

FIRESCAPING YOUR GARDEN

Firescaping specifically refers to landscaping in ways that will reduce the probability of fire catching and spreading through the firescaped area (e.g. a garden).

In this pamphlet are some points to consider in your planning.

THE BEST OF BOTH WORLDS

When people choose to build or buy a home in a high-hazard fire area, they should do so knowing that their entire property, including their home, is potentially fuel for a fire. The lifestyle associated with living close to nature is becoming a popular choice worldwide - so much so that the term Wildland/Urban Interface Zone has been coined. Fire is a natural part of many ecosystems, which means that it is not a case of "IF" there is a wildland fire, but "WHEN" there is a wildland fire....! However, it is possible for a home to be situated in a natural, fire-adapted environment and survive a wildfire without damage.



Zane Erasmus

THE FIREWISE APPROACH

FireWise Communities is a concept originally developed in the U.S.A. (www.firewise.org), currently being adapted and implemented in South Africa (www.firewisesa.org.za). The Firewise approach emphasizes community responsibility in designing a safe community as well as effective emergency response, and individual responsibility for safer home construction and design, landscaping, and maintenance.

By making changes in the home ignition zone - the area including and immediately surrounding the home - homeowners can substantially reduce the risk of their home becoming fuel for the inevitable fire. Examples of these changes are making sure there is adequate access to the home and an adequate water supply, and other strategies included in the FireWise approach.

1. Assess the Vulnerability of Your Property

- Are there plantations, thick stands of brush, shrubs and/or of invasive alien vegetation on, or close to your property? These have high fuel loads and greatly increase the intensity of fires.
- Is your property subject to strong, drying winds, such as the berg winds? Strong winds greatly affect the rate of spread of fire.
- Is your property at the top of a slope? Fire naturally moves up a slope, drying everything out ahead of it. Therefore it burns more vigorously higher up a slope than lower down.
- Is your home cut into and set back from the slope or on the slope? Structures that are set back are at less risk than those perched on a steep slope.

2. Create a Survivable Space

Creating "Survivable Space" means modifying your property's layout, fuels and building materials to make it less likely that your home will catch fire during a wildfire. The size of the Survivable Space is often expressed as a distance, extending outwards from the home and all attachments, such as decks and outbuildings. The distance varies, depending upon the type of natural vegetation growing near the home and the steepness of the slope. **The minimum Survivable Space should be at least 10 metres around the home**, in cases where surrounding fuel loads are light (e.g. low grasses) and the topography is flat. However, if the home sits on a 25% slope and is surrounded by woodland or dense brush, you would need to reduce hazardous fuels outwards to at least 60 metres from the structure.

● Communal Survivable Space

If creating an adequate Survivable Space for your home means encroaching into your neighbours' space, then it makes sense to work together and create a joint Survivable Space. Each owner should take responsibility for their own area, but work according to a jointly agreed hazard reduction plan. This is very effective and can be achieved without losing aesthetics or privacy.

● A Community Ignition Zone

A Community Ignition Zone usually includes the entire Wildland Urban Interface Zone and may include both private and public land. The work within the Community Ignition Zone is planned and implemented to create Survivable Space for the entire community, however firescaping and maintaining the Survivable Space around individual properties remains both essential and critical.

	Minimum	Horizontal Clearance
SHRUBS		TREES
From edge of one shrub to the edge of the next		From edge of one tree canopy to the edge of the next
Flat to mild slope (0% to 20% slope) Two times (2x) the height of the shrub (Two shrubs 0.5m high should be spaced 1m apart)	1m	Flat to mild slope (0% to 20% slope) 3 metres
Mild to moderate slope (20% to 40% slope) Four times (4x) the height of the shrub (Two shrubs 0.5m high should be spaced 2m apart)	2m	Mild to moderate slope (20% to 40% slope) 6 metres
Moderate to steep slope (greater than 40% slope) Six times (6x) the height of the shrub (Two shrubs 0.5m high should be spaced 3m apart)	3m	Moderate to steep slope (greater than 40% slope) 9 metres

3. Firescaping Inside the Minimum Survivable Space

The area closest to the home is particularly important in terms of effective Survivable Space. Use a zoning system to firescape your garden within the essential 10 metre zone: plan your garden with a fire-resistant **buffer zone** on the periphery, a **medium-resistance zone** within that, and a **low-resistance zone** extending about 3 metres around the house.

Different plants and bulbs will need to be planted within the three different zones. These plants will also differ depending on the vegetation zone in which you live.

In General, Though, Remember to be Lean, Clean and Green:

- Within the entire area extending at least 10 metres from the home (i.e. all three zones), the vegetation should be kept lean (i.e. small amounts of flammable vegetation) and regularly maintained (i.e. plants that are kept healthy).
- Keep the area clean, don't let dead vegetation or other flammable debris accumulate. Remove dead branches and excessive leaf litter.
- Trees should be de-limbed well above the height of ground vegetation. Group shrubs and trees in small clumps or islands, with plenty of open space between clumps.
- Remove any branches overhanging the roof and any vegetation or flammable material that can act as ladder fuel (e.g. leaf litter accumulating in gutters, fine-leaved shrubs, climbers, etc.).
- Use bedding plants, succulents and bulbs. Avoid plants that are high in oils or resin. Separate islands of vegetation with well-kept green lawn, paving, gravel or other non-flammable materials.

Minimum Vertical Clearance

3X HEIGHT OF SHRUB = MINIMUM VERTICAL CLEARANCE

Example: a 1.5 metre shrub is growing near a tree.
 $3 \times 1.5 = 4.5$ metres of clearance needed between the top of the shrub and the lowest tree branches.



3x height of shrub to lowest branches of tree.

Note: a grouping of vegetation may be treated as a single plant if the foliage of the grouping does not exceed 3 metres in width. For example, three individual shrubs growing in a cluster with a total foliage width of 2.5 metres can be "grouped" and considered as one plant.

4. Reduce Fuel in the Entire Survivable Space

Beyond the essential 10 metre zone, uncleared ground fuels (such as excessive vegetation) can provide an open route for the rapid spread and increased intensity of fire.

- Remove all dead branches and lower limbs of shrubs and trees. Thin out vegetation, so that there is not a continuous fuel bed for the fire to move forwards through.
- Group shrubs and trees in small clumps or islands. Space out the clumps so that the spreads are 1.5 - 3 metres apart in flat areas, and crowns are up to 10 metres apart for big trees on a steep slope.
- Prevent fire moving from the ground into the trees by pruning lower branches and leaving a generous space between the ground vegetation and the tree. Try to anticipate the flame height when calculating the pruning height.
- Avoid or remove tree species that have high levels of resin or oils. Plant trees and shrubs that are fire-resistant or fire-adapted.

5. Clear Invading Aliens On and Near Your Property

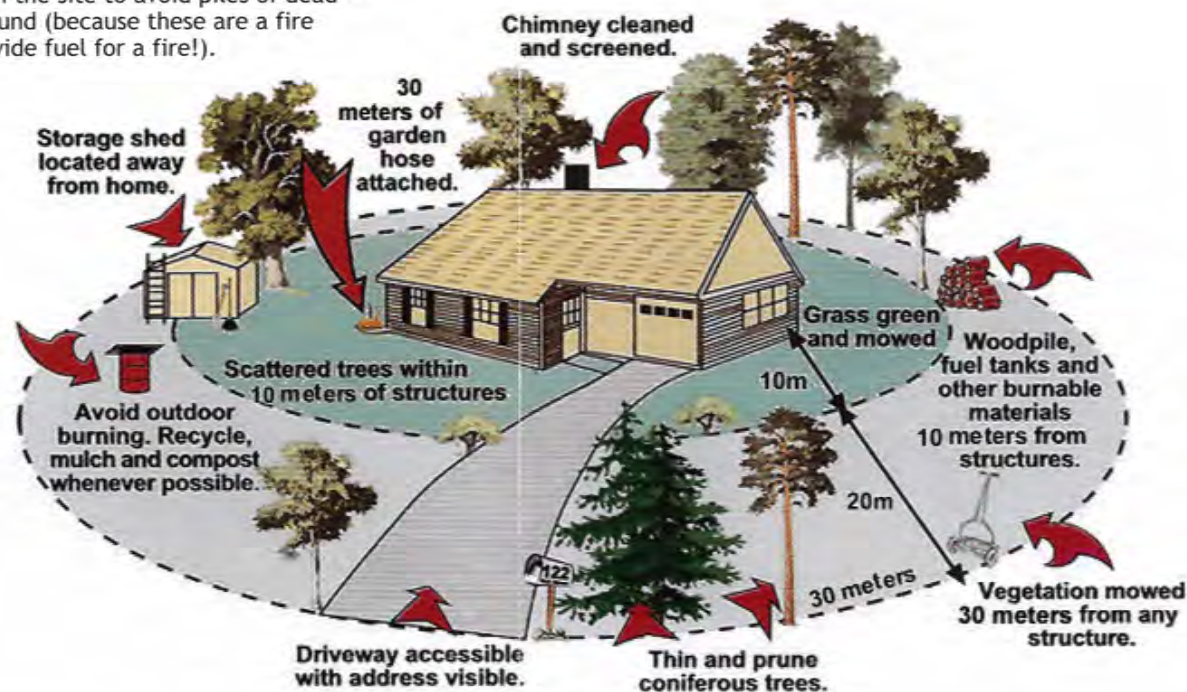
Cut down or herbicide invasive alien trees and shrubs, and remove them from the site to avoid piles of dead material lying around (because these are a fire hazard - they provide fuel for a fire!).

6. Remember: There is No Such Thing as a Fire Resistant Plant

All plants will eventually burn if a fire is hot enough. However, one thing that can be done is to place plants according to how long each kind is able to resist burning. Large fleshy succulents, such as Aloes, that are planted close to homes have been shown to have a fire retardant effect, absorbing radiant heat from an approaching fire.

7. Re-Vegetating a Burnt Area

Fire-adapted landscapes generally recover quickly after a fire, especially if there are bulbs and re-sprouters in the Firescaped mix. Pioneer plants that will grow quickly after fire are *Agapanthus*, *Psoralea pinnata*, *Euryops*, *Athanasia dentata*, *Gazania*, *Felicia*, vygies (*Lampranthus*, *Malephora*, *Drosanthemum*, *Delosperma* and *Carpobrotus*) and *Virgilia oroboides*.



GARDEN IN ZONES

Plant your garden with a fire-resistant buffer zone on the periphery, a medium resistant ring within that and an approximately 3m wide zone of low resistant planting around the house.

See inside for lists of suggested plant species for each zone within fynbos environments (with an addendum for suitable species for the mixed vegetation area of the Garden Route, in the Southern Cape).

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FOR MORE INFORMATION VISIT:

www.firewise.org

www.workingonfire.org

www.firewisesa.org.za

THE BUFFER ZONE

This area should be the furthest away from the house, within the essential 10 metre zone.

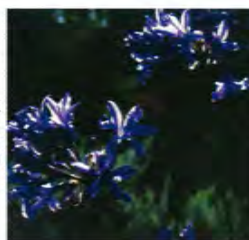
- Plant low-growing **groundcovers** with fleshy leaves that have a high resistance to fire like vygies (*Lampranthus*, *Malephora*, *Drosanthemum*, *Delosperma* and *Carpobrotus*), *Gazania*, *Arctotis*, *Cliffortia ferruginea* and *Aloe brevifolia*. These need to be watered at least once a week to retain their high fire-resistant quality.



Lampranthus aureus

Colin Paterson-Jones

- Suitable **bulbs** could include *Tulbaghia violacea*, *Agapanthus* and *Watsonia*. If a hedge is needed, use plants that re-sprout and do not have large quantities of dead material accumulating in the plant such as happens with proteas. The hedge (or fence) should be 30m from the house.



Agapanthus africanus

Colin Paterson-Jones

- Good **hedge plants** include *Searsia (Rhus) crenata*, *S. glauca* and *S. lucida*, all of which will re-sprout if burnt, as will *Tarchonanthus camphoratus* and *Pterocelastrus tricuspidatus*. *Osteospermum moniliferum* will burn more slowly because of its succulent-like leaves.



Tarchonanthus camphoratus

Colin Paterson-Jones



FIREWISE



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CapeNature

FIRESCAPING IN THE FYNBOS

THE MEDIUM RESISTANCE ZONE

This should be the area between the peripheral buffer zone and the inner band (low-resistance zone) around the house.

- It is possible to plant a fynbos garden here, but remember to space **tall and short shrubs** to prevent a large dense thicket of continuous fuel developing that could support a very hot fire.

- To prevent mud slides after a fire and to ensure a speedy recovery, it is important to plant **sprouters** here. These plants have an underground ligno-tuber or rootstock that re-sprouts if burnt to the ground and could include *Leucadendron salignum*, *Chondropetalum tectorum*, *Erica* spp., *Maytenus oleoides*, *Brachylaena discolor*, *Salvia* spp., *Pelargonium cucullatum*, *Protea cynaroides*, *Felicia echinata*, *Olea europaea* subsp. *africana* (Wild olive), *Kiggelaria africana* (Wild peach), and *Searsia lucida*.



Protea cynaroides

Andrew Brown

- Some plants also have **corky bark** that will protect them if a fire is mild. These will start budding soon after a fire. They include *Leucospermum conocarpodendron*, *Protea nitida* (Waboom), *Mimetes cucullatus* and *Aloe plicatilis*.



Mimetes cucullatus

Colin Paterson-Jones

- Forest trees** have a natural resistance to fire and do not burn easily, including *Rapanea melanophloeos* (Cape Beach), *Brabejum stellatifolium*, *Canonia capensis* (Rooiels), *Ilex mitis*, *Maurocena frangularia*, *Halleria lucida* (Tree Fuchsia) and *Canthium mundianum*.



Watsonia aurea

Colin Paterson-Jones

- Bulbs** also will re-sprout quickly after a fire and prevent mudslides by ensuring that the soil is held together. These would include *Agapanthus*, *Watsonia*, *Haemanthus coccineus*, *Cyrtanthus ventricosus* and *Kniphofia*.

- If you intersperse some **re-seeding plant species** amongst the mix of fynbos plants, they will ensure that the 'moon landscape' left after a fire will soon come to life. These include the many different species of *Protea*, *Erica*, *Ursinia*, *Leucadendron*, *Phylica*, *Helichrysum*, *Metalasia*, *Roella*, *Selago*, *Agathosma* as well as *Pelargonium cordifolium* and *Felicia aethiopica*.

THE LOW RESISTANCE ZONE AROUND THE HOUSE

This is the area closest to the house.

- This area must be kept free of large shrubs. It should contain low-growing plants and groundcovers, interspersed with gravel or lawn.

- Groundcovers** for sunny areas include *Cliffortia ferruginea*, *Otholobium decumbens*, *Dymondia margaretae*, *Gazania* spp., *Helichrysum argyrophyllum*, *Hermannia saccifera*, *Cotula lineariloba*, *Agathosma ovata* (Kluitjies kraal) and vygies. For shady areas, grow *Plectranthus verticillatus*, *P. neochilus* (which can also grow in the sun), and *P. ciliatus* (Drege).



Carpobrotus acinaciformis

Colin Paterson-Jones

- shrubs** can be planted alone with groundcovers round them. These could include *Agathosma serpyllacea*, *Phylica ericoides*, *Felicia* spp., *Carissa macrocarpa*, *Cotyledon orbiculata*, *Scabiosa* spp. and *Athanasia dentata*.



Drosanthemum speciosum

Colin Paterson-Jones

- No climbers or trellises should be attached to the walls of the house in a high-risk fire area as these act as 'ladders' for the fire.



Carissa bispinosa

Lorena Pasquini

IF YOU LIVE IN THE GARDEN ROUTE AREA

Indigenous species that can be planted to create a fire-proof thicket/forest hedge include:

- Shrubs:** *Aloe arborescens* (Krantz Aloe), *Azima tetraacantha* (Needle Bush), *Carissa bispinosa* (Num-Num), *Osteospermum moniliferum* (Bietou), *Buddleja salviifolia* (Sagewood), *Cassine tetragona* (Climbing Saffron), *Diospyros dichrophylla* (Common Star-apple), *Euclea racemosa* (Sea Guarri), *Gymnosporia buxifolia* (Common Spike-thorn), *Grewia occidentalis* (Cross-berry), *Searsia (Rhus) crenata* (Dune Crowberry), *Searsia (Rhus) lucida* (Glossy Currant). (Plant these closely together to create a thick hedge)



Aloe plicatilis

Colin Paterson-Jones

- Trees:** *Ekebergia capensis* (Cape Ash), *Kiggelaria Africana* (Wild Peach), *Buddleja saligna* (False Olive), *Diospyros whyteana* (Bladder-nut), *Nuxia floribunda* (Forest Elder), *Pterocelastrus tricuspidatus* (Candlewood), *Sideroxylon inerme* (White Milkwood Tree), *Tarchonanthus camphoratus* (Wild Camphor Bush), *Pittosporum viridiflorum* (Cheesewood).



Sideroxylon inerme

Bruce Sutherland

- For the **low-resistance zone** around the house, suitable indigenous species include:

- In sunny and dry, well-drained areas plant *Portulacaria afra* (Spekboom), *Aloe arborescens* (Krantz Aloe), *Osyris compressa* (Cape Sumach), *Osteospermum moniliferum* (Bietou), *Roepera (Zygophyllum) spp.* (Twinleaf) and other indigenous plants with thick or fleshy leaves.



Portulacaria afra

Lorena Pasquini

- Groundcovers** for sunny and sandy areas include *Tetragonia decumbens*, *Gazania* spp. (Botterblom), *Dymondia* spp., *Falkia repens* (oortjies).

- Grass species** include *Cynodon dactylon* (Kaapse Kweekgras) and *Stenotaphrum secundatum* (Buffalo Grass).