Katepwa Beach

Wildfire Risk Assessment

Assessment Completed by:
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Introduction

The FireSmart Canada Neighbourhood Recognition Program is designed to provide an effective management approach for preserving wildland living aesthetics while reducing community ignition potential. The program can be tailored for adoption by any community and/or neighborhood association that is committed to ensuring its citizens have maximum protection from wildland fire. The following report is intended as a resource to be used by residents for creating a FireSmart Neighbourhood Plan. The plan developed from this information should be implemented in a collaborative manner and modified as needed.

The Katepwa Beach neighbourhood wildfire hazard assessment was performed by Michael Springinotic who is employed by the Saskatchewan Public Safety Agency (SPSA).

This assessment examines the area's exposure to wildfire as it relates to ignition potential and looks at the community's ability to respond to a wildfire incident. The assessment does not focus on specific homes but examines the neighborhood as a whole.

Definition of the Ignition Zone

A structure will burn because of its relationship with everything in its surrounding ignition zone – the house and its immediate surroundings. It is important to note that an estimated 90% of homes that are destroyed or damaged by wildfire are ignited by embers, not by direct flame contact. To reduce the chance of a home ignition, a homeowner must create a fire-resistant zone that includes the structure itself and the area 10 m out that immediately surrounds the structure. Treating this "home ignition zone" is an easy-to-accomplish task that will help to prevent structure loss (figure 1). To accomplish this, flammable items such as excessive vegetation must be removed from the area immediately around the structure along with any flammable sources on or attached to the structure itself.

Figure 1: Image of the Home Ignition Zone.

This assessment is based on observations made while evaluating the area. The assessment helps to identify where and how structure ignitions may occur within the neighborhood and how these ignitions might be avoided with some mitigation actions undertaken by the residents. Residents can reduce the risk of structure loss during a wildfire by creating a fire-resistant zone within their lot that includes the structures on it. If the majority of lot holders carry out this work the whole area links together to become a fire-resistant zone.

Description of the Severe Case Wildland Fire Characteristics that Could Threaten the Area

Fire intensity and spread rates are determined by the fuel type and fuel conditions, the weather conditions prior and during ignition, and the topography. It is important to note that we hold no control over the weather and topography, but we can alter the fuels that are available to burn and therefore manage the type of fire that will occur.

- Fine fuels like dry grass ignite more easily and fire will spread faster than in coarser fuels like standing trees. For a given fuel, the more there is and the more continuous it is, the faster the fire spreads and the higher the intensity. Fine fuels take a shorter time to burn out than coarser fuels.
- The weather conditions affect the moisture content of the dead and live vegetative fuels. Fine fuel moisture content is highly dependent on the relative humidity and the degree of sun exposure. The lower the relative humidity and the greater the sun exposure, the lower the fuel moisture content. Lower fuel moistures allow fire to ignite easier, produce higher spread rates and higher fire intensities.

- Wind speed significantly influences the rate of fire spread and fire intensity. The higher the wind speed, the greater the spread rate, intensity, and ember transport distances.
- Topography influences fire behavior principally by the steepness of the slope. However, the configuration of the terrain such as narrow draws, saddles and alignment to the wind can influence fire spread and intensity. In general, the steeper the slope, the faster the uphill fire spread rate and intensity.

Site Description

Katepwa Beach is a lakeside community located in the Qu'Appelle Valley. The community lies on the shore of Katepwa Lake and is approximately 80 kilometers east of Regina.

The area surrounding Katepwa Beach is a mix of grassland, farmland and hardwood forests (figure 2). Above the river valley to the north, east and south of the community lies cultivated farmland. Entering the river valley, the vegetation transitions to tree and shrub dominant coulees along with dry slopes supporting native grasslands. Within the community there is a mix of planted tree species which include both hardwoods and softwoods. Planted softwood species (spruce, pine) are more volatile and pose a higher risk during a wildfire event.

Figure 2: Satellite imagery of the land surrounding the Katepwa North and South.

Assessment Process

Saskatchewan Public Safety Agency (SPSA) staff evaluated the wildfire risk at Katepwa Beach when they visited the community on September 2nd, 2025. During the visit staff toured the area, evaluating the properties for wildfire hazards. The hazard assessment provides a written evaluation of the overall wildfire hazard, for example the condition of structures, adjacent vegetation and other factors affecting the status of the community.

Observations and Primary Issues

A Community Wildfire Hazard Assessment begins with observations of the roofing assembly and roof cleanliness of its homes/cabins; working down the building's exterior which includes rating of the siding, windows, decks; ember accumulator features around the building; and location of nearby combustible materials around the structures. Also rated is the vegetation, topography, infrastructure, fire suppression capability, and the fire ignition potential surrounding the community.

Listed below are 11 comments for the community (Katepwa North and South) and some photographic evidence that supports the observations.

i. Structures should be labelled with individual signs identifying the property lot and block location for emergency purposes. Signs should be clearly visible from the road and use a consistent system that provides sequenced or patterned naming conventions. All signs should be constructed of non-combustible material such as metal posts and reflective metal placards. During the assessment it was noted that many homes were numbered but this numbering was not consistent in nature (size, colour, etc.).

   The (SPSA) has developed The Civic Address Registry (CAR) which is a province-wide standardized system of identifying and locating properties, by establishing unique access point locations. The SPSA encourages all communities to utilize the voluntary program to assist emergency responders such as police, fire and emergency medical services locate Saskatchewan residents in need quickly.

ii. Building exterior rating for the entire community is average. Many homes had vinyl or wood board siding. Vinyl or untreated shake siding provides no fire protection where stucco, metal, brick, rock or cement provide best protection for the building. Log or heavy timber provides more fire-resistant protection than normal wood board siding.

Figure 3: Homes with cedar shake siding provide little to no protection from wildfire.

iii. Roofing material in the subdivision was generally constructed from Type A materials like metal or asphalt. These materials are most fire resistant and remain effective under severe wildfire exposure. It is important that residents clean off all debris that accumulates on roof tops and within gutters.

Figure 4: Example of a roof that has not been maintained well.

iv. Combustible wood decks that are not enclosed along with buildings that are not skirted or closed in were noted within the subdivisions. Decks and homes should be closed in with minimum 12mm thick sheathing. These non-protected areas serve as ember accumulators where new spot fires can easily ignite in the tinder dry fuels that can be found in these locations.

Figure 5: Accumulated materials underneath decks can act as an ignition source during a wildfire.

v. Another area of concern was seasoned firewood or other wood combustibles piled directly against the home or other structures. These areas serve as locations where ignition can occur from flying embers, even from a simple unattended nearby campfire. It is recommended that firewood be stored away from structures and the amount is limited to one year's use. Firewood that is stacked against live standing trees can act as ladder fuel for fire to reach the canopy and increase fire intensity.

vi. The vegetation in the subdivision consists of hardwoods, shrubs, and mature conifers. Dry surface fuels are a particular concern when vegetation is cured due to drought or seasonal effects. It is recommended that residents remove all dead trees within their lot to not only reduce their fire risk but the potential damage to structures and infrastructure if they were to break off or blow down. Also, it is recommended to trim branches that overhang their structure and prune conifer trees to remove ladder fuels. It was noted during the assessment that woody debris had accumulated in several areas throughout the community.

Figure 6: Left image shows woody debris piled within the community that should be cleaned up. Right photo shows a dead conifer tree that should be removed.

vii. Many people have and enjoy the use of a fire pit. All fire pits should be screened with mesh not exceeding 12mm, located on clean rock, concrete, sand or mineral soil, and should have a minimum of 1 m noncombustible area surrounding the fire pit. The pit is to be constructed of metal or concrete and in good condition with no rusting or breaks.

viii. The risk for accidental human caused fires is generally higher in populated areas. Accidental ignition includes fire pits, fireworks and improper disposal of smoking material. Overhead powerlines near vegetation and propane tanks amidst vegetation or adjacent to buildings are also ignition sources that are highly apparent. If a tree is touching a power line or sparking, stay back at least 10 metres and call 310-2220 immediately. For your safety, never attempt to trim or remove a tree near a power line yourself. Submit a request to SaskPower and they will assess the situation.

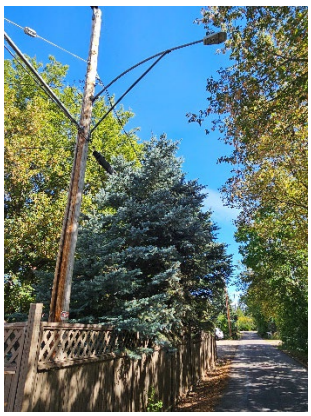

Figure 7: Image shows several trees growing into powerlines within the community.

ix. Access into the community varies based on location. Katepwa north has multiple access points for emergency vehicles. The homes along the lake towards Katepwa south may not allow as much access for emergency responders based on driveway length and width. Katepwa South has multiple dead-end roads which may make it difficult for emergency responders in the event of a fire (Poplar Drive, East Maple Road, West Maple Road). There were also several roads within the community that were too narrow for simultaneous ingress and egress.

Figure 8: Left photo shows a dead-end road and right photo shows a narrow road within the community.

x. Fine fuels such as native grasses should be maintained on community land on a regular basis. The buildup of these grassy fuels are a particular concern when they are dried out such as early spring and later into the summer. It was noted during the assessment that grasses within the community were well maintained on a consistent basis.

Figure 9: Image shows well-manicured grass along highway #56.

xi. There were many areas within the community where conifers were planted. Conifer trees pose a higher risk during a wildfire event due to the high resin content, especially when near homes and when planted in rows or clusters. Conifer trees within the community should be maintained by pruning the lower branches and cleaning up debris underneath.

Figure 10: Image of well-maintained conifers within the community.

Figure 11: Rows of conifer trees that need maintenance work.

Recommendations

The FireSmart Canada Neighbourhood Recognition Program seeks to create a sustainable balance that will allow communities to live safely while maintaining environmental harmony in a wildland urban interface setting. Residents within the community should focus attention on the structures and the surrounding area to create a fire-resistant zone. This can be accomplished by disconnecting the home from any high and/or low-intensity fire that could burn to it, and by being conscious of the potential ignition from wind-driven embers.

The following section of this report provides recommendations for consideration for community FireSmart by listing wildfire safety issues that were identified in the during the assessment.

- Establishment of a “fire free zone”, allowing no fire to ignite or burn on or within 1.5 metres of a structure by removing easily ignited fuels located within this zone.
    - Keep roofs and rain gutters/eaves trough free from leaves, dried needles, and twigs. Incorporate yearly cleaning of gutters when performing spring yard cleaning.
    - If your home has non-treated cedar shakes, consider replacing with less flammable class A asphalt or metal roofing or setting up sprinkler heads on the roof that could be activated if a wildfire did occur.
    - Stacked firewood, bark mulch or wooden building material piled directly against home or under structures should be moved a minimum of 10 metres away or screened in to prevent ignitions.
- Remove hazardous fuels within the “home ignition zone”. Many instances were noted where branches were in direct contact with structures. The home ignition zone includes the fire free zone and encompasses the area within 10 metres from the home or building structure. This includes 10 m from any flammable attached wooden decks. This would include the removal, thinning and pruning of spruce, pine and cedar trees and the removal of any brush, leaves and other debris within this area. Any remaining spruce and pine trees should be pruned to a height of 2 m.
- Homes, decks, and other structures should be skirted in to prevent accumulations of dried fuels. These open areas allow embers to blow in and start spot fires under the structures. Make a point during spring yard cleaning to rake and remove any accumulations of fuels such as dried leaves, needles, and twigs from under wooden decks and structures. Best protection would be to screen decks and skirt all buildings with 3 mm wire mesh or minimum 12mm thick wood sheathing.
- Add 8 – 12 mm wire mesh screens for over fire pits and create a 1 m wide fire-resistant strip around the fire pits.
- Fuel management options within the community could include the thinning and removal of any dead and down trees within the conifer stands to further reduce the risk of fire.
- Mowing and maintenance of grasslands within the community should be completed on a consistent basis. Keeping the fine fuel loading low within the community will reduce risk during times of high risk. During the site visit most of the grasses within the community were well maintained.
- The community should look into purchasing some wildland firefighting equipment in addition to the mutual aid agreements in place. Hand tools such as shovels, rakes and pulaski’s would be useful for low intensity fires. Backpack hand pumps and leaf blowers are good options to

suppress slow moving grass fires. Portable water tanks that can be placed in a pickup truck or on a trailer would be useful for quick response to a wildfire.

- The subdivision should maintain communication and cross train with the Local Fire Department and other responding agencies to ensure clear direction and cooperation should a fire event occur.
- Wildfire-related training should be part of the capacity building package for the community. Having a representative or two from the community attend a FireSmart Training Workshop that SPSA hosts annually would be a good start.

Successful FireSmart Mitigations

When adequately prepared, a structure can likely withstand a wildfire without the intervention of the fire service. Further, a house and its surrounding community can be both FireSmart and compatible with the area's ecosystem. The FireSmart Neighbourhood Program is designed to enable communities to achieve a high level of protection against wildfire loss even as a sustainable ecosystem balance is maintained.

Homeowners are reminded that proper attention to their home ignition zone can prevent ignitions in this area. They should identify the things that will ignite their homes and address those as priorities.

The District of Katepwa Beach has a number of positive FireSmart examples already and the goal would be to keep improving as time goes on. Being recognized as a FireSmart Neighbourhood under this program does not necessarily mean that it is safe from wildfire. What it does mean is that the residents are aware of what needs to be done and are taking steps to become FireSmart.

Next Steps

If the report and recommendations are accepted and the decision to pursue Neighbourhood FireSmart Recognition Status is made, then the subdivision of Jumbo Beach will need to create a FireSmart Board and build an agreed-upon list of actions based on the recommendations provided in the FireSmart Community Assessment Report. The FireSmart board will need to prepare a FireSmart Community Plan in cooperation with their Local FireSmart Representative.

FireSmart Neighbourhood recognition status can be earned by meeting the following criteria:

- Enlisting a wildland/urban interface specialist to complete an assessment and create a plan that identifies locally agreed-upon solutions that the community can implement.
- Sponsoring a local FireSmart Board which maintains the FireSmart Community Plan and tracks its progress or status.
- Conducting FireSmart Events each year that are dedicated to a local FireSmart project.
- Investing a minimum of $2.00 annually per capita in local FireSmart Neighborhood efforts.
- Submitting an annual report to FireSmart Canada documenting continuing compliance with the program.

Links to Helpful Resources

FireSmart Canada Website: https://www.firesmartcanada.ca/

FireSmart Canada Neighbourhood Recognition Program Tab: https://firesmartcanada.ca/programs/neighbourhood-recognition-program/

FireSmart Canada FireSmart Begins at Home Tab: https://www.firesmartcanada.ca/resources-library/category/manuals

Saskatchewan Public Safety Agency Website: http:// www.saskpublicsafety.ca

Saskatchewan Public Safety Agency FireSmart Tab: http://www.saskpublicsafety.ca/communities/firesmart-communities

Signature of Mitigation Specialist

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