



EDEN TO ADDO
CORRIDOR INITIATIVE



TOWARDS THE CONSERVATION
OF THE CRAGS CORRIDOR

HANDBOOK FOR LANDOWNERS

SERIES 1

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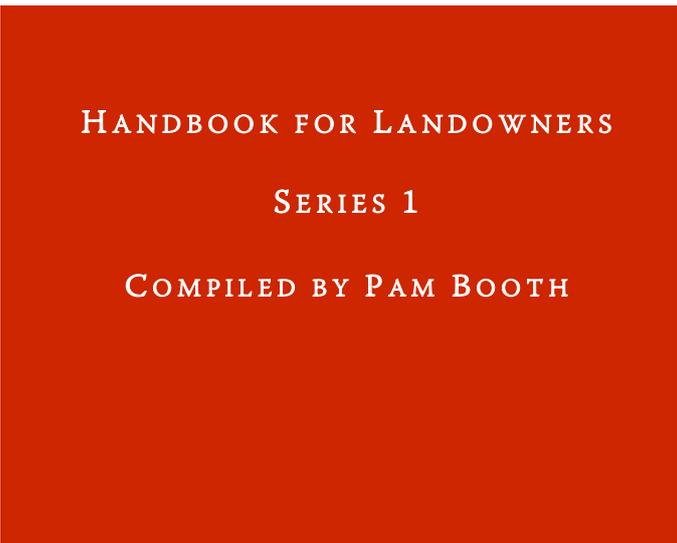


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1. SUMMARY

This document is an introduction to corridor conservation and the role of corridors in the local, regional and global environment. It is aimed at the people who live in the Craggs corridor, providing them with the basic information required to catalyze conservation action.

This handbook is not a prescriptive management plan with scheduled activities but a guideline document that can be the foundation of a more structured management plan should the need arise. It touches on climate change at the local level, the importance of biodiversity and the aesthetic value of the corridor. The boundaries of the corridor are outlined and a brief history including information from previous inhabitants is used to establish context while the conservation value of the corridor is described against a backdrop of potential threats. This is followed by a description of possible management actions that landowners can engage in and the stewardship options available, should they decide to conserve in a more permanent manner.

2. INTRODUCTION

The Eden to Addo Corridor Initiative started in 2006. The initiative was borne out of a dream to connect the Garden of Eden Forest Reserve near Knysna to the Greater Addo Elephant National Park in the Eastern Cape via a continuous natural corridor. This corridor seeks not only to enhance the overall socio-ecological sustainability of the area, but also to re-establish once well-used migratory routes used by larger mammals in the past, such as elephant, African buffalo, and leopard. The scope for such a corridor can not be under-estimated; with large tracts of indigenous forests, fynbos, and plantations already forming a nearly

continuous strip of land between the two defined regions - the dream has reason to become a reality.

Two years since the initiatives' creation two components of the corridor have been designated in the Craggs and Bitou areas of Plettenberg Bay. Both of these corridors are comprised entirely of privately owned land and it is only with the continuous support and enthusiasm of private landowners that the Eden to Addo Corridor can be realized.

THE KEY FUNCTIONS OF THIS HANDBOOK ARE TO:

- *Provide a clear definition of what a corridor is.*
- *Provide an understanding of the importance and value of corridors.*
- *Give proper orientation to the craggs valley corridor.*
- *Outline primary conservation actions.*
- *Provide recommendations for the types of stewardship options available.*
- *Act as a working document for owners to make their personal additions.*
- *Inspire and assist landowners to be the true stewards of their land.*

3. WHAT IS A CONSERVATION CORRIDOR?

A corridor can be defined as a strip of land that links historically connected natural areas. Corridors come in various sizes and shapes, depending on the composition of the land and also on the motivation for the designated corridor. For example, a wildlife corridor may be protected with the aim of ensuring movement of a specific animal across its altered home range; or a habitat corridor may be enhanced to ensure the continuous flow of ecological processes across the landscape. (Bennett, 2003)

The key rationale behind the designation of a natural corridor is the control of habitat loss, habitat fragmentation, and species loss. Since habitat loss and fragmentation are the main contributors to the decline in biodiversity - corridors can counteract this trend by maintaining the link between larger natural areas.

Landscapes rich in biodiversity are more resilient to environmental change, and thereby show greater ecosystem adaptability. (IUCN, 2005)

- *A landscape is like a tapestry. It comprises a diverse number of habitats and land-uses all woven together to form a distinct pattern. Like the threads of the tapestry all aspects of the landscape are connected, binding them inextricably into a beautiful finished product.*

4. WHY ARE CORRIDORS IMPORTANT?

4.1 MAINTENANCE OF BIODIVERSITY AND ECOLOGICAL PROCESSES

- *Biodiversity means the diversity of organisms within an ecosystem. In order for an ecosystem to be strong and resilient to outside pressures and changes it must be diverse – the higher the diversity of organisms the more resilient the ecosystem will be.*
- *Ecological processes are specific natural processes, such as pollination, that are essential for the maintenance of biodiversity.*

THE PRIMARY FUNCTIONS OF A CONSERVATION CORRIDOR ARE TO:

- *Enable migration and interbreeding of plants and animals.*
- *Facilitate movement between ecosystems by both large and small animals.*
- *Maintain key ecological processes (seed dispersal, pollination, nutrient cycling, predator-prey interactions, proper functioning of the hydrological cycle) across different types of habitats.*

- *Maintain habitats that aid movement by animals through a degraded environment.*
- *Serve as a fire escape.*
- *Allow for the re-colonization of indigenous plants in degraded patches.*
- *Enhance the long-term survival of larger herbivore and carnivore species by safe-guarding their home ranges.*
- *Ensure the flow of ecosystem services that contribute to the overall ecological sustainability of an area.*
- *Enhance the biodiversity of the landscape in which the corridor occurs.*

4.2 EDGE EFFECTS

- *Edge effect in a landscape refers to the impacts of a transformed landscape on a natural habitat. The more encroachment on a natural habitat, the greater the edge effect.*

A conservation corridor can help to equalize the negative impacts of agriculture and development on a natural habitat, through the maintenance of biodiversity and ecological processes. For example, in an area where agricultural practices take place adjacent to a nature area there may be fertilizer runoff or infestation of agricultural weeds. In this case a corridor can act as a buffer to the nature area. The extent to which a natural corridor can do this is dependent on the shape and size of the corridor.

When a corridor is narrow or fragmented the edge effect is substantial, as opposed to a continuous and fairly intact corridor that has kept most of its former natural integrity. Similarly, when the shape of the corridor is circular or regular, it is less impacted by edge effect, then a corridor that is of an irregular shape.

4.3 CLIMATE CHANGE

Conservation corridors continue to play a crucial role in offsetting the negative effects of climate change. As global warming is beginning to affect the key ecological processes we depend on for our well-being and survival, corridors are increasingly acting as essential linkages that sustain those processes.

In the Climate Change Strategy and Action Plan for the Western Cape the Department of Environmental Affairs and Development Planning (DEADP) refers to changes in rainfall patterns and temperature as well as increased occurrence of fires that pose a threat to the existence of many species and habitats (DEADP 2007). Prof. Bruce Hewitson of UCT predicts: “an increase in rainfall-intense events, reduced total rainfall in the west and increased orographic (rain that forms when moisture rises up a barrier) rainfall towards the east” (Hewitson, Cape Nature Fact Sheet, 2006). The Climate Change Strategy suggests that a total of 247,639 hectares will need to be protected in the Western Cape in order to mitigate the effects of climate change. Out of this total, more than 240,000 hectares, or 97%, is privately owned (DEADP, 2007). This highlights the importance of local action and confirms that individuals can indeed make a difference. It also echoes a prior study undertaken by the CSIR that emphasizes the importance of privately owned land for the conservation of biodiversity patterns and processes (Scholes 2003).

The above studies highlight the fact that statutory reserves are insufficient when it comes to the protection of critical biodiversity patterns and processes and that private land must be included in the conservation estate to alleviate the effects of climate change. For more information on climate change see, attached to this document, the “Landowners guide to managing climate change: Facts, Threats, and Solutions” by Cape Nature.

4.4 HISTORY AND AESTHETICS

Corridors not only play an important role in the ecological functioning of a landscape, but also help to maintain a community’s aesthetic and historical grounding. A community’s sense of place and intrinsic value for the land also act as key factors in identifying important corridor areas. Housing and infrastructural

developments can quickly alter the land creating changes in both the social and ecological structures of the given area.

The designation of a continuous corridor between the Garden of Eden Forest Reserve in the Western Cape and the Greater Addo Elephant National Park in the Eastern Cape is equally important in sustaining the well-being of the human communities living in and around the area.

5. ORIENTATION TO THE CRAGS CORRIDOR

5.1 LOCATION

The Craggs Valley Corridor lies along the southern slopes of the Outeniqua foothills in the Plettenberg bay area. The corridor's natural boundaries are formed

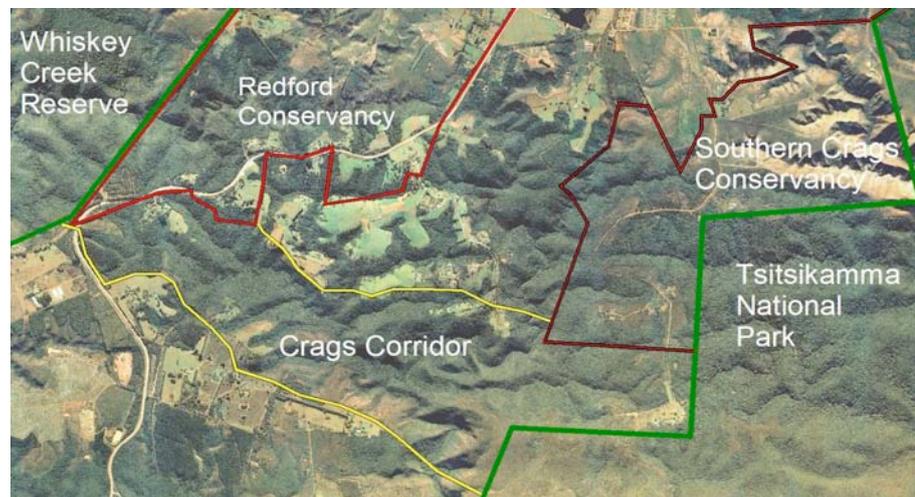
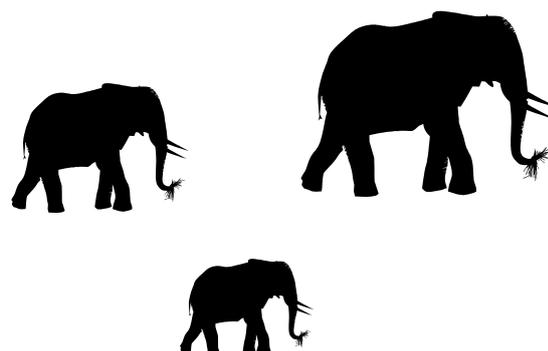


Figure 1. Map showing Craggs Corridor

by the Whiskey Creek Reserve in the west and the Nature's Valley Rest Camp of Tsitsikamma National Park in the east. The corridor comprises a diverse matrix of habitats and land-uses characteristic of land-use in the Cape Floristic Region. Approximately 80% consists of natural indigenous vegetation and 20% agriculture (specific data not available). There are approximately 44 private properties within the corridor site. The entire area of the corridor from east to west is approximately 1,500 hectares.

5.2 HISTORY



A HISTORICAL PERSPECTIVE:

- *People and environments change over time. Over 250 years ago, prior to the arrival of settlers, the area around the Craggs corridor was home to herds of elephants, buffalo, lion and eland, to name but a few, and the indigenous people of the San and Khoikoi. Today, most of the above no longer exist, except for a remnant population of elephant. In just 250 years the area has experienced a complete modification. However, though altered, the ecological backdrop still comprises the same habitat. The plant and tree species that occur today are reminders that we are living in an ancient landscape.*

The Craggs corridor occurs in a historically rich area, which has contributed largely to the molding of the land as we see it today. Prior to the recordings of modern history, the area was sparsely populated by Khoikoi pastoralists and hunter-gatherers. They hunted small game, gathered honey and fruits, and occasionally set fire to the veld and scrub to obtain grazing for their cattle. (DWAF, 1998). Although this Cape region was first noted by well-known explorer Bartholomeu Dias in 1488, it wasn't until the late 1700's that the Plettenberg bay area became settled by European pioneers, mostly of Dutch origin.

In the early 1800's the land across the Keurbooms river was settled for the first time by well-to-do English gentry, the Newdigates. William Newdigate bought 2 farms, which he renamed to Redbourne and Buccleugh, and then bought the land where Forest Hall would later be built. Up until that time, the Keurbooms formed an almost natural boundary as the river was wide and not always easy to cross. William Newdigate constructed a large family home, Forest Hall, which still stands strong today.

During the great fire of 1869, Forest Hall was one of the few houses that was not damaged; yet William Newdigate had "the Great Fire burning almost up to his doors" (Tapson, 1961). In 1881 Mrs. Newdigate inaugurated the pontoon over the Keurbooms river, which made this area more accessible; people no longer had to risk the vagaries of the tides in small boats.

The Newdigate family formed an important historical part of the Craggs Corridor. Among the most well known is Caroline Newdigate, William Newdigate's daughter, who identified a rare orchid, *Disa newdigatae*. This rare orchid has gone "missing" since Caroline's identification of it in the early 1900's. Another rare orchid, *Acrolophia lunata* had not been seen for almost 20 years when it was spotted during an Eden to Addo botanical survey in the Southern Craggs Conservancy. A great lover of nature with a philanthropic twist, it is said that Caroline Newdigate collected the moth, *Leto venus*, that pollinates the keurboom (*Virgilia oriboides*) and sold it to collectors overseas in order to finance the building of Kirbywood church, a beautiful old stone church that is greatly treasured by the Kurland community and still in good use today.



With this historical backdrop, the corridor's designation encompasses a rich legacy which forms an integral bond between its present owners and those who came before them.

Figure 2. *Leto venus*

5.3 CONSERVATION IMPORTANCE OF THE CORRIDOR

– GLOBAL, REGIONAL AND LOCAL

5.3.1 GLOBAL

Cape Floristic Region: The corridor lies within one of the world's prime biodiversity hotspots - the Cape Floristic Region or CFR. The CFR comprises one of the smallest but richest floral kingdoms in the world. A total of 70% of the 9,600 plant species of the CFR are found nowhere else on earth. Astoundingly, almost 80% of the CFR is privately owned which makes the integrity of this hotspot attainable only by working with the stewards of its land. Because of the overall loss of natural habitat to development infrastructure, this area is under considerable threat (WWF-SA, 2000).

C.A.P.E. Programme: The C.A.P.E. (Cape Action For People and the Environment) strategy is an internationally recognized and endorsed 20 year strategy to secure the biodiversity of the CFR. It states: *“By 2020, an effectively managed system of conservation areas, land-uses and ownership that is representative of the Cape Floral Kingdom and marine biodiversity, (will be) implemented by landowners and responsible agencies.”* (WWF-SA, 2000). Eden to Addo received an award from CAPE in 2007 in recognition of our stewardship efforts.

5.3.2. REGIONAL

Connectivity: Within the geographical scope of the Eden to Addo Corridor there are three major conservation initiatives: the Garden Route National Park led by South African National Parks and the Garden Route Initiative; the Baviaanskloof Mega Reserve implemented by the Wilderness Foundation on behalf of Eastern Cape Parks Board and SANParks' Greater Addo Elephant National Park. The above conservation areas hold a common goal or vision: “greater” and “mega”

indicate conservation areas that incorporate an entire landscape; not just a defined portion of it. The above areas contain some of the most biologically rich flora and fauna in the world. The function of the Craggs Corridor within this backdrop is to secure a linkage that will connect coastal corridors to inland corridors, filling in one of the gaps between the Garden Route National Park and the Baviaanskloof Mega Reserve.

Ecosystem Services: The corridor helps to secure ecosystem services which are the benefits people receive from ecosystems. These can be food through crop pollination, water from a functioning hydrological cycle, medicine from plants, recreational opportunities and clean air. These services are affected when there is a loss of genetic diversity and species diversity. Maintaining the quality of ecosystem services is essential to the well-being of the communities that occur in and around the Craggs Corridor, as well as other neighboring ecosystems. (IUCN, 2005)

Aesthetic value: The corridor contributes to the integral beauty of the CFR landscape; thereby providing people with recreational, educational, and inspirational benefits.

5.3.3 LOCAL

Environmental pressures: The Craggs corridor allows for the continuation of the natural vegetation between two protected areas, Tsitsikamma National Park and Whiskey Creek Reserve. This allows for the movement of organisms (fauna and flora) and of genetic material between the protected areas which helps to retain the diversity within the region. This strengthens the local environment against external pressures such as the localized impacts of climate change. As plant and animal species adapt to a changing climate, their ranges are likely to shift. They will require intact corridors to move along and into. Also, the more diverse the habitats, the greater the ecosystem adaptability they will show during adverse environmental changes related to climate change. (IUCN 2005).

Rare species, species protection and monitoring: The corridor has important habitat functions for plant and animal species. It provides safe passage for species

moving or dispersing between larger natural habitats. It also maintains habitats for smaller mammals, reptiles, insects and plants. The protection and sometimes rediscovery of special plant species such as the rare orchid, *Acrolophia lunata*, are an indication of the wealth of diversity in the corridor and the need to protect it. (More on *A. lunata* below).

Stewardship: By maintaining the original beauty as well as ecosystem services of the landscape, the corridor provides landowners with a valued sense of place. This instigates true stewardship amongst landowners, as they are the custodians of the land and key actors in its conservation.

Work incentives: Management of the corridor will create jobs for the local communities. Land/wetland rehabilitation, fire management and clearing of alien species are some aspects of corridor management that require people to work together.

5.4 ECOLOGICAL VALUE OF THE CORRIDOR



Figure 3. Cape orchid, (*Acrolophia Barbata*) Photo William Liltved

The Crags corridor is home to a significant number of species including some very rare plant species and vulnerable animal species. This very rare Cape Orchid, *Acrolophia lunata*, was found in the corridor in 2007. There exist few herbarium records of this particular orchid. It belongs to the genus *Acrolophia* and is endemic to the Cape Floristic Region. The genus has seven species of which *lunata* is among the rarest. Populations of these orchids are generally small comprising only a few plants (pers comm. W. Liltved 2007). They are pollinated by a small bee, *coletes*, which is

attracted by its sweet, fragrant scent. Members of *Acrolophia* are one of the few ground orchids with leaves visible above ground throughout the year. This could be due to massive

storage roots below the ground which continually feed the plant. Unlike most Cape Orchids, *A. lunata* is one of the few that is not dependent on fire for flowering (pers comm. W. Liltved 2007).

Another rare, endemic plant species found in the Craggs is the Outeniqua Pincushion, *Leucospermum glabrum*. It occurs in isolated pockets on the slopes of the Outeniqua and Tsitsikamma mountains. The seeds are stored in ant nests underground. This rare pincushion occurs along the northern boundary of the corridor. We recommend John Manning's "*Field Guide to Fynbos*" for further reading.



Figure 4. Outeniqua Pincushion (*Leucospermum glabrum*) Photo Pam Booth



Figure 5 Bush Buck (*Tragelaphus scriptus*) Photo Pam Booth

Amongst the mammals occurring in the corridor the Honey badger (*Mellivora capensis*), Leopard (*Panthera pardus*), Caracal (*Felis caracal*) and Blue duiker (*Philantomba monticola*) are considered rare and endangered. Other more abundant mammal species found in the corridor's area are Bush pig

(*Potamochoerus porcus*), Bush buck (*Tragelaphus scriptus*), various species of shrew and mole, Porcupine (*Hystrix africaeaustralis*), Egyptian fruit bat (*Rousettus aegyptiacus*), Baboon (*Papio ursinus*), and Vervet monkey (*Cercopithecus pygerrythrus*).



Figure 6 Bush pig (*Potamochoerus porcus*) Photo Mike Kemp



Figure 7 Caracal (*Felis caracal*) photo Mike Kemp

Many of South Africa's reptiles and amphibians are under threat due to land clearing for development and infrastructure and intensive farming practices. The Puff adder, although one of the region's commonly spotted snakes, has been placed on the "vulnerable" red species list. Other snakes found in the corridor include the Cape Cobra, *Naja nivea*, and Boomslang, *dispholidus typus*. Some of the amphibians found in the corridor are the Raucous toad, *Bufo rangeri*, Karoo toad, *Bufo gariensis*, and Cape River frog, *Rana fuscigula*. Various species of lizard and gecko also



Figure 7 Puff adder (*Bitis arietans*)



Figure 8. Spotted gecko (*Pachydactylus maculatus*)

are present in the corridor. For further reading on snakes: "A complete guide to the Snakes of Southern Africa" Johan Marais, or for reptiles: "A guide to the Reptiles of Southern Africa" Graham Alexander and Johan Marais.

The padloper tortoise, *Homopus areolatus* is a common presence in the corridor, while

not so commonly seen, the knysna dwarf chameleon, *Bradypodion damaranum*, can be found in moist, indigenous forest patches.



Figure 10. Dwarf Chameleon (*Bradypodion damaranum*)
Photo Pam Booth



Figure 9 Padloper tortoise (*Homopus areokatus*)
Photo Mike Kemp

There are a diverse number of bird species found within the corridor's area. Many, like this sunbird on the left are ideal pollinators of the fynbos plant species. The Cape Francolin (*Francolinus capensis*) and Rednecked Francolin (*Francolinus afer*) are the most common ground birds found roaming freely in the corridor.



Figure 10. Cape Francolin (*Francolinus afer*) Photo Mike Kemp



Figure 11. Sunbird, (*Nectarinia amethyst*)
Photo Pam Booth

As a working document, we would appreciate any additional information on local fauna and flora. The Eden to Addo Resource Centre at Indalo Conservancy can be home to the database of all photos of animals and plants found within the corridor. We also encourage landowners to start recording bird and mammal sightings and for those interested in butterflies and reptiles there's the Butterfly Atlas and

Reptile Atlas projects. All you need is a camera to take a photo and email to send the photo and your name and the location to the co-ordinators who add the info to their database and get back to you with a positive identification. Websites are: www.butterflies.adu.org.za for the Butterfly atlas project and www.saherps.net for the Reptile Atlas project.

5.5 THREATS

The main threats to the proper ecological functioning of the corridor are:

1. Invasive alien plant species
2. Inappropriate development and, to a lesser extent
3. Inappropriate land-use practices.

Invasive alien plant species such as Blackwood (*Accacia melanoxylon*), Black wattle (*Accacia mearnsii*), Gum (*Eucalyptus sp*), hakea (*Hakea sericea*) and pine are present in most parts of the corridor where fynbos dominates but are constrained by forested areas. A lot of work has been done in the Southern Craggs conservancy where the pine, wattle and blackwood are being brought under control through an effective partnership with CapeNature.

Inappropriate development in the Southern Cape is characterized by exclusive housing developments with attached recreational activities such as golf or polo. Fortunately in the corridor these threats are not currently present but landowners wishing to retain the rural character of the area should remain vigilant when it comes to large scale development proposals. A proposed gravel mine near Royston Farm, Kwela Quarry, is something that should also be monitored. Eden to Addo and many landowners have already stated their concerns regarding the mine and its potential impacts but the activities should be monitored carefully if mining is approved.

Land use practices that are damaging take the form of over grazing or grazing in natural areas and the introduction of inappropriate animal species. In particular the introduction of fallow deer should be monitored and fencing secured to prevent

animals from straying into pristine areas where, in addition to impacting negatively on the vegetation, they compete for grazing with bushbuck.

Finally, illegal hunting, snaring and capturing of animals such as bushpig, bushbuck, baboon and caracal pose a threat not only to the wild animals but also to domestic pets that often get caught in snares and traps. If a snare is found and recognized as such - often they are innocuous looking devices made of thin wire – they should be removed immediately and the landowner notified. Snares and traps are often found on existing game paths leading to or from a river or on fence lines. Landowners should disarm a gin trap by poking a stick into it and take it to the CapeNature offices in Plettenberg Bay or in George with details of where it was found. Gin traps are now illegal and anyone found in possession of one can be fined. Details of the position of the trap or snare should also be given to Eden to Addo: Joan Berning 082 7713744 joan@edentoaddo.co.za or Pam Booth 082 8750342 pam@edentoaddo.co.za in order to determine where snares are regularly placed within the corridors.

6. ACTIONS FOR CORRIDOR CONSERVATION

There are many activities that the individual landowner can undertake to ensure that biodiversity is enhanced and that the patterns and processes that support life within the corridor are encouraged. A lot of these are already being carried out by residents within the corridor who should be complemented on their commitment to conservation. For example, over the last 5 years the Southern Craggs Conservancy has undertaken to clear alien vegetation in partnership with CapeNature and Eden to Addo. As a result, large parts of the conservancy are virtually alien free and the fynbos is thriving. The occurrence of fire, although life-threatening at times, has proved beneficial to the fire-driven system precipitating the return of many fire-dependent plant species.

The conservancy has joined the Craggs Fire Protection Association which constitutes landowners and land occupiers who work together to put in place strategies to address all aspects of fighting and preventing veld and forest fires.

The Craggs FPA includes Laredo to the Redford Road; the N2 area around Fairview; the properties down the Keurbooms gravel road; Askop and properties to the east of Askop towards Monkeyland; the Southern Craggs conservancy; Forest Hall and Kuthumba. Membership is R500 per annum and over and above the access to FPA fire fighting equipment (2 ex SA military Buffels and various bakkie units) the benefits of joining include the expertise of the committee and quick response times that are more likely to mitigate the impact of a veld fire than the efforts of individuals. All of these are examples of pro-active management that serve not only to protect the natural environment but also the personal safety of those living in the area. In order to join the Craggs FPA or to find out more about it contact the Chairperson Fred Oelschig at 044 5348316 or the Treasurer Gerald Lewis.

Contact Paul Gerber at the Department of Forestry in Knysna for information about the Act or about other FPA's in the area: 044 3026900.

Instead of scheduling conservation activities with a timeframe and responsible party, for the purposes of this document we have outlined important activities with suggestions on how they could be implemented. Should the landowner decide to implement these actions as part of a stewardship agreement then a time-bound schedule of activities can be drafted in partnership with the implementing agency or NGO. The following 4 activities are probably the most important for the Craggs corridor which has seen many different land-uses, noticeably agriculture and forestry over the years, yet retains vast tracts of intact fynbos and indigenous forest. Following this, there are a number of stewardship options that facilitate the implementation of these conservation activities through partnerships with the relevant agencies, NGO's and government departments.

6.1 ALIEN CLEARING

Invasive Alien Plant Species are one of the single biggest threats to biodiversity in the region. It is important for the long term health of the corridor to control the spread of weeds in a systematic and consistent manner. Very often the control of weeds is closely linked to a burning regime in order to facilitate follow-up clearing.

ACTION	WHO	HOW	WHEN
Identification, prioritization, control and maintenance of stands of alien invasive plant species.	Individual landowners to take responsibility for their properties or partner with neighbours to clear larger stands. DWAF policy allows for the provision of herbicide to landowners who agree to maintain the areas cleared and submit to inspections.	Priority areas are selected where densities are lower but where virulent species occur. Areas of higher density should be contained. Priority areas are cleared first. Local, trained contractors are available who can provide professional quotes. Landowners to decide which methods best suit their requirements. Some prefer trees to die standing to maintain windbreaks, some prefer no use of herbicide. Methods include: mechanical (chainsaw), labour intensive and non-chemical (hand pulling), frilling (incision made in bark with application of herbicide), ring barking etc.	During the non-growing season when plants respond better to clearing methods and herbicides. When money is available!

Table 1. Actions for Alien Clearing

The legislation pertaining to the removal of alien invasive plant species is the Conservation of Agricultural Resources Act or CARA. See attached to this document a booklet outlining the responsibilities of the landowner with regard to the law plus a Working for Water guide to clearing invasive alien plants. Landowners within the Southern Crags Conservancy can refer to the alien vegetation clearing plan drafted by Eden to Addo.

6.2 FIRE MANAGEMENT

Firebreaks and controlled burns are required to create a fire mosaic or patches of differently aged veld. This allows for the correct frequency and intensity of fires so

that fires do not occur too often, leading to the prevalence of pioneer species or weeds. If fires are not frequent enough the result is old, moribund veld.

THERE ARE THREE OPTIONS FOR BURNING:

1. **Prescribed burning** as per a fire plan that provides for a mosaic of veld ages and reduction of fuel load.
2. **Compartmental burning** allows the landowner/s to choose large compartments, which may be isolated by pre-emptive burning of smaller compartments and the use of natural and other fire barriers (roads, young veld) thus allowing the peripheral compartments to be ignited under more manageable conditions while core areas can be managed according to natural burning conditions.
3. **Adaptive Interference management** is based on natural ignitions (lightning) and supplemented by intentional burns (CapeNature: Fire Principles and Management).

ACTION	WHO	HOW	WHEN
Fire break clearing, and where necessary controlled burns	All landowners in fire prone areas i.e. surrounded or bordered by fynbos, plantation or alien invasive plants. The decision to burn must be approved by the Fire Protection Association who will issue a permit. The local or district authority must also be notified.	Firebreaks can be burnt or mechanically created. Any planned burn must be well co-ordinated with landowners and authorities. 1 day of burning requires 3 days of follow-up and control. Requirements for a large burn: Trained labour, diesel bakkie, drip torches, travel costs, rations, safety gear, salaries for staff. Requirements for mechanical clearing of fire break: mower or bossie kapper, tractor, diesel, driver costs. If the burn is smaller in extent then landowners can provide the labour. Similarly for mechanical fire breaks – instead of machinery labour intensive methods can be used e.g. hoes, spades etc	Fynbos should burn on average every 12 years or between 9 and 15 years depending upon the veld type. Controlled burns may not take place on a Friday, Saturday or Sunday. No fires are permitted on Orange or Red days and only on Yellow days with permission of the Chief Fire officer.

Table 2. Actions for Fire Management

The legislation pertaining to the control of veld and forest fires is the National Veld and Forest Fires Act 1998. Find attached to this document, an explanation of Integrated Fire Management in the Southern Cape and the Southern Cape Fire Protection Association.

6.3 REHABILITATION AND RESTORATION

Once the large or continuous areas of intact habitat in a corridor are conserved it becomes necessary to look at the disturbed areas and see whether it is possible to restore them so that the core is buffered against the edge effect of other land use practices. In the Craggs disturbed land often comprises tracts of old agricultural or forestry land that, although useful as corridors for movement of mammals, may require active restoration if they are to regain some of their original characteristics. Many techniques exist that encourage the return of original plant and animal species almost all of them beginning with the principle that you conserve what remains and then remove alien invasive plants.

A simple and cost effective way of rehabilitating or re-vegetating disturbed areas with endemic species is to erect bird perches or to leave ring-barked trees standing to provide shade and a perch. The perches act as momentary respite for birds passing from an intact or pristine area, their bellies full of seed, to the next feeding site allowing them to make deposits along the way. In addition, commercially grown plants should be avoided as these harbour alien seeds in the soil and might not always be the appropriate, endemic species you require. Other simple methods of rehabilitation or restoration involve limiting the effects of soil erosion and the maintenance of gravel roads and their verges.

ACTION	WHO	HOW	WHEN
The active rehabilitation or revegetation of transformed or degraded land.	Anyone who has intact vegetation that is bordered by agricultural or transformed land.	Identify priority areas based on potential for further degradation and available resources. Spread flower heads and mulch from surrounding areas (min one flower head with seeds per square meter) (CapeNature). Erect birch perches, collect seedlings from nearby and either bag them for replanting later or plant directly. Use existing material for bird perches, preferably dead wattle, gum or blackwood. Re-vegetate areas that are prone to erosion or in extreme cases consider using swales or gabions. Keep records (photographic and descriptive).	Re-vegetation or the sowing of endemic seeds should take place in the Autumn after a fire (CapeNature).

Table 3. Actions for rehabilitation and restoration

6.4 FENCING: AGRICULTURAL, RESIDENTIAL & GAME PURPOSE

The fencing of agricultural land, residences and game is common practice in the Craggs corridor. From dairy cattle and fallow deer to elephant and exotic monkeys, the corridor and properties immediately adjacent to it, contain many different mammal species. All of these need to be retained within designated areas. Although fences may seem like an obvious obstacle to movement within a corridor, the ability of wild game to move through, around and underneath these obstacles can not be underestimated. However, in an effort to make movement of the naturally occurring species easier the following guidelines are important:

ACTION	WHO	HOW	WHEN
Fencing of residences, game, domestic stock and pets.	Anyone who has a need to keep their domestic stock or pets IN, and other animals (wild or domestic) OUT of a certain area.	Where fences are essential it is best to enclose only the area that has to be contained without fencing the entire cadastral unit. "Conservation fencing" or fencing that is permeable to wild species is designed to retain domestic stock like cows while allowing local game to pass through. With a gap of 300mm between the ground and the first strand, species such as tortoise, bushbuck, blue duiker and bushpig are able to move freely. If a game fence already exists, gates can be inserted into the fence at intervals without losing the tension of the fence. The gates should be min. 400mm X 400mm (Pers comm. Ken Coetzee). Mesh fence is not a very good fencing option as it is practically impermeable and should be avoided entirely. One of the most effective, albeit costly, ways of enclosing domestic animals is an electric fence of 2 or 3 strands.	Any time

Table 4. Actions for Fencing

7. STEWARDSHIP OPTIONS

The term Stewardship refers to the “wise use, management and protection of that which has been entrusted to you” (CapeNature Stewardship Manual). Within the context of conservation, stewardship means wisely using natural resources, protecting important ecosystems, effectively managing alien invasive species and fires, and grazing or harvesting without damaging the veld.

One of the best ways of implementing the conservation actions described above is for landowners to enter jointly into a stewardship agreement with an appropriate conservation agency or organisation. These range from contractual agreements to non-binding, voluntary agreements such as conservancies. More on these options below.

In order to understand the role of the individual landowner as an important stakeholder within the different conservation initiatives and more specifically within the Craggs corridor, we need to understand what choices are available to landowners to manage their land for conservation and how the different organizations can assist them to do so.

7.1 AGENCIES & ORGANIZATIONS INVOLVED IN STEWARDSHIP

The Craggs corridor is anchored by a National Park to the east and a provincial Nature Reserve in the west. These two agencies, **South African National Parks** and **CapeNature**, are key role-players in conservation in the Garden Route.

CapeNature have a clear mandate to work outside of their reserves through their Stewardship programme while SANParks are currently working on a similar strategy through the **Garden Route Initiative**. **Eden to Addo** is the only Non-government organization working on Stewardship in the area. All stewardship options place the landowner at the centre of decision-making regarding their land and are entered into on a voluntary basis.

7.2 STEWARDSHIP OPTIONS

Note that some of these are specifically allowed for by current legislation and involve a binding contract while others (conservancies) were developed as voluntary arrangements by the agency concerned.

TYPE OF AGREEMENT	IMPLICATIONS	BENEFITS to LANDOWNER
<p>CONSERVANCY</p> <p>Provided for by CapeNature's Stewardship Programme</p>	<ul style="list-style-type: none"> • Any natural land, • no specific duration, • existing zoning remains, • access decided by landowner, • no legal status, • voluntary • certificate of recognition. 	<ul style="list-style-type: none"> • Advice on best practice and management; • possible assistance with management plans, • provision of farm maps
<p>PROTECTED ENVIRONMENT</p> <p>Provided for by The Protected Areas Act (no. 57 of 2003)</p>	<ul style="list-style-type: none"> • Suggested vehicle: legal contract between landowner and conservation agency but the Act allows for the landowner to submit application directly to Minister or MEC (Part 6, 35(2)). • Declaration agreement between landowner and Minister or MEC • Relatively pristine land in a large landscape. • Suggested minimum: 30 years • Existing zoning remains • Access to properties decided by landowners • Conditions of agreement are not written into title deed and not binding on successors in title unless landowner wishes to. • Landowner may decide to re-zone to Open Space 3 or Conservation servitude (described below) 	<ul style="list-style-type: none"> • Drafting of management plan in partnership with conservation agency. • Flexibility in restricting landuse activities. • If a legal contract is entered into between the landowner and a conservation agency then benefits will be similar to Biodiversity Management Agreement below. • If landowner submits application directly to Minister or MEC then benefits would have to be negotiated with the relevant agency (CapeNature or SANParks), however this option has not been tested. • Possible tax incentives for minimum 30 year contract: All conservation and maintenance expenses as required by the management plan are deemed deductible donations and can be deducted from taxable income.

<p>BIODIVERSITY MANAGEMENT AGREEMENT</p> <p>Provided for by the Biodiversity Act (no. 10 of 2004)</p>	<ul style="list-style-type: none"> • Suggested vehicle: legal contract between landowner and appropriate agency binding them to a Biodiversity Management Plan • Although the Act allows for landowners to submit a draft Biodiversity Management Plan directly to the Minister as part of the Biodiversity Management Agreement (BMA) , the minister has yet to agree to this. • Relatively pristine land including isolated fragments • Suggested minimum: 10 years • Re-zoning not necessary • Access for landowners must be consistent with legal agreement • Landowner may decide to re-zone property to Open Space 3 or Conservation servitude (described below) 	<ul style="list-style-type: none"> • Drafting of management plan in partnership with conservation agency. • Other benefits are contingent on resources available to the agency but could include alien veg management, fencing, fire and game management. • If landowner submits draft Biodiversity Management Plan directly to Minister then benefits would have to be negotiated with relevant agencies, however this option has not been tested. • Possible tax incentives for minimum 5 year contract: ALL conservation and maintenance expenses incurred in terms of the contractual agreement between the landowner and the agency are treated as expenditure incurred in the production of income and for purposes of trade e.g. rehabilitation, alien veg clearing or burning of fire breaks. Conditions apply.
<p>CONTRACT NATIONAL PARK</p> <p>Provided for by the Protected Areas Act (no. 57 of 2003), and the amendment to this Act (no. 31 of 2004) and implemented by South African National Parks.</p>	<ul style="list-style-type: none"> • Area managed under contractual agreement between the proprietor and SANParks • Critically important sites • Primary landuse is conservation • In perpetuity or not less than 30 years • The management agreement (contract) must have some benefit for nature conservation, and in relation to existing 	<ul style="list-style-type: none"> • Drafting of management plan and substantial advice and support regarding alien vegetation clearing, fire and game management, fencing etc. • Tax incentive: municipal rates exclusion for area under contract provided no commercial or agricultural activities take place. • Possible tax incentives for minimum 30 year contract: All

	<p>National Parks</p> <ul style="list-style-type: none"> • Legal status under Protected Areas Act (Sec. 20), and conservation servitude registered against title deed. 	<p>conservation and maintenance expenses as required by the management plan are deemed deductible donations and can be deducted from taxable income.</p> <ul style="list-style-type: none"> • Possible tax incentive for minimum 99 year contract: Taxpayer may deduct the value of their land from their taxable income according to specific criteria
<p>CONTRACT NATURE RESERVE</p> <p>Provided for by the Protected Areas Act (no. 57 of 2003), and the amendment to this Act (no. 31 of 2004) and implemented by CapeNature's Stewardship Programme</p>	<ul style="list-style-type: none"> • Area managed according to a management plan under contractual agreement between the proprietor and CapeNature • Declaration agreement between the agency, the Minister and the landowner • Critically important sites • Primary landuse is conservation • In perpetuity or not less than 30 years • Rezoned to Open Space 3 • access by landowner, his or her family and permitted friends must be consistent with contract • Agency must notify landowner of intended access • General public not permitted unless agreed upon • Legal status on three levels: 1) Protected Areas Act, 2) Legal contract, 3) Notarial Deed with restrictions. 	<ul style="list-style-type: none"> • Drafting of management plan and substantial advice and support regarding alien vegetation clearing, fire and game management, fencing etc. • Tax incentive: municipal rates exclusion for area under contract provided no commercial or agricultural activities take place. • Possible tax incentives for minimum 30 year contract: All conservation and maintenance expenses as required by the management plan are deemed deductible donations and can be deducted from taxable income. • Possible tax incentive for minimum 99 year contract: Taxpayer may deduct the value of their land from their taxable income according to specific criteria

Table 5. Options for stewardship

The declaration of a Protected Environment is a new approach provided for in the Protected Areas Act that allows an “individual, organization or organ of state” to motivate for an area to be declared a Protected Environment (Protected Areas Act no. 31 of 2004). **Courtesy of funding from the Table Mountain Fund (WWF), Eden to Addo will be piloting this option with landowners who are interested.**

In addition to the above stewardship options, landowners can consider one or more of the following if they wish to retain their land, or a portion thereof, in conservation:

TYPE OF LAND-USE	IMPLICATIONS
Conservation Servitude	Notarial deed executed by landowner setting out terms and conditions of the servitude. Notarial deed gets registered against title deed and can be binding on successive owners (approximate cost R1000). Not limited in duration. Management of the area can be granted to a management authority such as CapeNature.
Open Space three zoning	Contingent on approval from Dept. Agriculture to rezone to another landuse AND on the declaration of a private, contractual, parastatal or public nature reserve. Primary use is for nature reserve.
Resort Zone 1	Contingent on approval from Dept. Agriculture. Subject to environmental acceptability. Used to promote tourism accommodation in pristine circumstances. Can not be sub-divided. Densities of accommodation predetermined according to terrain.
Rural Residential Development	Contingent on approval from Dept. Agriculture. Subject to environmental acceptability. Considered only if meaningful consolidation of farms occurs.
Contractual agreement between Municipality and landowner	This is not a common occurrence but is still an option where the municipality is sufficiently convinced of the biodiversity value of a property that they enter into a contractual agreement with the landowner (in terms of contract law, not any of the existing conservation legislation) to keep the land in pristine condition.

Table 6. Landuse Options

8. CONCLUSION

Conservation corridors enhance the protection of linkages between natural habitats. Many such habitat links occur outside of statutory reserves, and mostly on private land. It is therefore imperative that private land owners and local communities stand at the centre of appropriate management of their land.

The Eden to Addo Corridor Initiative intends for this handbook to be used as a working document. Landowners are invited to add their comments and specific knowledge of flora and fauna to keep the document alive and relevant.

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