Wildfire Series

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Wildfire-resistant Landscape Plants for Michigan

Mark F. Hansen, Michigan State University Extension
R. Thomas Fernandez, Department of Horticulture, Michigan State University
Michael R. Penskar, Michigan Natural Features Inventory, Michigan State University Extension

Introduction

Most Michigan residents are surprised to learn that Michigan experiences 8,000 to 10,000 wildland fires each year. It is estimated that forest fires, brush fires and grass fires destroy or damage 100 to 200 homes, barns and outbuildings annually. When wildfires occur, the right landscape plants, especially fire-resistant plants, can help increase the chance that a home will survive. Allowing wildland vegetation to grow too close to a structure or placing flammable landscape plants near a home or other structure increases the chance that the structure will ignite.

Wildfires move along the ground or through brush or forests by igniting the vegetation or fuels ahead. Figure 1 shows how coniferous trees can ignite and "torch" during a wildfire. If these trees were growing next to a house or building, the structure would surely ignite. This is why it is important to select fire-resistant plants when landscaping around the home.

Figure 1. Some trees and plants can burn intensely. (Courtesy of Michigan DNR.)

How Homes and Other Structures Ignite During a Wildfire

Studies have shown that homes and other structures can be ignited by a wildfire in three ways. The first of these is through direct contact, otherwise referred to as "convection." Direct contact of flames to combustible wood decks and siding may easily set the building on fire. When combustible trees and shrubs are touching the home or growing very close to it, they can ignite and bring the home into direct contact with the flames.

A second way that wildfires cause buildings to burn is through radiant heat. This refers to the intense heat that is produced by burning vegetation. If forest fuels or landscape plants grow too close to the structure, the structure can be set on fire by radiant heat, even though the flames may not actually touch the structure. The primary way to protect your home from convection or radiant heat is by eliminating flammable vegetation near the structure. This vegetation will serve as fuel; without this fuel, the fire cannot jump to the structure.

The third and a very common cause of structures catching fire during a wildfire is firebrands. Firebrands are floating embers that are still burning or glowing when they land. Firebrands have been known to travel up to a mile downwind from an intense wildfire. In large wildfires, firebrands are a concern because they will start new spot fires well ahead of the main fire. Experience has shown that firebrands from a wildfire or burning landscape plant may also land on or under decks, in leaves that have collected behind landscape plants, in eave troughs where leaves and vegetative litter have become trapped, or directly on wood shingles. Firebrands that land in or on these flamma-

ble materials can ignite the fuels and destroy the building.

One way to help prevent homes and other structures from catching fire is to eliminate these ignition points by creating defensible space around them. This can be achieved, in part, through proper landscape plant selection and placement. Plants that do not burn easily are less likely to set a structure on fire.

Selecting Landscape Plants

Given the right conditions, any plant will burn. However, because of the composition of the foliage or moisture content in the leaves, certain plant types are less likely to catch fire and are therefore termed "fire-resistant." Fire-resistant landscape plants should be your first choice if you live in a rural or urban-wildland interface area where wildfire is a possible threat.

Even before homeowners consider the right trees, shrubs and ground covers, other landscape issues should be considered. For example, a dry lawn can burn and carry a fire to the home or other structure. Lawns should be watered, and dead lawn litter should be raked and either removed from the property or composted. A green lawn will not carry a fire.

In nature, some plants ignite more quickly than others and burn with more intensity. For example, plants that contain resins — such as conifers, certain shrubs and dune grass — ignite easily and create very hot fires that radiate much heat. Firefighters at a wildfire in dune grass near Shelby, Michigan, in 2005 (Figure 2) reported flames as high as 20 feet. Two homes were destroyed in the fire, and a number of others had fire damage.

Figure 2. This wildfire in dune grass near Shelby, Michigan, in 2005 produced flames 20 feet high and destroyed two homes. (Courtesy of Michigan DNR.)

Other species, such as junipers, tend to retain dead foliage in the branches, which also serves as an ignition point for firebrands. Other conifers that have branches growing close to the ground can provide "ladder fuels" for a surface fire to climb into the tree canopy.

Wildfire-resistant Plant Species

The species of trees, shrubs and ground covers in Table 1 are considered wildfire-resistant and are recommended for Michigan's climate. Remember that any plant may burn if the plant tissue becomes very dry and if the vegetation is exposed to intense heat for a period of time.

Your local lawn and garden centers may sell or have access to many of the fire-resistant plant species mentioned in this publication. An excellent source of information on local landscape dealers is the MSU Extension office in your county. Both the landscape dealer and the Extension agent can provide information on growing characteristics, required growing conditions, winter hardiness and planting sites required for various plants.

Locating Shrubs and Trees in the Landscape

Where you locate ornamental plants is just as important as the species you select. Spacing between trees and shrubs is important so that fire cannot jump from a plant to the home, nor from one plant to another and finally to your home. Spacing depends on the species selected. It is also important to remember that the distance between two plants will decrease as they grow larger. Space plants according to their mature size, not their size at planting. The spruce trees in Figure 3 were planted too close to the home and are now a threat because of direct flames and radiant heat, should the trees ignite.

Figure 3. The spruce trees in this photo are located too close to the house. If they catch fire, they will likely create enough radiant heat to ignite the home. (Courtesy of MSU Extension.)

Table 1. Wildfire-resistant landscape plants for Michigan.

Botanical name	Common name	Category	Winter hardiness zones***	Native to Mich.**	Descriptors
Annuals					
Coreopsis tinctoria nana	Dwarf plains coreopsis	annual	zone 5	SCD*	annual, reseeds
Linum spp.	Flax	annual	SCD*	SCD*	most species annuals, some perennial in zone 5
Groundcovers					
Achillea tomentosa	Woolly yarrow	groundcover	zones 3-7	No	herbaceous perennial
Ajuga reptans	Carpet bugleweed	groundcover	zones 3-9	No	herbaceous perennial
Arctostaphylos uva-ursi	Kinnikinnick or bearberry	groundcover	zones 2-6	Yes	evergreen
Armeria maritima	Sea pink/thrift	groundcover	zones 4-8	No	herbaceous perennial
Asarum canadense	Canadian ginger	groundcover	zones 3-7	Yes	herbaceous perennial
Cotoneaster adpressus praecox	Early cotoneaster	groundcover	zones 5-7	No	deciduous
Epimedium spp.	Barrenwort	groundcover	most zones 5-8	No	herbaceous perennial
Festuca cinerea	Blue fescue	groundcover	zones 5-9	No	herbaceous perennial
Festuca spp.	Fescue	groundcover	SCD*	SCD*	herbaceous perennial
Fragaria spp.	Wild strawberry	groundcover	SCD*	SCD*	perennial
Gaultheria procumbens	Wintergreen	groundcover	zones 4-8	No	evergreen
Glandularia bipinnatifida	Dakota mock vervain	groundcover	zones 5-8	No	herbaceous perennial
Hedera helix	English ivy	groundcover	zones 4-10	No	evergreen
Hosta spp.	Plaintain lily/ hosta lily	groundcover	zones 3-9	No	herbaceous perennial
Iberis sempervirens	Evergreen candytuft	groundcover	zones 3-8	No	herbaceous perennial
Mahonia repens	Dwarf Oregon grape	groundcover	zones 5-7	No	woody evergreen
Pachysandra terminalis	Japanese pachysandra	groundcover	zones 4-9	No	herbaceous evergreen
Phlox subulata	Creeping phlox	groundcover	zones 2-8	No	herbaceous perennial
Potentilla neumanniana	Spring cinquefoil	groundcover	zones 4-7	No	woody perennial
Rosa spinosissima	Scotch rose	groundcover	zones 4-8	No	woody perennial
Sedum album	Green stonecrop	groundcover	zones 4-7	No	herbaceous perennial
Sedum spathulifolium	Stonecrop	groundcover	zones 6-9	No	herbaceous perennial
Sedum spurium	Two-row stonecrop	groundcover	zones 3-7	No	herbaceous perennial
Thymus praecox	Mother of thyme	groundcover	zones 5-8	No	herbaceous perennial
Thymus praecox arcticus	Creeping thyme	groundcover	zones 5-8	No	herbaceous perennial
Thymus pseudolanuginosus	Wooley thyme	groundcover	zones 5-8	No	herbaceous perennial
Thymus pulegioides	Lemon thyme	groundcover	zones 5-8	No	herbaceous perennial
Perennials					
Achillea filipendulina	Fernleaf yarrow	perennial	zones 3-8	No	herbaceous perennial
Achillea millefolium	White yarrow	perennial	zones 3-9	Yes	herbaceous perennial
Achillea spp.	Yarrow	perennial	SCD*	SCD*	herbaceous perennial
Allium schoenoprasum	Chives	perennial	zones 4-7	SCD*	herbaceous perennial
Antennaria spp.	Pussytoes	perennial	SCD*	SCD*	herbaceous perennial
Chamaemelum nobile	Chamomile	perennial	zones 3-7	No	herbaceous perennial

*SCD — Species and/or cultivar dependent.

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(continued)

Table 1. (cont.) Wildfire-resistant landscape plants for Michigan.

Botanical name	Common name	Category	Winter hardiness zones***	Native to Mich.**	Descriptors
Perennials (continued)					
Aquilegia spp.	Columbine	perennial	SCD*	No	herbaceous perennial
Arabis alpina	Rockcress	perennial	zones 5-7	No	herbaceous perennial
Artemisia caucasica	Silver spreader or Caucasian sagebrush	perennial	zones 5-9	No	herbaceous perennial
Aurinia saxatilis	Basket of gold	perennial	zones 3-7	No	herbaceous perennial
Bergenia cordifolia	Heartleaf bergenia	perennial	zones 4-8	No	semi-evergreen herbaceous perennial
Bergenia spp.	Bergenia	perennial	SCD*	No	semi-evergreen herbaceous perennial
Campanula poscharskyana	Serbian bellflower	perennial	zones 3-7	No	herbaceous perennial
Campanula rotundifolia	Harebell	perennial	zones 2-7	No	herbaceous perennial
Carex spp.	Sedges	perennial	SCD*	SCD*	herbaceous perennial
Caryopteris x*clandonensis*	Blue mist spirea	perennial	zones 5-9	No	herbaceous to woody perennial
Centranthus ruber	Red valerian	perennial	zones 5-8	No	herbaceous perennial
Cerastium tomentosum	Snow in summer	perennial	zones 2-10	No	herbaceous perennial
Coreopsis auriculata nana	Dwarf coreopsis	perennial	zones 4-9	No	herbaceous perennial
Coreopsis spp.	Coreopsis	perennial	SCD*	SCD*	herbaceous perennial
Dianthus deltoides	Maiden pinks	perennial	zones 3-8	No	herbaceous perennial
Dianthus plumarius	Pinks	perennial	zones 3-8	No	herbaceous perennial
Dianthus spp.	China pinks	perennial	zones 3-8	No	herbaceous perennial
Epilobium angustifolium	Fireweed	perennial	zones 3-7	Yes	herbaceous perennial
Erigeron hybrids	Fleabane	perennial	zones 4-7	SCD*	herbaceous perennial
Erysimum linifolium	Wallflower	perennial	zones 5-8	No	herbaceous perennial
Fragaria chiloensis	Wild strawberry	perennial	zones 4-8	No	herbaceous perennial
Gaillardia x*grandiflora*	Blanket flower	perennial	zones 2-9	No	herbaceous perennial
Geranium cinereum	Hardy geranium	perennial	zones 5-7	No	herbaceous perennial
Geranium sanguineum	Bloodred geranium	perennial	zones 3-8	No	herbaceous perennial
Geranium spp.	Geranium	perennial	zones 3-8	No	most species perennial, some annual
Helianthemum nummularium	Sunrose	perennial	zones 5 - 7	No	mounding
Heuchera sanguinea	Coral bells	perennial	zones 3-8	No	herbaceous perennial
Iberis sempervirens	Candytuft	perennial	zones 3-8	No	herbaceous perennial
Iris missouriensis	Wild blue iris	perennial	zones 3-8	No	herbaceous perennial
Iris spp.	Iris	perennial	SCD*	No	most species perennial, some annual
Lavandula angustifolia	Lavender	perennial	zones 5-9	No	herbaceous perennial
Leontopodium alpinum	Edelweiss	perennial	zones 4-7	No	herbaceous perennial
Leucanthemum x*superbum*	Shasta daisy	perennial	zones 4-9	No	herbaceous perennial
Liriope muscari	Blue lily-turf	perennial	zones 6-9	No	herbaceous perennial
Lupinus spp.	Lupine	perennial	SCD*	SCD*	not strong performers in Michigan
Lychnis chalcedonica	Maltese cross	perennial	zones 3-7	No	herbaceous perennial

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Perennials (continued)					
Oenothera macrocarpa	Evening primrose	perennial	zones 4-7	No	herbaceous perennial
Oenothera spp.	Primrose	perennial	SCD*	SCD*	herbaceous perennial
Ophiopogon japonicum	Mondo grass	perennial	zones 6-9	No	herbaceous perennial
Papaver spp.	Poppy	perennial	SCD*	No	most species perennial, some annual
Penstemon spp.	Beard tongue	perennial	SCD*	SCD*	most species perennial, some annual
Phlox drummondii	Creeping phlox	perennial	zones 4-9	No	herbaceous perennial
Potentilla spp.	Potentilla	perennial	SCD*	SCD*	most species perennial, some annual
Primula hybrids	Primrose	perennial	SCD*	SCD*	herbaceous perennial, most hardy to zone 5
Salvia spp.	Sage	perennial	SCD*	No	most species perennial, some annual
Santolina chamaecyparissus	Lavender cotton	perennial	zones 6-10	No	mounding
Sempervivum tectorum	Hens and chicks	perennial	zones 3-7	No	herbaceous perennial
Solidago spp.	Goldenrod	perennial	SCD*	SCD*	herbaceous perennial
Stachys byzantina	Lamb's ear	perennial	zones 4-7	No	herbaceous perennial
Teucrium chamaedrys	Germander	perennial	zones 4-9	No	herbaceous perennial
Thymus praecox arcticus	Creeping thyme	perennial	zone 5-8	No	herbaceous perennial
Shrubs					
Amelanchier alnifolia	Alder-leaved serviceberry	shrub	zones 4-5	No	deciduous, also small tree
Amelanchier spp.	Serviceberry	shrub	zones 4-9	SCD*	deciduous, also small tree
Arctostaphylos uva-ursi	Bearberry	shrub	zones 2-6	Yes	creeping shrub
Aronia arbutifolia	Red chokeberry	shrub	zones 5-8	No	deciduous, also small tree
Aronia melanocarpa	Black chokeberry	shrub	zones 3-8	Yes	deciduous
Berberis buxifolia	Box-leaf barberry	shrub	zones 5-8	No	evergreen
Berberis xmentorensis	Mentor barberry	shrub	zones 5-8	No	deciduous
Buddleia davidii	Butterfly bush	shrub	zones 5-9	No	deciduous, also small tree
Buxus sempervirens	Common boxwood	shrub	zones 5-8	No	evergreen
Chaenomeles speciosa	Flowering quince	shrub	zones 4-8	No	deciduous
Chamaecyparis obtusa	Hinoki falsecypress	shrub	zones 5-8	No	evergreen
Clethra alnifolia	Summersweet	shrub	zones 4-9	No	deciduous
Cornus alba	Tatarian dogwood	shrub	zones 3-7	No	deciduous
Cornus sericea	Yellowtwig dogwood/ red osier dogwood	shrub	zones 2-8	No	deciduous
Corylus avellana	European filbert	shrub	zones 4-8	No	deciduous, also small tree
Cotinus coggygria	Royal purple smoketree	shrub	zones 5-8	No	deciduous
Cotoneaster apiculatus	Cranberry cotoneaster	shrub	zones 4-7	No	deciduous
Cotoneaster dammeri	Coral beauty cotoneaster	shrub	zones 5-8	No	semi-evergreen
Cotoneaster divaricatus	Spreading cotoneaster	shrub	zones 4-7	No	deciduous
Cotoneaster horizontalis	Rock cotoneaster	shrub	zones 5-7	No	deciduous
Cotoneaster spp.	Cotoneaster	shrub	SCD*	No	SCD*
Cytisus decumbens	Creeping broom	shrub	zones 5-7	No	deciduous

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(continued)

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Shrubs (continued)					
Daphne cneorum	Garland daphne	shrub	zones 4-7	No	evergreen
Daphne xburkwoodii	Burkwood daphne	shrub	zones 4-7	No	semi-evergreen
Deutzia gracilis	Slender deutzia	shrub	zones 4-8	No	deciduous
Eleutherococcus pentaphyllus	Five-leaf aralia	shrub	zones 4-8	No	deciduous
Euonymus obovatus	Running burning bush	shrub	zones 4-8	Yes	deciduous
Forsythia xintermedia	Lynwood border forsythia	shrub	zones 5-8	No	deciduous
Hibiscus syriacus	Rose of Sharon	shrub	zones 5-8	No	deciduous; also small tree
Hydrangea quercifolia	Oakleaf hydrangea	shrub	zones 5-9	No	deciduous
Ilex crenata	Northern beauty/ Japanese holly	shrub	zones 5-7	No	evergreen
Ilex verticillata	Michigan holly	shrub	zones 3-9	Yes	deciduous
Ilex x *meserve*	Blue holly	shrub	zones 4-7	No	evergreen
Mahonia aquifolium	Oregon grapeholly	shrub	zones 5-8	No	evergreen
Mahonia repens	Creeping mahonia	shrub	zones 5-7	No	evergreen, also groundcover
Mahonia spp.	Creeping grape holly	shrub	SCD	No	evergreen
Myrica pennsylvanica	Northern bayberry	shrub	zones 3-6	No	deciduous
Philadelphus spp.	Mock orange	shrub	SCD*	No	deciduous
Philadelphus xvirginalis	Minnesota Snowflake Mock Orange	shrub	zones 4-8	No	deciduous
Picea abies 'nidiformis'	Bird's nest spruce	shrub	zones 3-7	No	evergreen
Picea glauca 'conica'	Dwarf Alberta white spruce	shrub	zones 2-6	Yes	evergreen
Pieris japonica	Japanese andromeda	shrub	zones 4-7	No	evergreen
Potentilla fruticosa	Shrubby cinquefoil	shrub	zones 2-6	Yes	deciduous
Prunus americana	Native plum	shrub	zones 3-8	Yes	deciduous, also small tree
Prunus besseyi	Sand cherry	shrub	zones 3-6	No	deciduous
Prunus tomentosa	Nanking cherry	shrub	zones 3-7	No	deciduous
Pyracantha spp.	Pyracantha	shrub	SCD*	No	can have fireblight problems on more vigorous selections
Rhododendron catawbiense	Catawba rhododendron	shrub	zones 4-8	No	evergreen
Rhododendron obtusum	Hiryu azalea	shrub	zones 6-7	No	evergreen
Rhododendron PJM	PJM rhododendron	shrub	zones 4-7	No	evergreen
Rhododendron xkosteranum	Mollis azalea	shrub	zones 6-7	No	deciduous
Rhus spp.	Sumac	shrub	SCD*	SCD*	SCD*
Ribes alpinum	Green mound alpine currant	shrub	zones 2-7	No	deciduous
Rosa carolina	Carolina rose	shrub	zones 4-9	Yes	deciduous
Rosa wichuriana	Memorial rose	shrub	zones 5-8	No	semi-evergreen
Rubus spp.	Raspberry	shrub	SCD*	SCD*	deciduous
Sheperdia canadensis	Russet buffaloberry	shrub	zones 2-6	Yes	deciduous
Shepherdia argentea	Silver buffaloberry	shrub	zones 2-6	No	deciduous, also small tree
Spiraea japonica	Daphne spirea	shrub	zones 4-8	No	deciduous

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Shrubs (continued)					
Spiraea nipponica	Snowmound Nippon spirea	shrub	zones 4-8	No	deciduous
Spiraea x*vanhouttei*	Vanhoutte spirea	shrub	zones 3-8	No	deciduous
Symphoricarpos albus	Snowberry	shrub	zones 3-7	Yes	deciduous
Syringa spp.	Lilac	shrub	SCD*	No	deciduous
Syringa vulgaris	Common lilac	shrub	zones 3-7	No	deciduous
Syringa x*prestoniae*	Preston lilac	shrub	zones 3-7	No	deciduous
Taxus cuspidata	Japanese yew	shrub	zones 4-7	No	evergreen
Taxus x*media*	Anglojap yew	shrub	zones 4-7	No	evergreen
Thuja occidentalis	American arborvitae	shrub	zones 3-7	Yes	evergreen
Viburnum trilobum	American cranberrybush viburnum	shrub	zones 2-7	Yes	deciduous
Viburnum trilobum 'compactum'	Dwarf American cranberry-bush viburnum	shrub	zones 2-7	No	deciduous
Viburnum carlesii	Korean spice viburnum	shrub	zones 4-8	No	deciduous
Viburnum cassinoides	Witherod viburnum	shrub	zones 5-9	No	deciduous
Viburnum dentatum	Arrowwood viburnum	shrub	zones 2-8	No	deciduous
Viburnum dilatatum	Linden viburnum	shrub	zones 5-7	No	deciduous
Viburnum lantana	Wayfaringtree viburnum	shrub	zones 4-8	No	deciduous
Viburnum lentago	Nannyberry	shrub	zones 3-7	No	deciduous; also tree
Viburnum plicatum var. *tomentosum*	Doublefile viburnum	shrub	zones 5-8	No	deciduous
Viburnum wrightii	Wright viburnum	shrub	zones 5-7	No	deciduous
Viburnum x*burkwoodii*	Burkwood viburnum	shrub	zones 5-8	No	deciduous
Viburnum x*carlcephalum*	Fragrant snowball viburnum	shrub	zone 5-8	No	deciduous
Viburnum x*juddii*	Judd viburnum	shrub	zone 4-8	No	deciduous
Viburnum x*rhytidophylloides*	Willowwood or Allegheny viburnum	shrub	zones 5-8	No	deciduous
Viburnum prunifolium	Blackhawk viburnum	shrub	zones 3-9	Yes	deciduous
Viburnum sargentii	Sargent viburnum	shrub	zones 3-7	No	deciduous
Viburnum sieboldii	Siebold viburnum	shrub	zones 4-7	No	deciduous
Viburnum setigerum	Tea viburnum	shrub	zones 5-8	No	deciduous
Weigela florida	Old-fashioned weigela	shrub	zones 5-8	No	deciduous
Trees					
Acer campestre	Hedge maple	tree	zones 4-8	No	deciduous
Acer griseum	Paperbark maple	tree	zones 5-7	No	deciduous
Acer palmatum	Japanese maple	tree	cultivar dependent	No	deciduous
Acer platanoides	Norway maple	tree	zones 4-7	No	deciduous
Acer rubrum	Red maple	tree	cultivar dependent	Yes	deciduous
Acer saccharum	Green Mountain sugar maple	tree	zonse 4-8	Yes	deciduous
Aesculus hippocastanum	Horsechestnut	tree	zones 4-7	No	deciduous

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Trees (continued)					
Alnus cordata	Italian alder	tree	zones 5-7	No	deciduous
Betula spp.	Birch	tree	SCD*	SCD*	deciduous
Calocedrus decurrens	Incense cedar	tree	zones 5-8	No	evergreen
Carpinus betulus	Upright European hornbeam	tree	zones 4-7	No	deciduous
Catalpa speciosa	Northern catalpa	tree	zones 4-8	No	deciduous
Cedrus spp.	Cedar	tree	SCD*	No	evergreen
Celtis occidentalis	Common hackberry	tree	zones 2-9	Yes	deciduous
Cercis canadensis	Eastern redbud	tree	zones 5-9; best from local seed source	Yes	deciduous
Cercis spp.	Redbud	tree	zones 5-9; best from local seed source	SCD*	deciduous
Chamaecyparis nootkatensis	Nootka weeping falsecypress	tree	zones 4-7	No	evergreen
Chamaecyparis pisifera	Sawara falsecypress	tree	zones 4-8	No	evergreen tree/shrub
Cornus florida	Flowering dogwood	tree	zones 5-8; best from local seed source	Yes	deciduous
Cornus kousa	Chinese kousa dogwood	tree	zones 5-8	No	deciduous
Cornus mas	Cornelian cherry dogwood	tree	zones 4-8	No	deciduous
Crataegus phaenopyrum	Washington hawthorn	tree	zones 4-8	No	deciduous
Crataegus spp.	Hawthorn	tree	zones 4-7	SCD*	deciduous
Fagus spp.	Beech	tree	SCD*	No	deciduous
Fagus sylvatica	European beech	tree	zones 4-7	No	deciduous
Ginkgo biloba	Maidenhair tree/ginkgo	tree	zones 4-8	No	deciduous tree/shrub
Gleditsia triacanthos	Honeylocust	tree	zones 4-9	SCD*	deciduous
Gymnocladus dioicus	Kentucky coffee tree	tree	zones 3-8	Yes	deciduous
Juglans spp.	Walnut	tree	zones 4-7	Yes	deciduous
Liquidambar styraciflua	American sweetgum	tree	zones 5-9		deciduous
Liriodendron tulipifera	Tulip tree	tree	zones 4-9	Yes	deciduous
Magnolia stellata	Star Magnolia	tree	zones 4-9	No	deciduous
Magnolia x*loebneri*	Dr. Merrill star magnolia	tree	zones 3-8	No	deciduous
Magnolia x*soulangiana*	Saucer magnolia	tree	zones 4-9	No	deciduous
Malus spp.	Crabapple	tree	SCD*	SCD*	deciduous
Nyssa sylvatica	Black gum	tree	zones 4-9	Yes	deciduous
Picea abies	Norway spruce	tree	zones 3-7	No	evergreen
Picea glauca	White spruce	tree	zones 2-6	Yes	evergreen
Picea omorika	Serbian spruce	tree	zones 4-7	No	evergreen
Platanus x*acerifolia*	London planetree	tree	zones 4-8	No	deciduous
Populus spp.	Aspen, cottonwoods, poplar	tree	SCD*	SCD*	deciduous
Populus tremuloides	Quaking aspen	tree	zones 1-6	Yes	deciduous

*SCD — Species and/or cultivar dependent.

**Michigan's critical dune guidelines allow only native plants to be used within 100 feet of the crest of a dune. In addition, any alteration on the lake side of the dune requires a permit, including establishing or reestablishing.

***Winter hardiness refers to the ability of the plant to withstand average low winter temperatures. Winter hardiness zones listed in the table refer to the USDA National Arboretum Plant Hardiness Zone Map (see page 12) which can also be found at http://www.usna.usda.gov/Hardzone/ushzmap.html. Other factors will also affect the suitability of a plant for a particular climate, such as heat, humidity, soil characteristics, and water availability.

(continued)

Table 1. (cont.) Wildfire-resistant landscape plants for Michigan.

Botanical name	Common name	Category	Winter hardiness zones***	Native to Mich.**	Descriptors
Trees (continued)					
Prunus cerasifera 'atropurpurea'	Flowering plum	tree	zones 5-8	No	deciduous
Prunus serrulata	Kwanzan Oriental cherry	tree	zones 5-7	No	deciduous
Prunus subhirtella	Higan cherry	tree	zones 5-8	No	deciduous
Prunus virginiana	Chokecherry	tree	zones 2-6	Yes	deciduous
Prunus xyedoensis	Yoshino cherry	tree	zones 5-8	No	deciduous
Pseudotsuga menziesii	Douglas fir	tree	zones 4-6	No	evergreen
Pyrus calleryana	Bradford pear	tree	zones 5-8	No	deciduous, may break under heavy snow/ice loads
Quercus alba	White oak	tree	zones 3-9	Yes	deciduous
Quercus macrocarpa	Bur oak	tree	zones 3-8	Yes	deciduous
Quercus robur	English oak	tree	zones 4-8	No	deciduous
Quercus rubra	Red oak	tree	zones 3-7	Yes	deciduous
Quercus spp.	Oak	tree	SCD*	SCD*	deciduous
Salix spp.	Willow	tree	SCD*	SCD*	deciduous
Sorbus aucuparia	European mountain ash	tree	zones 3-7	No	deciduous, several pest problems
Thuja occidentalis	American arborvitae	tree	zones 3-7	Yes	evergreen
Thuja plicata	Western red cedar	tree	zones 5-7	No	evergreen
Tilia cordata	Greenspire littleleaf linden	tree	zones 3-7	No	deciduous
Tsuga canadensis	Canadian hemlock	tree	zones 3-7	Yes	evergreen
Vines					
Campsis radicans	Trumpet vine	vine	zones 4-9	No	deciduous
Clematis hybrids	Clematis	vine	SCD*	No	deciduous
Hydrangea anomala subsp. *petiolaris*	Climbing hydrangea	vine	zones 4-7	No	deciduous
Lonicera sempervirens	Trumpet honeysuckle	vine	zones 4-9	No	deciduous
Lonicera xheckrottii	Goldflame honeysuckle	vine	zones 4-9	No	semi-evergreen
Parthenocissus quinquefolia	Virginia creeper	vine	zones 4-9	Yes	deciduous
Parthenocissus tricuspidata	Boston ivy	vine	zones 4-8	No	deciduous
Polygonum aubertii	Silverlace vine	vine	zones 4-7	No	deciduous, can be very vigorous
Wisteria sinensis	Chinese wisteria	vine	zones 5-8	No	deciduous

*SCD — Species and/or cultivar dependent.

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When creating defensible space in the yard, provide a minimum of 3 feet of clearance between the structure and landscape plants. Non-flammable landscape material such as limestone, marble chips or even mineral soil can be used in this area. Avoid using organic mulch, peat or wood chips within the 3-foot barrier. These materials can ignite when dry.

Leave at least 30 feet of defensible space between the structure and solid stands of wildland vegetation. Studies in the western states have shown that 85 to 90 percent of homes with 30 to 50 feet of defensible space and fire-resistant roofing materials survived major wildfires. Ornamental landscape plants may be placed within the defensible space, but it is important to maintain 10 to 16 feet of space between the crowns of the plants.

Houses and structures built at the crest of a hill should have a minimum of 60 feet of defensible space on the downhill side of the structure, because a fire traveling uphill will be more intense and radiate more heat than a wildfire moving on level ground. Liquid propane tanks, stacks of firewood and other fuels should be located outside the 30- or 60-foot perimeter.

The term "ladder fuels" describes low-hanging branches and limbs that could catch fire from a wildfire moving across the ground. If the tree is combustible, such as a spruce tree, the fire will ignite the lower leaves and move upward. Should this happen, the radiant heat given off could set a nearby house or other structure on fire. Remove limbs and branches of ornamental landscape trees within 6 to 8 feet of the ground so that fire cannot move from the ground to the lower branches of the tree.

Planting Ornamental Trees and Shrubs

When planting any tree or shrub, it is important to match the species with the conditions in the planting site. Some species may grow better in sandy soils than in heavy clay soils. Some will do better than others in poorly drained areas. Other species may do better in the sun than in the shade. This information is often included on a tag attached to the tree or shrub at the garden center. If there is no tag, ask an informed employee about the preferred environment before purchasing. Again, your local Extension office will likely have this information as well.

At planting time, dig a hole that is larger than the root ball. This will provide an area of soft soil for new feeder roots to expand into and take hold. Fall or spring planting depends on the species selected. Avoid planting during the midsummer months because of high temperatures and sparse rainfall. To obtain more information on planting landscape plants, obtain a copy of Extension bulletin E-2941, *A Guide for the Selection and Use of Plants in the Landscape,* from your county Extension office.

Maintaining the Yard and Shrubbery

If the landscape is not maintained properly, a wildfire can move across the yard and ignite a home or other structure. To decrease this possibility, keep your lawn mowed and watered. A green lawn is unlikely to catch fire and will typically serve as a protective barrier around the home. On the other hand, a yard that is managed in natural vegetation or a lawn that has become very dry could allow a wildfire to move across it and pose a danger of the wildfire igniting a deck or wood siding, and then the home. The home and garage shown in Figure 4 were damaged because tall grass was allowed to grow too close to the structures.

Figure 4. A wildfire in a grassy field melted the siding on this garage and home.
(Courtesy of Michigan DNR.)

It is also important to provide adequate water for newly planted trees and shrubs. Once these plants have grown and have established extensive root systems, they should usually be able to absorb necessary water from the soil, and nutrients from the soil and from lawn fertilizers. Ornamental plants may or may not need special fertilization.

This can be determined by a soil test, which is available through your local Extension office. For more information, pick up a copy of North Central Region publication 356, *Fertilizing Garden & Landscape Plants & Lawns*, from your county Extension office.

Summary

Each year in Michigan, wildfires damage or destroy homes and other structures. A firewise home includes adequate defensible space, fire-resistant building materials, and eave troughs and spaces around and under the base of the home void of leaves. Firewise homeowners also place other fuels, such as LP tanks and firewood stacks, at a safe distance from the home. Adding fire-resistant plants and pruning trees can greatly increase the chances that a home or other strucures will still be standing after a wildfire passes, while also providing the esthetics that the homeowner desires (Figure 5).

For more information on Michigan wildfires and protecting your home and family, pick up copies of Extension bulletins E-2831, *Protect Your Michigan Home from Wildfire,* and E-2882, *Understanding Wildfire Behavior in Michigan,* from your county Extension office.

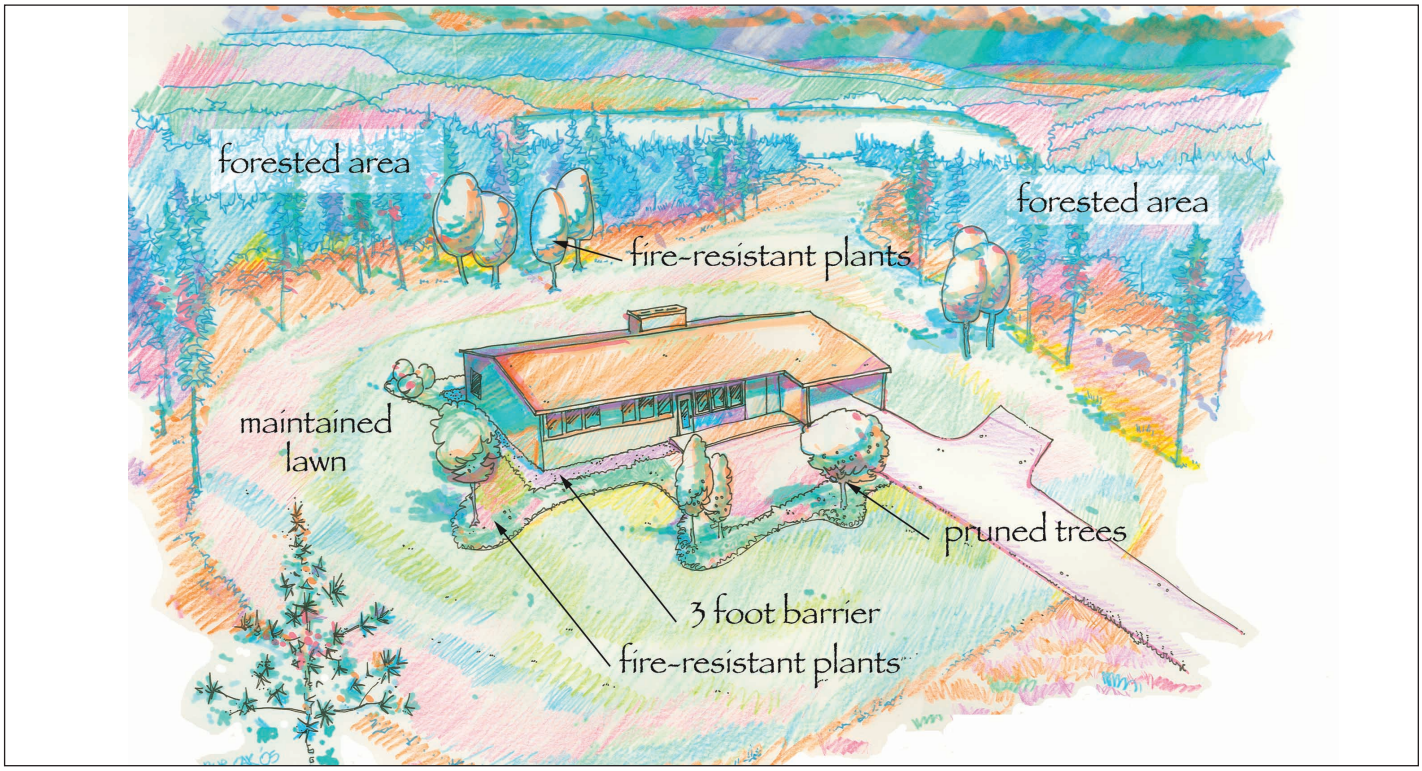
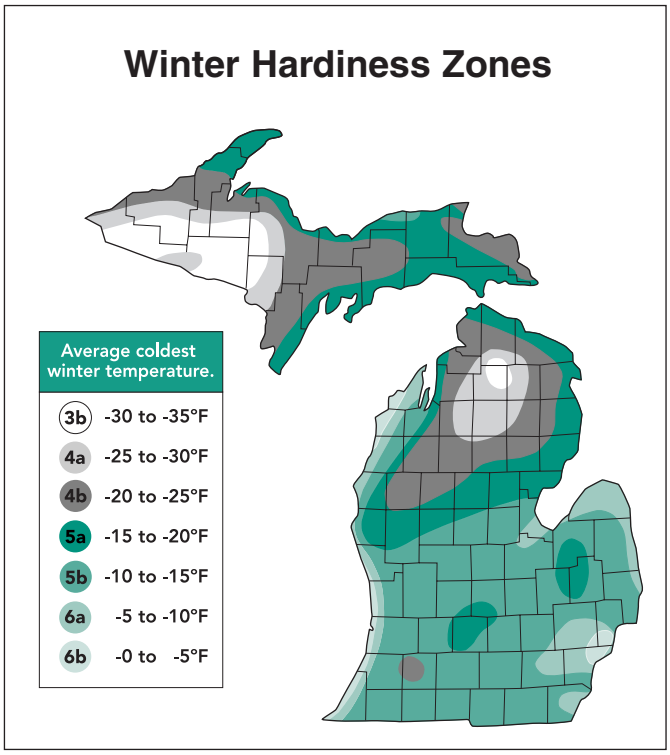


Figure 5. Firewise landscaping reduces the chance of wildfire damage to a home.
(Courtesy of Dr. Jon Bryan Burley, ASLA, associate professor, LAP director, MSU.)



For an online version of the USDA National Arboretum Plant Hardiness Zone Map for North America, go to:
http://www.usna.usda.gov/Hardzone/ushzmap.html

Other publications in the **Wildfire Series** are available from your MSU county Extension office or the MSU Bulletin Office, 117 Central Services Bldg., Michigan State University, East Lansing, MI 48824.

E-2831, Protect Your Michigan Home from Wildfire

E-2882, Understanding Wildfire Behavior in Michigan

Michigan DNR

In Cooperation with
Michigan Dept. of Natural Resources
and the USDA Forest Service.

NA

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