rosemary and deer moss ground cover will be evident

Extreme Fire Hazard

Palmetto-Gallberry (over 6 feet tall) with Dense Pine

Fire Behavior Prediction System Model 4

Palmetto and gallberry shrubs averaging over 6 feet tall under a dense pine canopy characterize this fuel type. Other associated shrubs include yaupon, fetterbush, runner oak and grasses. A canopy that covers at least 75 percent of the ground is considered a dense pine canopy.

Sand Pine Scrub (over 6 feet tall) with Dense Pine

Fire Behavior Prediction System Model 4

This fuel type is characterized by a dense understory of scrub oaks, scattered palmetto, scattered grasses and cacti in open areas. Sand pines dominate the overstory, providing at least 75 percent crown closure.

Extreme Fire Hazard

Dense Melaleuca

Fire Behavior Prediction System Model 8

This fuel is characterized by almost pure stands of melaleuca trees. These trees are easily identified by their papery white bark that easily peels off in layers and evergreen leaves. Understory plants may include sawgrass and Brazilian pepper.

Where To Go For More Information

Supplemental information on how to protect your subdivision or community from wildfire may be obtained from your local Florida Division of Forestry office or by contacting the state headquarters of the Division of Forestry at:

Forest Protection Bureau
3125 Conner Boulevard, C-15
Tallahassee, FL 32399-1650
Telephone: 850/921-3733
FAX: 850/488-4445

In addition, the below websites are excellent sources of information on wildland/urban interface fire and wildfire hazard mitigation:

Forest Protection Bureau
www.flame.fl-dof.com

Firewise Communities
www.firewise.org/communities

Florida Division of Emergency Management
www.floridadisaster.org

Federal Alliance for Safe Homes (FLASH)
www.flash.org

Florida Cooperative Extension Service
www.sfrc.ufl.edu/Extension/pubs.htm

Federal Emergency Management (FEMA)
www.fema.gov

Interface South (USFS)
www.interfacesouth.org