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From game camps to landscape conservation: The evolution and development of the Addo Elephant National Park, South Africa

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Abstract

In 1931 an area of 4,517 hectares was declared a national park to protect a remnant herd of 12 elephants, the only remaining elephants in the Eastern Cape. Effective conservation measures not only protected the elephants, but also the only remaining buffalo in the Cape Province. Conflict with neighbouring farmers and collisions with trains limited the population increase for two decades. In 1954 a herd of 20 elephants was eventually confined by the first elephant-proof fence in Africa. Preservation of large mammals inadvertently resulted in the conservation of the endemic, subtropical thicket. As the elephants increased in number, the enclosure had to be enlarged from its original 2,270 hectares. Two state forest reserves were transferred to the national park in 1985 and 2002. A coherent expansion blueprint, completed in 1997, succeeded in attracting funding from government and international sources and increased the size of the national park by 36-fold. Tourist facilities have been considerably increased and two new rest camps and two tented camps have been added. Visitor numbers increased by 145% between 2004 and 2019, while unit nights increased by 65%, which indicates that many tourists are staying in accommodation outside the AENP. The AENP illustrates important shifts which have occurred in conservation in South Africa in nine decades, with less emphasis being placed on the protection of large mammals and greater emphasis being placed on the conservation of landscapes.

Keywords: Eastern Cape, African elephant, national park expansion, ecotourism development

Introduction

National parks in Africa are an integral component of tourism in Africa. Increasingly, the media seems to be dominated by “doom-and-gloom” accounts of poaching, habitat destruction and climate change and an impending environmental calamity. The Addo Elephant National Park (AENP) appears to be a rare exception. A spatially-restricted preserve set aside for a relic herd of elephants in 1931, has been enlarged to include five biomes and a marine protected area. Apart from the expansion of the land area of the national park, tourist facilities have kept pace and AENP is one of SANParks’ best performing national parks in terms of visitor numbers, unit occupancy rates and activities sold per 100 overnight visitors (SANParks, 2007a, 17).

The paper makes extensive use of the literature in an attempt to understand why the AENP seems to have succeeded in capturing both the interest of the public and has also attracted funding from government and donors. Maps of the original park boundary were analysed, as well as maps from 1960 and 1980, and changes in the spatial extent of the park since 1931 were documented Tourism data from SANParks and for the concession lodges was analysed for the past 15 years to ascertain whether AENP is performing better than a flagship park, such as the Kruger National Park.

Asset stripping in the Cape Colony

In the middle of the 17th century, the Dutch founders of the refreshment station, in what was to develop into the city of Cape Town, encountered an abundance of large fauna (Richards, 2003). Elephants, black rhinos, hippos and other wildlife species were found throughout South Africa and three rivers and more than 40 places were named after elephants (Brett, 2010: 26). In 1654, the Dutch settlers reported that elephants were found within the vicinity of Cape Town (Pringle, 1982: 18).

Hunting was an important economic activity amongst the settlers and was used to clear land for livestock and crops, to derive an income and to avoid using livestock as a source of meat (Beinart, 2003, 31) (Figure 1). On the ever-expanding edge of the Cape Colony, families of migratory *trekboers* (migratory farmers) made a living from livestock farming and hunting, and supplied the colony with a reliable source of meat. Young men with limited financial means could make a living by banding together and hunting eland, hippos and elephants (Richards, 2003: 291). Hunting subsidised settlers in regions where agriculture was still in its infancy, and where fertile land was scarce. Wildlife resources were vitally important and abundant on the frontier and this ensured a reliable supply of salted, air-dried biltong, which reduced the need for supply lines and large capital inputs for any expedition into the interior (Pringle, 1982, 36; Beinart and Coates, 1995: 24).

In 1778, the *trekboers* had migrated as far east as the Zuurveld, to the east of Algoa Bay (MacKenzie, 1988, 87; Richards, 2003, 292). By the end of the Dutch administration of the Cape Colony at the end of the 18th century, elephants, rhinos, hippos, and other large mammal species had long since disappeared from the more settled regions of the Cape Colony (Richards, 2003: 305). Beinart and Coates (1995, 21) have shown that ivory was a lucrative export from South Africa. In the early years of the British administration of the Cape Colony, there was a rapid growth in the export of ivory. In 1815, ivory exports were worth £59, but by 1825, exports totalled £16,586 (MacKenzie, 1988: 91). The arrival of the 1820 settlers in Algoa Bay hastened the destruction of wildlife in the Eastern Cape. The last lion in the Albany district was shot in 1849, and the last black rhino was shot in 1853 at Grassridge (Hall-Martin & Penzhorn, 1977: 147). With the arrival of the 1820 Settlers in the Eastern Cape, there was a rapid increase in the export of animal products from the Albany district. The market in Grahamstown (Makana) was the scene of a flourishing trade in wildlife products (Pringle, 1982: 36, 37). In 1831 exports of ivory, hides and horns from the Albany district amounted to £38,738 (MacKenzie, 1988: 91).

In 1846, the government of the Cape Colony took the first steps to protect the elephants in the Knysna Forest (Grove, 1995: 465). A new law passed in 1886 offered special protection to many wildlife species, but allowed farmers to shoot elephants on their land. However, the provision was unnecessary, as elephants had already been eradicated from the entire Cape Colony, with the exception of the Knysna Forest and the Addo region (van Sittert, 2005: 280). The exploitation of wildlife resources was unsustainable and led to the eventual collapse of the ivory market. In 1875, ivory exports were worth £60,000, but a decade later had declined to slightly more than £2,000 (MacKenzie, 1988: 114). MacKenzie (1988) likens the unsustainable exploitation of wildlife resources to asset stripping and states, “hunters were hacking away at the game resource as at a coal face. They no longer hunted to survive, but to supply the demands of the trade in skins, ivory and feathers” (MacKenzie, 1988: 100, 101).

The Addo subtropical thicket

The Scottish writer, Thomas Pringle, who is considered to be the father of South African English poetry, visited the Addo region in 1821 and described it as, “these rugged ravines and

that far-stretching forest were still the haunt of elephants and buffaloes, protected from extirpation by the enormous extent of jungle, which, consisting chiefly of evergreens and

Figure 1: Unsustainable hunting in the 19th century reduced the majority of wildlife species to relic populations. The horns displayed on the waggon are from kudu, waterbuck, impala and other antelope. Source: Zuurberg Inn collection.

Figure 2: A photograph of a cutting in the Zuurberg Pass, which was completed in 1858, from the late 19th

century. The cutting is still in use, and since 1985 a large portion of the mountain range had been incorporated in the Addo Elephant National Park. Source: Zuurberg Inn collection.

succulent plants, such as milkwood, spekboom, and euphorbias" (Penzhorn, Robbertse and Olivier, 1974: 138). The dense, subtropical thicket found in the hot, semi-arid Sundays River Valley offered a refuge for wild animals. In 1913, Sir Percy Fitzpatrick, author of "Jock of the Bushveld", proposed the establishment of an irrigation scheme for the valley (SANParks, 2017b: 5). Construction of the Darlington Dam (formerly Lake Mentz) began in 1917, and canals were laid out to irrigate citrus orchards. The Eastern Cape currently accounts for 26% of the land devoted to citrus production in South Africa, and the Sundays River Valley accounts for 80% of the land cultivated for citrus production in the province. The Sundays River Valley is therefore one of the most important citrus-growing regions in South Africa (Directorate Marketing, 2017: 6).

In a dry region, conflicts between elephants and citrus farmers over access to water soon became frequent, and farmers petitioned government to eradicate the elephants. In 1919 the Cape Provincial Government hired Major Philip Pretorius, a World War I veteran and a big game hunter, to shoot the elephants (Hoffman, 1993: 24, 25). Pretorius described the dense Addo thicket as, "a hunter's hell. A hundred square miles or so of all that you would think bad in Central Africa, lifted up as by some Titan and planked down in the Cape Province. It was scrub, generally some eighteen feet high, and exceedingly thick. Once in this jungle it was seldom possible to see more than five paces ahead, and the jumble of undergrowth consisted of thorns and spikes of every description. A terrible country" (Pretorius, 1948) (Figure 9).

From June 1919 to August 1920, Major Pretorius shot an estimated 80% of the largest of four extant elephant populations in South Africa at the time (Hoffman, 1993: 29). Hall-Martin (1992: 69) estimated that after the shooting campaign in 1920, no more than 120 elephants survived in South Africa. Stevenson-Hamilton reported that by 1902, there were no elephants in what would later become the Kruger National Park, and several years passed before migrants from Mozambique were again observed (Stevenson-Hamilton, 1926: 221).

Popular conservation mythology suggests that the Addo shooting campaign was halted by an outcry in the press and in Parliament (Stokes, 1941: 372; Grobler & Hall-Martin, 1982: 3; Pringle, 1982: 155). In another popular account the Minister of Lands, Piet Grobler, declared, "no one shall again attempt to exterminate the elephants in the Addo bush. I shall protect them" (Labuschagne, 1968: 140). Despite these claims, Hoffman (1993, 35) found no evidence of letters to the press or articles in newspapers objecting to the eradication of the elephants. Hoffman argues that a small group of influential people, including scientists employed by museums and Major Pretorius himself, were responsible for the eventual preservation of the remaining 16 elephants (1993: 36, 37).

The Addo Elephant National Park of 1931

The Sundays Thicket (AT6), or the spekboom thicket, is a vegetation type that is adapted to withstand high temperatures and a low rainfall of between 190 mm and 480 mm (Mucina and Rutherford, 2006: 556, 557). There is a high number of endemic taxa, and the spekboom *Portulacaria afra* is an important source of browse within the vegetation unit (Figure 10 and 11). Although the thicket is an important vegetation unit, it is quickly degraded under goat farming and cleared areas do not easily regenerate (Mucina & Rutherford, 2006: 556, 557) (Figure 12).

A portion of the dense Addo thicket, situated on the farms Strathmore and Mentone, had been gazetted as a forest reserve in 1890. In 1921 the forest reserve was transferred from the Department of Forestry to the Cape Provincial Administration and set aside as an elephant reserve (Pringle, 1982: 155). However, the remnant herd of elephants was resident on a farm

belonging to Nathaniel Harvey, located 16 kilometres to the south, and when Dr. S.H. Skaife visited the reserve he reported, "we called on the ranger and found that he was farming cattle on the land set aside for the elephants and not one of them had been seen on the reserve for some years" (Pringle, 1982: 157).

In 1924 the Minister of Lands, Deneys Reitz, drafted a national park bill, with the intention of establishing the Kruger National Park. Reitz also planned to establish a reserve for the Addo elephants, but a change in government occurred (Carruthers, 2016: 142; SANParks, 2017b: 6). In the 1924 election, Barry Hertzog of the National Party defeated Jan Smuts of the South African Party by a majority of 10 seats (The Registrar, Adelaide, 19 June 1924). The new Minister of Lands, Piet Grobler, subsequently tabled the national park bill and it was passed by Parliament on 31 May 1926 (Pringle, 1982: 107).

Five years after the passing of the National Parks Act, Act 56 of 1926, Piet Grobler, declared the forest reserve and an adjacent farm, covering an area of only 4,517 hectares, as a national park to protect the Addo elephants (SANParks, 2015: 113). The Kruger National Park, which had been proclaimed by the National Parks Act in 1926, covered an area 430 times larger than the AENP. However, the proclamation of the AENP was entirely compatible with the declaration of two other "species parks" in the Cape Province in the 1930s (Carruthers, 2016: 145). These were national parks established specifically to protect a single large mammal species that was in imminent danger of extinction. In the examples of the bontebok and the Cape mountain zebra, the national parks were even smaller in area at 722 hectares and 1,432 hectares respectively (Pringle, 1982: 166; Brett, 2010: 18, 30). As was the case with the cessation of the Addo shooting campaign, the historic record suggests that influential people exerted pressure on government which eventually led to the creation of these national parks (Stokes, 1941: 378; Pringle, 1982: 164, 166).

The majority of the early national parks and game reserves in South Africa represented a retrospective gaze to the English deer park, which became a feature of the landscape from the 13th century (Mileson, 2009, 53: 61), and were not IUCN Category II (national parks and equivalent reserve) protected areas in accordance with the modern definition (Dudley, 2008: 14). Predators were persecuted by early rangers, but in the case of AENP large predators had already been eradicated many decades before the park was established. The last lion in the region was shot 70 years before the start of Major Pretorius' shooting campaign (SANParks, 2017b: 5). The fledgling AENP therefore had more in common with a Category IV (habitat/species management area) protected area than it had with a national park (Carruthers, 2016: 145; Dudley, 2008: 14).

In the 1930s, no technology existed to confine elephants to such a small area of land, and the Addo elephants had been reduced to only 16 animals by Major Pretorius (Diederichs, 1979: 9). Compared to the vast Kruger National Park, the protection of a remnant elephant population, on a piece of land the size of a single farm, is perhaps difficult to explain. That is apart from the explanation offered by Hoffman (1993), where a handful of influential people objected to the total extermination of the elephants and successfully petitioned government.

For 23 years after the proclamation of the national park, the survival of the Addo elephants remained uncertain. In August 1931 Harold Trollope was transferred from the Kruger National Park and given the unenviable task of driving the elephants into the national park (National Parks Board, c. 1976, 13). Trollope accomplished the difficult task by October 1931 by using fires and gunshots, although he had to shoot an elephant bull which reduced the herd to only 11 animals (National Parks Board, c. 1976: 15-23; Grobler & Hall-Martin, 1982: 4).

As the land set aside was very limited in size, the elephants frequently crossed onto neighbouring farms. In an attempt to keep the elephants within the national park, in 1933 Trollope began to provide oranges, hay, pumpkins and lucerne at feeding sites (Stokes, 1941:

375). However, a number of elephants were shot by farmers, and four were killed by trains between 1940 and 1943 on the adjacent railway line (Stokes, 1941: 378; Pringle, 1982: 209). By 1941 the elephants had increased to 23, but by 1945 had decreased to 17 animals (Stokes, 1941: 372; Pringle, 1982: 209).

The first elephant-proof fence in Africa

As the elephants visited the feeding sites at specific times, it was possible to open the park to the first visitors. In 1934, Trollope experimented with electric fencing, and completed a fence over 4.8 kilometres by 1937. The fence was a failure because the elephants quickly learned that the fence poles were not electrified.

In 1943 Graham Armstrong was appointed warden of AENP and he experimented with a number of devices intended to dissuade the elephants from leaving the park. Tins were filled with stones and strung on the fence, and a more elaborate scheme involved a trip wire which would discharge a gun and ignite a bottle of benzene which would set grass on fire (SANParks, 2017b, 6). Armstrong was a committed and resolute "gardener of Eden", whose concern for the elephants resulted in stomach ulcers and a damaged vertebra (Jensen, 1980b: 39).

Armstrong began experimenting with a sturdy fence built from railway lines, bluegum poles and elevator cables. This fence was first used to protect the windmills and a 750-metre-long section was erected near to his house and oranges placed on one side. Armstrong observed how the elephants were unable to break through the barrier (National Parks Board, c. 1976: 53). As the cost of erecting the fence was considerable, Waygood-Otis donated many kilometres of old elevator cables. In 1951 the City Council of Port Elizabeth donated 200 used tramlines, and tramlines were also donated by the City of Johannesburg. (SANParks, 2017b: 7).

By September 1954, workmen had completed an 18-kilometre-long fence which enclosed an area of 2,270 hectares (Map 1). The 4-metre-long railway lines were planted 10 metres apart, each one weighed 360 kilograms and required eight men to be lowered into holes which were drilled by a drilling machine loaned by the Post Office. Heavy bluegum poles were planted one metre apart and five elevator cables were attached to the fence (SANParks, 2017b: 7) (Figure 3 and 4).

Given the fact that in 1954 there were vast areas regions of Africa where elephants could still roam without any restriction, the enclosing of 2,270 hectares to protect a remnant herd of 20 elephants is a significant event in the environmental history of Africa.

Game camps and oranges

Although the elephants were confined in 1954, this effectively divided the AENP into four camps. In what would be unimaginable to modern conservationists, the thicket vegetation east of the rest camp was thinned out and antelope were introduced (Map 1). Antelope introductions included red hartebeest, eland, springbok, mountain reedbuck, reedbuck and grey rhebok (Penzhorn, 1971: 146). A total of 27 springbok were released into the park between 1956 and 1958, but by 1975 had been reduced to a single animal by heartwater. (De Graaff & Penzhorn, 1976: 77, 78, 79). Although the Scottish explorer, Lieutenant William Paterson, recorded springbok in 1789 near the Sundays River, the species is extra-limital to the spekboom thicket (Paterson, 1789). Mountain reedbuck, reedbuck and grey rhebok are also extra-limital to spekboom thicket (Boshoff *et al*. 2002: 91).

For twenty-five years after 1954, a visit to AENP was similar to a visit to a large safari park. Elephants were enticed from the dense spekboom thicket by oranges placed at a feeding site below the rest camp (Figure 5). Visitors were not allowed access to the elephant camp,

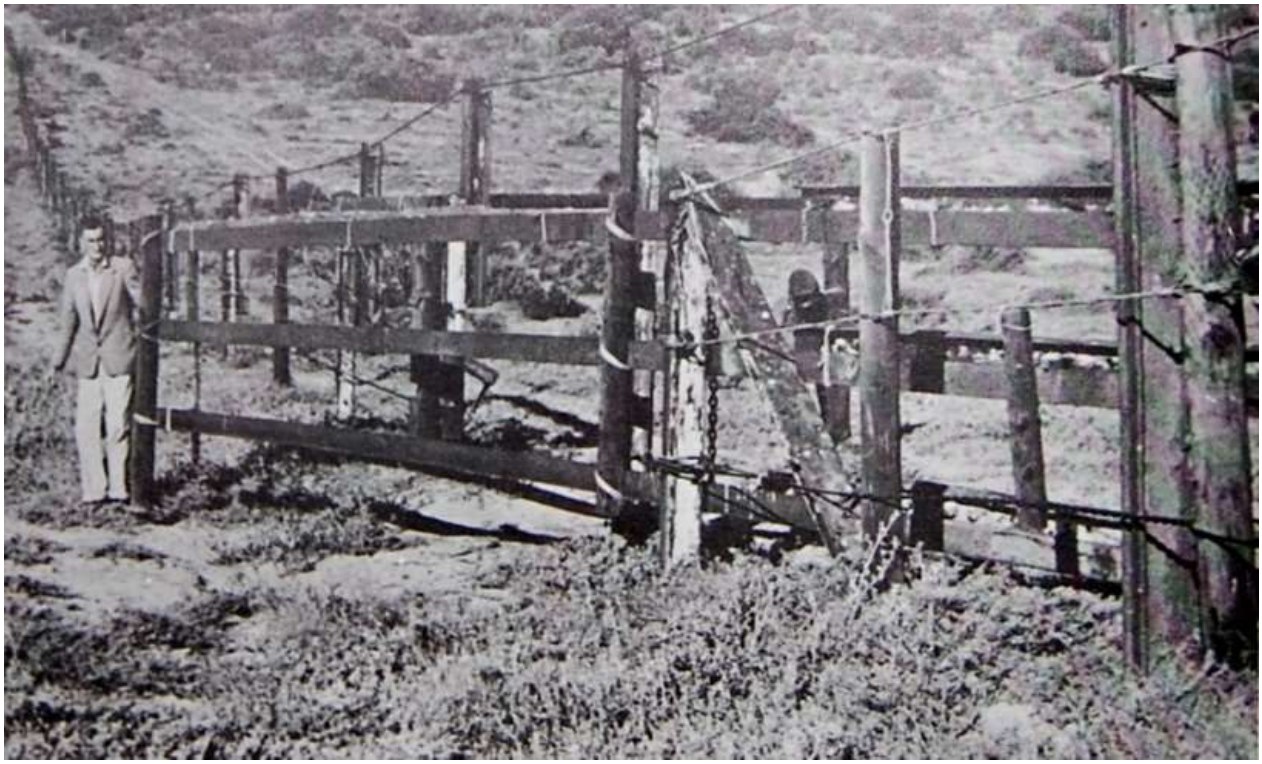
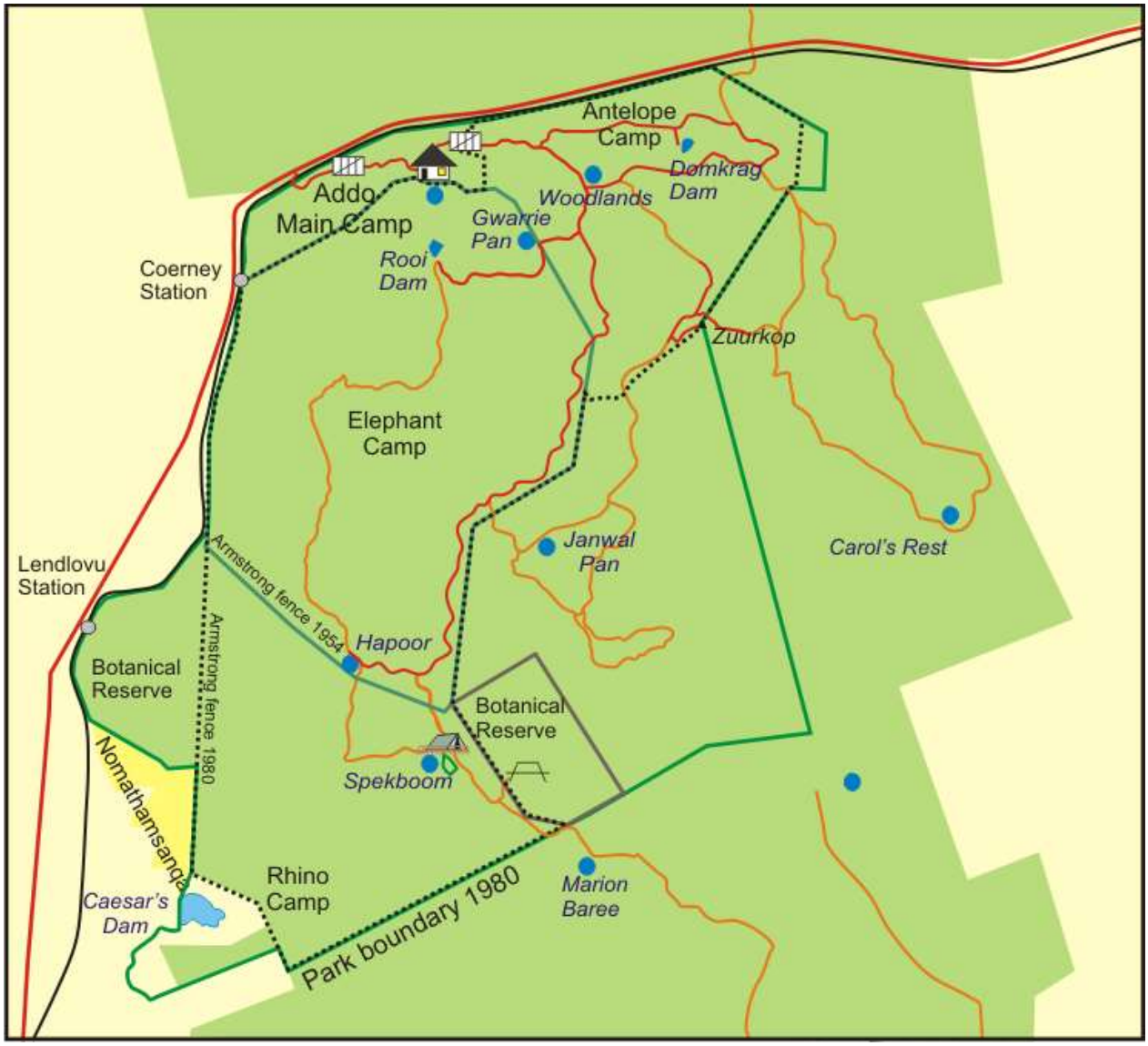


Figure 3: In 1954 Graham Armstrong enclosed 2,270 hectares with the first elephant-proof fence developed in Africa. The fence was built from railway lines, bluegum poles and elevator cables.
Source: Pringle (1982, 210).

Figure 4: The original "Armstrong fence" of 1954 west of the main rest camp. The fence separated elephants from local farmers and put an end to elephant incursions onto neighbouring farms.
Source: Author's own.



Map 1: The alignment of the original "Armstrong fence" of 1954, the location of separate camps for other wildlife species and the extension of the elephant fence completed in 1980. The map also indicates the current national park boundary and visitor road network.

and a number of viewing sites were erected on the road which followed the fence (Figure 6). Black rhinos were fed in their enclosure (Figure 7) and hippos were confined to Caesar's Dam (Figure 8) (Stokes, 1941: 375; Labuschagne, 1969: 215; Hall-Martin, 1977: 11).

Even though the re-introduction of large mammals took place six decades after the first game reserves were established in South Africa, the nature of some of the operations displayed a profound lack of knowledge at the time of animal territorial behaviour.

In 1961 two black rhinos were transported by ship from Kenya and released into a 150-hectare camp near Caesar's Dam. A year later another five black rhinos arrived and released into the same enclosure. The dominant cow reacted aggressively to the newcomers and within three weeks three of the rhinos were dead. The park warden was able to separate the dominant cow in a separate enclosure, which ended the fighting. Two pairs of black rhinos were therefore kept in separate enclosures totalling 210 hectares (Hall-Martin & Penzhorn, 1977: 150). By 1977 the rhinos had increased to 11 animals, but the dominant bull had eliminated all opposition and was near the end of his reproductive life (Hall-Martin, 1977: 9, 11, 12). The

Kenyan black rhinos are classified as the subspecies *Diceros bicornis michaeli*, but in 1977 three bulls were introduced from Zululand to augment the population. As the Zululand rhinos are classified as the subspecies *Diceros bicornis minor*, and are smaller in size than the Kenyan subspecies, they were later removed, together with any hybrid offspring (Hall-Martin, 1984: 11). The *D. b. michaeli* rhinos were released from the camp in 1977 and by 1984, resulting from access to the enlarged elephant camp of 6,800 hectares, had increased to 14 animals (Hall-Martin, 1984: 11).

A decision was later taken to remove all of the *D. b. michaeli* rhinos and this was completed by 2004. The rhinos were transported to a game farm in Limpopo and to Tanzania and Rwanda (SANParks, 2004: 49). Rhinos from the subspecies *D. b. bicornis* were obtained from Namibia, as this is the original subspecies which occurred in the Cape Province in the 19th century. By 2005 there were 46 black rhinos of the subspecies *D. b. bicornis* (SANParks, 2005: 51). For security reasons, current rhino estimates cannot be released.

The re-introduction of hippos to AENP was beset by similar problems. Three hippos were captured in the Kruger National Park in 1961 and transported to Caesar's Dam after permission had been obtained from the water board to enclose the dam with a cable fence. Another two hippos were later released. In 1965 both hippo bulls died from wounds sustained from fighting, and another two hippos died within a few months. Two additional hippos were released, but by 1971 only one hippo remained. In 1974 the lone survivor, a bull, escaped and settled in the Sundays River. As it was impossible to capture the hippo, it was shot by rangers. The reintroduction of hippos to AENP therefore ended in failure. (Custos, September 1974: 35-37; Labuschagne, 1969: 215). With the expansion of the park, hippos were reintroduced to the Sundays River in the Kabouga Section in 1992, and currently number 18 animals (SANParks, 2017b: 9; de Goede, pers. comm., 9 September 2019).

A conservation conundrum

The protection of the elephants initially suffered similar setbacks. In 1938 there were 25 elephants, but the population declined to 18 and remained stable for a few years. By 1949 there were 23 elephants, but when the Armstrong fence was completed in 1954 only 20 remained. The complete protection offered by the fence resulted in a sustained increase: by 1960 there were 29 elephants, in 1965 there were 45 and 97 in 1979. By 1989 the population had increased to 153 and in 1992 there were 197 (Penzhorn, Robbertse & Olivier, 1974: 141; Diederichs, 1979; 8; Dearlove, 1992: 22; Hall-Martin, 1993: 18).

In 1974 Penzhorn, Robbertse and Olivier published research on the thicket and concluded that the biomass within the elephant camp had been reduced to 45% compared to the land outside the camp, indicating that elephant utilisation of the thicket was not sustainable. At the time the elephant density within the camp was 2.7 per km², which was one of the highest densities recorded in Africa. By 1978 the biomass in AENP was 4,807 kilograms per km², the highest for any national park in South Africa, and within the elephant camp it was calculated to be 6,726 kilograms per km², the fourth highest recorded in Africa (Grobler and Hall-Martin, 1982: 31). Elephant densities in AENP have at times exceeded the recommended stocking rating by as much as 8-fold (Maciejewski & Kerley**,** 2014: 921).

Penzhorn *et al*. considered that only two courses of action were practical: the elephants had to be reduced by more than half, or the park had to be enlarged (Penzhorn, Robbertse & Olivier, 1974: 149, 155, 156). Given the iconic status of the Addo elephants, reducing the elephants was not a practical solution. The elephant camp was enlarged to 4,000 hectares in June 1977, and in March 1980 tourists were permitted to enter the camp for the first time

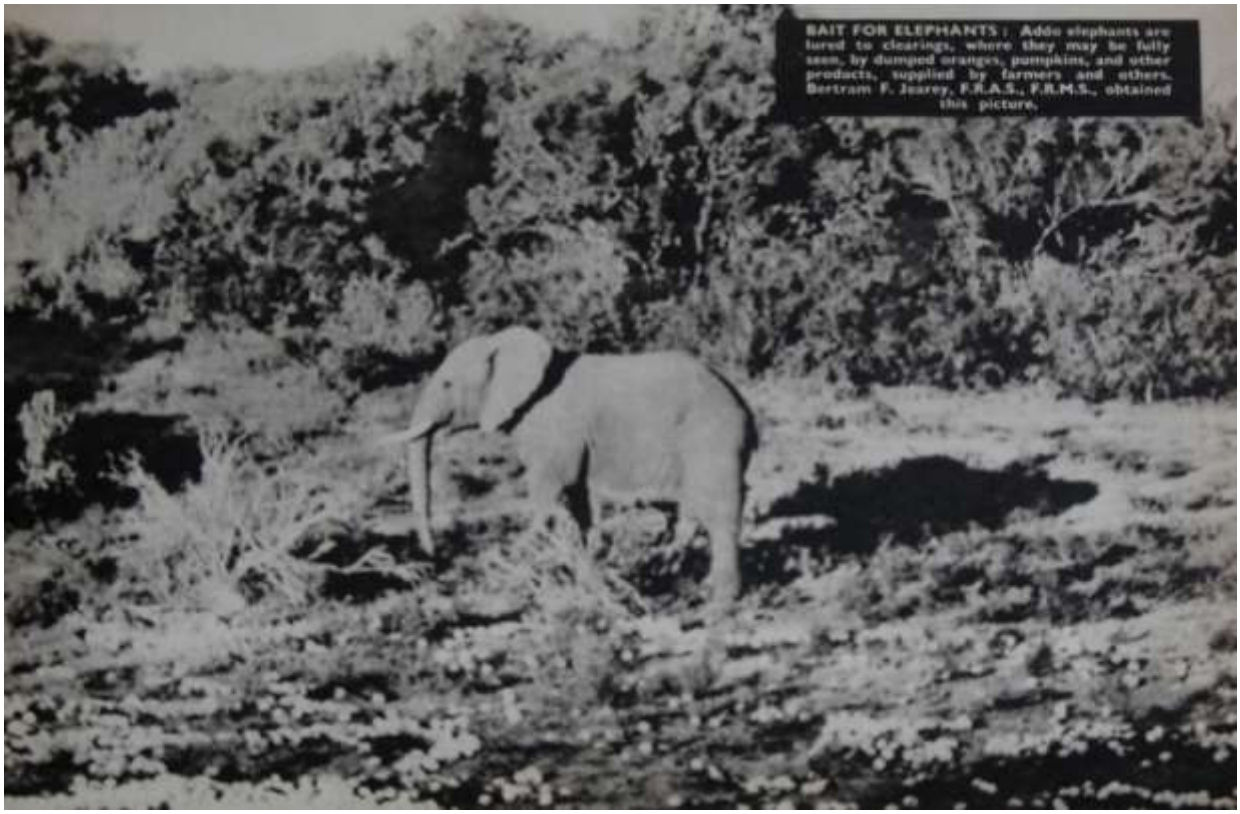


Figure 5: The reclusive Addo elephants were enticed out of the dense, spekboom thicket by oranges obtained from farmers in the adjacent Sundays River Valley. Source: Stokes (1941, 373).

Figure 6: For 25 years the Addo Elephant National Park was divided into separate camps. Elephants were confined to a 2,270-hectare camp, and separate camps were created for antelope, black rhinos and hippos. Only buffalo and some antelope species had access to the entire park. Source: Botha (1984, 28).

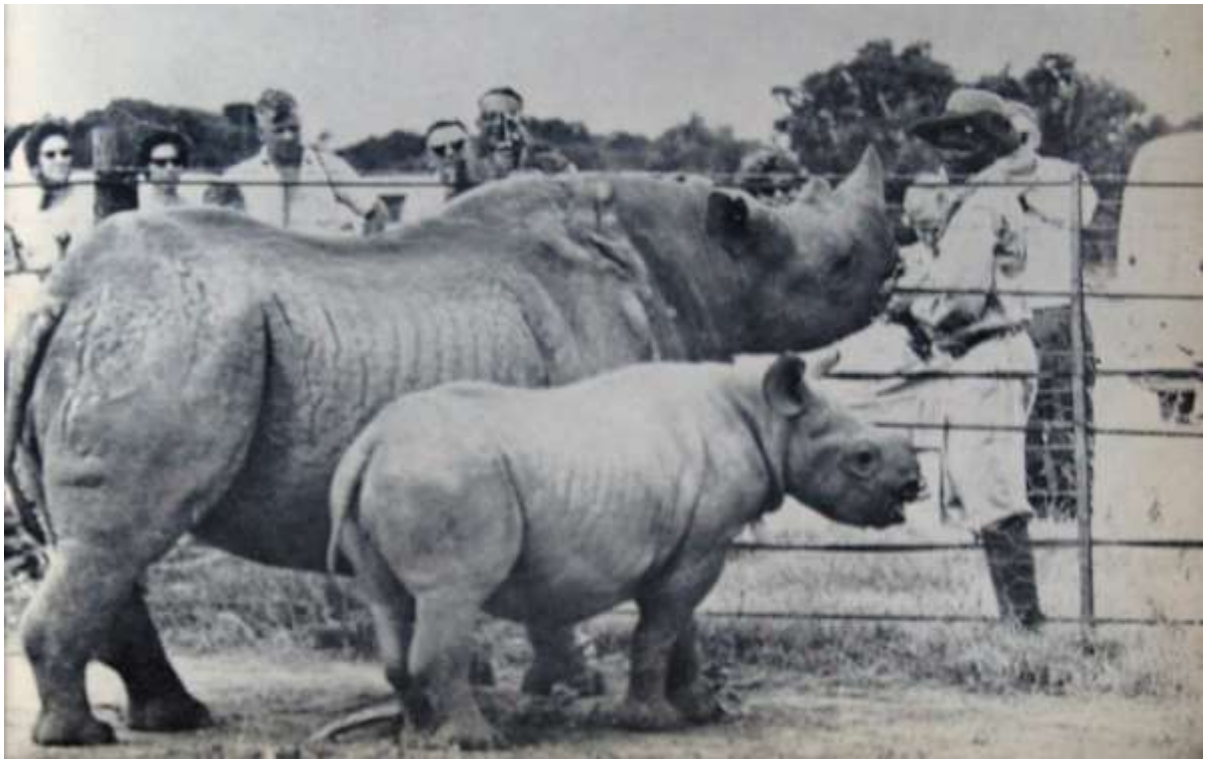


Figure 7: In 1960 and 1961 seven black rhinos from Kenya were released into a camp in the south-west corner of the national park near Caesar's Dam. Source: Labuschagne (1969, 213).

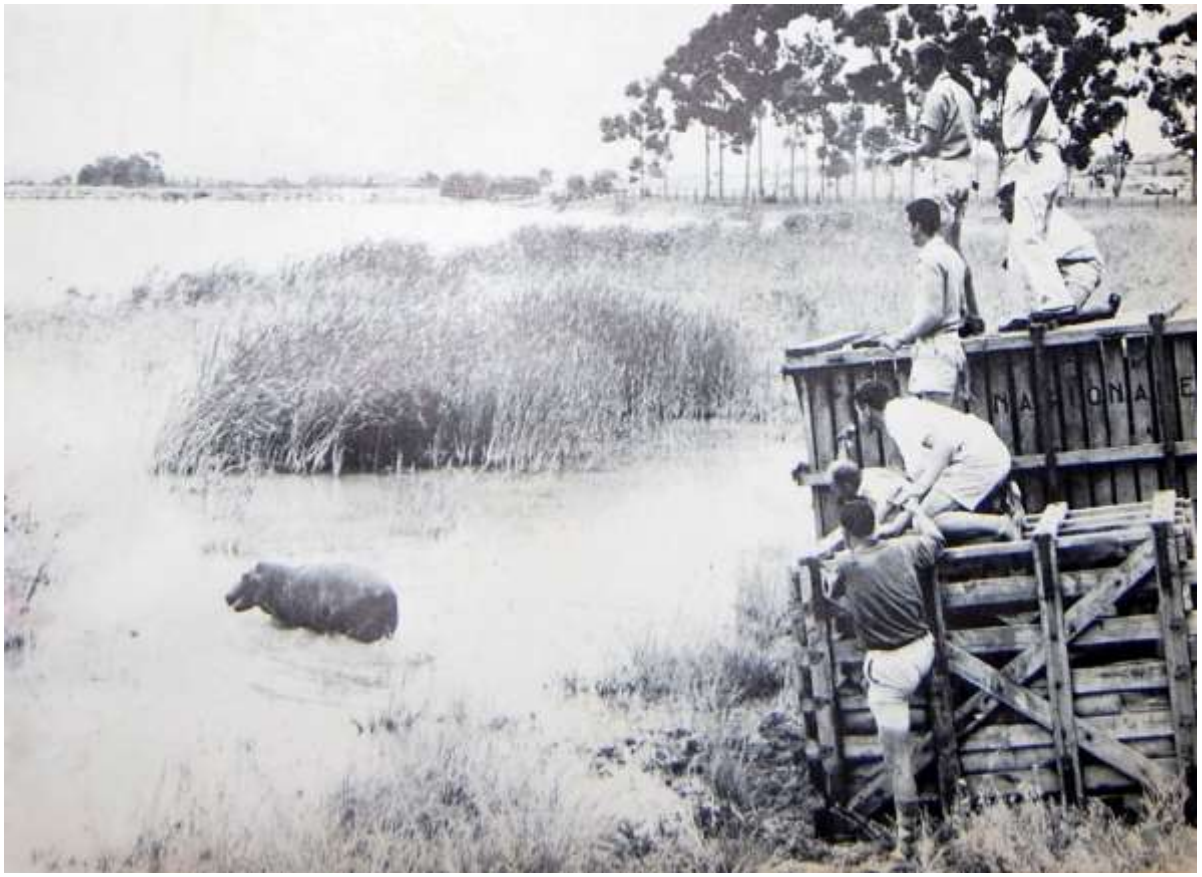


Figure 8: Release in 1960 of a hippo captured in the Kruger National Park into Caesar's Dam in the south-west section of the national park. Source: Labuschagne (1968, 125).

as the elephant camp had been enlarged to 6,800 hectares and incorporated the antelope camp. This decision was taken although the Addo elephants had a reputation for aggressive behaviour (Jensen, 1980a: 17; Diederichs, 1980: 6) (Map 1).

Novellie *et al*. (1991: 47, 48) recorded deterioration in the grasslands of AENP, which necessitated reducing the buffalo population. This is the only remnant buffalo population in the Cape, and an important source of disease-free buffalo in South Africa (Novellie, Hall-Martin & Joubert, 1991: 49). Due to deterioration in the grasslands, and increasing competition from elephants and other herbivores, buffalo were dying during droughts. By 2000 the area available to elephants had increased to 10,300 hectares, and the population had grown to 324 animals (Whitehouse & Schoeman, 2003: 96).

A number of researchers have studied the impact that an increasing elephant population is having on the vegetation of AENP. Paley and Kerley estimated that elephants comprised 78% of the biomass within the main game viewing area (Paley & Kerley, 1998: 37, 43). Carrying capacity is a blunt instrument in wildlife management as even at low densities elephants have an impact on vegetation. During dry periods this impact varies and increases around waterholes. Elephants and other wild animals cannot be herded like domestic livestock. Landman *et al.* (2014: 3) examined the impact that the introduction of 16 elephants in 2005 had on the Nama Karoo vegetation of the Kuzuko section. The researchers argue that historically elephants would only have visited inland interfluves seasonally, and that the continuous presence of elephants had resulted in high mortalities in two tree species studied. Elephant impact was recorded on 45% of *Pappea capensis* and 19% of *Boscia oleoides* trees.

Parker (2008: 95) studied the impact of elephants on vegetation types within the AENP and concluded that in grassland habitats the physical structure of the vegetation was neither enhanced nor degraded by the presence of elephants, but in the thicket biome elephant browsing had the effect of transforming relatively homogeneous stands of vegetation into more heterogeneous units (Parker, 2008: 95). Fullman *et al.* (2017: 12) studied elephants within the main game viewing area and concluded that on a daily basis resource selection varies in the morning from patterns recorded at midday and in the afternoon. Elephants constantly demonstrate trade-offs between acquiring sufficient food and access to water.

Elephants are currently fenced into three distinct units of the AENP and the long-term goal should be to manage the entire national park as a single unit so that historic migration patterns can be restored. Fences and artificial waterholes have a major impact on elephant movements and increase localised impact on vegetation (Kuiper & Parker, 2014: 2).

A model applied by Woodd (1999: 99) estimates that the elephant population will reach 1000 in 2023 and 2700 in 2043, which is the estimated limit for the expanded national park. At present there are 622 elephants in three separate sections of the AENP (de Goede, pers. comm., 9 September 2019). The successful protection of the Addo elephants raises a conservation conundrum: what happens to the population once the limit is reached? Elephants are iconic animals and there is considerable international pressure against the culling of elephants.

Expansion of the Addo Elephant National Park

The AENP had been enlarged from 6,434 hectares in 1964 to 8,767 hectares in 1989, but it was still far too small to sustain a viable population of elephants. A minimum population of 250 elephants, and preferably 500 animals, was needed to ensure genetic diversity (Dearlove, 1992: 22; SANParks, 2015: 113). At the time government funding for national park expansion was not easy to obtain (Brett, 2010: 8). In 1976 the National Parks Land Acquisition Fund was established, so it became possible to attract donations and to raise income from the sale of surplus animals such as buffalo (SANParks, 2017b; 14). In October 1989 a televised pledge

day was held and government announced that the funds raised would be matched. Dr Anton Rupert of the World Wildlife Fund (WWF) also agreed to match funds raised. An area of 2,951 hectares was subsequently purchased and the AENP was enlarged to 11,718 hectares. (Dearlove, 1992: 22).

In 1896 three tracts of land had been declared forest reserves in the Zuurberg mountains 6 kilometres north of the AENP. In 1985 the forest reserves, covering 20,777 hectares, were transferred to SANParks and declared the Zuurberg National Park. It was hoped that the two national parks could be consolidated, but this seemed unlikely. Hall-Martin in 1993 sketched an optimistic vision for the future and wrote, "the medium-term strategy will be to amalgamate the two parks to create one large conservation unit of nearly 50,000 hectares and to extend that even further" (Hall-Martin, 1993: 18).

In 1997, Graham Kerley and Andre Boshoff of the Terrestrial Ecology Research Unit at Nelson Mandela Metropolitan University, published a landmark report which proposed consolidating the AENP with the two forest reserves. The enlarged national park would encompass five biomes and cover an eventual area of 341,000 hectares (Kerley & Boshoff, 1997; Kerley, Boshoff & Knight, 2003: 10). In 2000, funding was received from the World Bank's Global Environment Facility (GEF) for the implementation of the park expansion project. Funds for park expansion have come from government, from revenue generated by SANParks and from donors (SANParks, 2017b, 14). By the end of 2001, the AENP had already been increased in size by 36,000 hectares (Kerley, Boshoff & Knight, 2003: 12).

The GEF funding aimed to create 1,596 jobs and at the end of the project, 1,842 jobs had been created. The target for the number of tourist beds within the greater AENP was 440 and the actual achievement was 505 beds (World Bank, 2011: 24). The World Bank report stated, "eco-tourism, particularly nature based tourism, is therefore regarded as a clear area for growth by the Government of South Africa, particularly as recent studies have shown that this can be considered to be ecologically, economically and socially more sustainable than pastoralism" (World Bank, 2011: 1). It was also estimated that income from ecotourism in the region could exceed that derived from pastoralism by as much as four-fold (Kayser, Sobrevila & Ledec, 2011: 3).

Several researchers have examined the future potential for expanding the AENP to form a link to the Fish River Valley, and have recommended the creation of partnerships between protected areas and their neighbours and the extension of the contractual national park system, which will lessen pressure on funding sources (Knight *et al,* 2003: 9, 14; Rouget *et al,* 2006: 557). Considerable potential exists for enlarging the AENP, particularly in the Darlington, Zuurberg and Woody Cape sections, and the current national park could be doubled in size to approximately 320,000 hectares. The proclamation of the Addo Elephant National Park Marine Protected Area in 2018, which includes the offshore islands of St Croix, Seal and Bird, had added a marine component to the five terrestrial biomes already included within the national park (Bradfield, 2005: 24).

Development of tourism

In the 1960s the sole rest camp in the AENP had more in common with a dusty Cape farmstead than it did with a national park rest camp (Figures 15 and 17). The original building was a four-roomed house and George Johnson, a game ranger from 1935 to 1943, was responsible for renovating the building and establishing the garden and adjacent dam (Symonds, 1987: 34).

Figure 9: Major Pretorius described the Addo thicket as, "once in this jungle it was seldom possible to see more than five paces ahead, and the jumble of undergrowth consisted of thorns and spikes of every description" (Pretorius, 1948). Source: Author's own.

Figure 10: The survival of a relic population of elephants into the 20th century, and within 50 kilometres of a large coastal city, can be attributed to the dense, spekboom thicket which provided a refuge from hunters. Source: Author's own.

Figure 11: The drought-resistant spekboom, *Portulacaria afra*, is well adapted to semi-arid regions of the Eastern Cape and is a major food source for elephants in the Addo Elephant National Park.
Source: Author's own.

Figure 12: View over the Gorah Loop from the Zuurkop Lookout Point. Former fence lines are still visible after 30 years and there is no evidence of spekboom thicket recolonising former cultivated land. Source: Author's own.

Tourist accommodation was very limited for many years, as were visitor activities, and in 1972 accommodation was limited to 24 beds (Curry-Lindahl & Harroy, 1972: 117; De Graaff, 1976: 86). The caravan park, which consists of 30 sites, was opened in 1976 (Custos, March 1976: 15).

Addo Main Camp has been considerably enlarged and now consists of six categories of visitor accommodation which can accommodate a total 275 overnight visitors, which is similar in size to Olifants camp in the Kruger National Park (Brett, 2018: 15) (Table 1). Apart from the accommodation categories and a reception office, shop, restaurant and petrol station (Figure 16), facilities for tourists in the main rest camp include the Ulwazi Interpretive Centre (Figure 22), bird hide, ground-level hide, swimming pool and guided game drives (Figure 23). The number of activities sold per 100 guest nights is high for SANParks facilities, as is the annual unit occupancy rate (Table 2).

In the 2005/2006 financial year, the 36-bed Matyholweni camp was opened at the southern entrance gate and is easily accessible from the N2 (Table 1 and 2). Nyathi camp was originally the Nguni River concession lodge until the concessionaire terminated the contract in May 2010 (SANParks, 2011, 21). The lodge is now operated by SANParks as the 32-bed Nyathi camp (Table 2) (Map 2).

The expanded AENP is effectively divided into three units by the N2 national road linking Makana (Grahamstown) and Port Elizabeth, and the R342 and the parallel electrified railway from Paterson to Port Elizabeth, although Hall-Martin did propose building culverts under the railway line to allow elephants access to the Nyathi Section (Hall-Martin, 1993: 18) (Map 2).

The main wildlife area is situated between the R342 and N2 and contains two rest camps, a concession lodge and a tented camp at the Spekboom waterhole (Map 1). The Nyathi Section, immediately to the north of the R342, covers 14,000 hectares and has been stocked with wildlife such as lion, elephant, black rhino, buffalo and eland. This section contains the River Bend concession lodge and the Nyathi camp (Table 1) (Map 2). Although it would require substantial funding, the Nyathi Section could be connected to the main game-viewing section by culverts constructed under the R342 and electrified railway (Hall-Martin, 1993: 18).

The Zuurberg and Darlington sections are low density/low impact zones and provide facilities for hikers and four-wheel-drive tourists, and offer a tourist product which differs from that offered by the main game-viewing section (Figures 26 and 27) (Map 2).

In the Zuurberg Section the Narina Bush Camp is located in an indigenous forest on the banks of the Wit River and offers tourists an affordable and exclusive wilderness experience (Figures 28 and 29). Further to the west, there is a camping site on the banks of the Sundays River and a cottage which accommodates four-wheel-drive tourists (Bradfield, 2005: 23). Tourist accommodation is also provided by a number of establishments on the border of the AENP, such as the historic Zuurberg Inn (Figure 30 and 31), and many privately-owned establishments are concentrated in the Sundays River Valley (Map 2).

Visitors to the AENP increased from 37,512 in the first nine months of the 1975/1976 financial year, to 117,037 visitors in the 2003/2004 financial year and 287,394 visitors in the 2018/2019 financial year (De Graaff, 1976: 93; SANParks, 2019) (Table 2). If the same period is compared with the Kruger National Park, then the AENP recorded a 145% increase in visitors compared to 41.5% for the Kruger National Park for the same period (SANParks, 2019).

Maciejewski and Kerley (2014: 924) concluded that while elephants play an important role in attracting tourists to AENP, a large increase in visitors was independent of an increase in elephant density. Of significance was a 14% increase in visitors in the 2004/2005 financial

year, the year after lions and spotted hyaenas were introduced. The increase in visitors was also attributed to the tarring of some of the park roads (SANParks, 2005: 50). The conclusion

Table 1: SANParks accommodation and concession lodges in the Addo Elephant National Park.

Camp	Accommodation category	Number of beds
Addo Main Camp	Chalet	80
	Cottage	26
	Rondavels	12
	Forest cabin	40
	Safari tent	10
	Family chalet	5
	Domkrag guest house	6
	Hapoor guest house	6
	Tent site*	30
	Caravan site*	60
		275
Matyholweni	Cottage	18
	Family cottage	18
		36
Nyathi**	Cottage	16
	Family cottage	12
	Guest cottage	4
		32
Narina Rustic Bush Camp	Safari tent	**8**
Spekboom Tented Camp	Safari tent	**10**
Kabouga Guest House	Guest house	**6**
Langebos Huts	Hiking huts	**16**
Total SANParks accommodation		**383**
Concession lodges		
Gorah Elephant Camp		**22**
River Bend Lodge		**22**
Kuzuko Lodge***		**54**
Total visitor accommodation		**427**

*: Calculated at an average of 3 visitors per site
**: Originally a concession lodge known as Nguni River Lodge
***: Kuzuko Lodge and 14,462 hectares became a contractual national park in 2004 but the contract has been terminated.

by Maciejewski and Kerley (2014) is not unexpected. Informed tourists are likely to be alarmed by widespread degradation of vegetation resulting from very high elephant densities, whereas the introduction of predators such as lions and spotted hyeanas conforms with a desire for authenticity. During the past two decades SANParks has taken steps to reintroduce predators to four national parks in an attempt to restore ecological patterns and processes (Brett, 2010: 64).

Research by Meyer found that the average length of stay in the AENP is 3 days, and the park was rated third on the list of national parks that respondents would like to visit on the next visit, after the two largest national parks of Kruger and Kgalagadi (Meyer, 2015: 85). Game-viewing was listed as the most important reason for visiting the AENP by 64.7% of respondents, followed by self-drive game drives by 56.5% of respondents (Meyer, 2015: 106).

The number of unit nights sold is depicted in Figure 13 and exhibits growth from 18,728 in 2003/2004 to 30,951 in 2018/2019, or a 65% increase over a 15-year period. Growth in unit nights is therefore less than half of the overall growth in visitor numbers, which suggests that many visitors are staying outside of the AENP (SANParks, 2019). The economic impact of the park on the region is therefore greater than direct expenditure at SANParks camps within the AENP. Growth in unit nights sold has not been consistent, and in 2010 and 2011 and in 2019 there was a decrease on previous years. The 2010/2011 financial year coincided with

the FIFA World Cup, which did not seem to translate into an anticipated increase in visitors to AENP, even though games were played in Port Elizabeth.

The AENP has had six concession lodges but the success, and failure, of these lodges offers insight into the competitive nature of the tourism industry. While levies paid by two lodges (Figure 14) have increased since 2004, in the same period under review three lodges no longer operate. Gorah Elephant Camp and River Bend Lodge have succeeded in growing their income, as evident in the levies paid to SANParks, but the Intsomi and Darlington Lake lodges only operated for between two and three years (Bradfield, 2005, 18, 19). Decreases in levies are also noted from the 2008/2009 financial year, and it took four years for a full recovery to take place. The contractual park agreement which encompasses the Kuzuko lodge was also recently terminated.

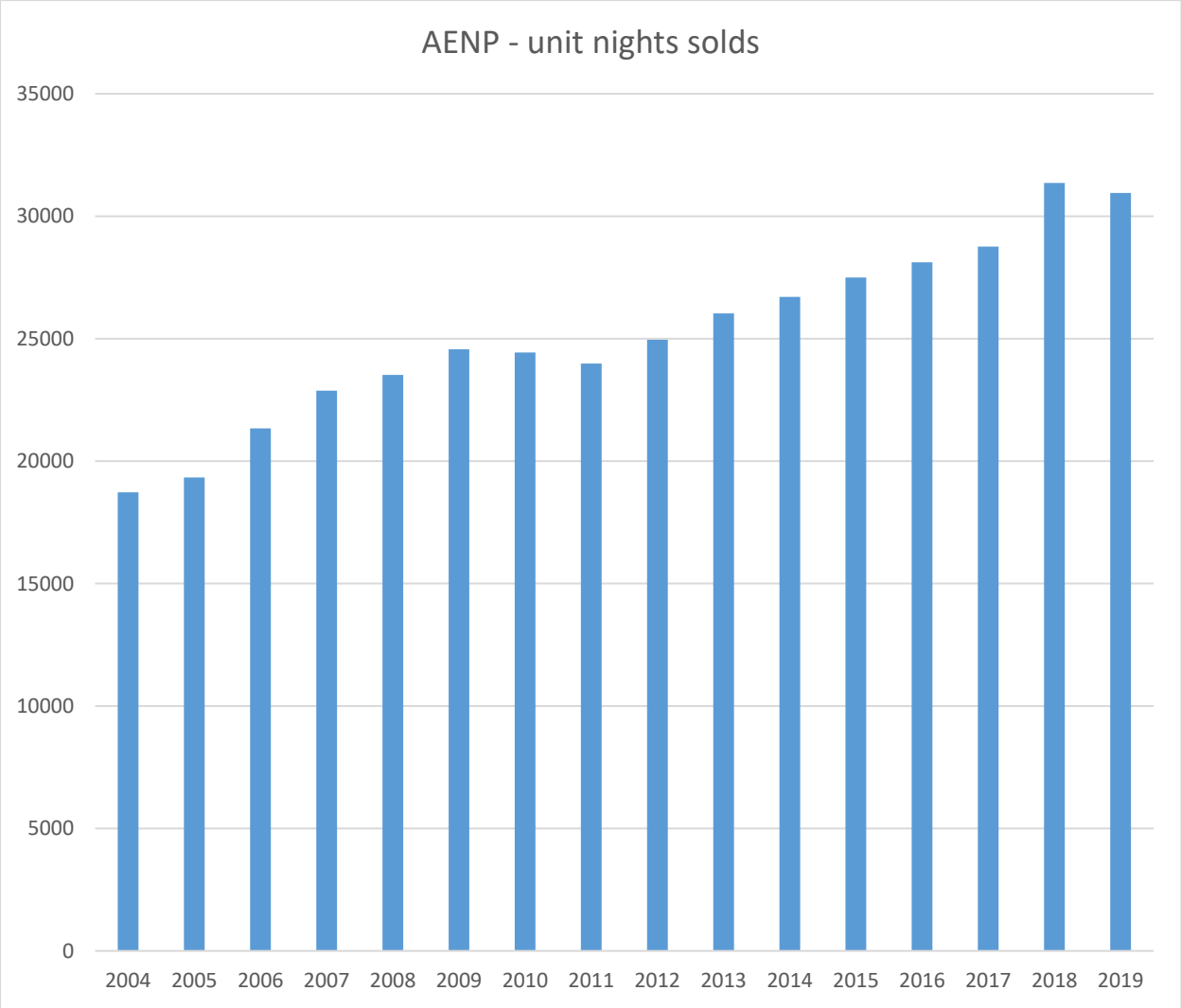


Figure 13: Unit nights sold in the Addo Elephant National Park from the 2003/2004 financial year to the 2018/2019 financial year.

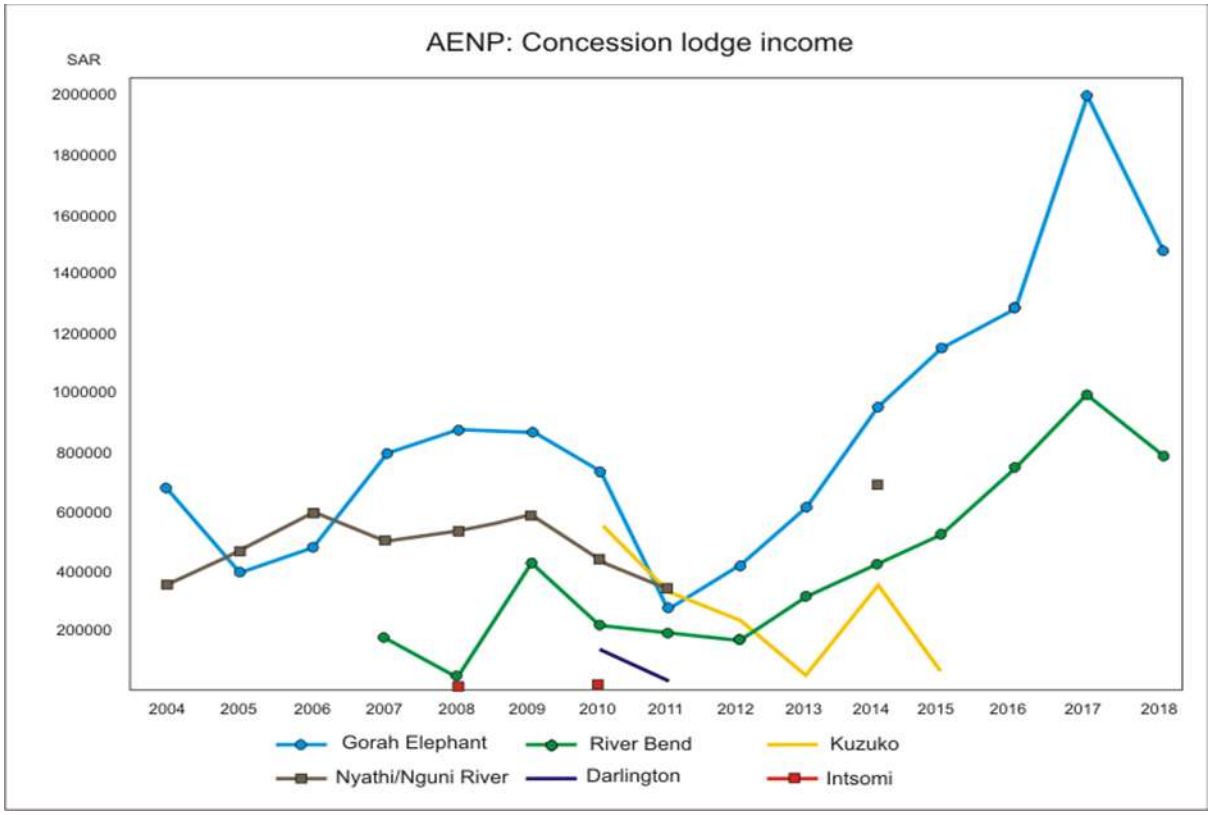


Figure 14: Revenue paid to SANParks by the concession lodges operating within the Addo Elephant National Park.

Figure 15: Aerial view of Addo Main Camp in the 1970s, at a time when it resembled a guest farm rather than a conventional national park rest camp. Source: De Graaff (1976, 86).

Figure 16: Current tourist development at Addo Main Camp, indicating the location of key buildings and six categories of visitor accommodation. Note the density of the thicket in the rest camp compared to the land frequented by elephants. Source: Adapted from Google Earth image.

Figure 17: The building which houses the restaurant and shop at the main camp in Addo Elephant National Park in the 1960s. Source: Labuschagne (1968,137).

Figure 18: A current view of the same site. Note the addition of paved walkways, indigenous plants and wild fig trees. Other additions include information displays, a ground-level hide and an interpretive centre. Source: Author's own.

Figure 19: The original entrance to the Addo Elephant National Park on the R342 north of the town on Addo. Source: Author's own.

Figure 20: The rondavels at the main camp overlook a floodlit-waterhole and, although only 50 kilometres from the city of Port Elizabeth, offer tourists the opportunity of viewing wildlife such as lion, elephant, buffalo and black rhino. Source: Author's own.

Figure 21: The reception office at the main camp adjoins a shop, restaurant and the interpretive centre. Source: Author's own.

Figure 22: The Ulwazi Interpretive Centre at the Addo Main Camp is dominated by the elephant bull, Hapoor, who succeeded in climbing over the Armstrong fence. Source: Author's own.

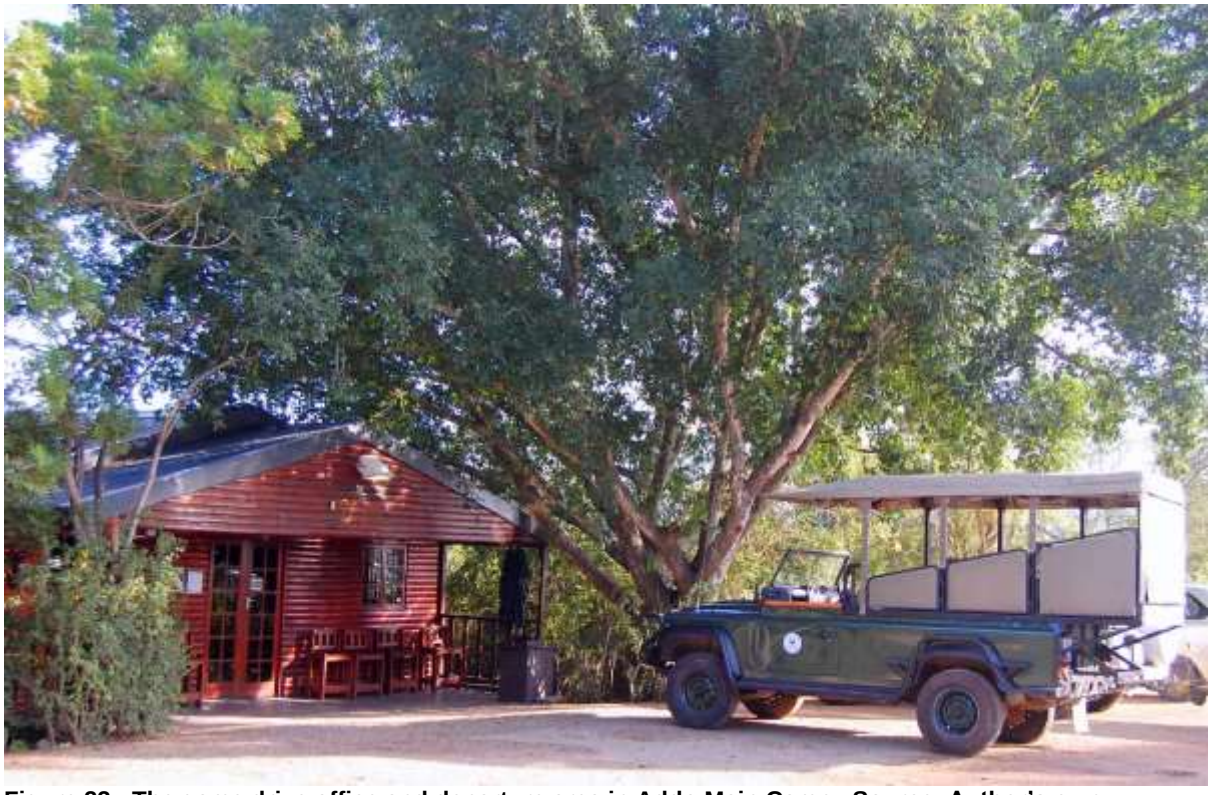


Figure 23: The game drive office and departure area in Addo Main Camp. Source: Author's own.

Figure 24: Self-drive tourism is concentrated in the section of the national park between the R342 and the N2, where 15 waterholes, such as Marion Baree, attract elephant, buffalo and other wildlife species. Source: Author's own.

Figure 25: Jack's Picnic Site is situated within a 500-hectare botanical reserve which was set aside to monitor elephant impact on the spekboom thicket. Source: Author's own.

Figure 26: Privately-owned farms still occur in the portions of the Zuurberg Section and complicate the consolidation of the national park. Source: Author's own.

Figure 27: Apart from its scenic and botanic appeal, the Zuurberg Section contains many examples of the folded strata typical of the Cape Fold mountains. Source: Author's own.

Figure 28: The Narina Bush Camp is located in indigenous forest bordering the Wit River in the Zuurberg Mountains. Source: Author's own.

Figure 29: The Narina Bush Camp offers visitors a wilderness experience in a remote valley of the Zuurberg range. Source: Author's own.

Figure 30: Adjoining the national park, and located on the crest of the Zuurberg Pass, the Zuurberg Inn was first opened in 1861. Source: Author's own.

Figure 31: Private accommodation adjoining the national park, such as the Zuurberg Inn, complements the three rest camps and two tented camps offered by SANParks, and two concession lodges, situated within the national park. Source: Author's own.

Table 2: Key developments over the past 15 years in Addo Elephant National Park.

2004	R35 million grant received from the World Bank A 14,462 ha contractual park is established around Kuzuko Lodge 55 elephants chased across the R342 into the Nyathi section 4 elephant bulls from Kruger National Park released in Nyathi section Last of *D. b. michaeli* black rhinos transferred to Limpopo 4 *D. b. bicornis* black rhinos translocated from Etosha NP in Namibia 6 lions from the Kgalagadi and 5 spotted hyaenas from Madikwe GR released Game count records 359 buffalo, 370 elephant and 38 black rhino Total of 117,037 visitors
2005	Visitor numbers increase by 14% Another 4 spotted hyaenas introduced from Kruger National Park Game census reveals 46 black rhinos
2006	13 elephants translocated to the Kuzuko section from the Kruger National Park 10 elephant bulls sold to private game reserves First 3 lion cubs born New Matyholweni camp opened
2007	AENP has highest number of 40.7 activities sold per 100 guest nights for SANParks Unit occupancy at Addo Main Camp is 92% A 38-km link road is opened. Census reveals 459 elephant and 268 buffalo 10 oribi released on Langvlakte contractual property
2008	Addo Main Camp has unit occupancy of 90.8%, which is the 3rd highest for SANParks Lions released into the Kuzuko section Game census records 329 buffalo and 488 elephant in 3 sections
2009	Addo Main Camp has unit occupancy of 90.3% 5,242 hectares added to park 50 eland from West Coast NP released 2 lions released in Kuzuko section Jack's Picnic Site is opened
2010	Burchell's zebra, eland, buffalo and hartebeest released in Colchester section Unit occupancy for AENP of 85.2% is the highest for all SANParks national parks 17 km of visitor roads completed R11.7 million received from Expanded Public Works Programme to construct roads in the Colchester Section
2011	Nguni River Lodge closes at end of May Spekboom tented camp is opened 12 km of visitor roads completed Fence between Colchester and Addo sections is removed allowing elephants access to a larger area
2012	Game census records 551 elephant in 3 sections, 348 buffalo, 282 eland, 2182 kudu, 258 gemsbok, 578 black wildebeest and 449 Burchell's zebra
2013	306 ha added and park covers 163,130 ha
2014	Cattle Baron restaurant opens in Addo Main Camp 4,838 kg of exotic fish removed from Darlington Dam Park covers an area of 163,296 ha
2015	Three concession lodges pay a levy of R1.8 million Parks now covers 163,297 ha
2016	Visitors to park total 231,464 No concession income from Kuzuko Lodge
2017	Visitors increase by 14.7% Total of 265,585 visitors
2018	3 male cheetah break into Addo main game-viewing section from an adjoining private game reserve Some elephant cows in Nyathi section placed on contraception Visitors surpass 300,000 for the first time R4 million spent on drilling boreholes due to ongoing drought
2019	Addo Elephant National Park Marine Protected Area proclaimed from the Coega mouth east to Cannon Rocks 27 elephants translocated to the Darlington section 7 lions translocated to other parks and 10 spotted hyaena sold on game auction Game census records 622 elephant and 525 buffalo Doringnek Hiking Trail opened in Zuurberg section

Information summarised from SANParks annual reports for the period 2003/4 to 2016/17; de Goede pers. comm., 16 September 2019.

Conclusion

The AENP offers insight into changes which have taken place in South African conservation since the 1930s. Initially conceived as a "species park", the AENP has been transformed into a national park which includes five biomes and a marine protected area. The protection of an iconic single mammal has been superseded by landscape conservation.

The establishment of national parks in the 1930s in South Africa differed from the record in the United States of America, where the focus was on landscape conservation. The National Parks Act 56 of 1926 stated that the objective of a national park was the, "propagation, protection and preservation therein of wild animal life, wild vegetation and objects of geological, historical or other scientific interest for the benefit, advantage and enjoyment of the inhabitants of the Union", which echoed the wording of the proclamation of Yellowstone, the world's first national park in 1872 (Brett, 2001, 91; Carruthers, 2016, 143). Despite the wording of the Act, the emphasis in South Africa was on the preservation of large mammals, and in the opinion of decision-makers the presence of iconic mammal species was a prerequisite for any African national park (Carruthers, 2016, 143).

The historic record suggests that attitudes have slowly changed over time. Four national parks were proclaimed in the 1960s to protect landscape components, such as a waterfall, sandstone formations, indigenous forest and marine resources, and did not contain any significant mammal populations (Brett, 2010, 4). While the public interest in the protection of the African elephant has been an important catalyst in the enlargement of AENP, it has not been the only factor. Although the historic emphasis was on protecting elephants, the full suite of biodiversity has ultimately benefitted (Kerley, Boshoff & Knight, 2003, 4).

Since 1994 SANParks has established two large national parks similar in size to AENP, and five smaller national parks, of from 20,000 to 32,000 hectares, where the emphasis is on conserving landscape, vegetation and items of cultural value and not on the preservation of iconic mammal species. These national parks are situated mostly in poorly conserved biomes and, with the exception of two parks, do not contain endangered mammals or significant mammal populations.

The Protected Areas Act of 2003 defined national parks as existing for sustainable use by society. SANParks regards national parks as fulfilling the dual function of contributing to local economic development and providing ecosystem goods and services. The vision of the organisation is expressed as, "a sustainable national park system connecting society" and SANParks' mission is to, "to develop, expand, manage and promote a system of sustainable national parks that represents biodiversity and heritage assets, through innovation and best practice for the just and equitable benefit of the current and future generation" (SANParks, 2017a, 2, 6). The example of AENP shows that an enlarged national park is considerably more viable, not only in terms of ecological patterns and processes, but also in its ability to attract tourists and to generate regional economic activities.

Given the fact that overnight units sold in the AENP for the period 2003 to 2017 grew at 65% compared to a 145% growth in total visitor numbers, it is evident that the park is sustaining many privately-owned lodges in the adjacent Sundays River Valley. Future research will seek to quantify the extent of this tourist accommodation and to estimate the economic impact that the park is having on the region.

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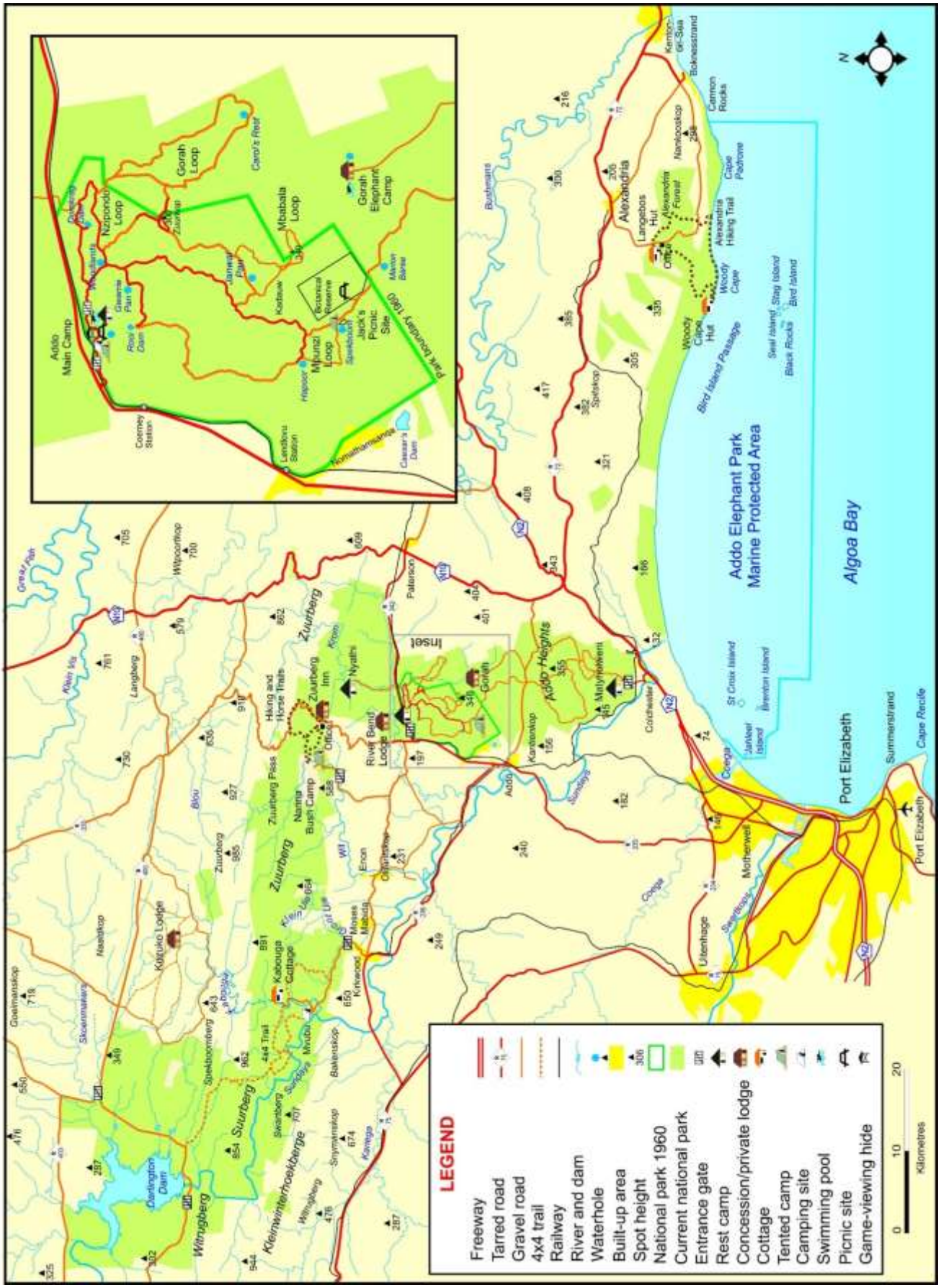

Map 2: Current extent of the Addo Elephant National Park, indicating location of tourist accommodation and expansion of the national park since 1960.

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References

Beinart, W. (2003). *The Rise of Conservation in South Africa: Setters, Livestock, and the Environment 1770-1950.* Oxford: Oxford University Press.

Beinart, W. & Coates, P. (1995). *The taming of nature in the USA and South Africa.* London: Routledge.

Botha, J. (1984). Pofbolletjies op stelte maar een herinnering. *Custos,* August, 13(5), 27-33.

Bradfield, M. (2005). *Addo Elephant National Park: Official Guide*. Pretoria: South African National Parks.

Brett, M. (2001). *The National Parks of America*. London: New Holland Publishers.

Brett, M.R. (2010). *Touring South Africa's National Parks*. Cape Town: Struik Travel and Heritage.

Brett, M.R. (2018). Tourism in the Kruger National Park: Past Development, Present Determinants and Future Constraints. *African Journal of Hospitality, Tourism and Leisure*, 7(2), 1-28.

Carruthers, J. (2016). "'Why Celebrate a Controversy?' South Africa, the United States, and National Parks" In: Howkins, A., Orsi, J. and Fiege, M. (eds.). *National Parks Beyond the Nation: Global Perspectives on "America's Best Idea".* Norman: University of Oklahoma Press.

Curry-Lindahl, K. & Harroy, J. (1972). *National Parks of the world.* Volume 2. New York: Golden Press.

Dearlove, T. (1992). Armstrong fence extended. *Custos,* December, 21(9), 22.

de Goede, N. (2019). Email, 9 and 16 September, nick.degoede@sanparks.org

De Graaff, G. (1976). Addo Elephant abound in Spekboom Veld. *Custos,* 5(6), 86-93.

Diederichs, P. (1979). Addo Elephants Flourish. *Custos,* 8(9), 8-9.

Diederichs, P. (1980). In the heart of the Addo bush. *Custos,*, 9(6), 5-7.

Directorate Marketing. (2017). *A profile of the South Africa citrus market value chain.* Pretoria: Department of Agriculture, Forestry and Fisheries.

Dudley, N. (ed.) (2008). *Guidelines for Applying Protected Area Management Categories.* Gland, Switzerland: International Union for Conservation of Nature.

Fullman, T.J., Kiker, G.A., Gaylard, A., Southworth, J., Waylen, P. & Kerley, G.I.H. (2017).

Elephants' respond to resource trade-offs in an aseasonal system through daily and annual variability in resource selection. *Koedoe,* 59(1), 1-21.

Grobler, H. & Hall-Martin, A. (1982). *A Guide to the Addo Elephant National Park.* Pretoria: National Parks Board of South Africa.

Grove, R.H. (1995). *Green imperialism: Colonial expansion, tropical island Edens and the origins of environmentalism.* Cambridge: Cambridge University Press.

Hall-Martin, A. (1977). Black Rhinos of Addo. *Custos,* 6(9), 8-15.

Hall-Martin, A. (1984). Kenya's black rhino in Addo, S. Africa. *Newsletter of the African Elephant and Rhino Group*, 3, 11. Retrieved from: www.rhinoresourcecenter.com/index.php?s=1&act=refs&CODE=ref_detail&id=1165236961, [Accessed 11.9.2019]

Hall-Martin, A.J. (1992). Distribution and status of the African elephant *Loxodonta africana* in South Africa, 1652-1992. *Koedoe*, 35, 65-88.

Hall-Martin, A. (1993). Addo: Tale of redemption and resurrection. *Custos,* August, 17-18.

Hall-Martin, A. & Penzhorn, B.L. (1977). Behaviour and recruitment of translocated black rhinoceros Diceros bicornis. *Koedoe*, 20, 147-162.

Hippos of Addo. (1974). *Custos,* 3(9), 35-37.

Hoffman, M.T. (1993). Major P.J. Pretorius and the decimation of the Addo elephant herd in 1919-1920: important reassments. *Koedoe,* 36(2), 23-44.

Inauguration of Addo Caravan Park. (1976). *Custos,* 5(4), 15.

Jensen, N. (1980a). Addo Elephant and Buffalo thrive. *Custos*, 9(6), 15-19.

Jensen, N. (1980b). "Armstrong fence" pioneer dies. *Custos,* 9(11), 37, 39, 41, 44.

Kayser, D., Sobrevila, C. & Ledec, G. (2011). *Addo Elephant National Park: From Planning to the Implementation of a Successful Conservation and Socio-Economic Model.* Washington, D.C.: The World Bank.

Kerley, G.I.H. & Boshoff, A. (1997). *A proposal for a Greater Addo National Park. A regional and national conservation and development opportunity.* Terrestrial Ecology Research Unit, Report 17. University of Port Elizabeth.

Kerley, G.I.H., Boshoff, A.F. & Knight, M.H. (2003). "The Greater Addo National Park, South Africa: Biodiversity Conservation as the Basis for a Healthy Ecosystem and Human Development Opportunities" In: Rapport, D.J., Lasley, W.L., Rolston, D.E., Ole Nielsen, N., Qualset, C.O. and Damania, A.B. (eds.). *Managing for Healthy Ecosystems*. Boca Raton: Lewis Publishers.

Knight, A.T., Boshoff, A.F., Cowling, R.M. & Wilson, S.L. (2003). *Keeping people on the land in living landscapes: A Co-operative Strategy for Conserving Landscapes and Enhancing Livelihoods in the Subtropical Thicket Biome, South Africa.* Port Elizabeth: Subtropical Thicket Ecosystem Planning (STEP).

Kuiper, T.R. & Parker, D.M. (2014). Elephants in Africa: Big, grey biodiversity thieves? *South African Journal of Science, 110(3/4), 1-3.*

Labuschagne, R.J. (1968).*The Kruger Park and other national parks*. Johannesburg: Da Game Publishers.

Labuschagne, R.J. (1969). *Our National Parks.* Pretoria: National Parks Board of South Africa.

Landman, M., Gaylard, A., Mendela, T. & Kerley, G.I.H. (2014). Impact of elephant on two woody trees, *Boscia oleoides* and *Pappea capensis*, in an arid thicket-Nama Karoo mosaic, Greater Addo Elephant National Park. *Koedoe,* 56(1), 1-3.

Maciejewski, K. & Kerley, G.I.H. (2014). Elevated elephant density does not improve ecotourism opportunities: convergence in social and ecological objectives. *Ecological Applications*, 24(5), 920-926.

MacKenzie, J.M. (1988). *The Empire of Nature: Hunting, Conservation and British Imperialism.* Manchester: Manchester University Press.

Meyer, I. (2015). *The impact on visitation and the relative importance of iconic animals as tourist attraction in selected SANParks.* Unpublished MCom thesis, Pretoria University.

Mileson, S.A. (2009). *Parks in Medieval England.* Oxford: Oxford University Press.

Mucina. L. & Rutherford, M.C. (2006). *The Vegetation of South Africa, Lesotho and Swaziland.* Pretoria: South African National Biodiversity Institute.

National Parks Board. (c. 1976). *The Addo Elephants.* Pretoria: National Parks Board of Trustees.

Novellie, P., Hall-Martin, A.J. & Joubert, D. (1991). The problem of maintaining large herbivores in small conservation areas: deterioration of the grassveld in the Addo Elephant National Park. *Koedoe,* 34(1), 41-50.

Paley, R.G.T. & Kerley, G.I.H. (1998). The winter diet of elephant in Eastern Cape Subtropical Thicket, Addo Elephant National Park. *Koedoe,* 41(1), 37-45.

Paterson, W. (1789). *A Narrative of four Journeys into the Country of the Hottentots and Caffraria, in the Years One Thousand Seven Hundred and Seventy-Seven, Eight and Nine.* London: J. Johnson.

Parker, D.M. (2008). *The effects of elephants at low densities and after short occupation time on the ecosystems of the Eastern Cape Province, South Africa.* Unpublished PhD thesis, Rhodes University.

Penzhorn, B.L. (1971). A summary of the re-introduction of ungulates into South African National Parks (to 31 December 1970). *Koedoe,* 14, 145-159.

Penzhorn, B.L., Robbertse, P.J. & Olivier, M.C. (1974). The influence on the African elephant on the vegetation of the Addo Elephant National Park. *Koedoe,* 17, 137-158.

Pretorius, P.J. (1948). *Jungle Man: The Autobiography of Major P. J. Pretorius*. London: Alexander Books.

Pringle, J. (1982). *The Conservationists and the killers: The Story of Game Protection and the Wildlife Society of Southern Africa*. Cape Town: T.V. Bulpin and Books of Africa.

Richards, J.F. (2003). *The Unending Frontier: An Environmental History of the Early Modern World.* Berkeley: University of California Press.

Rouget, M., Cowling, R.M., Lombard, A.T., Knight, M.H. & Kerley, G.I.H. (2006). Designing Large-Scale Conservation Corridors for Pattern and Process. *Conservation Biology*, 20(2), 549-561.

SANParks. (2004). Annual Report: 2003/2004. Pretoria: South African National Parks.

SANParks. (2005). Annual Report: 2004/2005. Pretoria: South African National Parks.

SANParks. (2006). Annual Report: 2006/2007. Pretoria: South African National Parks.

SANParks. (2007). Annual Report: 2007/2008. Pretoria: South African National Parks.

SANParks. (2008). Annual Report: 2007/2008. Pretoria: South African National Parks.

SANParks. (2009). Annual Report: 2008/2009. Pretoria: South African National Parks.

SANParks.(2010). Annual Report: 2009/2010. Pretoria: South African National Parks.

SANParks. (2011). Annual Report: 2010/2011. Pretoria: South African National Parks.

SANParks. (2012).Annual Report: 2011/2012. Pretoria: South African National Parks.

SANParks .(2013). Annual Report: 2012/2013. Pretoria: South African National Parks.

SANParks. (2014). Annual Report: 2013/2014. Pretoria: South African National Parks.

SANParks. (2015a). Annual Report: 2014/2015. Pretoria: South African National Parks.

SANParks. (2015b). *Addo Elephant National Park: Park Management Plan: 2015-2025.* Pretoria: SANParks.

SANParks. (2016). Annual Report: 2015/2016. Pretoria: South African National Parks.

SANParks. (2017a). Annual Report: 2016/2017. Pretoria: South African National Parks.

SANParks. (2017b). *Information for guides operating in the Addo Elephant National Park*. Pretoria: South African National Parks.

SANParks. (2019). *Tourism Summary: 2018/2019.* Pretoria: South African National Parks.

South African Elections: Government in the Minority. General Smuts himself defeated. The Registrar, Adelaide, Australia. 19 June 1924.

Stokes, C.S. (1941). *Sanctuary.* Cape Town: The Sanctuary Production Committee.

Stevenson-Hamilton, J. (1926). The Transvaal Game Reserve: An Animal Sanctuary for the Union. *Journal of the Royal African Society,* 25(99), 211-228.

Symonds, E. (1987). From Rugby to Royalty: Early days at Addo Elephant National Park. *Custos,* January, 15(10), 34-37.

van Sittert, L. (2005). Bringing in the Wild: The Commodification of Wild Animals in the Cape Colony/Province c. 1850-1950. *The Journal of African History,* 46(2), 269-291.

Whitehouse, A.M. & Schoeman, D.S. (2003). Ranging behaviour of elephants within a small, fenced area in Addo Elephant National Park, South Africa. *African Zoology*, 38(1), 95-108.

Woodd, A.M. (1999). A demographic model to predict future growth of the Addo elephant population. *Koedoe,* 42(1), 97-100.

World Bank. (2011). *Implementation Completion and Results Report (TF-53110) on a grant in the amount of $5.5 million to the Republic of South Africa for the Greater Addo Elephant National Park Project.* Washington: The World Bank.