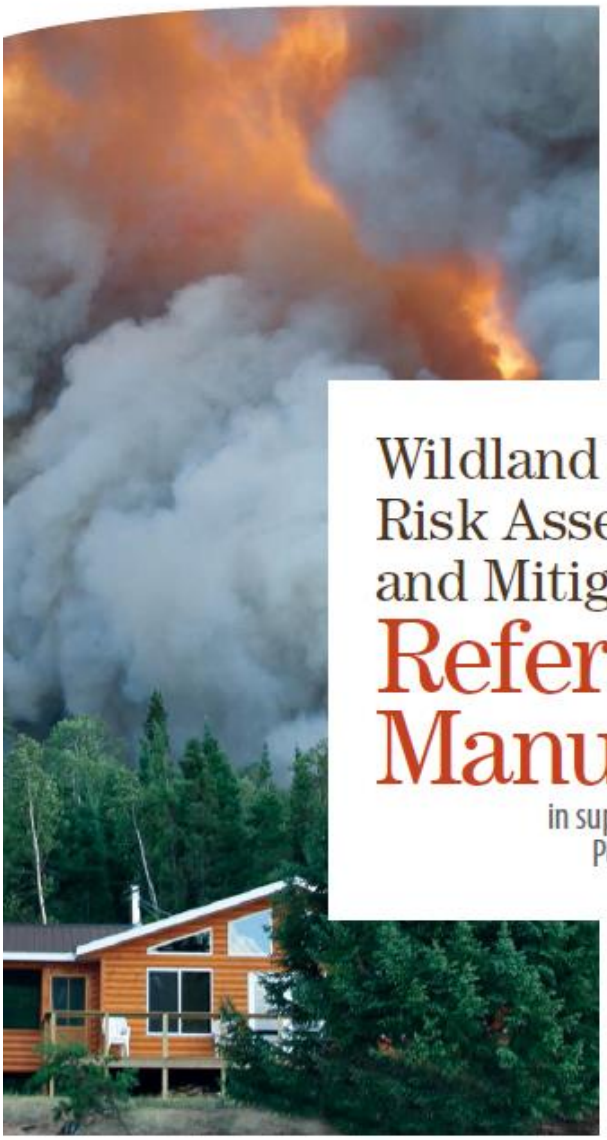
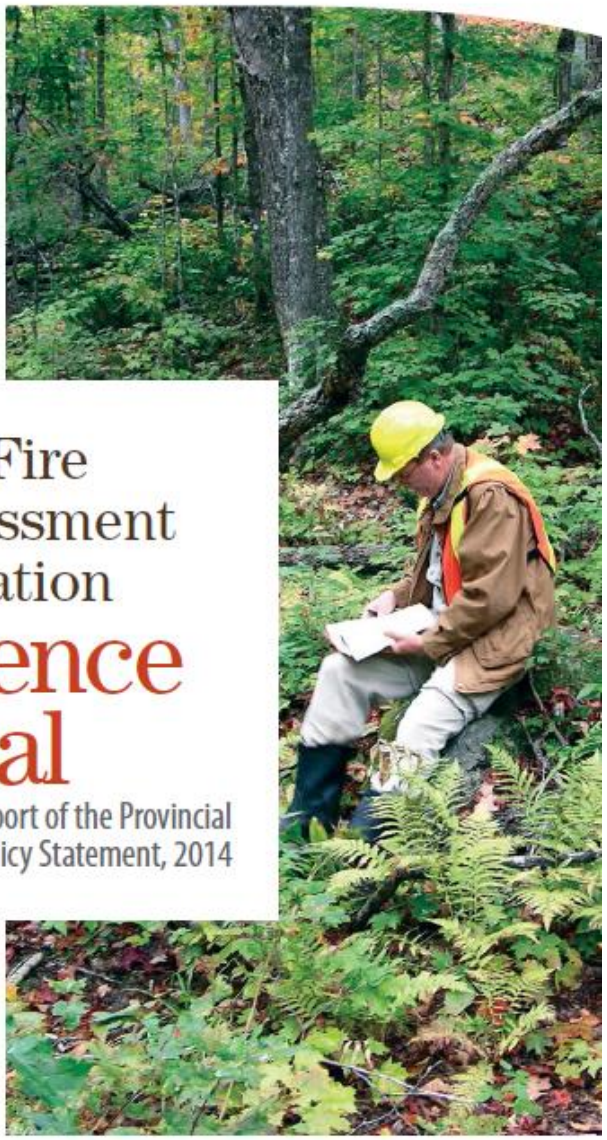
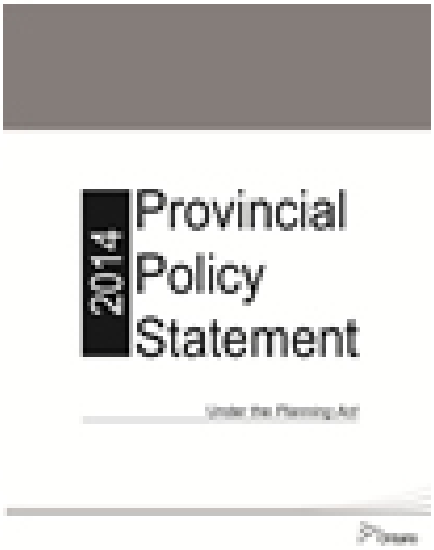




Wildland Fire Risk Assessment and Mitigation Reference Manual

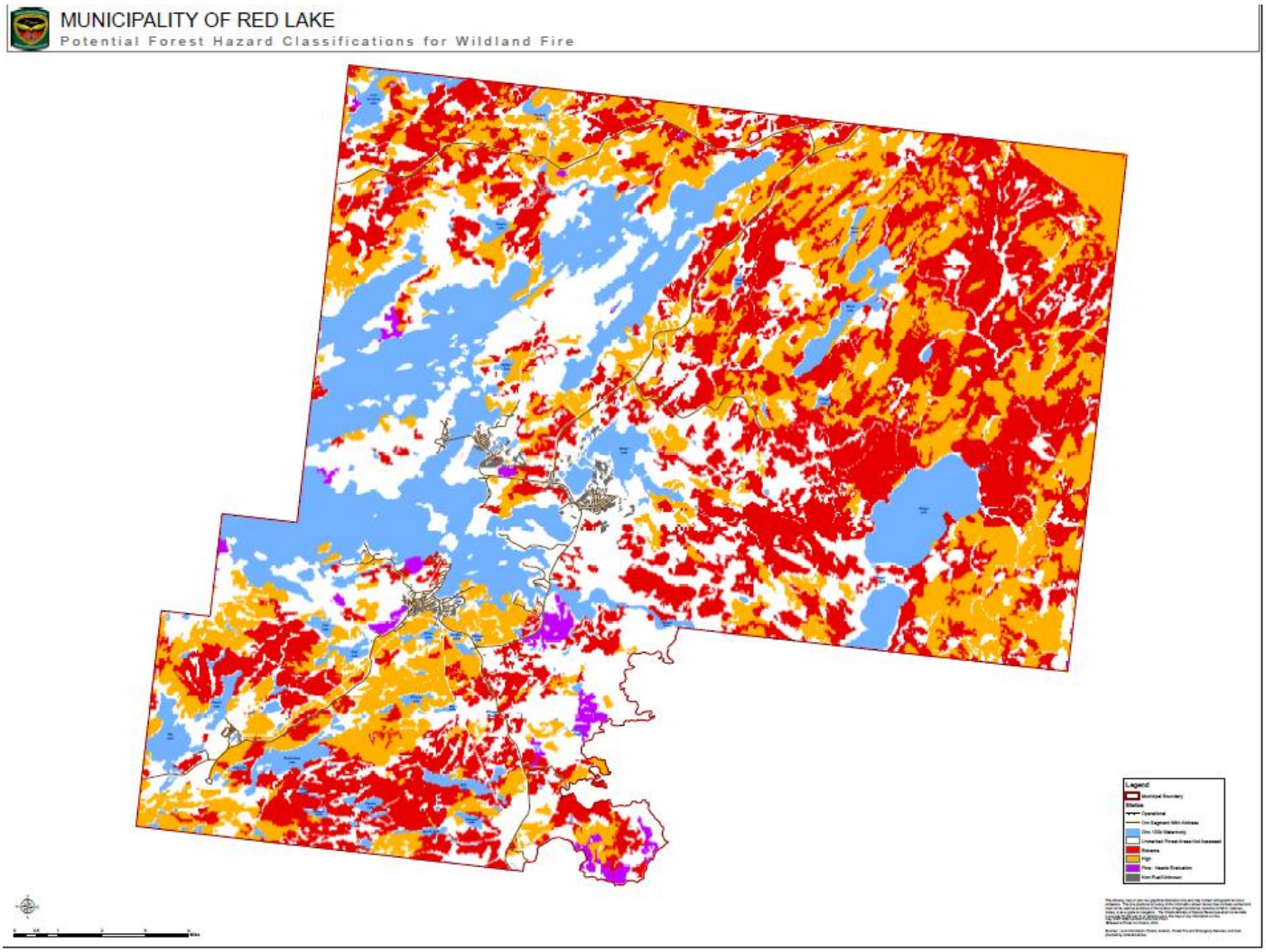
in support of the Provincial Policy Statement, 2014

Ontario



3.1.8 Development shall generally be directed to areas outside of lands that are unsafe for *development* due to the presence of *hazardous forest types for wildland fire*.

Development may however be permitted in lands with *hazardous forest types for wildland fire* where the risk is mitigated in accordance with *wildland fire assessment and mitigation standards.*



RED = EXTREME WILDLAND FIRE RISK

MUSTARD = HIGH WILDLAND FIRE RISK

PURPLE = PINE – NEEDS EVALUATION

WHITE = FOREST AREAS NOT ASSESSED

RED LAKE
OFFICIAL PLAN

Wildland Fire Hazards

Where new development is proposed on lands which are subject to wildland fire risk:

i. Development shall generally be directed to areas outside of lands that are unsafe for development due to the presence of hazardous forest types for wildland fire.

ii. Development may be permitted in lands with hazardous forest types for wildland fire where the risk is mitigated in accordance with wildland fire assessment and mitigation standards, as identified by the Ministry of Natural Resources and Forestry.

iii. Proponents may be required to undertake a site assessment to determine the presence of hazardous forest types for wildland fire, as may be indicated by generalized wildland fire hazard information. If development is proceeding where hazardous forest types are present, mitigation measures should be identified by proponents to outline how the risk will be lessened.

APPENDIX 2
Sample images of hazardous forest types for wildland fire:

The following images illustrate examples of hazardous forest types for wildland fire (high- to extreme-risk), including various forest conditions and species composition.

Species composition of high- and extreme-risk forests

(Photo courtesy of Ministry of Natural Resources and Forestry)

Figure A2-1.
Spruce forest with dense conifer vegetation arrangement and ladder fuels

(Photo courtesy of Ministry of Natural Resources and Forestry)

Figure A2-2.
Dense conifer-dominant vegetation arrangement and ladder fuels

(Photo courtesy of Ministry of Natural Resources and Forestry)

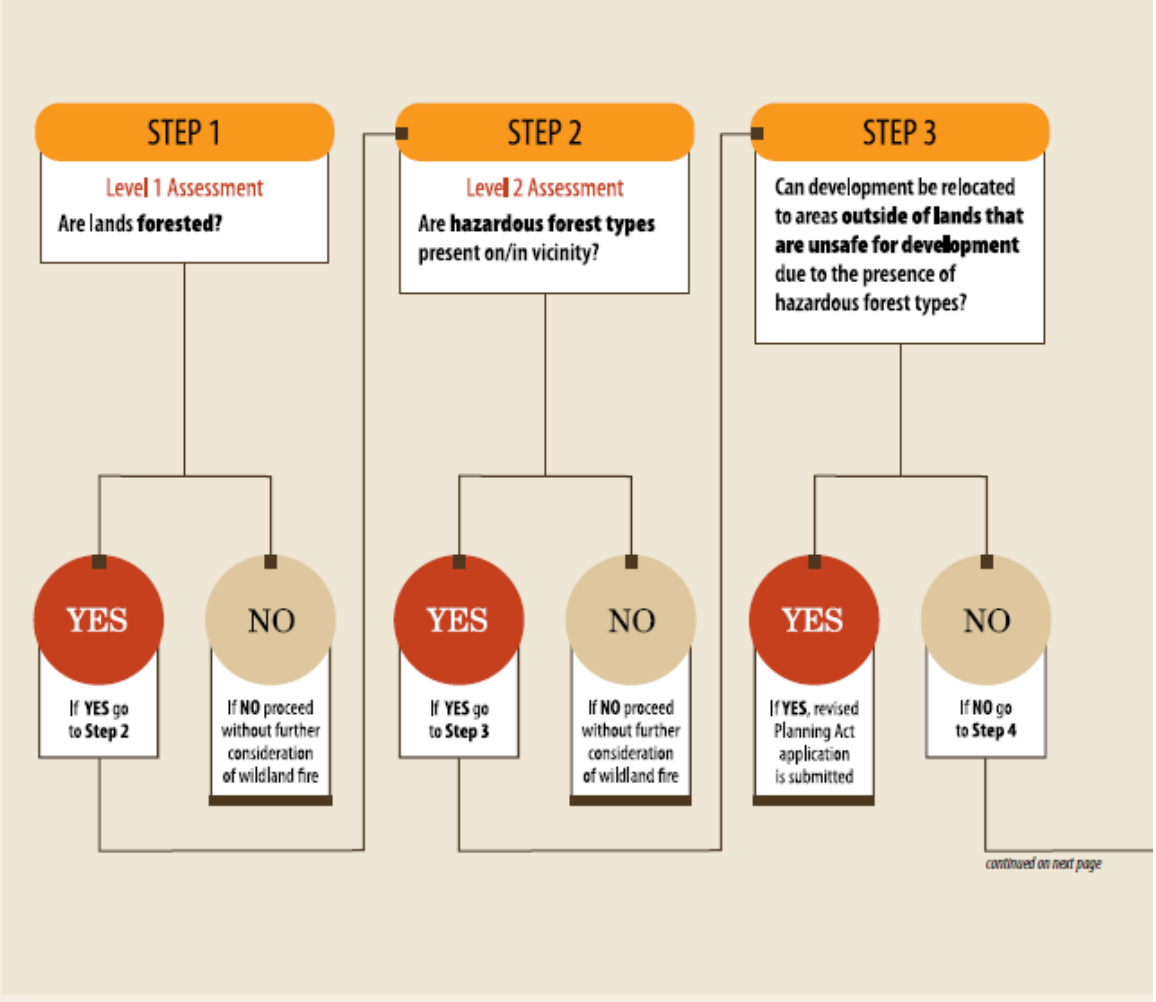
Figure A2-3.
Dense boreal spruce forest

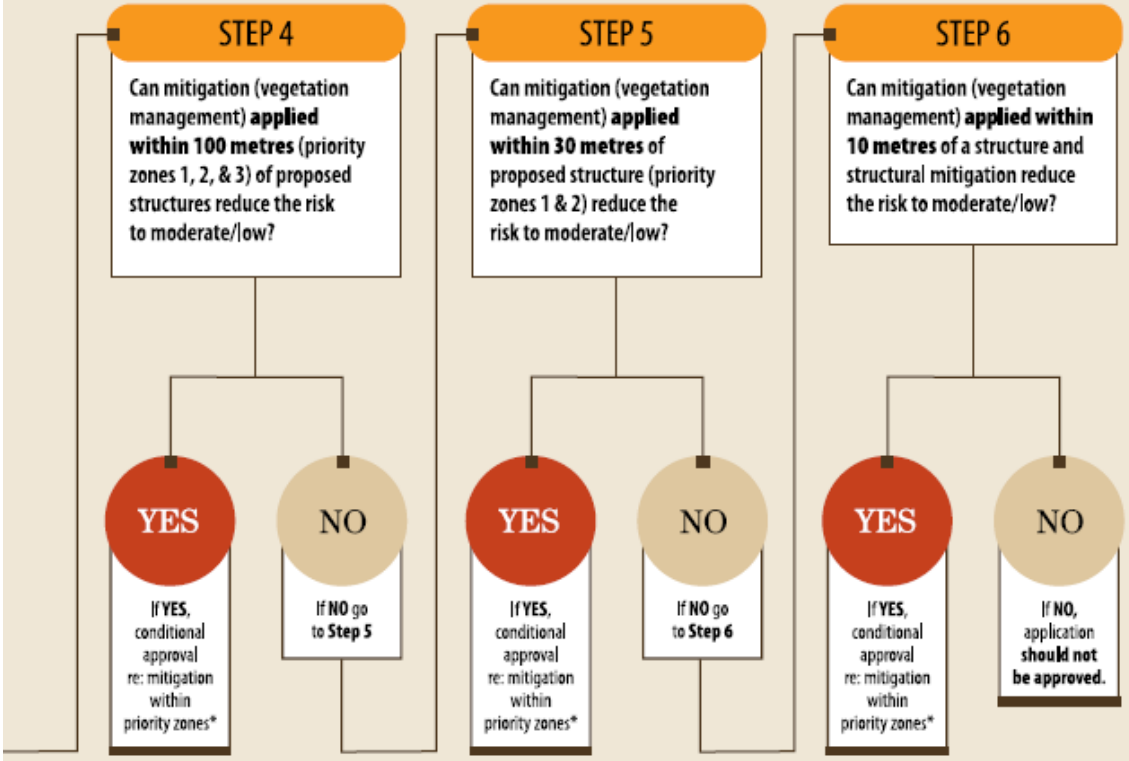
(Photo courtesy of Ministry of Natural Resources and Forestry)

Figure A2-4.
Dense spruce forest (bird's eye view)

APPENDIX 4
Simple Sequential Evaluation Matrix

The evaluation matrix indicates a simple step-by-step process for implementation of policy 3.1.8 of the PPS, 2014.




STEP 4
Can mitigation (vegetation management) applied within 100 metres (priority zones 1, 2, & 3) of proposed structures reduce the risk to moderate/low?
YES
If YES, conditional approval re: mitigation within priority zones*
NO
If NO go to Step 5
STEP 5
Can mitigation (vegetation management) applied within 30 metres of proposed structure (priority zones 1 & 2) reduce the risk to moderate/low?
YES
If YES, conditional approval re: mitigation within priority zones*
NO
If NO go to Step 6
STEP 6
Can mitigation (vegetation management) applied within 10 metres of a structure and structural mitigation reduce the risk to moderate/low?
YES
If YES, conditional approval re: mitigation within priority zones*
NO
If NO, application should not be approved.

APPENDIX 6
Wildland Fire Risk and Hazard Assessment Form

Pre or Post Development

This hazard assessment form is designed for assessing generalized wildfire risk conditions for existing or planned development areas. The assessment evaluates the proposed or actual structural components, the surrounding forest and surface vegetation present, and the general neighbourhood factors that affect public safety.

To utilize the assessment sheet on new developments, the developer must assume that the buildings have been completed. Once the hazard value has been established the developer or landowner can evaluate areas that can be modified to reduce the high- or extreme-risk value to a low- or moderate-risk value. This can be achieved through vegetation management, building modifications, or infrastructure upgrades.

To assist completing the assessment sheet, the FireSmart Protecting Your Community from Wildfire Manual is available online at FireSmart Canada.

FACTOR	POINTS	SCORE	NOTES
1. Roofing assembly (choose one of "a" to "b"; add "c" if applicable)			
a. Rated roof (metal, tile, asphalt, ULC rated shakes)	0		
b. Un-rated roof (unrated wood shakes)	65		
c. Tree branches overhang the roof area (yes = 5)	0–5		
d. Eavestrough Uncovered, Metal = 2, Vinyl = 5, Covered = 0 (Uncovered metal clean = 0)	0–5		
e. Tiered roof with accumulator areas for embers and combustible siding materials	0–5		
2. Building Design and Exterior Features			
2.1 Materials (Choose one of "a" to "c"; add "d" to "f" if applicable)			
a. Non-combustible/fire resistant siding, eaves, deck	0		
b. Non-combustible/fire resistant siding, eaves - combustible deck	5		
c. Combustible siding, eaves and deck	10		
d. Window and door glazing, thermal (0), double pane (2), single pane (5)	0–5		
e. Ember accumulator features (scarce to abundant)	0–5		
f. Nearby Combustibles <10m – firewood, fences, outbuildings	0–5		
g. Propane or bulk fuel < 7m from sustained heat source and within 10 m	0–5		
h. Open decks, building on piers – screened (0), unscreened (10)	0–10		

FACTOR	POINTS	SCORE	NOTES
3. Vegetation			
3.1 PZ-1: Vegetation — 0–10 metres from residence			
a. Forest vegetation (overstory) – hardwood or treated to FireSmart guidelines (0), mixedwood < 50% (10) mixedwood >50% (15), conifer (20)	0–20		
b. Surface fuels, green lawn or treated to FireSmart guidelines (0), dry grass, untreated area with combustible fuels allowing fire to reach structure (15)	0–15		
3.2 PZ-2: Vegetation — 10–30 metres from residence			
a. Forest vegetation (overstory) – hardwood or fully treated site with FireSmart guidelines (0), mixedwood <50% (5), mixedwood >50% (15), or conifer (30), conifer trees with ladder fuels no thinning (full value), pruned up to 2 metres (½ value)	0–30		
b. Surface fuels, watered lawn or non-combustible material or fully treated site with FireSmart guidelines (0), dry grass, leaves, small branches, shrub layer (10), deadfall and heavier woody materials mixed with fine fuels (15)	0–15		
3.3 PZ-3: Vegetation — 30–100 metres from residence (Choose one of "a" to "e"; add "f" if applicable)			
a. Light fuel deciduous grass, shrubs	0		
b. Moderate fuel mixed-wood light to moderate surface and ladder fuels, shrubs	10		
c. Heavy fuel coniferous moderate to heavy surface and ladder fuels, shrubs	30		
d. Logging slash, dead/down fuel accumulations	20		
e. Diseased forest without foliage vs with foliage	10–20		
Notes:			
4. Topography			
4.1 Slope (within 100m of structures) (Choose one of "a" to "c")			
a. Slope Flat or < 10 %	0		
b. Slope 10 — 30 %	5		
c. Slope >30 %	10		
4.2 Building setback on slopes >30 %, position on slope (Choose one of "a" to "c")			
a. Setback from top of slope > 10m, bottom of slope	0		
b. Buildings located mid-slope	5		
c. Setback from top of slope <10m, upper slope	10		
Community Wildfire Hazard Assessment Total: Total Points (add all factor point scores)			
Low < 40			
Moderate 40–64			
High 65–94			
Extreme >95			

APPENDIX 7
Sample images of hazardous site conditions within priority zone 1

The following images illustrate examples of hazardous site conditions before and after the application of vegetation management mitigation measures within priority zone 1 (whithin 0–10 m of structures).

Before vegetation management mitigation measures are applied in priority zone 1, resulting in high- to extreme-risk, should a wildland fire occur.

(Photo courtesy of Ministry of Natural Resources and Forestry)

Figure A7-1.
High-density forest with continuous and ladder fuels close to a structure (priority zone 1)

(Photo courtesy of Ministry of Natural Resources and Forestry)

Figure A7-2.
High-density forest with continuous and ladder fuels close to a structure (priority zone 1)

(Photo courtesy of Ministry of Natural Resources and Forestry)

Figure A7-3.
Conifer fuels overhanging a stucture and deck (priority zone 1)

(Photo courtesy of Ministry of Natural Resources and Forestry)

Figure A7-4.
High-density forest directly against a structure (priority zone 1)

After vegetation management mitigation measures have been applied in priority zone 1 (and 2), reducing the risk to moderate or low, should a wildland fire occur

(Photo courtesy of Ministry of Natural Resources and Forestry)

Figure A7-5.
Vegetation in priority zone 1 converted to non-flammable or low-flammable fuels such as deciduous species

(Photo courtesy of Ministry of Natural Resources and Forestry)

Figure A7-6.
Vegetation in priority zone 1 converted to non-flammable fuels (e.g., trimmed grass); vegetation in priority zone 2 has been thinned and pruned, and debris has been removed

(Photo courtesy of Ministry of Natural Resources and Forestry)

Figure A7-7.
Application of vegetation management measures have been applied in priority zones 1 and 2, including conversion to non-flammable vegetation (priority zone 1), and spacing, thinning and pruning of trees and other vegetation (priority zone 2)

(Photo courtesy of Ministry of Natural Resources and Forestry

Figure A7-8.
Application of vegetation management measures in priority zones 1 and 2, including spacing, thinning, pruning and removal of flammable ground fuels and debris

(Photo courtesy of Ministry of Natural Resources and Forestry

Figure A7-9.
Application of vegetation management measures (i.e., thinning and pruning) in priority zone 2

Where to find the Wildland Fire Risk Assessment and Mitigation Reference Manual

http://apps.mnr.gov.on.ca/public/files/er/mnrf-wildland-fire-report.pdf

Thank You

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