

Karoo Landowner Conservation Guidelines



Karoo conservation is 99% in the hands of private landowners. Healthy ecology carries a huge price tag.
Contact NKF if your management practices are aligned with this booklet.

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□ **Aardvarks & Porcupines** – These diligent diggers recycle nutrients & provide habitat for other species such as the South African Shell Duck and Ant-eating Chat that nest in their burrows. Their diggings trap water and litter making perfect establishment sites for seeds. They are as important as ants & termites for soil maintenance. Aardvarks breed just one young per year. Porcupines mate for life and 60% of the time produce just one young per year. Ensure your employees don't have a taste for their meat.

□ **Alien Vegetation** - Identify what alien plants are on your property (read Problem Plants of South Africa) and decide upon control measures (for example, rest or physical removal).

Old agricultural lands (once the Karoo's most productive pieces of natural vegetation) have many non-indigenous plants with no palatability. Some plants were intentionally introduced while others came with feed, with domestic livestock (dung, hooves, tails), with birds or blew in with the wind.

Some alien plants that are a threat to Karoo grazing and livestock production are cocklebur (*Xanthium* spp), cactus (*Echinopsis*, *Cereus*, *Opuntia*), American Aloe and sisal (*Agave* sppines (*Pinus halipensis*) and mesquite (*Prosopis* sp). Alien trees that are a threat to springs, rivers and ground water resources are poplars (*Populus*), gums (*Eucalyptus* sp), willow (*Salix babylonica*) and pepper tree (*Schinus molle*).

Most tilled land was grassed or wooded/riparian wetlands and need mechanical restoration works followed by planting of legumes, indigenous seeds and trees to restore the water table, repair the gullies/*dongas* and restore productivity.

After 100 years of unsustainable harvesting which included felling for the Kimberly mine shafts, the final onslaught to the Karoo's ancient trees came with the arrival of fencing in the late 1800's. Water-stealing alien tree species such as gum & poplars were then introduced. Indigenous tree removal led to salinization problems. Alien trees proceeded to dry up the fountains.

Contact NKF to find out what indigenous plants can be used in restoration works on your property.

□ **Anthropology, Archaeology & Architecture** – It is unlawful to disturb or remove anthropological evidence older than 60 years. The defacing of archaeological sites & the removal of artifacts may result in fines or jail sentences. Youth should be chaperoned at rock art sites to prevent graffiti and defacing. If you have historic buildings on your property, read the NKF publication Caring & Restoring for Karoo Homes.

□ **Baboons** - Mountainous properties are sometimes home to baboons. In certain areas of the Cape, baboon troops have been extirpated (made locally extinct) by hunting. Baboons do not kill livestock in the Karoo. Although it might be necessary to scare them out of your garden around harvest time, their favorite food is scorpions. Eugene Marais's The Soul of the Ape is a fascinating read.

□ **Blue Cranes** - The Nama Karoo & Grassland Biomes are where most Blue Cranes still occur in their natural habitat. Count & submit numbers to contribute to the scientific monitoring of South Africa's national bird. There were over 120,000 in the 1970's. Today there are less than 21,100 Blue Cranes left in the world. 21,000 of them are found in South Africa.

1. Don't allow locust spraying & other chemicals
2. If you ever see anyone near Blue Cranes (e.g. chasing chicks), try to get a license plate number and call the police.
3. Check for Blue Cranes and other birds below powerlines for collision victims.
4. Do not disturb when they are breeding.

□ **Burning** - Burning results in soil erosion & water runoff. It should be done for biodiversity & restoration purposes only. Natural fires burn only isolated patches of veld that benefits the ecology. Large scale burning usually has the long-term effect of replacement of climax (or premium) grass species with less palatable specie.

Each veld type & situation, coupled with your grazing system, will determine if, when, and how to burn.

The three things to remember are:

1. Scale of burning - big is not good.
2. Veld management afterwards – long rest is needed after a burning event. Follow-up grazing will depend on factors such as rainfall and veld condition.
3. New laws have been implemented by Department of Water Affairs & Forestry. For example, you need your neighbour's permission, you are accountable for fencing damaged by the fire, burning must be done in the right season and you are required to form a Fire Protection Association with your neighbors.

Historical records show that winter burning followed by spring/summer grazing caused much of the degradation in the mountains with the subsequent loss of species like Rooigras (*Themeda triandra*).

□ **Cats** - Feral cats kill rare species of birds & mammals. They also interbreed with African wild cats. They must therefore be eliminated from your property. Be sure you know how to identify the black-footed cat and African wild cat. All cats kept on farms should be spayed or castrated.

□ **Dassies** - Due to the perceived threat of dassies on grazing, many farms have eradicated their resident dassie populations – even selling them for R10 in townships. This leads to problems for predators like Vereaux's (Black) Eagles and blacked-backed jackals that are the natural controls of dassie populations. Dassies are the staple food for many species and their removal forces small predators to find other food sources. This creates more pressure from landowners to interfere with naturally controlled processes. Amazingly, they are becoming one of South Africa's threatened mammals, like their closest relative the elephant. The ideal is to have a stable population of dassies with sufficient predators.

□ **Dips & Doses** - The average livestock farmer is using up to two times the recommended amount of dips and doses. Over dipping & dosing poisons dung beetles, micro-organisms and more. When dung beetles are removed from your veld, you will have a dirty environment dominated by blow flies and parasites – resulting in the need for more dips & doses.

Meanwhile, farmers using natural methods of parasite and disease control (e.g. the use of garlic) are reporting enormous success. Farmers who are conscientious about dips & doses benefit the health of people & the environment.

□ **Dogs** - Farm dogs should not be permitted to hunt or wander. Small dogs (knee height or less) are preferable to larger breeds. The barking of domestic dogs scares away wildlife. Hunting with dogs has already been prohibited in some parts of South Africa. Domestic dogs kill animals that would be food for the smaller predators that then might look towards your livestock for food.

□ **Drinking Troughs & Farm Reservoirs**

- Small, knee-high drinking reservoirs need a step-up (bricks or stone) for tortoises and smaller creatures on both the inside and the outside.
- Large farm reservoirs need exit ramps for animals & birds that fall in while taking a drink or get trapped while bathing. Refer to your copy of Karoo Veld & Ecology for pictures.

□ **Electric Fencing & Tortoises** - Do not use low-strand electric fencing for predator management because it kills tortoises, rabbits, korhaans & even pangolins. Good management of smaller mammals is the sustainable solution. For example, a better way to manage black-backed jackals is to control hunting, gun & dog activity so you will have enough dassies & smaller mammals.

The Karoo's gentle giants (*Stigmochelys pardalis*/mountain tortoise) are dying agonizing slow deaths caused by electric fencing electrocution. Some districts have few large tortoises left!

Tortoises have been around virtually unchanged for circa 200 million years. Right now, 60% of all tortoise species world-wide are listed in the IUCN Red Data Book! Karoo farmers need to protect their tortoises because they are important seed disperser and thus benefit the veld.

If an electric fence kills a young-adult mountain tortoise, one should keep in mind that such a tortoise has struggled to survive the past 10 years, without reproducing at all. In order to maintain the population, this tortoise should have been reproducing for at least the next 10 years to ensure the production of a mature tortoise in the next generation.

□ **Energy Efficiency**

- Switch off geysers; unplug power (e.g. computers & decoders) & electrical devices at the sockets whenever possible.
- Use energy efficient light bulbs.
- Try energy efficient products such as solar geysers & wind generators.
- Utilize trees for winter wind protection & summer shade. Refer to NKAF Karoo Architectural Network booklet to incorporate energy efficiency into design.

□ **Game Fencing** - *Karoo* means vast, dry space. Don't let it become a maze of wire like the surrounds of Addo and Kruger. Game will not jump fences if your veld is in good condition. It is expensive and can decrease the value of your land because:

- Restocking is needed for gene pools such as mountain reedbuck.
- Most game fences don't comply with the new legal fencing standards & therefore won't come with a certificate.
- Game fencing that inhibits the natural movement of endangered species is prohibited. *You don't have to allow game fencing to be placed against your property.* The laws say you will take equal financial responsibility for maintenance.
- Many new property buyers in the Karoo don't want game fencing; they want the open spaces.

□ **Game Management** - The right habitat is necessary before any game is introduced. For regional advice, contact your provincial authorities. Refer to your copy of Karoo Veld & Ecology for Karoo game information. Use gun silencers when possible. Avoid wildlife that is not native to the Karoo.

Know what species are protected (e.g. steenbuck).

□ **Gin Traps** - Newer, kinder models allow you to adjust the weights when set so smaller animals like the Cape fox, Aardwolf and termite-eating bat-eared foxes are not killed. They also prevent permanent foot/leg damage so the larger non-target species can be released and/or relocated. Traps must be monitored & inspected at least 4 times a week but preferably every day. Gin traps have been banned in certain countries & are likely to be banned in South Africa. Certain older, crueller models are already banned. Dispose of old gin traps by hammering them to pieces. Contact NKF if you have a hyaena or leopard you want trapped & relocated.

□ **Grazing Systems** - One way to know the status of your veld is to become familiar with everything in Karoo Veld & Ecology. Every district of the Karoo is overstocked when compared to the recommended carrying capacity. After 200 years of highly selective grazing by only six mammal species, it's no surprise that every piece of the Karoo would benefit from rest.

Predator control methods & best veld management practices will continue to be argued about for many years to come.

- Recognize disturbance and/or improvement.
- Have knowledge about the environmental history.
- Reinvest back into your land.

□ **Livestock** - Generally, veld damage caused by the more common types of livestock increases in the following order: Romney Marsh sheep, Merino sheep, Dorper sheep, small-hoofed cattle, large-hoofed cattle, horses, goats & donkeys.

Remember that veld in poor condition is more easily overgrazed than veld in good condition. It is possible to overgraze and to damage forage plant populations no matter what kind of domestic livestock or game are on the veld. Too many plant-eating animals relative to the available forage will damage the veld – especially if the animals stay in one place for many months.

□ **Locusts** - Locusts, like drought, are a natural part of arid regions. They provide the ultimate free gardening service by pruning and adding organic, Karoo-made fertilizer. Locusts and other hoppers keep your grazing plants insect-free and healthy. The unrivalled feeding frenzy has tourism potential.

Synthetic pyrethroids (the modern chemical used in locust spraying) poison your meat, water & the 90% of unknown life in soil. Springbok, livestock, birds & many other creatures eat locusts, alive or sprayed dead.

Research we read about the safety of poisons is one-sided. There is no longer argument from scientists & ecologists about the persistence of poisons in ecosystems including people, livestock and other animals – they all stay with us in the environment.

The 1990's locust outbreak resulted in +R35 million spent on a poison campaign. The amount of veld and crop damage caused by the outbreak was a mere R3.5 million. Experienced farmers don't allow spraying because they've seen the long-term loss of productivity on sprayed land.

Thanks to the NEMA Act, you are under no legal obligation to allow spraying. Keep your entrance gate locked during locust outbreaks. Permission to spray is not asked but sprayers may not break a lock to enter your property.

□ **Monitoring** - Accurate rain records, fixed-point photography, photography of unusual species, diary recordings (e.g. first/last frost dates, bird counts) & species checklists are important. Old farm diaries are very valuable.

□ **Non-Indigenous Species Introductions** - Alien plants, mammals, reptiles, insects & fish are problematic for the Karoo's ecology. For example, if you introduce bottom feeding carp into your dam, you will no longer have clear water. Tires, hooves, dung & wind can carry seed. Exotic/alien vegetation introduced into gardens can spread such as pampas grass or Spanish reed taking over river courses. Unless it is for consumption, there is no reason to introduce non-native plants into our gardens when the Karoo has thousands of indigenous species.

□ **Otters** - If you have otters, you have clean water and good aquatic life and water fowl – they are an indicator species for healthy functioning fresh water ecology. Otters are under threat of being shot out.

□ **Poisons** - All poisons should be locked away until collected or turned in. Poisoned meat bait is why many species, like the calcium-recycling Cape vultures, became regionally extinct. For every jackal or caracal successfully poisoned, up to 100 non-target species (such as a bat-eared fox who visits the carcass looking for maggots) may be killed. Poisons are as cruel as gin traps. Many poisons, like DDT, have been banned but are still used by those who did not read Silent Spring. Sadly, poisons are the preferred method of predator control for farmers in the Cape. Like power lines, they kill untold numbers of innocent creatures.

□ **Poisonous plants** - Poor veld management practices results in unpalatable and poisonous species dominating the veld. These plants are sometimes to blame for livestock loses. Do not, however, try to eradicate the indigenous unpalatable and poisonous species because you will be making room for a bigger problem. Rather rest & restore.

□ **Powerlines** - Walk under power lines looking for signs of bird collisions. World-wide, up to 150, 000, 000 birds may be dying in powerline collisions every year. If you find Blue Crane, flamingo, heron, stork, bustard, koraan, ducks or geese colliding with your lines, contact your local Eskom service station or the EWT/Eskom Powerline Partnership to report incidents.

If possible, have the following information ready:

- Name & title deed number of the property.
- Installation number (e.g. MID69) & customer ID#.
- Numbers & type of bird(s) colliding.
- Pole readings are helpful but may lead to confusion.
- Digital photographs, GPS coordinate & map grid reference.

□ **Predators** - Managing your small mammals correctly will result in few predator problems. Farmers have unsuccessfully tried to eradicate jackals & caracals for over 250 years. In response, jackals now breed at the age of 1 instead of age 3 & have up to 14 instead of 4 pups.

In America, foxes & lynx are now actively protected by farmers because of their value in controlling smaller mammals. By trying so hard to kill jackals, farmers have made many non-predator species locally extinct (like the termite eating aardwolf) as well as farmer friendly predators like vultures.

□ **Raptors** - Raptors use electricity pylons & transformer boxes to hunt. They are electrocuted when their wings touch two of the conductors or one conductor and one earth-wire. In an area like the Bo Karoo, more than 80% of the pylons are raptor-unfriendly. It's a simple problem for Eskom to rectify, usually by fitting a raptor protector to the central conductor or by cutting a gap in the earth-wire. Eskom is committed to a bird-friendly Karoo.

You can help by:

- Look for signs of owl, eagle or other raptor deaths
- Ensure your drinking troughs & farm reservoirs have exit ramps
- Poison-free predator management will result in the Cape Vulture's return & a healthier, cleaner Karoo. No vulture has ever killed livestock.
- Rat & mice poisons kill owls that eat the easy-to-catch poisoned rodents. Please ask your co-op to carry Racumin.
- Owl boxes, raptor perches/nests & bat homes will help control unwanted rodents and insects.

The Northern Cape Department of Tourism, Environment and Conservation give a certificate to landowners who manage raptors successfully.

□ **Recycling & Refuse -**

- Turn garden & food refuse into compost. Composting is similar to making *potjiekos* – heat, liquid & stirring are important.
- Separate tins, scrap metal, plastic water bottles, light bulbs, batteries, electronic equipment & glass.
- Divert your grey water from baths, showers & washing onto fruit & other trees.
- Collect & burn all plastic bailing twine to save birds

□ **Roads -** The impact from creating a road in the Karoo landscape is permanent. Expensive to make and maintain, roads inevitably lead to erosion. EIA's are needed by law. Avoid building new roads, especially 4x4 tracks on mountains & through vleis. Leave the middelmanneljies in place rather than scraping them off – they help to prevent erosion and hasten veld recovery once roads are abandoned.

□ **Road Kills & Speed -**

- Keep your eyes open for wildlife such as tortoises & snakes.
- **SPEED KILLS.** Keep the speed limit to 60 Km p/hour for main roads on your property. Less on secondary roads. Your wildlife & livestock will become much tamer. Big birds will not have to expend energy by being scared into flight.
- Throwing food such as chewy biltong & apple cores out the window will attract wildlife & lead to road kills.
- Discard road kills far from the road to prevent family members & carrion eaters from also becoming road kills.
- Use smaller road kills such as dassies & guinea fowls by planting an indigenous shrub or tree.
- Avoid driving at night. Certain species are more common at different seasons and/or times of the lunar month.
- If a tortoise is moved from the road, it should be handled carefully (e.g. slow movements, not lifting any longer than required, not overturning the individual). That should avoid the tortoise emptying its bladder, which is particularly important in the dry season. Furthermore, it is important to move the tortoise in the direction it was walking. They are stubborn and will cross the road again if moved to the wrong side of the road. On busy roads, that might be a problem.

□ **Soil Erosion -** Make every effort to prevent & repair soil erosion - the #1 threat to life in the Karoo. This will add the greatest possible value to your land. Overgrazing is the leading cause of soil erosion. Soil erosion poses the greatest threat to our biodiversity & water resources. South Africa is the world's third most biologically diverse country. We have the second highest number of extinct plants in the world & the highest number of plants facing extinction. We are second only to Australia as the leading soil erosion offender. For advice on farm road making, repair and erosion control read Caring for Natural Rangelands by Ken Coetzee.

□ **Tortoise Threats**

- Overgrazing.
- Electric fencing.
- Traffic & speed.
- Drowning (low level drinking troughs without exit ramps).
- Veld burning.
- Farmers who believe they spread disease or compete with livestock.
- Poaching & illegal trade.

□ **Veld Management** – Karoo livestock farmers are plant farmers. Different circumstances apply where livestock are involved or adequate veld recovery time has not corrected overgrazing & erosion. It is best to get expert advice. Read Karoo Veld & Ecology. You have to put in before you can expect to take out - that's how Natural Capital works.

□ **Vleis** – C.J. Rubidge described vleis as the Karoo's great treasures. Like sponges, they store water. Sadly, Karoo wetlands & riverine areas are scarred by erosive gullies (*dongas*) caused by overgrazing, large camp systems, tree removal & burning. Vleis & river courses were also degraded because they were the roads for ox wagons & horse carts that transported people & goods through the Karoo until the arrival of cars.

South Africa has less water than the Mississippi River. It is therefore critical that the Karoo's vleis & fountain areas are restored. It is also critical that overstocking, burning & other management practices that lead to soil erosion are checked.

If you are a new landowner, avoid fencing removal in vleis until adequate veld recovery & restoration measures have taken place.

Today, environmental restoration endeavors are taking place across the region. Different techniques for restoration are used. Expert advice is needed to avoid using outdated restoration methods such as planting alien vegetation or using old tires to stabilize soil.

Other NKF Publications:

Karoo Architectural Network:
Restoring and Caring for Karoo Homes

Springbok Treks in the Karoo by Chris Roche

Happy Days at Zoetvlei by Stella Rubidge

Oral History of the Sneeuberg by C.J. Rubidge

Alien Vegetation Removal in the Bo Karoo



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