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**Ecology of the white lion: conservation management of the white lion (*Panthera leo melanochaita* Hamilton Smith 1842) in the Greater Kruger Park Region, South Africa**

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**Photo 6.2** Reintroduced adult white lioness with her cub at Tula Tsau Wildlife Area. © *Global White Lion Protection Trust*

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# Summary

This is the first study to investigate the ecology and conservation management of the white lion (*Panthera leo melanochaita*). The white lion is a natural colour variant, or leucistic form, of the southern subspecies of the African lion (*Panthera leo melanochaita*) that has only ever been recorded in the wild in the Timbavati, Klaserie and Umbabat Private Nature Reserves (Greater Timbavati Region) and the Central Kruger National Park (KNP) – the Greater Kruger Park Region – in South Africa. The frequency of occurrence of white lions in the region was increasing in the 1980s, with 12 recorded sightings in nine different prides in the Timbavati Private Nature Reserve and Central Kruger National Park. From 1994 to 2006, there was an absence of white lions in the wild, the perception being that white lions cannot survive in the wild due to a lack of camouflage preventing them from hunting successfully.

In 2006 a non-profit conservation organisation, the Global White Lion Protection Trust, therefore initiated the first reintroduction of white lions to free-roaming conditions within a small fenced wildlife area in the Greater Kruger Park Region. The results of this doctoral study suggest that the reintroduced white lions show natural behaviour, similar to wild tawny lions, in terms of their social interactions, home range and movement patterns, and their hunting success. These findings are supported by historical observations at the Timbavati Private Nature Reserve, and recent observations at Sanbona and Pumba Private Game Reserves. These observations suggest that white lions are capable of surviving in the wild as part of wild tawny prides. Based on these findings it is concluded that the reason for the low survival rate of white lion cubs in the Greater Kruger Park Region was due to anthropogenic activities and not due to lack of competitive capacity of white lions. Between 2006 and 2022 white lion cubs (17) were born in the Greater Kruger Park Region, confirming that the recessive gene is still present in the wild lion population. Although white lions occur within the wild lion population in this region, due to the rarity of white lions (only 13 wild managed lions and 3 wild adult white lions), the anthropogenic activities that affect the wild tawny lion population may have had a more significant impact on wild and managed white lions in that region. Human-lion conflict and trade in lion body parts for traditional and cultural use are two of the anthropogenic activities that have been identified as a major threat to wild lions in South Africa. The long-standing cultural significance of white lions amongst the local Tsonga and Sepedi communities in the Greater Kruger Park Region led white lions to be referred to as a 'living cultural heritage'. According to the Global White Lion Protection Trust, this cultural belief may help to mitigate human-lion conflict and prevent lion poaching for body parts. The low incidence of lion poaching

and human-lion conflict over the past 20 years at the wildlife areas managed by the Global White Lion Protection Trust suggests that a positive attitude of local Tsonga and Sepedi communities towards the conservation of white lions has contributed to the conservation of white lions in the bordering wildlife areas.

The present study had a number of limitations, namely: the small size of the prides and small number of prides studied, the restricted size of the fenced wildlife area included in the study and the captive-origin of the white lions studied. The findings of the study are therefore preliminary, but they do indicate that white lions display natural behaviour similar to wild tawny lions, and they can therefore survive in the wild. This finding is supported by historical observations. The implications of the study are therefore expected to advance the existing knowledge of the ecology of the white lion, may contribute to reintroduction techniques and translocation success for white lions. The results of this study may also contribute to the conservation management of white lions in relation to the metapopulation approach for lions in South Africa. The findings suggest the potential role of the white lion in lion conservation in the Greater Kruger Park Region, in terms of their economic, eco-touristic and cultural significance.