

Firewise Plants



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How do we achieve firewise landscapes – pavement and rocks?



Photo: Mike Kuhns, USU

DOONESBURY



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No, but we can do better...



Photo: Mike Kuhns, USU

Overview

- Why firewise landscapes?
 - What makes landscapes firewise?
 - plants with firewise characteristics
 - appropriate placement
 - management, maintenance
 - What are characteristics of firewise plants?
 - Some plant examples
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Terminology

- Firewise
 - less likely to burn
 - or will burn less hot or for less time
 - may imply low maintenance, slow growth
 - Don't use terms fire-safe or fireproof – *all plants will burn under extreme conditions*
 - Fire resistant OK
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Wildland/Urban Interface

- Between core rural and urban areas
 - Popular for housing and recreation
 - Increasing pressure throughout the West
 - Problems with wildlife, water quality, and fire
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Popularity=Problems

- Attractive natural (and introduced) vegetation
- Fire often natural part of landscape
- Access and infrastructure problems
- Minor fires become major concerns



Photo: Mike Kuhns, USU

Solutions

- Community level
 - Development level
 - Individual level
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Community Level

- Planning & zoning*
- Infrastructure requirements
- Demonstration homes, landscapes*
- Ordinances*

*Affect/affected by plants & landscaping

Development Level

- Development location, layout*
- Fuel breaks*
- Water supplies
- Buried utilities
- Street, home signs
- Covenants that help*
- Education, awareness*

*Affect/affected by plants & landscaping

Individual Level

- Building design
- Building placement, access*
- Landscaping, maintenance*
- Water supply*
- Readiness*

*Affect/affected by plants & landscaping

Firewise Landscaping

- Designing, installing, and maintaining landscapes to...
 - minimize fire hazard to structures, residents, and neighbors
 - maintain components of native ecosystems
 - achieve owner's goals
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Firewise Plants and Landscaping Don't Guarantee Fire Safety

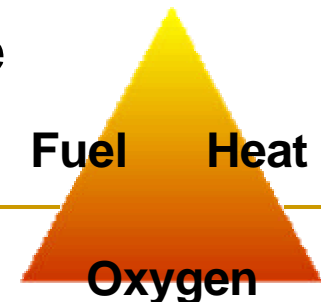
- All plants will burn
 - Firewise plants, good design, and maintenance help establish a defensible space and reduce fire intensity near structure
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Defensible Space

- Use of 3-4 zones, lightly-managed natural veg. to heavily managed landscape near structure
 - Zone 1 -- well-irrigated area near structure at least 30' on all sides; space for fire suppression equipment; plantings should be carefully spaced firewise species.
 - Zone 2 -- firewise plant materials should be used here; only low-growing plants; irrigation needed.
 - Zone 3 -- low-growing plants and well-spaced trees; keep volume of vegetation (fuel) low.
 - Zone 4 -- furthest from structure; natural; thin selectively, remove highly flammable vegetation.
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Important Points About Firewise Plants

- *No plant is fireproof. All will burn in intense fire.*
- Firewise plants have one or more of these traits:
 - Tissues contain more moisture, especially during fire season.
 - Tissues contain low amounts of volatile oils and other readily flammable chemicals.
 - Provide less fuel, by producing less litter or by staying small.
 - Compact or low to the ground; can be used in landscape to interrupt fire pathways.
- Firewise plants generally low to ground, compact, and stay green and healthy with low maintenance and minimal water.
- They interrupt at least one leg of the fire triangle



Important Points About Firewise Plants and Their Management

- Trees provide large amounts of fuel; carefully place and maintain.
 - Broadleaved trees generally less flammable than conifers (pines, firs, spruces, junipers).
 - Most do well in sunny areas typical of some fire-prone sites.
 - Some need minimal or no irrigation; over-irrigation can harm or cause fast growth. Some require irrigation.
 - Some can be weedy in certain circumstances.
 - Consider plant availability and cold-hardiness.
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Firewise Landscaping Isn't Easy

- Need to know plant needs and habits so you can use and manage them appropriately.
 - Good looking firewise landscapes aren't easy to design or maintain; takes considerable expertise.
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Firewise Landscaping Isn't Easy



Photo: Mike Kuhns, USU

- Safe, but natural or attractive?

Firewise Landscaping Isn't Easy



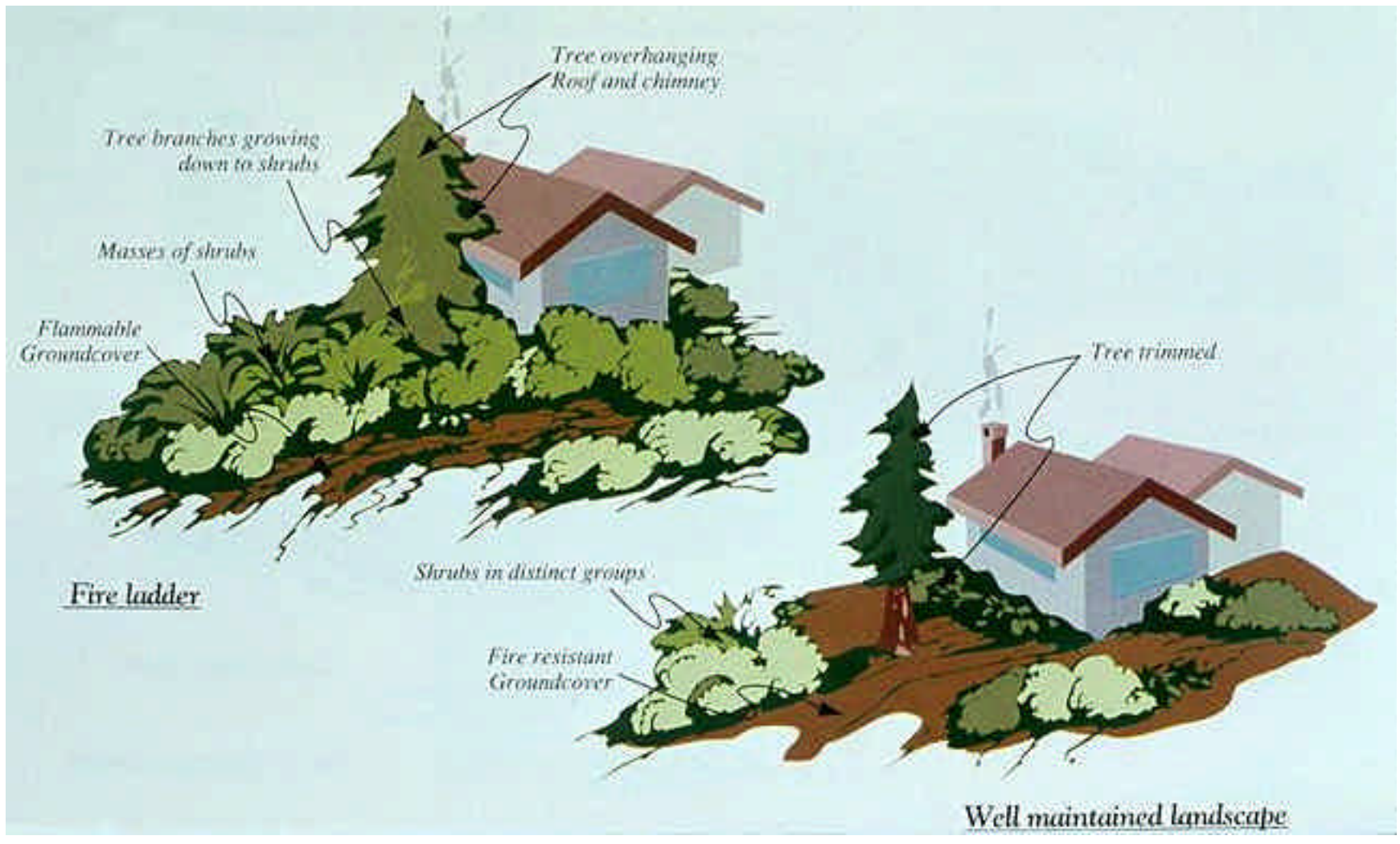
Photo: Mike Kuhns, USU

- Right is safer; left more natural & more attractive to some (note wood roof)

Firewise Plant Maintenance

- Remove dead leaf and stem material within crown.
 - Remove litter on the ground.
 - Prune to thin crowns; prune trees 6' to 10' up.
 - Thin shrub crowns.
 - Remove individuals or groups of plants to break up fuel continuity.
 - Irrigate appropriately.
 - Remove debris from site.
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Firewise Plant Maintenance



Firewise Plants

- Grasses
 - Herbaceous perennials
 - Shrubs, vines
 - Trees
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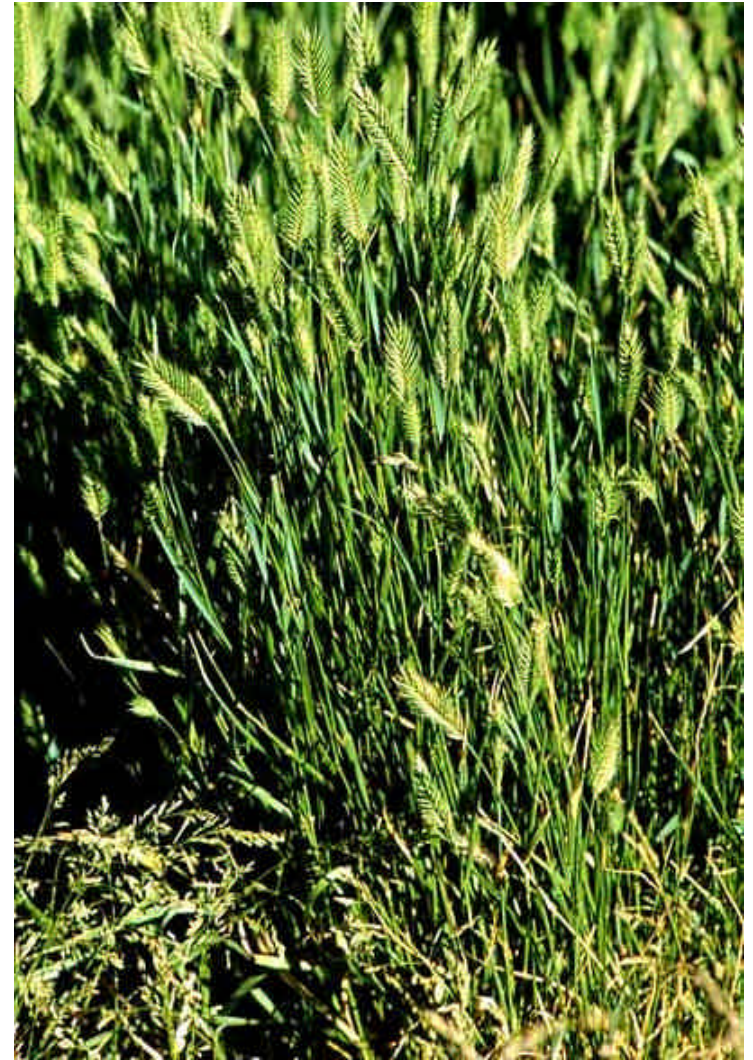
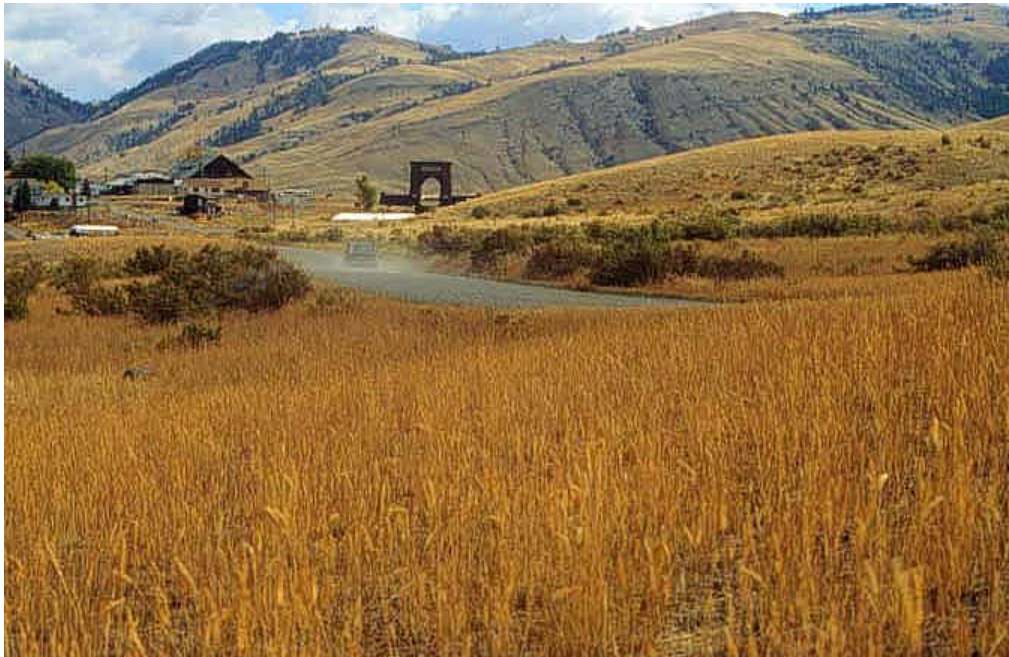
Firewise Plants -- Grasses

- Most low growing
- Some need to be mowed or grazed



Crested Wheatgrass (*Agropyron cristatum*)

- Resists fire spread due to growth form



Photos: Montana State Herbarium, Matt Lavin

Western Wheatgrass (*Agropyron smithii*)

- Low fuel loads;
regrows quickly after
fire



Photo: Wisconsin State Herbarium, Robert Freckmann

Buffalograss (*Buchloe dactyloides*)

- Low growing w/out mowing; green in summer with minimal irrigation



Photos: Paul Johnson, USU

Orchardgrass (*Dactylis glomerata*)

- Mow or graze



Photos: Forage Info. System, Oregon State Univ.

Blue Fescue (*Festuca cinerea* and others)

- Most low growing; may need to mow; moist w/ irrigation



Photos: Mike Kuhns, USU

Rye Grass (*Lolium* species)

- Green w/ less irrigation than some; mow or graze



Photo: www.agronomy.psu.edu/Extension/Turf/TurfExt.html



Photo: Wisconsin State Herbarium, Robert Freckmann

Kentucky Bluegrass (*Poa pratensis*)

- Low growing; mow; moist with irrigation



Photo: Mike Kuhns, USU

Sandberg Bluegrass (*Poa secunda* or *sandbergii*)

- Low growing w/out mowing; low fuel loads



Photo: www.pnl.gov/ecology

Firewise Plants -- Herbaceous Perennials

- Grow back from underground parts every year
 - Not woody
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Yarrow (*Achillea clavennae*, *filipendulina*, etc.)

- Good for dry sites; varying sizes; not all good



Photos: Mike Kuhns, USU

Columbine (*Aquilegia* species, hybrids)

- Likes moisture & some shade



A. caerulea

Photos: Mike Kuhns, USU

Sea Pink, Sea Thrift (*Armeria maritima*)

- Low growing; dry infertile sites only; salt tolerant



Photos: Dept. Horticulture, Oregon State Univ.

Beach Wormwood, Dusty Miller (*Artemisia stelleriana*)

- Very well-drained soil; moist in summer; annual in colder areas



Photo: Mike Kuhns, USU

Bergenia (*Bergenia* species, hybrids)

- Moisture loving; medium sized; semi-evergreen



Photo: Mike Kuhns, USU

Red Valerian, Jupiter's Beard (*Centranthus ruber*)

- Gets fairly large; moist in summer



Photos: Mike Kuhns, USU

Snow-in-summer (*Cerastium tomentosum*)

- Low growing; moist in summer



Photos: Mike Kuhns, USU

Coreopsis (perennial *Coreopsis* species)

- *C. auriculata* var. 'Nana' low growing, needs water; others larger, drought tolerant



Photos: Mike Kuhns, USU

Hardy Ice Plant (*Delosperma nubigenum*; also other hardy species)

- Very drought tolerant; low growing; some not cold hardy



Photo: U. Innsbruck Botanical Garden



Photo: Copyright Markku Savela

Pinks (*Dianthus* species)

- Use perennials; need moisture; moist in summer



Photos: Mike Kuhns, USU

Fleabane (*Erigeron* species, hybrids)

- Moist in summer



Photos: Texas A&M Bioinformatics Working Group, James Reveal, James Manhart

Blanket Flower (*Gaillardia x grandiflora*)

- Drought, heat tolerant; moist in summer; large



Photos: Mike Kuhns, USU

Geranium (*Geranium* species)

- Most low-growing; need shade where hot; moist in summer; use perennials



G. viscosissimum



G. cinereum

Photo: Mike Kuhns, USU

Daylily (*Hemerocallis* species)

- Green and moist in summer



Photos: Mike Kuhns, USU

Coral Bells, Alum Root (*Heuchera sanguinea* and others)

- Several species, many hybrids; low growing foliage



Photos: Mike Kuhns, USU

Evergreen Candytuft (*Iberis sempervirens*)

- Fairly low growing; evergreen



Photos: Mike Kuhns, USU

Iris (*Iris* species, hybrids)

- Green and moist in summer



I. pseudacorus



I. virginica

Photos: Wisconsin State Herbarium, Paul Drobot, Robert Freckmann

Red-hot Poker (*Kniphofia* species, hybrids)

- Large plants; moist in summer



Photos: Mike Kuhns, USU

Lavender (*Lavandula* species)

- Moist in summer;
compact; cut to ground
regularly



L. angustifolia



L. pedunculata

Shasta Daisy (*Leucanthemum x superbum*)

- Green and moist in summer



Photos: Mike Kuhns, USU

Sea Lavender, Statice (*Limonium latifolium*)

- Low growing leaves; salt resistant; dry soils



Photos: David Graper, SDSU

Flax (*Linum* species)

- Good for tough sites & soils



Photo: Wisconsin State Herbarium, Emmet Judziewicz



Photo: Mike Kuhns, USU

Lily-turf (*Liriope spicata*)

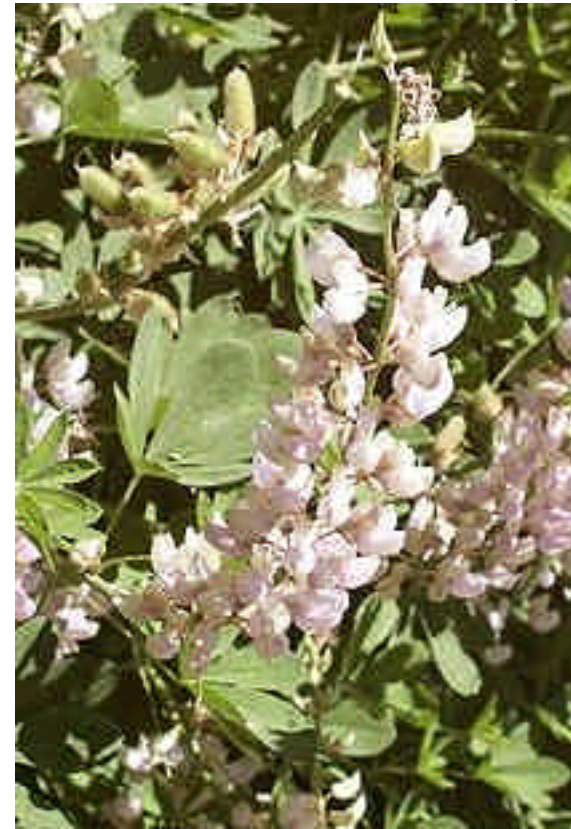
- Fairly low growing; moist or dry sites; evergreen



Photo: www.uky.edu/Ag/Horticulture/gardenflowers

Lupine (*Lupinus* species, hybrids)

- Some are annuals; poisonous to livestock; good for poor soils



Photos: Mike Kuhns, USU

Alfalfa (*Medicago sativus*)

- Green & moist in summer; low growing



Photos: Mike Kuhns, USU

Primrose (*Oenothera* species)

- Fairly low growing; best on poor soils



Photo: Mike Kuhns, USU

Poppy (*Papaver* species)

- Easy to grow; cut back regularly



P. orientale



P. orientale

Photos: Texas A&M Bioinformatics Working Group, Hugh Wilson

Penstemon (*Penstemon* species, hybrids)

- Use on well-drained soils



Photos: Mike Kuhns, USU

Russian Sage, Azure Sage (*Perovskia atriplicifolia*)

- Moist in summer; cut back yearly



Photos: Dept. Horticulture, Oregon State Univ.

Cinquefoil, *Potentilla* (*Potentilla* species, hybrids)

- Use low-growing, non-shrubby species; full-sun



Photo: Wisconsin State Herbarium, Emmet Judziewicz

Salvia, Sage (*Salvia* species, hybrids)

- Some are annuals; use low-growing, small plants; Mediterranean sage is weedy



S. pratensis



S. pratensis

Photos: Wisconsin State Herbarium, Emmet Judziewicz

Stonecrop, Sedum (*Sedum* species)

- Low growing; fleshy, moist leaves; drought tolerant



S. album



S. album

Photos: Mike Kuhns, USU

Hen and Chicks (*Sempervivum tectorum* and other species)

- Very low-growing; succulent; good on droughty, poor soils



S. tectorum

Photo: Mike Kuhns, USU

Lamb's Ear (*Stachys byzantina*)

- Moist in summer; good on poor soils



Photos: Mike Kuhns, USU

Yucca (*Yucca filamentosa*)

- Evergreen; very drought tolerant



Photo: Mike Kuhns, USU

Firewise Plants -- Shrubs, Vines

- Woody; grows out from above-ground stems
 - Many low growing; slow growing
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Bearberry, Kinnikinnick, Manzanita (*Arctostaphylos uva-ursi*)

- V. low, spreading; evergreen; needs little pruning; salt & poor soil tolerant



Photos: Wisconsin State Herbarium, Eric Epstein, Robert Kowal

Saltbush (*Atriplex* species)

- Very drought tolerant;
low maintenance



Photos: Range Plants of Utah Web Page, USU

New Jersey Tea (*Ceanothus americanus*)

- Low, dense; ever-green; fairly trouble-free; drought tolerant



Photos: Wisconsin State Herbarium, Kenneth Sytsma

Ceanothus (*Ceanothus herbaceus* and others)

- Fairly low growing; evergreen; low maintenance



C. herbaceus

Photo: Wisconsin State Herbarium, Stephen Solheim

Rock-rose (*Cistus* species)

- Not all are cold hardy; evergreen; dry sites; size varies



C. x corbariensis



C. x corbariensis

Photos: Dept. Horticulture, Oregon State Univ.

Cotoneaster (*Cotoneaster horizontalis*, *C. dammeri*, and other species)

- Use low-growing, compact forms; some are evergreen; dry sites; low maintenance; tough



C. divaricatus

Photo: Mike Kuhns, USU

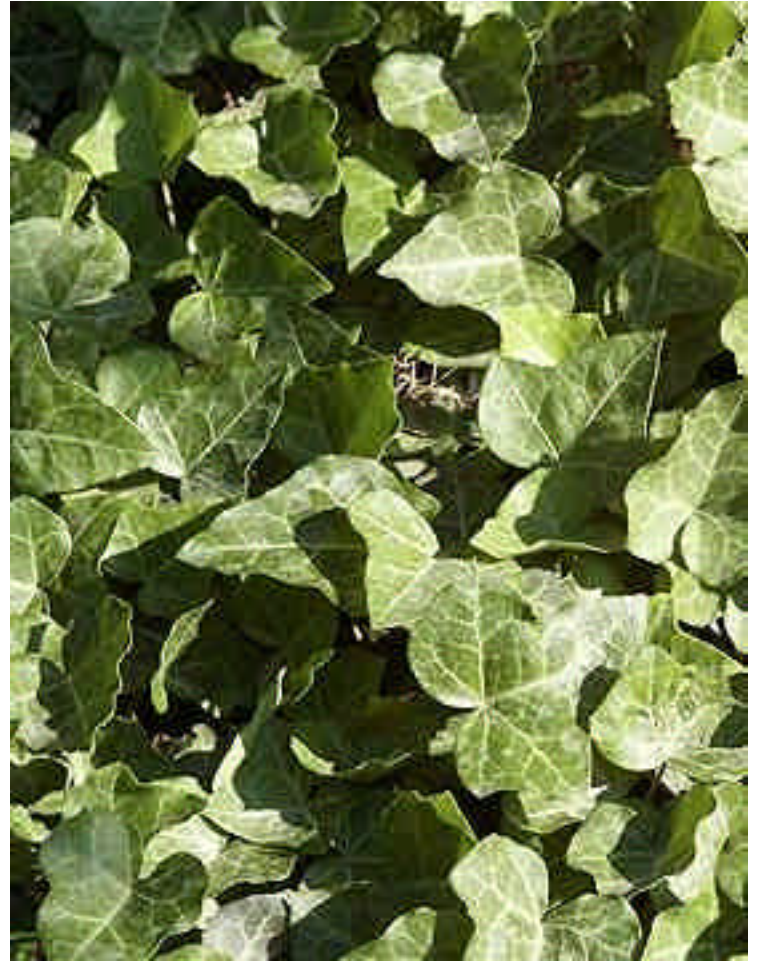


C. horizontalis

Photo: Dept. Horticulture, Oregon State Univ.

English Ivy (*Hedera helix*)

- Evergreen vine; low growing, spreading, climbing; prune to control spread; sun or shade



Photos: Mike Kuhns, USU

Immigrant Forage Kochia (*Kochia prostrata*)

- Shrub that stays green most of year; no volatiles; grows in clumps that break up fuel continuity; don't confuse with weedy annual kochia (*K. scoparia*)



Photo: www.agx.usu.edu



Photo: Steve Dewey, USU

Honeysuckle (*Lonicera* species, hybrids)

- Shrubs or vines; use low-growing species/cvs.



Photos: Wisconsin State Herbarium, Robert Bierman, Michael Clayton

Creeping Oregon-grape (*Mahonia repens*)

- Low growing, spreading shrub; evergreen; needs some shade



Photos: Mike Kuhns, USU

Virginia Creeper (*Parthenocissus quinquefolia*)

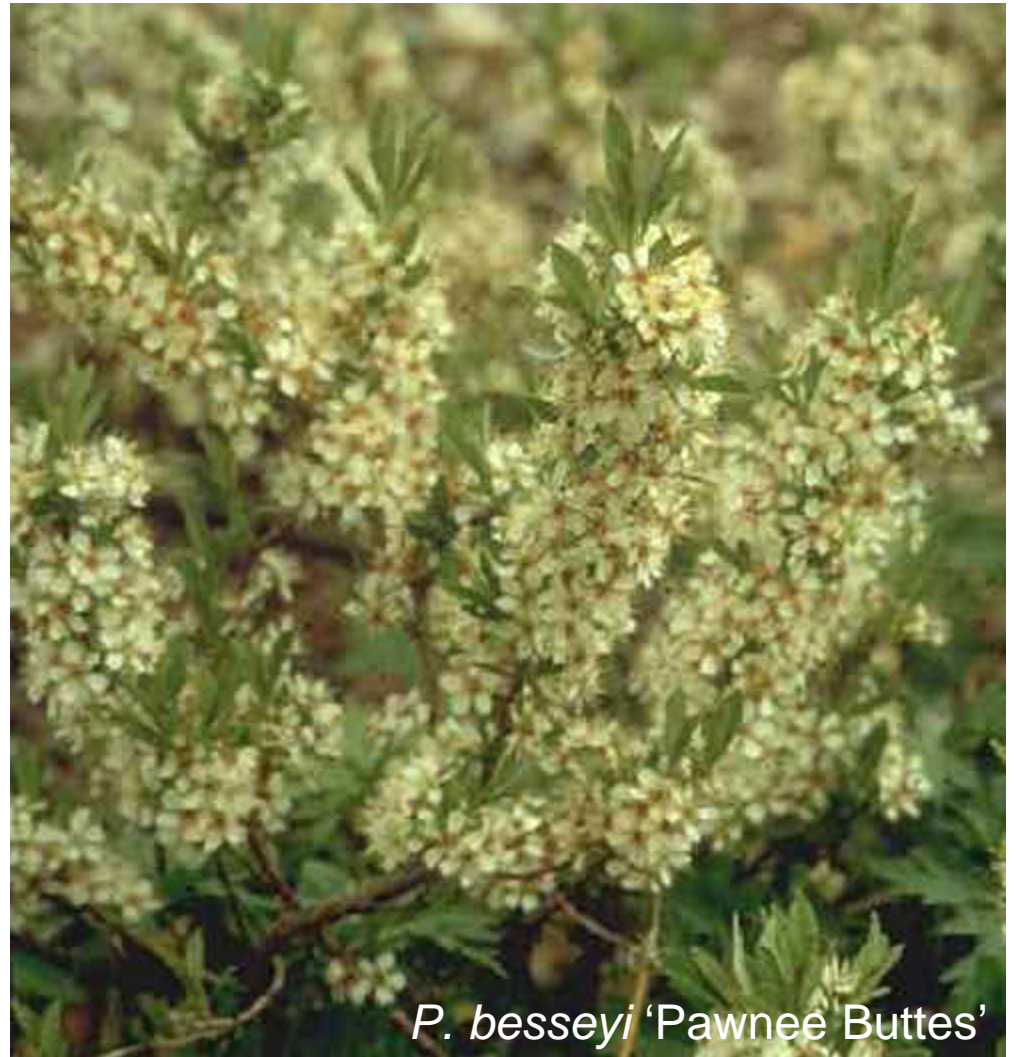
- Vine; tough and very adaptable; prune to control spread



Photos: Mike Kuhns, USU

Sand Cherry (*Prunus besseyi*)

- Small, spreading shrub for dry, tough sites



P. besseyi 'Pawnee Buttes'

Photo: www.ext.colostate.edu/psel

Bitterbrush, Antelope Bitterbrush (*Purshia tridentata*)

- Low maintenance; good for dry, tough sites



Photos: www.cnr.vt.edu/dendro/wwwmain.html; Virginia Tech Dendrology

Firethorn, *Pyracantha* (*Pyracantha* species)

- Evergreen shrub; use low-growing selections; prune regularly



Photos: Dept. Horticulture, Oregon State Univ.

Buckthorn (*Rhamnus* species)

- Tough shrub; low maintenance



Photos: Mike Kuhns, USU

Skunkbush Sumac and other Sumacs (*Rhus trilobata* and other species)

- Skunkbush small, easy to grow, low maintenance; some get large; thin & prune; drought tolerant



Photos: Mike Kuhns, USU

Currant, Gooseberry (*Ribes* species)

- Use low-growing dwarf forms; fairly tough; adaptable



Photos: Mike Kuhns, USU

Shrub Roses (*Rosa rugosa*, *R. woodsii*, and other species)

- Medium shrub; tough; fairly drought and salt tolerant



R. woodsii



R. woodsii

Photos: Mike Kuhns, USU

Russet Buffaloberry (*Shepherdia canadensis*)

- Tolerant of drought & very poor soils; fixes nitrogen; salt tolerant



Photos: Wisconsin State Herbarium, Emmet Judziewicz, Robert Read

Lilac (*Syringa vulgaris*)

- Small to large shrubs; green in summer with irrigation; thin & prune regularly



var. 'Katherine Havenmeyer'

Photo: Mike Kuhns, USU

Large Periwinkle (*Vinca major*)

- Low growing, prostrate ground cover; sun or shade; evergreen



Photos: Texas A&M Bioinformatics Working Group, James Manhart

Dwarf Periwinkle, Common Periwinkle (*Vinca minor*)

- Similar to large periwinkle, but very low to the ground



Photos: UConn Plant Database

Firewise Plants -- Trees

- Many will need supplemental moisture
 - Large woody plants; lots of fuel
 - Use moist, broadleaved trees; not conifers
 - Pruning branches up from ground important
 - Break up large, continuous wooded areas near area to be protected
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Firewise Plants -- Trees

- Maple (*Acer*)
 - Birch (*Betula*)
 - Redbud (*Cercis*)
 - Aspen, Cottonwood, Poplar (*Populus*)
 - Willows (*Salix*)
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Other Firewise Resources

- *Firewise Plants for Utah Landscapes* fact sheet from USU Extension or at www.extension.usu.edu/publica/natrpub2.htm
 - Firewise Web Page at www.firewise.org

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