

Who lights fires?

In southern Africa most fires are lit by people. Fires in Kruger National Park are lit by section rangers and researchers, although some are also started unintentionally by tourists and poachers. A smaller number of fires originate from lightning strikes.

In southern African savannas burning is carried out for many reasons including:

- maintenance of natural habitats in conservation areas
- management of vegetation for pastoral production
- control of invasive and/or encroaching plants
- protection of property (fire-breaks)

What time of year and how often should fires be lit?

There is no one fire type or way of burning that is best for all plants and animals. Some species require frequent fires while others need longer unburnt areas. In Kruger National Park fires are lit throughout the year to produce range of fire intensities and fire sizes. This approach is thought to be the best overall fire management for biodiversity.

Not all fires are destructive

Plants and animals are very resilient to burning. Many plants are able to recover rapidly following fires. Few animals are directly killed by fires - they can often sense fire from a long way away and move out of the area. After a fire animals move back in from the surrounding unburnt area.



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Fire has been a part of the African landscape for thousands of years, and it plays an important role in the structure and functioning of many African ecosystems. Fire is especially widespread and frequent in Africa's savannas where it is widely used today as a land management tool both in conservation and agriculture.

The savannas of Africa burn regularly because of the climate - grasses grow in the summer wet season and then become highly flammable during the dry winter season

Fires are fundamental to South African savannas, and without them we would lose much of our biodiversity.

Burning for Biodiversity

Most insects are highly resilient to fires. Ant diversity in savannas has been shown to increase with frequent burning.



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Because grasses grow from their base, they are able to quickly re-grow after fire. Often the quality of grass improves after burning.



Herbivore species show a range of responses to fires with different species recolonising a burnt area at different times. The first species onto burnt areas are often warthog (*Phacochoerus aethiopicus*) and zebra (*Equus burchelli*). Zebras eat green shoots that are available immediately post-fire with the removal of dead grass.



Birds such as the bronze-winged courser (*Rhinoptilus chalcopterus*) or Temminck's courser (*Cursorius temminckii*) use recently burnt areas for breeding. Their eggs and chicks are well camouflaged on the blackened ground surface.

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Burning for Biodiversity is a research programme that aims to improve ecological understanding and inform conservation managers about fires and savanna biodiversity.

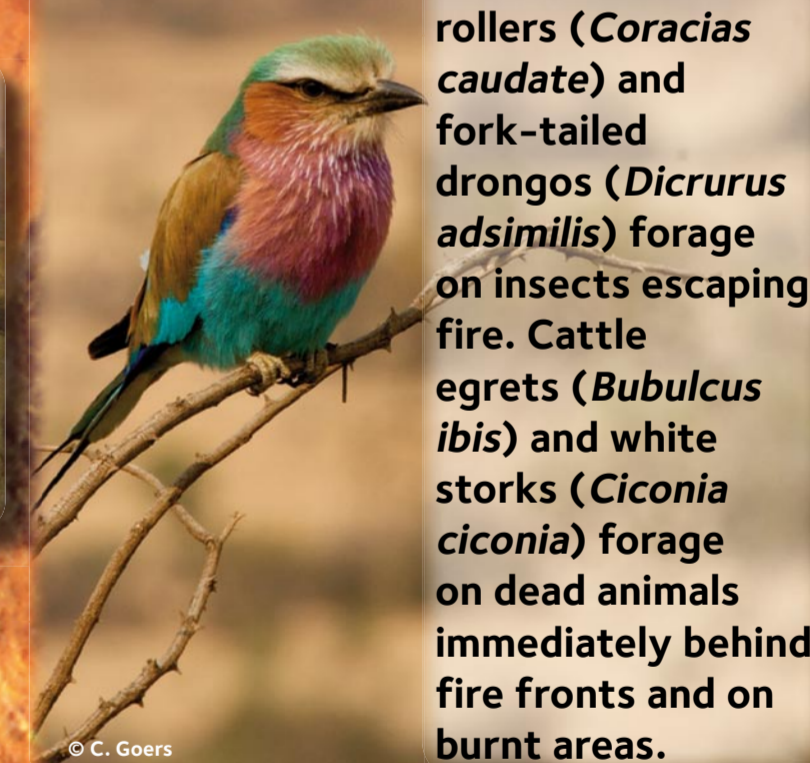


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Many savanna trees are protected from the heat of fires by thick bark.



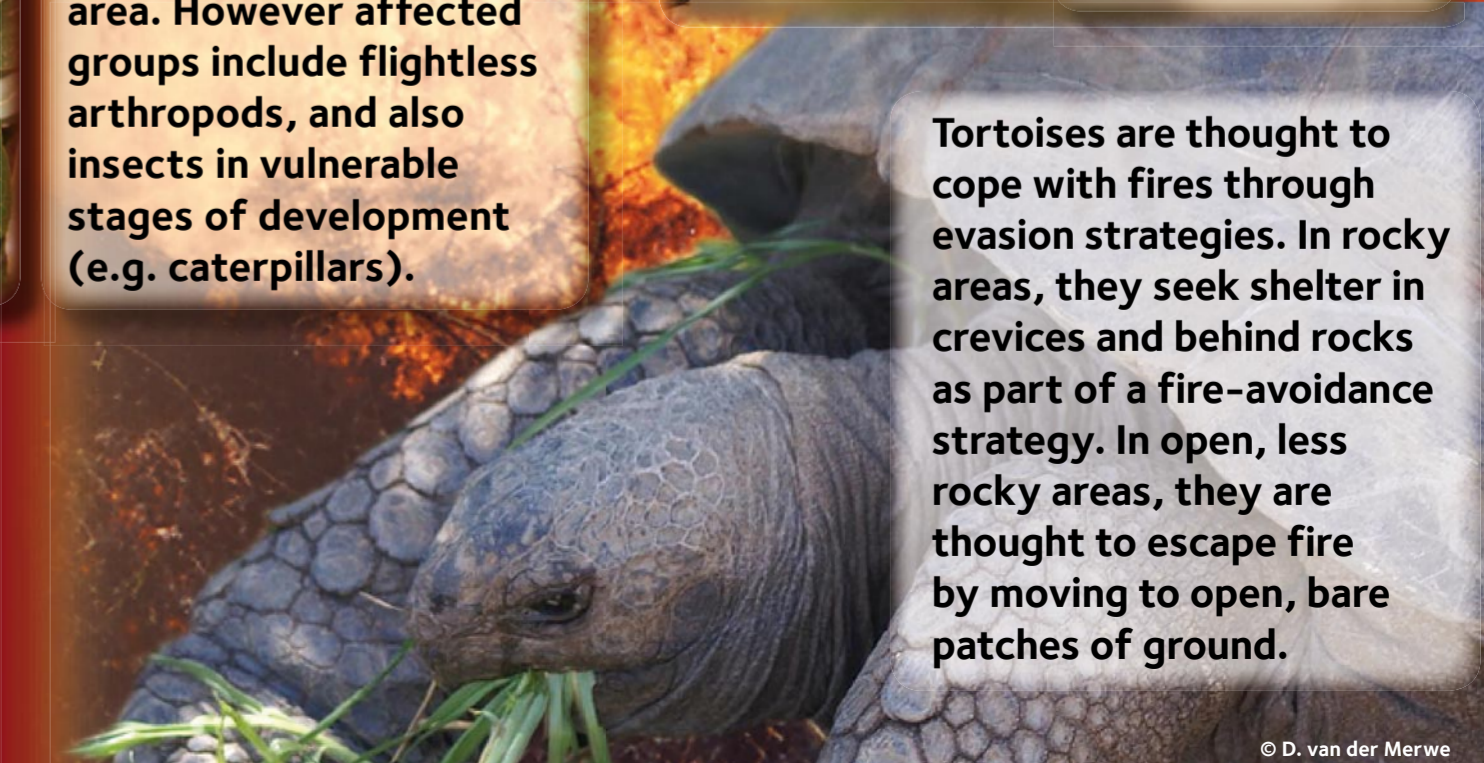
Mortality is generally low because most animals move out of the affected area. However affected groups include flightless arthropods, and also insects in vulnerable stages of development (e.g. caterpillars).



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Lilac-breasted rollers (*Coracias caudate*) and fork-tailed drongos (*Dicrurus adsimilis*) forage on insects escaping fire. Cattle egrets (*Bubulcus ibis*) and white storks (*Ciconia ciconia*) forage on dead animals immediately behind fire fronts and on burnt areas.

Tortoises are thought to cope with fires through evasion strategies. In rocky areas, they seek shelter in crevices and behind rocks as part of a fire-avoidance strategy. In open, less rocky areas, they are thought to escape fire by moving to open, bare patches of ground.



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Often only when leaves have grown back on the trees do browsers such as kudu (*Tragelaphus strepsiceros*) return to burnt areas.

For more information on the Burning for Biodiversity program contact Dr Kate Parr at the Environmental Change Institute, University of Oxford (kate.parr@ouce.ox.ac.uk)



Xana I va mani va hisaka nhova?

E Afrika dzonga mindzilo kumbe ritshwa swi lumekiwa ni ku vangiwa hi vanhu. Eka ntanga wa Kruger, ndzilo wu lumekiwa hi marhenja ni valavisisi, kasi yinwana mindzilo yi vangiwa hi vapfumba vanga ti yimiselanga, hambi ku ri vahloti. Ritshwa rinwana ri nga vangiwa hi tilo ni rihati, kambe a swi tolovelekanga.

E ka tinhova ta Afrika ndzonga ku hisa nhova swi endleriwa swilo swo hambana hambana, ku katsa ni leswi:

- ku pfumelela matshamele ya ntumbuluko eka tindzawu leti hlayisiwaka.
- ku hlayisa nkucetelo wa makulele ya nhova.
- ku hisa ni ku sivela swimilani leswi nga lavekiki swo karhi.
- ku hlayisa nhundzu yo karhi.

Xana ritshwa ri fanele ku hisiwa rini?

Ku hava ritshwa ro karhi leri nga kahle eka swimilani ni swihari. Ku ni swimilani ni swihari swo kari leswi tsakelaka ritshwa minkhari hinkwayo kasi swinwana swi tsakela ndzhawu leytshamaka yi nga hisiwanga nkarhi wo leha. Eka ntanga wa Kruger ritshwa ra hisiwa exikarhi ka lembe hinkwaro, ku hunguta vukari ni vukulu bya ndzilo. Maendlele lawa ya voniwa ya ri yona yo hlayiseka emafambiselweni ya ntumbuluko.

A hi mindzico hinkwayo yi onhaka

Swimilani ni swihari swa swikota ku tiyisela ndzilo. Swimilani swo tala swi kota ku hluka hi ku hatlisa endzaku ka ritshwa. Nhlayo ya swihari leswintsongo yona ya dlayiwa hi ritshwa, kambe swa kota ku tshwa leswaku ritshwa rita kutani swi tsutsumela ekule. Kutani loko ritshwa ri hundzile, swihari swa thlelela endzawini leyi nga tshwa.



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Ndzilo wu vile nchumu wa ntlovelo eka matiko ya Africa malembe layo tala ya nga hundza, na swona ndzilo wu ni ntirho wa nkoka eka swiyenge ni swikongomelo swa mafambisele ni maendlele ya swilo. Ku hangalaka ka ndzilo ku tekiwa tani hi mafambisele/ mahlayisele lamanene ya ntumbuluko ni leka vurimi.

Swihlahla / Nhova ya Afrika yi tala ku tshwa hi xivangelo xa maxele ni makulele ya byanyi hi nguva ya ximumu, lebyi tshwaka hi ku olova hi tinguva leto kala mpfula ta vuxika.

Mindzilo yi tolovelekile eka tinhova ta Afrika, na swona loko ho yi pfumala, nkoka wa ntumbuluko wu ta nyamalala.

Ku hisa nhova hi ndlela yo hlayisa ntumbuluko

Swinyenyana swinwana swi tirhisa ndzawu leyi hisiweke ku tswalela eka yona hikuva matandza ni vana va swona swa tumbeteka hi ntima wa masalelwa ya ndzilo.

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Ku hisa nhova yi ri ndlela yo hlayisa ntumbuluko, i ndlela leyi lavisisiweke leyi xikongomelo ku nga ku antswisa nkoka wa ntumbuluko lowu nga ta pfuna vahlayisi va ntumbuluko ku tiva nkoka lowu.



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Ku fa ka swihari hi ndzilo ku le hansi hikuva swihari swa kota ku papalata ndzilo /ritshwa. Kasi swihari leswi tikumaka swiri ekhombyeni ra ritswa swi katsa tinjiya ni switsotswana leswintsongo, leswi swa ha faneleleka kula.

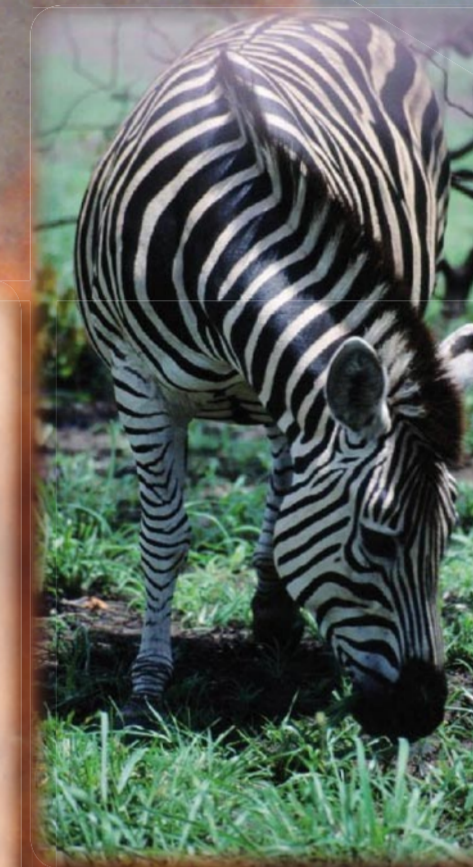
Swihari swo tani hi tihongonyi, swikota ku thlelela laha ku nga tshwi loko matluka ni mabyasi swi hlukile.

Switsotswana swo tala swa kota ku pona eka ritshwa naswona swotala swi kota ku andza hi ku hatlisa loko ritshwa ri hundzile.



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Mabyanyi ya hluka eka switshindzi swa wona, na swona ni ku hatlisa. Endzhaku ka ritshwa mabyanyi ya hluka ya sasekile.



Swihari leswi dyaka byasi swi ni matitwele kumbe maendlele yo hambana endzhaku ka ritshwa. Tinguluve-nhova ni timangwa i swihari leswi tsakelaka ndzhawu leyi hlukaka endzhaku ka ritshwa. Swi dya mabyasi lawa ya hlukaka endzhaku ka ritshwa ematshanweni ya mabyanyi ya khale.

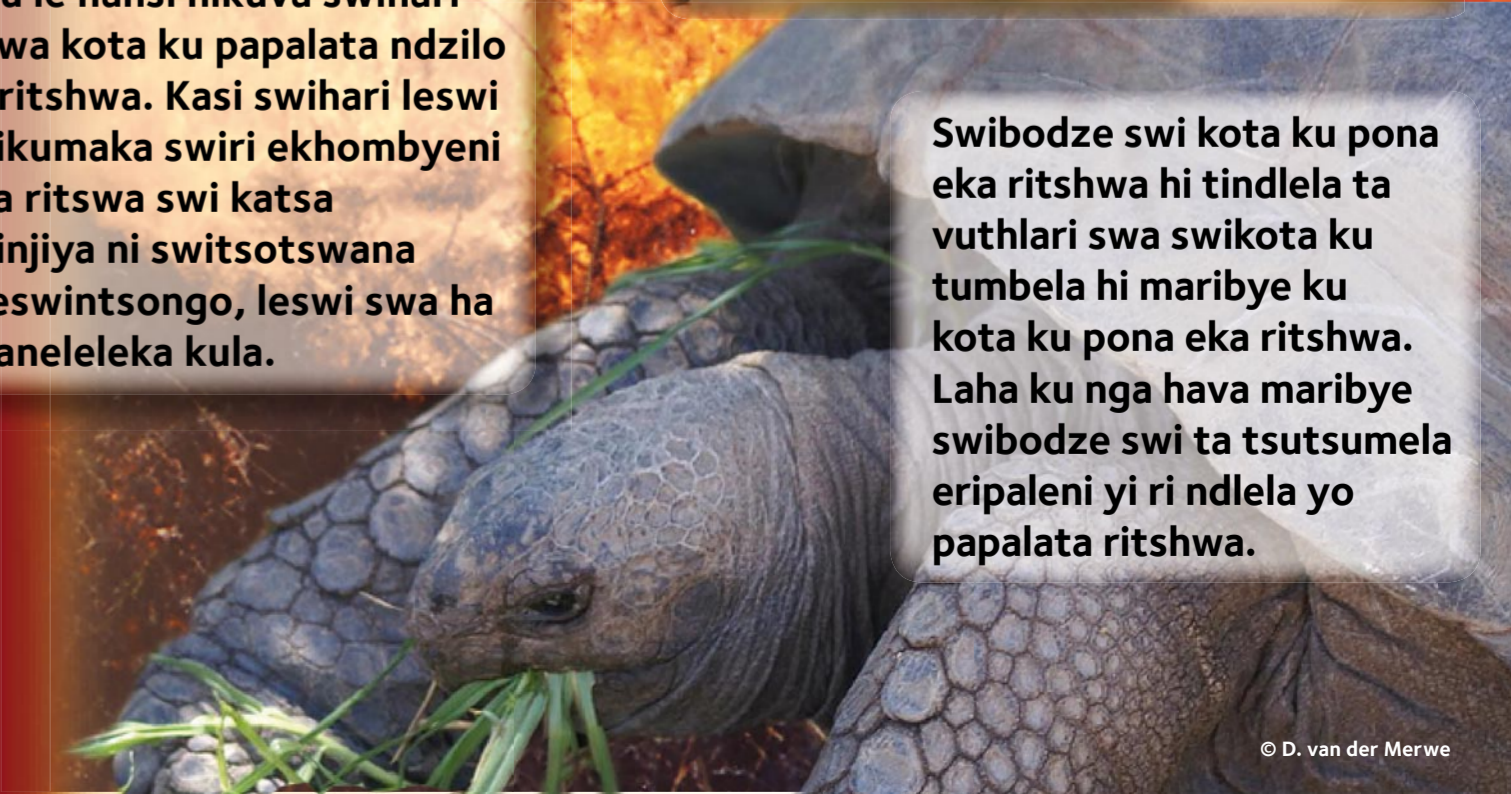
Minsinya yo tala ya swikota ku tisirhelele eka ritswa hi makamba ya matshinye ya yona



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Switsotswana ni madongani swi kota ku poma eka ritshwa hi ku namarhela eka swihari leswi tsutsumaka ritshwa

Swibodze swi kota ku pona eka ritshwa hi tindlela ta vuthlari swa swikota ku tumbela hi maribye ku kota ku pona eka ritshwa. Laha ku nga hava maribye swibodze swi ta tsutsumela eripaleni yi ri ndlela yo papalata ritshwa.



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Ku kuma vuxokoxoko byo enta hi mhaka leyi mi nga tihlanganisa na Kate Parr eka Environmental Change Institute, eka University ya Oxford (kate.parr@ouce.ox.ac.uk)



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