GENERAL NOTICE

NOTICE 54 OF 2013

DEPARTMENT OF ENVIRONMENTAL AFFAIRS

NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT, 2004 (ACT NO. 10 OF 2004):

NON-DETRIMENT FINDINGS

I, Bomo Edith Edna Molewa, Minister of Water and Environmental Affairs, hereby publish the summary of the non-detriment findings made by the Scientific Authority in terms of section 62 of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) and set out in the Schedule hereto. The complete non-detriment findings containing detailed information will be made available on the Department of Environmental Affairs' website: http://www.environment.gov.za/

Members of the public are invited to submit to the Minister, within 30 (thirty) days after the publication of the notice in the *Gazette*, written inputs for further consideration by the Scientific Authority to the following addresses:

By post to: Chair: Scientific Authority
South African National Biodiversity Institute
Attention: Ms M Pfab
Private Bag X 101
Pretoria
0001

By hand at: 2 Cussonia Avenue, Brummeria, Pretoria, 0001

By e-mail: m.pfab@sanbi.org.za or by fax to: 086 555 9863

Comments received after the closing date may not be considered.

BOMO EDITH EDNA MOLEWA
MINISTER OF WATER AND ENVIRONMENTAL AFFAIRS

SCHEDULE

NON-DETRIMENT FINDINGS

1. ***Encephalartos latifrons*** (Reference Number: Enc_lat_Aug2012)

Summary of finding

Encephalartos latifrons (Albany cycad) is included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As an Appendix I species, the export of wild-sourced specimens for commercial purposes is prohibited. However, specimens artificially propagated for commercial purposes are deemed to be specimens of species included in Appendix II (Article VII) of CITES and therefore may be traded. In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species. This document details the undertaking of a non-detriment finding (NDF) for *E. latifrons* and is based on the best current available information.

Encephalartos latifrons has been listed as Critically Endangered by the IUCN (the International Union for Conservation of Nature), meaning that it is considered to be facing an extremely high risk of extinction in the wild. Historically scattered through the Albany and Bathurst districts of the Eastern Cape, *E. latifrons* has declined by more than 80% over the past 100 years and today numbers approximately 45 wild plants equally divided between the two major localities where the species is still extant. The species continues to decline in the wild due to poaching for horticultural/ornamental purposes and illegal harvesting of suckers from the remaining wild plants, as well as limited bark harvesting, is also occurring. *Encephalartos latifrons* is a popular cycad amongst collectors and is encountered in private collections and in some cycad nurseries primarily in the Eastern Cape, Western Cape and Gauteng.

The harvest of wild cycads has been prohibited throughout South Africa since February 2007. Prior to this, any harvesting, possession or conveyance of cycads required permits in terms of provincial legislation that was enacted in the 1970s, but apart from one permit issued in 1997 to allow for the once-off collection of seed, no permits were reportedly ever issued for the wild harvest of *E. latifrons* plants or seed (although *ex situ* plants may have originally been sourced from the wild prior to the enactment of provincial legislation). Enforcement of these strict protection measures has been hampered by the human resource and budgetary constraints facing the provincial conservation authorities that are mandated to enforce provincial and national environmental legislation, and ongoing illegal harvest of wild cycads is a countrywide problem. In Gauteng for example, where the demand for illegally harvested wild cycads is ultimately centered, reportedly 40% of posts within the Biodiversity Enforcement division of the Gauteng Department of Agriculture and Rural Development are currently (2011/2012) vacant. The Special Investigations unit within the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism is reportedly constrained by a limited operational budget.

Past ineffective implementation of provincial conservation legislation in Gauteng, KwaZulu-Natal and the Eastern Cape has facilitated the entry of illegally harvested cycads into the legal trade. These plants have been and continue to be legalized and incorporated into private collections and their use as parental stock for the propagation of seedlings for both the domestic and international cycad trade cannot be ruled out. The number of *E. latifrons* specimens exported from South Africa has increased over the years since the inception of international trade in this species in 1980. In total, 972 specimens had been exported from South Africa up until the end of 2009, the bulk of the trade (83%) having taken place after 1995 when the cycad protection measures in Gauteng were particularly weak.

Micro-chips have been inserted into all known wild *E. latifrons* plants. Micro-chips have however proven to be largely ineffective for establishing wild origins of cycads and have failed to deter poachers. The failure of the legal protection measures has been further exacerbated by prosecutors and magistrates who are not well

informed about South Africa's cycad extinction crisis and the small fines issued and minimal jail sentences passed for cycad related offenses are ineffective deterrents.

A Biodiversity Management Plan (BMP) for *E. latifrons*, the aim of which is to secure the existing wild plants and execute a restoration and monitoring programme, was published in June 2011 in terms of section 43 of the National Environmental Management: Biodiversity Act (NEMBA) of 2004. Legal harvesting of wild seed for propagation and subsequent trade is permitted in accordance with this BMP on condition a percentage of the seedlings are set aside for restoration purposes, thereby increasing the value of the wild plants and incentivizing landowners to protect them from poaching. As the BMP has only been published recently, it is premature to assess its effectiveness in bringing about the recovery and sustainable utilization of *E. latifrons*. However, the existence of the BMP and the anticipated conservation benefits to the species places *E. latifrons* at a lower risk of overutilization (Figure 1) than other Critically Endangered cycad species, and it is hoped that its conservation status will be improved and ultimately its extinction will be prevented.

The species' biology, which is characterized by a poor dispersal ability and slow growing long-lived adults that regenerate predominantly from seed, renders *E. latifrons* particularly vulnerable to overutilization. It is therefore imperative that the effectiveness of the existing strict protection measures be improved significantly on a national basis in order to curtail the continuing poaching activities. Until such time as these improvements are realized, the Scientific Authority is unable to state with any confidence that the export of artificially propagated *E. latifrons* specimens from South Africa will not have a detrimental impact on the wild population. **The Scientific Authority is therefore unable to issue a positive NDF for *E. latifrons* at this time, with one exception – seedlings propagated in accordance with the BMP published for *E. latifrons* may be exported.**

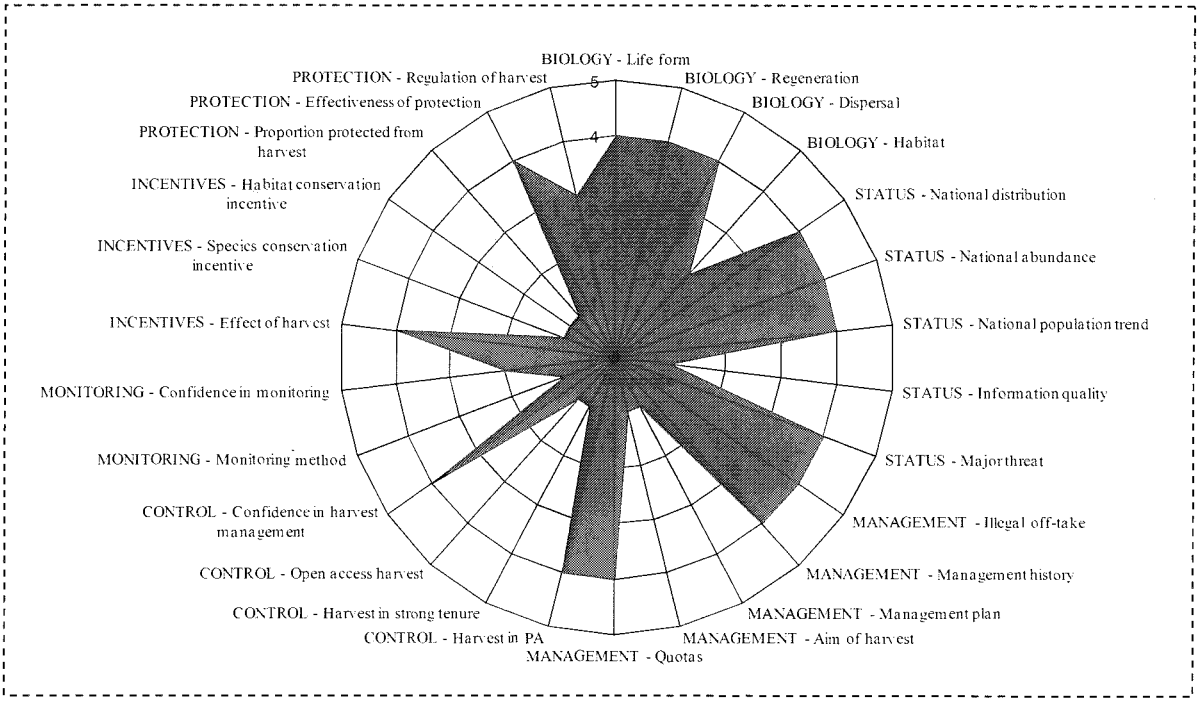

Figure 1. Radar chart summarizing the non-detriment finding undertaken for *Encephalartos latifrons* in accordance with the CITES NDF checklist. Higher scores are indicative of higher risks to the species.

2. ***Encephalartos laevifolius*** (Reference Number: Enc_lae_Aug2012)

Summary of finding

Encephalartos laevifolius (Kaapsehoop cycad) is included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As an Appendix I species, the export of wild-sourced specimens for commercial purposes is prohibited. However, specimens artificially propagated for

commercial purposes are deemed to be specimens of species included in Appendix II (Article VII) of CITES and therefore may be traded. In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species. This document details the undertaking of a non-detriment finding (NDF) for *E. laevifolius* and is based on the best current available information.

Encephalartos laevifolius has been listed as Critically Endangered by the IUCN (the International Union for Conservation of Nature), meaning that it is considered to be facing an extremely high risk of extinction in the wild. Its distribution is restricted and fragmented, the species occurring predominantly in Mpumalanga, with the main populations growing in the Kaapsehoop mountain range. Available data to date suggest that the few known and monitored populations in South Africa number approximately 26 plants, 54 plants and 15 plants. The population in the Kaapsehoop area, formerly numbering approximately 1700 plants, has experienced a severe decline of 97% between 1997 and 2010 due to poaching to supply the horticultural trade and private collections. Also due to poaching, *E. laevifolius* no longer occurs in the Blyderivierspoort Nature Reserve in Mpumalanga or in the provinces of KwaZulu-Natal and Eastern Cape.

The harvest of wild cycads has been prohibited throughout South Africa since February 2007. Prior to this, any harvesting, possession or conveyance of cycads required permits in terms of provincial legislation that was enacted in the 1970s, but no permits were reportedly ever issued for the wild harvest of *E. laevifolius* plants or seed (although *ex situ* plants may have originally been sourced from the wild prior to the enactment of provincial legislation). Enforcement of these strict protection measures has been hampered by the human resource and budgetary constraints facing the provincial conservation authorities that are mandated to enforce provincial and national environmental legislation, and ongoing illegal harvest of wild cycads is a countrywide problem. In Gauteng for example, where the demand for illegally harvested wild cycads is ultimately centered, reportedly 40% of posts within the Biodiversity Enforcement division of the Gauteng Department of Agriculture and Rural Development are currently (2011/2012) vacant. The Mpumalanga Tourism and Parks Agency is primarily responsible for the *in situ* protection and management of *E. laevifolius*, however current (2011/2012) vacancy rates within this agency are reported to be 51% and 64% within the Wildlife Protection Services and Scientific Services divisions, respectively. No more than 3% of the annual conservation budget is apparently spent on cycads and this expenditure is usually allocated towards law enforcement activities. Since 2011 the Mpumalanga Tourism and Parks Agency has reportedly had no operational budget.

Past ineffective implementation of provincial conservation legislation in Gauteng, KwaZulu-Natal and the Eastern Cape has facilitated the entry of illegally harvested cycads into the legal trade. These plants have been and continue to be legalized and incorporated into private collections and their use as parental stock for the propagation of seedlings for both the domestic and international cycad trade cannot be ruled out. The bulk of the international trade (75%) in *E. laevifolius* occurred after 1997, coinciding with the observed dramatic decline in the wild population and taking place in the same time period when the cycad protection measures in Gauteng were particularly weak. Altogether 810 *E. laevifolius* specimens had been exported from South Africa by the end of 2009, the trade steadily increasing since its inception in 1986. No conservation benefit for the species or its habitat is derived from the trade in *E. laevifolius*.

Micro-chips inserted into wild plants have proven to be largely ineffective for establishing wild origins of cycads and have failed to deter poachers. All but 54 of the 1700 plants micro-chipped in the Kaapsehoop area had been stolen by 2010 and numerous *E. laevifolius* plants exhibiting evidence of removed micro-chips have been encountered in Gauteng. The failure of the legal protection measures has been further exacerbated by prosecutors and magistrates who are not well informed about South Africa's cycad extinction crisis and the small fines issued and minimal jail sentences passed for cycad related offenses are ineffective deterrents.

Outdated (20 years old) conservation plans exist for all Mpumalanga's cycad species. Although some of these plans are currently being implemented, parts have collapsed altogether and they are in dire need of major revision. None of these plans address harvest management. While regular monitoring of *E. laevifolius* does

take place, continuation of monitoring programmes is uncertain due to the severe capacity constraints facing the Mpumalanga Tourism and Parks Agency.

The species' biology, which is characterized by a poor dispersal ability and slow growing long-lived adults that regenerate predominantly from seed, renders *E. laevifolius* particularly vulnerable to overutilization. This, together with the species' extremely poor conservation status, the severe ongoing poaching pressure, the outdated conservation plan, the capacity and budgetary constraints that prevent the Mpumalanga Tourism and Parks Agency from effectively managing and monitoring the species, the lack of conservation incentives and the continuing ineffective implementation of the existing strict protection measures for cycads on a national basis present a scenario that is unfavourable for the survival of *E. laevifolius* in the wild (Figure 1). In order to decrease the risk to this species and prevent its imminent extinction, a concerted effort to address all of these factors is essential.

The NDF for *E. laevifolius* demonstrates that this species is at an extremely high risk of unsustainable utilization (Figure 1). The Scientific Authority is unable to state with any confidence that the export of artificially propagated *E. laevifolius* specimens from South Africa will not have a detrimental impact on the wild population. **The Scientific Authority is therefore unable to issue a positive NDF for *E. laevifolius* at this time.**

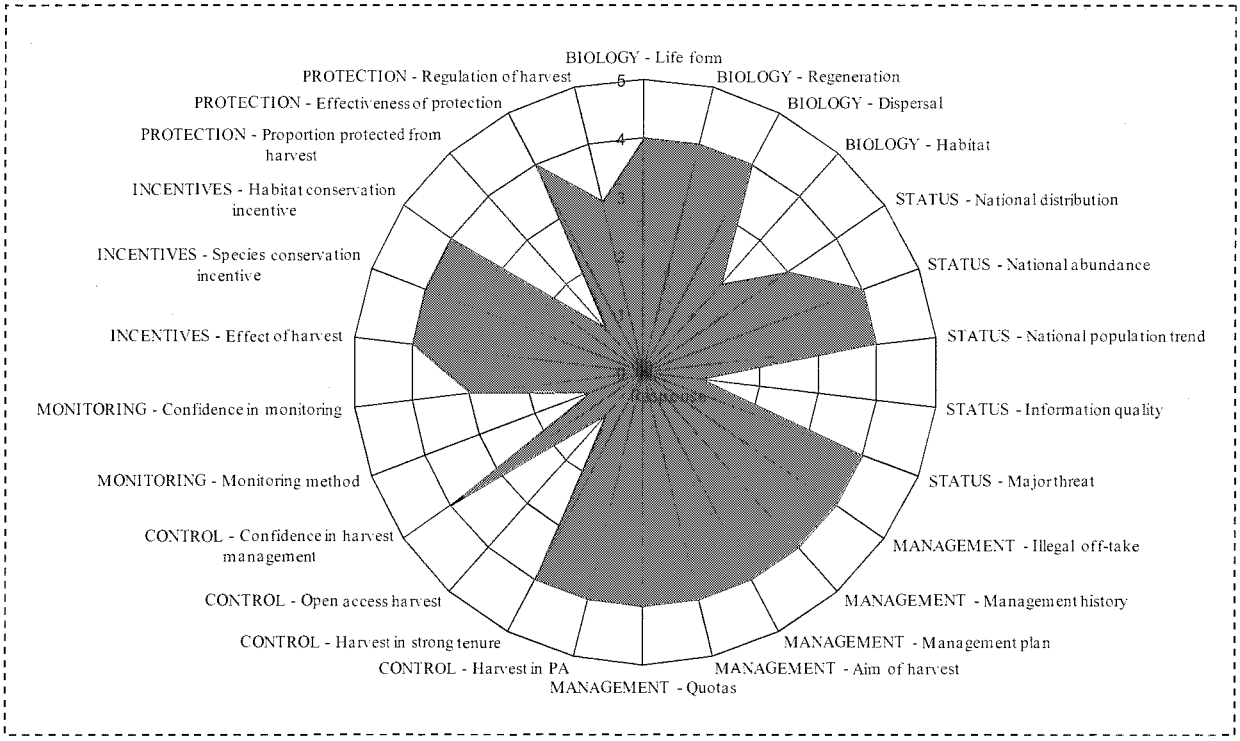

Figure 1. Radar chart summarizing the non-detriment finding undertaken for *Encephalartos laevifolius* in accordance with the CITES NDF checklist. Higher scores are indicative of higher risks to the species.

3. ***Encephalartos inopinus*** (Reference Number: Enc_ino_Aug2012)

Summary of finding

Encephalartos inopinus (Lydenburg cycad) is included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As an Appendix I species, the export of wild-sourced specimens for commercial purposes is prohibited. However, specimens artificially propagated for commercial purposes are deemed to be specimens of species included in Appendix II (Article VII) of CITES and therefore may be traded. In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental

to the survival of that species. This document details the undertaking of a non-detriment finding (NDF) for *E. inopinus* and is based on the best current available information.

Encephalartos inopinus has been listed as Critically Endangered by the IUCN (the International Union for Conservation of Nature), meaning that it is considered to be facing an extremely high risk of extinction in the wild. Formerly localized in Limpopo province, this species may in fact already be extinct in the wild since a flight over the population in 2008 and then again in 2012 failed to locate any plants. Poaching of plants to supply the horticultural trade as well as private collections has had a severe impact on the wild population of *E. inopinus*, causing a dramatic decline of 83% in the time period between 1992 and 2001, and then a further decline of 28% between 2001 and 2004.

The harvest of wild cycads has been prohibited throughout South Africa since February 2007. Prior to this, any harvesting, possession or conveyance of cycads required permits in terms of provincial legislation that was enacted in the 1970s, but no permits were reportedly ever issued for the wild harvest of *E. inopinus* plants or seed (although seedlings were available from the Hartebeesthoek nursery which operated between 1975 and 1998 and some *ex situ* plants may have originally been sourced from the wild prior to the enactment of provincial legislation). Enforcement of these strict protection measures has been hampered by the human resource and budgetary constraints facing the provincial conservation authorities that are mandated to enforce provincial and national environmental legislation, and ongoing illegal harvest of wild cycads is a countrywide problem. In Gauteng for example, where the demand for illegally harvested wild cycads is ultimately centered, reportedly 40% of posts within the Biodiversity Enforcement division of the Gauteng Department of Agriculture and Rural Development are currently (2011/2012) vacant. The Limpopo Department of Economic Development, Environment and Tourism is primarily responsible for the *in situ* protection and management of *E. inopinus*, however this department is experiencing severe capacity constraints with current (2011/2012) vacancy rates reported to be 65% and 68% within the Biodiversity Management and Enforcement divisions, respectively. There is furthermore no botanist in this province to provide strategic direction for the conservation of the species.

Past ineffective implementation of provincial conservation legislation in Gauteng, KwaZulu-Natal and the Eastern Cape has facilitated the entry of illegally harvested cycads into the legal trade. These plants have been and continue to be legalized and incorporated into private collections. Their use as parental stock for the propagation of seedlings for both the domestic and international cycad trade cannot be ruled out. International trade in E. inopinus started in 1986, but the bulk of the trade (96%) occurred after 1995 when the cycad protection measures in Gauteng were particularly weak. Peak trade levels between 1995 and 2001 coincided with the massive decline observed in the wild population. No conservation benefit for the species or its habitat is derived from the trade in *E. inopinus*.

Micro-chips inserted into wild plants have proven to be largely ineffective for establishing wild origins of cycads and have failed to deter poachers. The failure of the legal protection measures has been further exacerbated by prosecutors and magistrates who are not well informed about South Africa's cycad extinction crisis and the small fines issued and minimal jail sentences passed for cycad related offenses are ineffective deterrents.

There is an outdated conservation plan for *E. inopinus* that is in considerable need of revision. The species' biology, which is characterized by a poor dispersal ability and slow growing long-lived adults that regenerate predominantly from seed, renders *E. inopinus* particularly vulnerable to overutilization. All of this, together with the species' extremely poor conservation status, the severe poaching pressure, the capacity and budgetary constraints that prevent the Limpopo Department of Economic Development, Environment and Tourism from curbing poaching, the lack of conservation incentives and the continuing ineffective implementation of the existing strict protection measures for cycads on a national basis present a scenario that is unfavourable for the survival of *E. inopinus* in the wild (Figure 1). In order to decrease the risk to this species and bring about its recovery, a concerted effort to address all of these factors is essential.

The NDF for *E. inopinus* demonstrates that this species is at an extremely high risk of unsustainable utilization (Figure 1). In fact illegal off-take to supply the cycad trade may already have caused the extinction of this species. The Scientific Authority is unable to state with any confidence that the export of artificially propagated *E. inopinus* specimens from South Africa will not have a detrimental impact on the wild population. **The Scientific Authority is therefore unable to issue a positive NDF for *E. inopinus* at this time.**

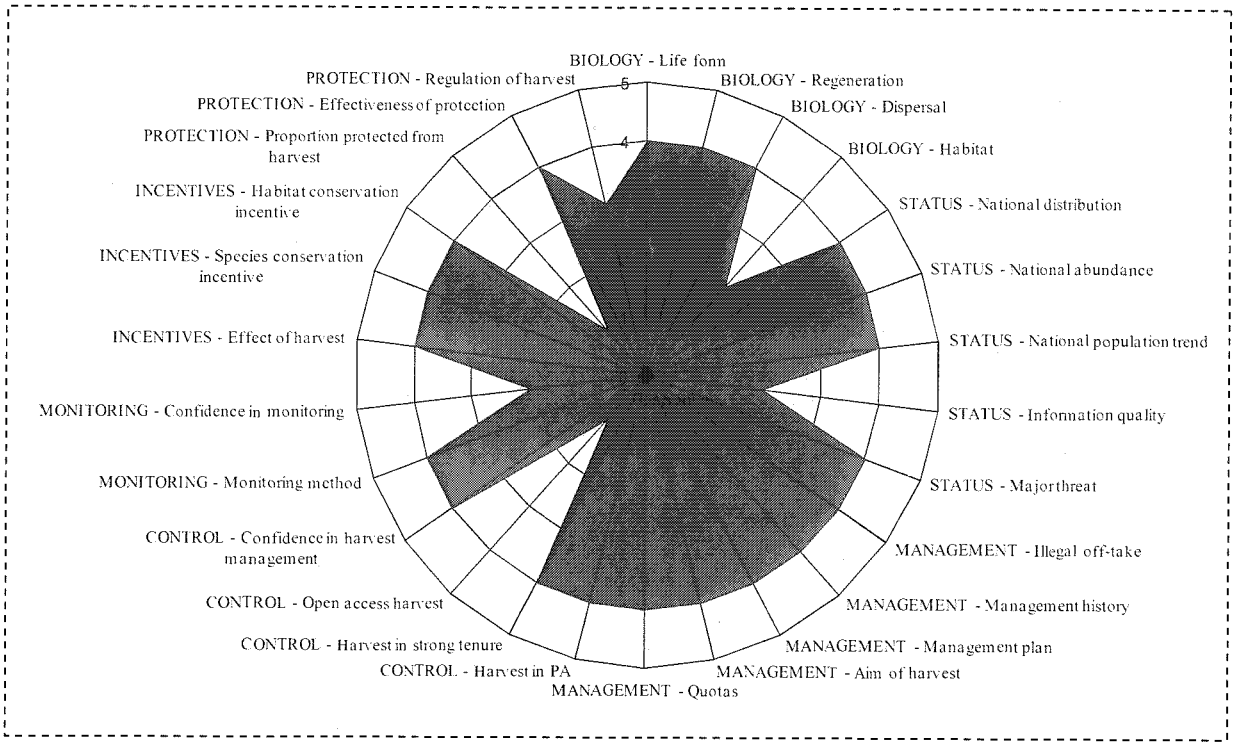

Figure 1. Radar chart summarizing the non-detriment finding undertaken for *Encephalartos inopinus* in accordance with the CITES NDF checklist. Higher scores are indicative of higher risks to the species.

4. ***Encephalartos hirsutus*** (Reference Number: Enc_hir_Aug2012)

Summary of finding

Encephalartos hirsutus (Venda cycad) is included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As an Appendix I species, the export of wild-sourced specimens for commercial purposes is prohibited. However, specimens artificially propagated for commercial purposes are deemed to be specimens of species included in Appendix II (Article VII) of CITES and therefore may be traded. In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species. This document details the undertaking of a non-detriment finding (NDF) for *E. hirsutus* and is based on the best current available information.

Encephalartos hirsutus has been listed as Critically Endangered by the IUCN (the International Union for Conservation of Nature), meaning that it is considered to be facing an extremely high risk of extinction in the wild. When the species was first described in 1996, there were three known localities in the Soutpansberg region of the Limpopo province and the size of the wild population was estimated to number between 400 and 500 plants. But the impact of poaching on *E. hirsutus* to supply the horticultural trade and private collections has been so severe that it has resulted in the near extinction of the species. By 2004 the monitored wild population had declined to 219 plants and today only 1 individual apparently remains in an inaccessible location on a private nature reserve.

The harvest of wild cycads has been prohibited throughout South Africa since February 2007. Prior to this, any harvesting, possession or conveyance of cycads required permits in terms of provincial legislation that was enacted in the 1970s, but no permits were reportedly ever issued for the wild harvest of *E. hirsutus* plants or seed since its description in 1996. Enforcement of these strict protection measures has been hampered by the human resource and budgetary constraints facing the provincial conservation authorities that are mandated to enforce provincial and national environmental legislation, and ongoing illegal harvest of wild cycads is a countrywide problem. In Gauteng for example, where the demand for illegally harvested wild cycads is ultimately centered, reportedly 40% of posts within the Biodiversity Enforcement division of the Gauteng Department of Agriculture and Rural Development are currently (2011/2012) vacant. The Limpopo Department of Economic Development, Environment and Tourism is primarily responsible for the *in situ* protection and management of *E. hirsutus*, however this department is experiencing severe capacity constraints with current (2011/2012) vacancy rates reported to be 65% and 68% within the Biodiversity Management and Enforcement divisions, respectively. There is furthermore no botanist in this province to provide strategic direction for the conservation of the species.

Past ineffective implementation of provincial conservation legislation in Gauteng, KwaZulu-Natal and the Eastern Cape has facilitated the entry of illegally harvested cycads into the legal trade. These plants have been and continue to be legalized and incorporated into private collections. Their use as parental stock for the propagation of seedlings for both the domestic and international cycad trade cannot be ruled out. International trade in *E. hirsutus* started in 1999, just three years after the species had been described and during the years when the cycad protection measures in Gauteng were particularly weak. The trade has shown an increasing trend since its inception in parallel with the observed decline of the wild population. As no permit has ever been issued to allow for the harvest of *E. hirsutus* plants or seed from the wild and the species was only discovered and described recently, it is unlikely that the original parental stock was obtained legally prior to the enactment of the provincial legislation. No conservation benefit for the species or its habitat is derived from the trade in *E. hirsutus*.

Micro-chips inserted into wild plants have proven to be largely ineffective for establishing wild origins of cycads and have failed to deter poachers. The failure of the legal protection measures has been further exacerbated by prosecutors and magistrates who are not well informed about South Africa's cycad extinction crisis and the small fines issued and minimal jail sentences passed for cycad related offenses are ineffective deterrents.

There is currently no management plan for *E. hirsutus* and the wild population of this species is not regularly monitored. The species' biology, which is characterized by a poor dispersal ability and slow growing long-lived adults that regenerate predominantly from seed, renders *E. hirsutus* particularly vulnerable to overutilization. All of this, together with the species' extremely poor conservation status, the severe poaching pressure, the capacity and budgetary constraints that prevent the Limpopo Department of Economic Development, Environment and Tourism from curbing poaching, the lack of conservation incentives and the continuing ineffective implementation of the existing strict protection measures for cycads on a national basis present a scenario that is unfavourable for the survival of *E. hirsutus* in the wild (Figure 1). In order to decrease the risk to this species and bring about an improvement in its conservation status, a concerted effort to address all of these factors is essential.

The NDF for *E. hirsutus* demonstrates that this species is at an extremely high risk of unsustainable utilization (Figure 1). In fact with apparently only 1 plant remaining in the wild, the species has already been exploited to the brink of extinction. **The Scientific Authority is therefore unable to issue a positive NDF for *E. hirsutus* at this time.**

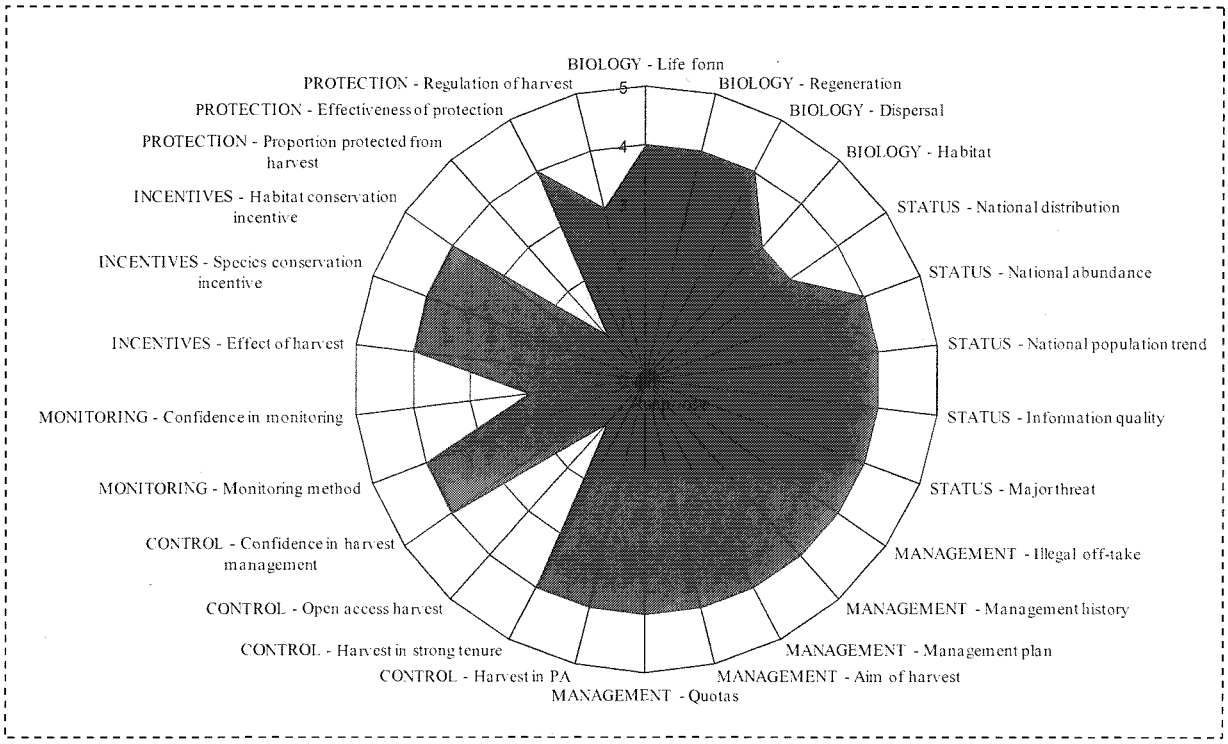

Figure 1. Radar chart summarizing the non-detriment finding undertaken for *Encephalartos hirsutus* in accordance with the CITES NDF checklist. Higher scores are indicative of higher risks to the species.

5. ***Encephalartos heenanii*** (Reference Number: Enc_hee_Aug2012)

Summary of finding

Encephalartos heenanii (woolly cycad) is included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As an Appendix I species, the export of wild-sourced specimens for commercial purposes is prohibited. However, specimens artificially propagated for commercial purposes are deemed to be specimens of species included in Appendix II (Article VII) of CITES and therefore may be traded. In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species. This document details the undertaking of a non-detriment finding (NDF) for *E. heenanii* and is based on the best current available information.

Encephalartos heenanii has been listed as Critically Endangered by the IUCN (the International Union for Conservation of Nature), meaning that it is considered to be facing an extremely high risk of extinction in the wild. The ongoing poaching pressure on this species in order to supply plants to the horticultural trade and private collections is severe, and the last surviving population of approximately 24 plants (comprising of 45 stems) occurs on a provincial nature reserve in Mpumalanga. According to a survey conducted in 1995, this population numbered approximately 115 plants (comprising of 326 stems) 17 years ago. Despite its occurrence on a protected area owned and controlled by the state, poaching has resulted in a rapid decline in this population, as observed through regular surveys, the last undertaken in 2009. Reproductive failure in the few remaining plants is now anticipated.

The harvest of wild cycads has been prohibited throughout South Africa since February 2007. Prior to this, any harvesting, possession or conveyance of cycads required a permit in terms of provincial legislation that was enacted in the 1970s, but no permits were reportedly ever issued for the wild harvest of *E. heenanii* plants or seed (although seedlings were available from the Hartebeesthoek nursery which operated between 1975 and

1998 and some *ex situ* plants may have originally been sourced from the wild prior to the enactment of provincial legislation). Enforcement of these strict protection measures has been hampered by the human resource and budgetary constraints facing the provincial conservation authorities that are mandated to enforce provincial and national environmental legislation, and ongoing illegal harvest of wild cycads is a countrywide problem. In Gauteng for example, where the demand for illegally harvested wild cycads is ultimately centered, reportedly 40% of posts within the Biodiversity Enforcement division of the Gauteng Department of Agriculture and Rural Development are currently (2011/2012) vacant. The Mpumalanga Tourism and Parks Agency is primarily responsible for the *in situ* protection and management of *E. heenanii*, however current (2011/2012) vacancy rates within this agency are reported to be 51% and 64% within the Wildlife Protection Services and Scientific Services divisions, respectively. Furthermore, 43% of the field ranger posts for the nature reserve on which *E. heenanii* grows are reportedly vacant, while no more than 3% of the annual conservation budget is apparently spent on cycads, this expenditure being primarily allocated towards law enforcement activities. Since 2011 the Mpumalanga Tourism and Parks Agency has reportedly had no operational budget.

Past ineffective implementation of provincial conservation legislation in Gauteng, KwaZulu-Natal and the Eastern Cape has facilitated the entry of illegally harvested cycads into the legal trade. These plants have been and continue to be legalized and incorporated into private collections and their use as parental stock for the propagation of seedlings for both the domestic and international cycad trade cannot be ruled out. International trade in *E. heenanii* started in 1988 and 188 specimens had been exported from South Africa by the end of 2009, the bulk of the trade (93%) showing an increasing trend after 1995, the same time period over which the decline in the wild population was observed and coinciding with the weakening of cycad protection measures in Gauteng. No conservation benefit for the species or its habitat is derived from the trade in *E. heenanii*.

Micro-chips inserted into wild plants have proven to be largely ineffective for establishing wild origins of cycads and have failed to deter poachers. The failure of the legal protection measures has been further exacerbated by prosecutors and magistrates who are not well informed about South Africa's cycad extinction crisis and the small fines issued and minimal jail sentences passed for cycad related offenses are ineffective deterrents.

Outdated (20 years old) conservation plans exist for all Mpumalanga's cycad species. Although some of these plans are currently being implemented, parts have collapsed altogether and they are in dire need of major revision. None of these plans address harvest management. While regular monitoring of *E. heenanii* does take place, continuation of monitoring programmes is uncertain due to the severe capacity constraints facing the Mpumalanga Tourism and Parks Agency.

The species' biology, which is characterized by a poor dispersal ability and slow growing long-lived adults that regenerate predominantly from seed, renders *E. heenanii* particularly vulnerable to overutilization. This, together with the species' extremely poor conservation status, the severe ongoing poaching pressure, the outdated conservation plan, the capacity and budgetary constraints that prevent the Mpumalanga Tourism and Parks Agency from effectively managing and monitoring the species, the lack of conservation incentives and the continuing ineffective implementation of the existing strict protection measures for cycads on a national basis present a scenario that is unfavourable for the survival of *E. heenanii* in the wild (Figure 1). In order to decrease the risk to this species and prevent its imminent extinction, a concerted effort to address all of these factors is essential.

The NDF for *E. heenanii* demonstrates that this species is at an extremely high risk of unsustainable utilization (Figure 1). In fact with less than 30 plants remaining in the wild, the species has already been exploited to the brink of extinction. The Scientific Authority is unable to state with any confidence that the export of artificially propagated *E. heenanii* specimens from South Africa will not have a detrimental impact on the wild population. **The Scientific Authority is therefore unable to issue a positive NDF for *E. heenanii* at this time.**

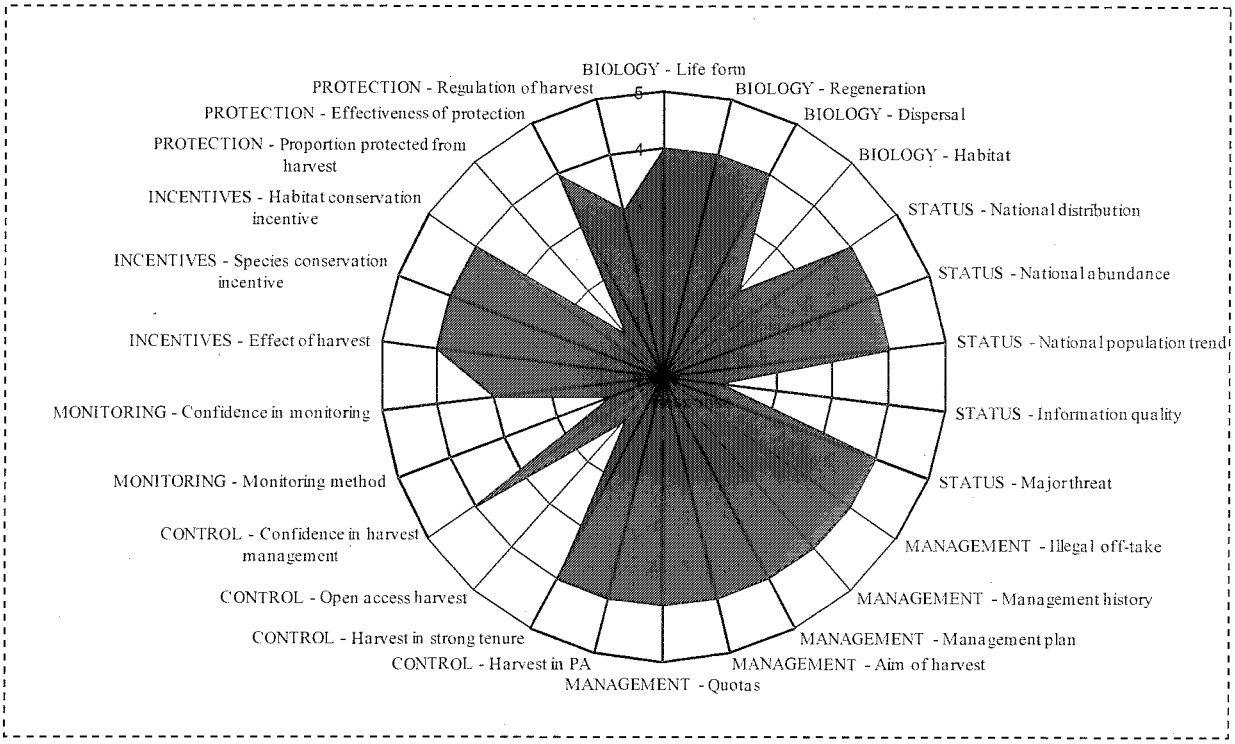

Figure 1. Radar chart summarizing the non-detriment finding undertaken for *Encephalartos heenanii* in accordance with the CITES NDF checklist. Higher scores are indicative of higher risks to the species.

6. ***Encephalartos dyerianus*** (Reference Number: Enc_dye_Aug2012)

Summary of finding

Encephalartos dyerianus (Lowveld cycad / Lillie cycad) is included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As an Appendix I species, the export of wild-sourced specimens for commercial purposes is prohibited. However, specimens artificially propagated for commercial purposes are deemed to be specimens of species included in Appendix II (Article VII) of CITES and therefore may be traded. In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species. This document details the undertaking of a non-detriment finding (NDF) for *E. dyerianus* and is based on the best current available information.

Encephalartos dyerianus has been listed as Critically Endangered by the IUCN (the International Union for Conservation of Nature), meaning that it is considered to be facing an extremely high risk of extinction in the wild. The species is confined to a single granite mountain in Limpopo province and the wild population numbers approximately 364 adult plants. Despite its occurrence within a provincial nature reserve, limited poaching of wild plants for horticultural/ornamental purposes is resulting in a continuing decline of the population. Because of the small size of the population, any illegal harvest of this species will have a severe impact on its survival in the wild.

The harvest of wild cycads has been prohibited throughout South Africa since February 2007. Prior to this, any harvesting, possession or conveyance of cycads required permits in terms of provincial legislation that was enacted in the 1970s, but no permits were reportedly ever issued for the wild harvest of *E. dyerianus* plants or seed (although seedlings were available from the Hartebeesthoek nursery which operated between 1975 and 1998). Enforcement of these strict protection measures has been hampered by the human resource and budgetary constraints facing the provincial conservation authorities that are mandated to enforce provincial and

national environmental legislation, and ongoing illegal harvest of wild cycads is a countrywide problem. In Gauteng for example, where the demand for illegally harvested wild cycads is ultimately centered, reportedly 40% of posts within the Biodiversity Enforcement division of the Gauteng Department of Agriculture and Rural Development are currently (2011/2012) vacant. The Limpopo Department of Economic Development, Environment and Tourism is primarily responsible for the *in situ* protection and management of *E. dyerianus*. However this department is experiencing severe capacity constraints with current (2011/2012) vacancy rates reported to be 65% and 68% within the Biodiversity Management and Enforcement divisions, respectively. There is furthermore no botanist in this province to provide strategic direction for the conservation of the species. All of the field ranger posts for the nature reserve on which *E. dyerianus* occurs are reportedly vacant, although the *E. dyerianus* population is guarded by field rangers deployed from a neighbouring protected area.

Past ineffective implementation of provincial conservation legislation in Gauteng, KwaZulu-Natal and the Eastern Cape has facilitated the entry of illegally harvested cycads into the legal trade. These plants have been and continue to be legalized and incorporated into private collections. Their use as parental stock for the propagation of seedlings for both the domestic and international cycad trade cannot be ruled out. International trade in *E. dyerianus* started in 1995, coinciding with the weakening of cycad protection measures in Gauteng. Altogether 1016 specimens had been exported from South Africa by 2009, with trade levels peaking in 1999 and then again in 2007/2008. No conservation benefit for the species or its habitat is derived from the trade in *E. dyerianus*.

Micro-chips inserted into wild plants have proven to be largely ineffective for establishing wild origins of cycads and have failed to deter poachers. The failure of the legal protection measures has been further exacerbated by prosecutors and magistrates who are not well informed about South Africa's cycad extinction crisis and the small fines issued and minimal jail sentences passed for cycad related offenses are ineffective deterrents.

There is currently no management plan for *E. dyerianus*, but the wild population of this species is monitored regularly. The species' biology, which is characterized by a poor dispersal ability and slow growing long-lived adults that regenerate predominantly from seed, renders *E. dyerianus* particularly vulnerable to overutilization. All of this, together with the species' extremely poor conservation status, the continuing incidences of poaching, the capacity and budgetary constraints that prevent the Limpopo Department of Economic Development, Environment and Tourism from curbing poaching, the lack of conservation incentives and the continuing ineffective implementation of the existing strict protection measures for cycads on a national basis present a scenario that is unfavourable for the survival of *E. dyerianus* in the wild (Figure 1). In order to decrease the risk to this species and prevent its imminent extinction, a concerted effort to address all of these factors is essential.

The NDF for *E. dyerianus* demonstrates that this species is at an extremely high risk of unsustainable utilization (Figure 1). The Scientific Authority is unable to state with any confidence that the export of artificially propagated *E. dyerianus* specimens from South Africa will not have a detrimental impact on the wild population. **The Scientific Authority is therefore unable to issue a positive NDF for *E. dyerianus* at this time.**

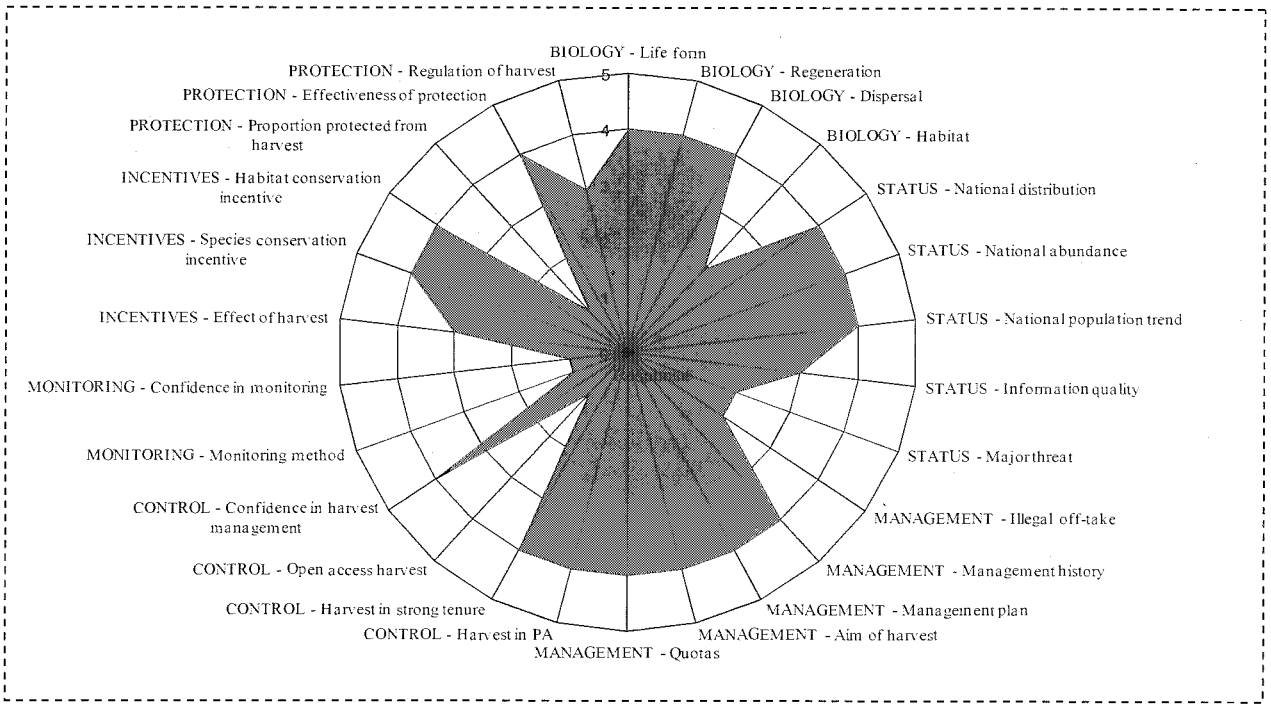

Figure 1. Radar chart summarizing the non-detriment finding undertaken for *Encephalartos dyerianus* in accordance with the CITES NDF checklist. Higher scores are indicative of higher risks to the species.

7. ***Encephalartos dolomiticus*** (Reference Number: Enc_dol_Aug2012)

Summary of finding

Encephalartos dolomiticus (Wolkberg cycad) is included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As an Appendix I species, the export of wild-sourced specimens for commercial purposes is prohibited. However, specimens artificially propagated for commercial purposes are deemed to be specimens of species included in Appendix II (Article VII) of CITES and therefore may be traded. In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species. This document details the undertaking of a non-detriment finding (NDF) for *E. dolomiticus* and is based on the best current available information.

Encephalartos dolomiticus has been listed as Critically Endangered by the IUCN (the International Union for Conservation of Nature), meaning that it is considered to be facing an extremely high risk of extinction in the wild. It is a rare species localized in the southeastern region of Limpopo province. In a 2012 aerial survey of the wild population, a total of 139 plants were counted. It is presumed that the wild population of this species is declining and the threat of illegal harvesting for horticultural and medicinal purposes is severe, as the population of *E. dolomiticus* is bordered by poor rural communities and all cycads in the Drakensberg mountain range within Limpopo are targeted by poachers. *Encephalartos dolomiticus* is a highly sought after and expensive cycad in the horticultural trade.

The harvest of wild cycads has been prohibited throughout South Africa since February 2007. Prior to this, any harvesting, possession or conveyance of cycads required permits in terms of provincial legislation that was enacted in the 1970s, but no permits were reportedly ever issued for the wild harvest of *E. dolomiticus* plants or seed (although seedlings were available from the Hartebeesthoek nursery which operated between 1975 and 1998 and *ex situ* plants may have originally been sourced from the wild as *E. eugene-maraisii* prior to the enactment of provincial legislation). Enforcement of these strict protection measures has been hampered by the human resource and budgetary constraints facing the provincial conservation authorities that are mandated

to enforce provincial and national environmental legislation, and ongoing illegal harvest of wild cycads is a countrywide problem. In Gauteng for example, where the demand for illegally harvested wild cycads is ultimately centered, reportedly 40% of posts within the Biodiversity Enforcement division of the Gauteng Department of Agriculture and Rural Development are currently (2011/2012) vacant. The Limpopo Department of Economic Development, Environment and Tourism is primarily responsible for the *in situ* protection and management of *E. dolomiticus*, however this department is experiencing severe capacity constraints with current (2011/2012) vacancy rates reported to be 65% and 68% within the Biodiversity Management and Enforcement divisions, respectively. There is furthermore no botanist in this province to provide strategic direction for the conservation of the species.

Past ineffective implementation of provincial conservation legislation in Gauteng, KwaZulu-Natal and the Eastern Cape has facilitated the entry of illegally harvested cycads into the legal trade. As owners of *E. dolomiticus* plants are typically able to provide documentary proof of legal possession (the sole legal requirement in Gauteng between 1994 and 2001), these plants have been and continue to be legalized and incorporated into private collections. Their use as parental stock for the propagation of seedlings for both the domestic and international cycad trade cannot be ruled out. International trade in *E. dolomiticus* started in 1996 when the cycad protection measures in Gauteng were particularly weak and by the end of 2009 a total of 422 specimens had been exported from South Africa. No conservation benefit for the species or its habitat is derived from the trade in *E. dolomiticus*.

Micro-chips inserted into wild plants have proven to be largely ineffective for establishing wild origins of cycads and have failed to deter poachers. The failure of the legal protection measures has been further exacerbated by prosecutors and magistrates who are not well informed about South Africa's cycad extinction crisis and the small fines issued and minimal jail sentences passed for cycad related offenses are ineffective deterrents.

There is an outdated conservation plan for *E. dolomiticus* that is in considerable need of revision. The wild population of this species was not monitored between 2004 and 2011 due to capacity constraints, although a monitoring programme has very recently been re-initiated. The species' biology, which is characterized by a poor dispersal ability and slow growing long-lived adults that regenerate predominantly from seed, renders *E. dolomiticus* particularly vulnerable to overutilization. All of this, together with the species' extremely poor conservation status, the presumed ongoing poaching pressure, the capacity and budgetary constraints that prevent the Limpopo Department of Economic Development, Environment and Tourism from curbing poaching, the lack of conservation incentives and the continuing ineffective implementation of the existing strict protection measures for cycads on a national basis present a scenario that is unfavourable for the survival of *E. dolomiticus* in the wild (Figure 1). In order to decrease the risk to this species and prevent its imminent extinction, a concerted effort to address all of these factors is essential.

The NDF for *E. dolomiticus* demonstrates that this species is at an extremely high risk of unsustainable utilization (Figure 1). The Scientific Authority is unable to state with any confidence that the export of artificially propagated *E. dolomiticus* specimens from South Africa will not have a detrimental impact on the wild population. **The Scientific Authority is therefore unable to issue a positive NDF for *E. dolomiticus* at this time.**

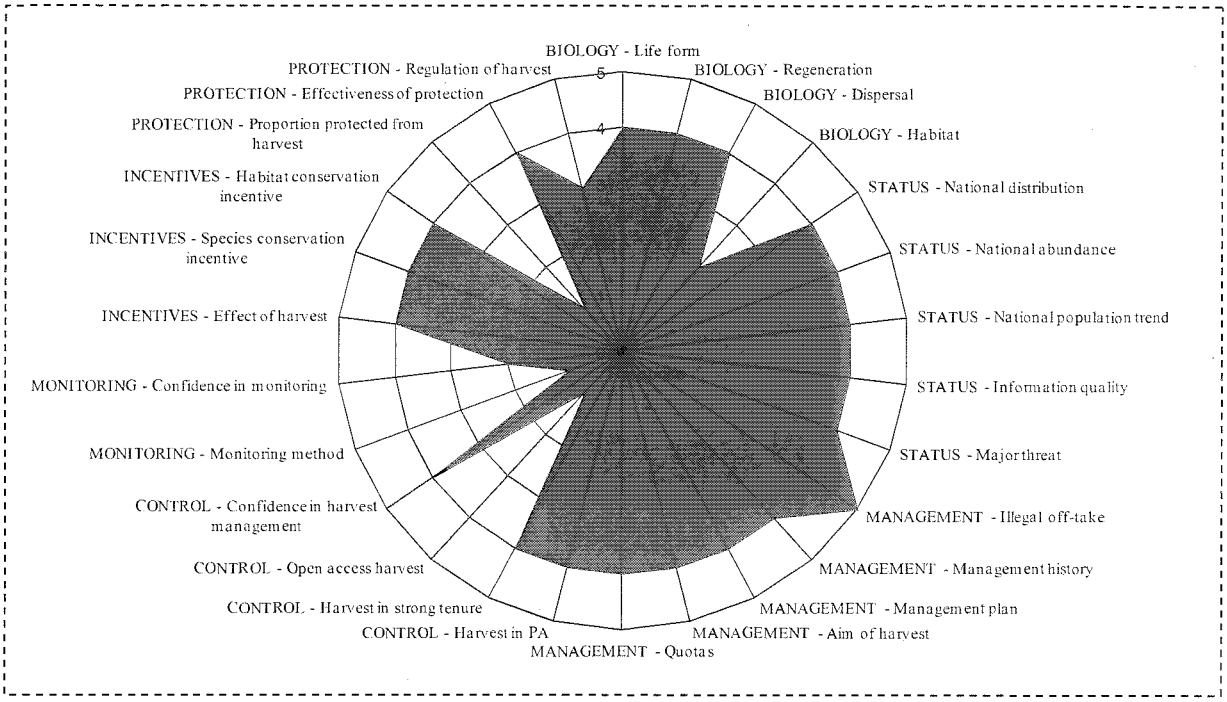

Figure 1. Radar chart summarizing the non-detriment finding undertaken for *Encephalartos dolomiticus* in accordance with the CITES NDF checklist. Higher scores are indicative of higher risks to the species.

8. ***Encephalartos cupidus*** (Reference Number: Enc_cup_Aug2012)

Summary of finding

Encephalartos cupidus (Blyde River cycad) is included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As an Appendix I species, the export of wild-sourced specimens for commercial purposes is prohibited. However, specimens artificially propagated for commercial purposes are deemed to be specimens of species included in Appendix II (Article VII) of CITES and therefore may be traded. In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species. This document details the undertaking of a non-detriment finding (NDF) for *E. cupidus* and is based on the best current available information.

A rare and localized species, *E. cupidus* has been listed as Critically Endangered by the IUCN (the International Union for Conservation of Nature), meaning that it is considered to be facing an extremely high risk of extinction in the wild. Despite occurring on a provincial nature reserve, severe declines have been observed for this species from estimates of 1110 plants in 1984, to 861 plants in 1999 to approximately 50 plants today. In 2004 the species was confirmed extinct in Limpopo. These declines have been caused by poaching for horticultural/ornamental and medicinal purposes. The recovery of large numbers of illegally harvested *E. cupidus* plants between 2004 and 2010 are further evidence of the severity of the poaching pressure on this species.

The harvest of wild cycads has been prohibited throughout South Africa since February 2007. Prior to this, any harvesting, possession or conveyance of cycads required permits in terms of provincial legislation that was enacted in the 1970s, but no permits were reportedly ever issued for the wild harvest of *E. cupidus* plants or seed (although seedlings were available from the Hartebeesthoek nursery which operated between 1975 and 1998 and some *ex situ* plants may have originally been sourced from the wild prior to the enactment of provincial legislation). Enforcement of these strict protection measures has been hampered by the human resource and budgetary constraints facing the provincial conservation authorities that are mandated to enforce

provincial and national environmental legislation, and ongoing illegal harvest of wild cycads is a countrywide problem. In Gauteng for example, where the demand for illegally harvested wild cycads is ultimately centered, reportedly 40% of posts within the Biodiversity Enforcement division of the Gauteng Department of Agriculture and Rural Development are currently (2011/2012) vacant. The Mpumalanga Tourism and Parks Agency is primarily responsible for the *in situ* protection and management of *E. cupidus*. However current (2011/2012) vacancy rates within this agency are reported to be 51% and 64% within the Wildlife Protection Services and the Scientific Services divisions, respectively. Furthermore, reportedly 73% of the field ranger posts for the nature reserve on which *E. cupidus* occurs are vacant, while apparently no more than 3% of the annual conservation budget is spent on cycads, this expenditure primarily being allocated towards law enforcement activities. Since 2011 the Mpumalanga Tourism and Parks Agency has reportedly had no operational budget.

Past ineffective implementation of provincial conservation legislation in Gauteng, KwaZulu-Natal and the Eastern Cape has facilitated the entry of illegally harvested cycads into the legal trade. These plants have been and continue to be legalized and incorporated into private collections and their use as parental stock for the propagation of seedlings for both the domestic and international cycad trade cannot be ruled out. International trade in *E. cupidus* started in 1986 and 923 specimens had been exported from South Africa by 2009, the trade showing an increasing trend after 1998, the same time period over which the severe decline in the wild population was observed. The bulk of the trade (92%) occurred after 1995 when cycad protection measures in Gauteng were particularly weak. No conservation benefit for the species or its habitat is derived from the trade in *E. cupidus*.

Micro-chips inserted into wild plants have proven to be largely ineffective for establishing wild origins of cycads and have failed to deter poachers. The failure of the legal protection measures has been further exacerbated by prosecutors and magistrates who are not well informed about South Africa's cycad extinction crisis and the small fines issued and minimal jail sentences passed for cycad related offenses are ineffective deterrents.

Outdated (20 years old) conservation plans exist for all Mpumalanga's cycad species. Although some of these plans are currently being implemented, parts have collapsed altogether and they are in dire need of major revision. None of these plans address harvest management. While regular monitoring of *E. cupidus* does take place, continuation of monitoring programmes is uncertain due to the severe capacity constraints facing the Mpumalanga Tourism and Parks Agency.

The species' biology, which is characterized by a poor dispersal ability and slow growing long-lived adults that regenerate predominantly from seed, renders *E. cupidus* particularly vulnerable to overutilization. This, together with the species' extremely poor conservation status, the severe ongoing poaching pressure, the outdated conservation plan, the capacity and budgetary constraints that prevent the Mpumalanga Tourism and Parks Agency from effectively managing and monitoring the species, the lack of conservation incentives and the continuing ineffective implementation of the existing strict protection measures for cycads on a national basis present a scenario that is unfavourable for the survival of *E. cupidus* in the wild (Figure 1). In order to decrease the risk to this species and prevent its imminent extinction, a concerted effort to address all of these factors is essential.

The NDF for *E. cupidus* demonstrates that this species is at an extremely high risk of unsustainable utilization (Figure 1). The Scientific Authority is unable to state with any confidence that the export of artificially propagated *E. cupidus* specimens from South Africa will not have a detrimental impact on the wild population. **The Scientific Authority is therefore unable to issue a positive NDF for *E. cupidus* at this time.**

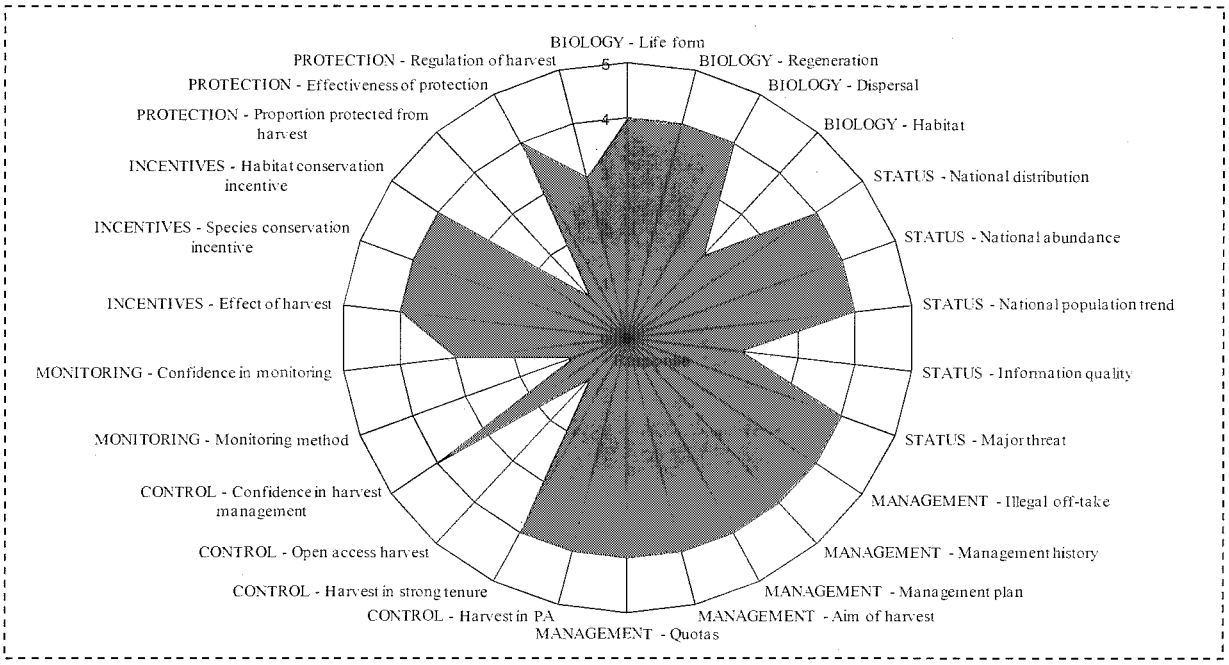

Figure 1. Radar chart summarizing the non-detriment finding undertaken for *Encephalartos cupidus* in accordance with the CITES NDF checklist. Higher scores are indicative of higher risks to the species.

9. ***Encephalartos cerinus*** (Reference Number: Enc_cer_Aug2012)

Summary of finding

Encephalartos cerinus (Waxen cycad) is included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As an Appendix I species, the export of wild-sourced specimens for commercial purposes is prohibited. However, specimens artificially propagated for commercial purposes are deemed to be specimens of species included in Appendix II (Article VII) of CITES and therefore may be traded. In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species. This document details the undertaking of a non-detriment finding (NDF) for *E. cerinus* and is based on the best current available information.

A rare species restricted to central KwaZulu-Natal, *E. cerinus* has been listed as Critically Endangered by the IUCN (the International Union for Conservation of Nature), meaning that it is considered to be facing an extremely high risk of extinction in the wild. Within 6 months of *E. cerinus* being described in 1989, most of the population (a couple of hundred plants) was illegally harvested for horticultural/ornamental purposes. The species may now be extinct, although some reports indicate that there are four or five plants remaining in the wild.

The harvest of wild cycads has been prohibited throughout South Africa since February 2007. Prior to this, any harvesting, possession or conveyance of cycads required permits in terms of provincial legislation that was enacted in the 1970s, although no permits were reportedly issued for the wild harvest of *E. cerinus* plants or seed since its description in 1989, except to allow for the once-off collection of seed for research purposes in 2005. Enforcement of these strict protection measures has been hampered by the human resource and budgetary constraints facing the provincial conservation authorities that are mandated to enforce provincial and national environmental legislation, and ongoing illegal harvest of wild cycads is a countrywide problem. In Gauteng for example, where the demand for illegally harvested wild cycads is ultimately centered, reportedly

40% of posts within the Biodiversity Enforcement division of the Gauteng Department of Agriculture and Rural Development are currently (2011/2012) vacant.

Past ineffective implementation of provincial conservation legislation in Gauteng, KwaZulu-Natal and the Eastern Cape has facilitated the entry of illegally harvested cycads into the legal trade. These plants have been and continue to be legalized and incorporated into private collections and their use as parental stock for the propagation of seedlings for both the domestic and international cycad trade cannot be ruled out. In 1996, approximately 6 years after the wild population of *E. cerinus* had been decimated by poachers, the international trade in this species started with the highest number of specimens exported in 1997. The inception of trade in *E. cerinus* coincided with the weakening of cycad protection measures in Gauteng and a total of 1606 specimens had been exported from South Africa by 2009. No conservation benefit for the species or its habitat is derived from the trade in *E. cerinus*.

Micro-chips inserted into wild plants have proven to be largely ineffective for establishing wild origins of cycads and have failed to deter poachers. The failure of the legal protection measures has been further exacerbated by prosecutors and magistrates who are not well informed about South Africa's cycad extinction crisis and the small fines issued and minimal jail sentences passed for cycad related offenses are ineffective deterrents.

There is currently no management plan for the species. The species' biology, which is characterized by a poor dispersal ability and slow growing long-lived adults that regenerate predominantly from seed, renders *E. cerinus* particularly vulnerable to overutilization. This, together with the species' extremely poor conservation status, the capacity and budgetary constraints that prevent Ezemvelo Kwazulu-Natal Wildlife from curbing poaching, the lack of conservation incentives and the continuing ineffective implementation of the existing strict protection measures for cycads on a national basis present a scenario that is unfavourable for the survival of *E. cerinus* in the wild (Figure 1). In order to decrease the risk to this species and bring about an improvement in its conservation status, a concerted effort to address all of these factors is essential.

The NDF for *E. cerinus* demonstrates that this species is at an extremely high risk of unsustainable utilization (Figure 1) and in fact trade in the late 1990s followed the decimation of the wild population approximately 6 years earlier. **The Scientific Authority is therefore unable to issue a positive NDF for *E. cerinus* at this time.**

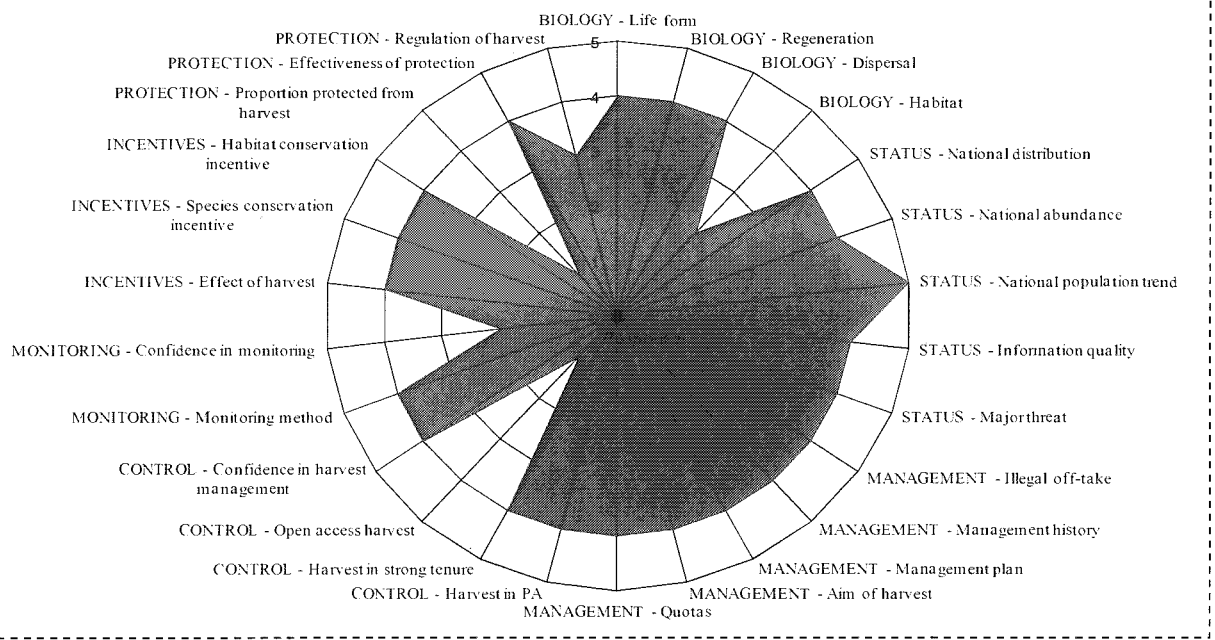

Figure 1. Radar chart summarizing the non-detriment finding undertaken for *Encephalartos cerinus* in accordance with the CITES NDF checklist. Higher scores are indicative of higher risks to the species.

10. ***Encephalartos aemulans*** (Reference Number: Enc_aem_Aug2012)

Summary of finding

Encephalartos aemulans (Ngotshe cycad) is included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As an Appendix I species, the export of wild-sourced specimens for commercial purposes is prohibited. However, specimens artificially propagated for commercial purposes are deemed to be specimens of species included in Appendix II (Article VII) of CITES and therefore may be traded. In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species. This document details the undertaking of a non-detriment finding (NDF) for *E. aemulans* and is based on the best current available information.

Encephalartos aemulans is listed as Critically Endangered by the IUCN (the International Union for Conservation of Nature), meaning that it is considered to be facing an extremely high risk of extinction in the wild. The species is located on a hill in KwaZulu-Natal in a single population of an estimated 3000 plants. Overuse/exploitation for horticultural purposes is the major factor threatening the survival of *E. aemulans* and although the rate of population decline is uncertain, adult plants continue to be lost from the wild due to poaching.

The harvest of wild cycads has been prohibited throughout South Africa since February 2007. Prior to this, any harvesting, possession or conveyance of cycads required permits in terms of provincial legislation that was enacted in the 1970s, although no permits were reportedly issued for the wild harvest of *E. aemulans* plants or seed since its description in 1990, except to allow for the once-off collection of seed for research purposes in 2005. Enforcement of these strict protection measures has been hampered by the human resource and budgetary constraints facing the provincial conservation authorities that are mandated to enforce provincial and national environmental legislation, and ongoing illegal harvest of wild cycads is a countrywide problem. In Gauteng for example, where the demand for illegally harvested wild cycads is ultimately centered, reportedly 40% of posts within the Biodiversity Enforcement division of the Gauteng Department of Agriculture and Rural Development are currently (2011/2012) vacant.

Past ineffective implementation of provincial conservation legislation in Gauteng, KwaZulu-Natal and the Eastern Cape has facilitated the entry of illegally harvested cycads into the legal trade. These plants have been and continue to be legalized and incorporated into private collections and their use as parental stock for the propagation of seedlings for both the domestic and international cycad trade cannot be ruled out. International trade in *E. aemulans* started in 1995 just five years after its description, and coinciding with the weakening of cycad protection measures in Gauteng. By 2009, 687 specimens had been exported from South Africa. No conservation benefit for the species or its habitat is derived from the trade in *E. aemulans*.

Micro-chips inserted into wild plants have proven to be largely ineffective for establishing wild origins of cycads and have failed to deter poachers. The failure of the legal protection measures has been further exacerbated by prosecutors and magistrates who are not well informed about South Africa's cycad extinction crisis and the small fines issued and minimal jail sentences passed for cycad related offenses are ineffective deterrents.

There is currently no management plan for the species. The species' biology, which is characterized by a poor dispersal ability and slow growing long-lived adults that regenerate predominantly from seed, renders *E. aemulans* particularly vulnerable to overutilization. This, together with the species' extremely poor conservation status, the ongoing poaching pressure, the capacity and budgetary constraints that prevent conservation authorities from curbing poaching, the lack of conservation incentives and the continuing ineffective implementation of the existing strict protection measures for cycads on a national basis present a scenario that is unfavourable for the survival of *E. aemulans* in the wild (Figure 1). In order to decrease the risk to this species and prevent its imminent extinction, a concerted effort to address all of these factors is essential.

The NDF for *E. aemulans* demonstrates that this species is at an extremely high risk of unsustainable utilization (Figure 1). The Scientific Authority is unable to state with any confidence that the export of artificially propagated *E. aemulans* specimens from South Africa will not have a detrimental impact on the wild population. **The Scientific Authority is therefore unable to issue a positive NDF for *E. aemulans* at this time.**

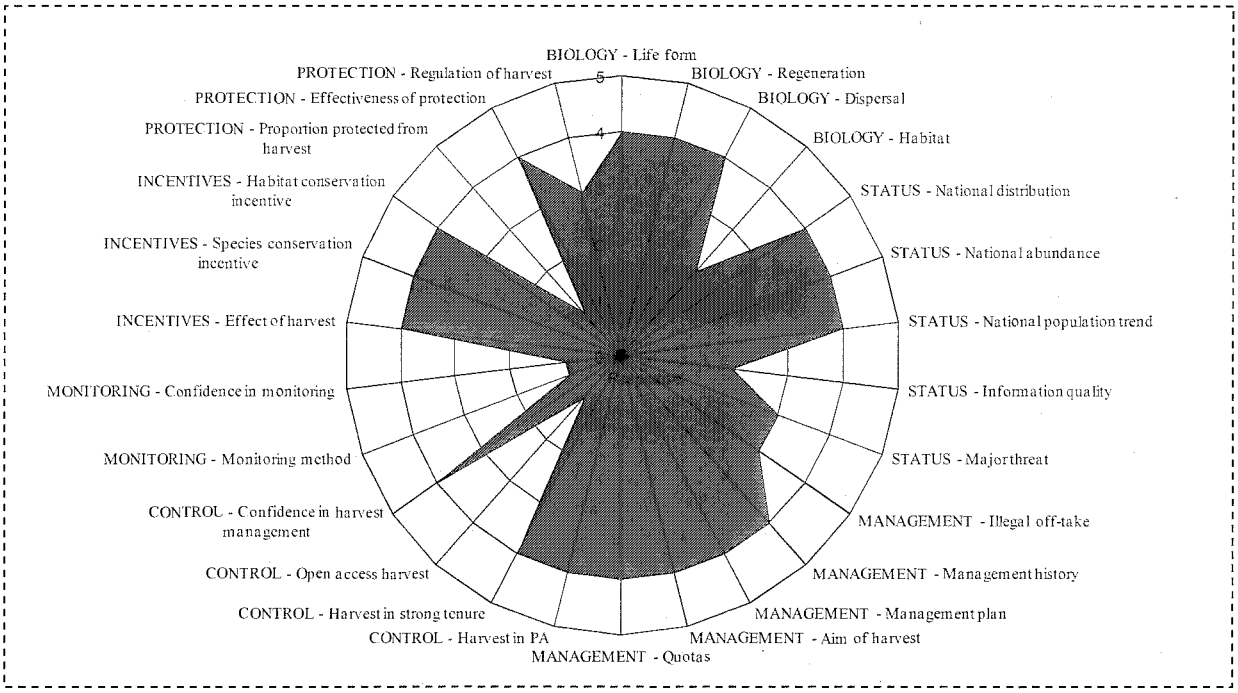

Figure 1. Radar chart summarizing the non-detriment finding undertaken for *Encephalartos aemulans* in accordance with the CITES NDF checklist. Higher scores are indicative of higher risks to the species.

11. ***Encephalartos middelburgensis*** (Reference Number: Enc_mid_Aug2012)

Summary of finding

Encephalartos middelburgensis (Middelburg cycad) is included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As an Appendix I species, the export of wild-sourced specimens for commercial purposes is prohibited. However, specimens artificially propagated for commercial purposes are deemed to be specimens of species included in Appendix II (Article VII) of CITES and therefore may be traded. In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species. This document details the undertaking of a non-detriment finding (NDF) for *E. middelburgensis* and is based on the best current available information.

Encephalartos middelburgensis has been listed as Critically Endangered by the IUCN (the International Union for Conservation of Nature), meaning that it is considered to be facing an extremely high risk of extinction in the wild. The species has a restricted and fragmented distribution, confined to the Witbank and Middelburg districts of Mpumalanga and marginally in Gauteng. It is estimated that the wild population of this species numbers no more than 350 plants in total, with a large population of between 100 and 200 plants occurring on a provincial nature reserve in Mpumalanga and approximately 150 plants occurring on private land. Resurveys of some of the plants originally recorded in 1983 indicate a loss of approximately 59% of the population, predominantly from poaching activities to supply the horticultural trade and private collections. During 2006 and 2007, illegal harvesting of suckers was particularly rife, while large consignments of illegally possessed *E. middelburgensis* plants were recovered as recently as 2011.

The harvest of wild cycads has been prohibited throughout South Africa since February 2007. Prior to this, any harvesting, possession or conveyance of cycads required permits in terms of provincial legislation that was enacted in the 1970s, but no permits were reportedly ever issued for the wild harvest of *E. middelburgensis* plants or seed (although seedlings were available from the Hartebeesthoek nursery which operated between 1975 and 1998 and some ex *situ* plants may have originally been sourced from the wild prior to the enactment of provincial legislation). Enforcement of these strict protection measures has been hampered by the human resource and budgetary constraints facing the provincial conservation authorities that are mandated to enforce provincial and national environmental legislation, and ongoing illegal harvest of wild cycads is a countrywide problem. In Gauteng for example, where the demand for illegally harvested wild cycads is ultimately centered, reportedly 40% of posts within the Biodiversity Enforcement division of the Gauteng Department of Agriculture and Rural Development are currently (2011/2012) vacant. The Mpumalanga Tourism and Parks Agency is primarily responsible for the *in situ* protection and management of *E. middelburgensis*, however current (2011/2012) vacancy rates within this agency are reported to be 51% and 64% within the Wildlife Protection Services and Scientific Services divisions, respectively. Furthermore, 52% of the field ranger posts for the nature reserve on which *E. middelburgensis* occurs are reportedly vacant, while no more than 3% of the annual conservation budget is apparently spent on cycads, this expenditure primarily being allocated towards law enforcement activities. Since 2011 the Mpumalanga Tourism and Parks Agency has reportedly had no operational budget.

Past ineffective implementation of provincial conservation legislation in Gauteng, KwaZulu-Natal and the Eastern Cape has facilitated the entry of illegally harvested cycads into the legal trade. These plants have been and continue to be legalized and incorporated into private collections and their use as parental stock for the propagation of seedlings for both the domestic and international cycad trade cannot be ruled out. International trade in *E. middelburgensis* started in 1995 very soon after Gauteng relaxed its regulatory requirements for cycads and 1529 specimens had been exported from South Africa by 2009, 63% of the total trade occurring between 1994 and 2001 when the cycad protection measures in Gauteng were particularly weak. No conservation benefit for the species or its habitat is derived from the trade in *E. middelburgensis*.

Micro-chips inserted into wild plants have proven to be largely ineffective for establishing wild origins of cycads and have failed to deter poachers. The failure of the legal protection measures has been further exacerbated by prosecutors and magistrates who are not well informed about South Africa's cycad extinction crisis and the small fines issued and minimal jail sentences passed for cycad related offenses are ineffective deterrents.

Outdated (20 years old) conservation plans exist for all Mpumalanga's cycad species. Although some of these plans are currently being implemented, parts have collapsed altogether and they are in dire need of major revision. None of these plans address harvest management. While monitoring of *E. middelburgensis* does take place, continuation of monitoring programmes is uncertain due to the severe capacity constraints facing the Mpumalanga Tourism and Parks Agency.

The species' biology, which is characterized by a poor dispersal ability and slow growing long-lived adults that regenerate predominantly from seed, renders *E. middelburgensis* particularly vulnerable to overutilization. This, together with the species' extremely poor conservation status, the ongoing population decline due to poaching activities, the outdated conservation plan, the capacity and budgetary constraints that prevent the Mpumalanga Tourism and Parks Agency from effectively managing and monitoring the species, the lack of conservation incentives and the continuing ineffective implementation of the existing strict protection measures for cycads on a national basis present a scenario that is unfavourable for the survival of *E. middelburgensis* in the wild (Figure 1). In order to decrease the risk to this species and prevent its imminent extinction, a concerted effort to address all of these factors is essential.

The NDF for *E. middelburgensis* demonstrates that this species is at an extremely high risk of unsustainable utilization (Figure 1). The Scientific Authority is unable to state with any confidence that the export of artificially propagated *E. middelburgensis* specimens from South Africa will not have a detrimental impact on the wild

population. **The Scientific Authority is therefore unable to issue a positive NDF for *E. middelburgensis* at this time.**

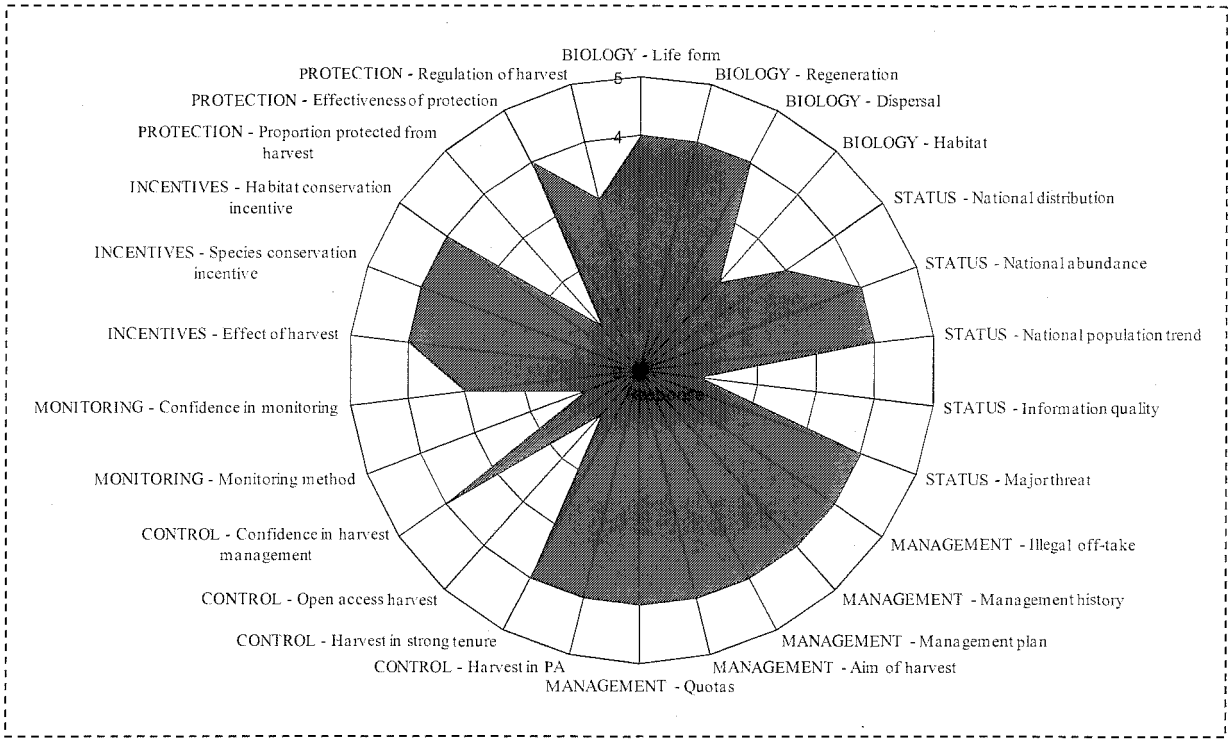

Figure 1. Radar chart summarizing the non-detriment finding undertaken for *Encephalartos middelburgensis* in accordance with the CITES NDF checklist. Higher scores are indicative of higher risks to the species.

12. ***Encephalartos msinganus*** (Reference Number: Enc_msi_Aug2012)

Summary of finding

Encephalartos msinganus (Msinga cycad) is included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As an Appendix I species, the export of wild-sourced specimens for commercial purposes is prohibited. However, specimens artificially propagated for commercial purposes are deemed to be specimens of species included in Appendix II (Article VII) of CITES and therefore may be traded. In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species. This document details the undertaking of a non-detriment finding (NDF) for *E. msinganus* and is based on the best current available information.

Localized to a small area in the Msinga district of KwaZulu-Natal, *Encephalartos msinganus* has been listed as Critically Endangered by the IUCN (the International Union for Conservation of Nature), meaning that it is considered to be facing an extremely high risk of extinction in the wild. Poaching of wild plants to supply the horticultural trade and private collections (and possibly also for medicinal purposes) has resulted in the near extinction of this species. It is estimated that between 100 and 200 *E. msinganus* plants used to occur in the wild, but by 2008 the population had been reduced to a small number of scattered individuals. Field visits in 2011 confirmed that the few remaining plants are still targeted by poachers.

The harvest of wild cycads has been prohibited throughout South Africa since February 2007. Prior to this, any harvesting, possession or conveyance of cycads required permits in terms of provincial legislation that was enacted in the 1970s, but no permits were reportedly ever issued for the wild harvest of *E. msinganus* plants or seed since its description in 1996, except for the once-off collection of seed for research purposes in 2005 (although *ex situ* plants may have originally been sourced from the wild as the Msinga form of *E. natalensis*

prior to the enactment of provincial legislation). Enforcement of these strict protection measures has been hampered by the human resource and budgetary constraints facing the provincial conservation authorities that are mandated to enforce provincial and national environmental legislation, and ongoing illegal harvest of wild cycads is a countrywide problem. In Gauteng for example, where the demand for illegally harvested wild cycads is ultimately centered, reportedly 40% of posts within the Biodiversity Enforcement division of the Gauteng Department of Agriculture and Rural Development are currently (2011/2012) vacant.

Past ineffective implementation of provincial conservation legislation in Gauteng, KwaZulu-Natal and the Eastern Cape has facilitated the entry of illegally harvested cycads into the legal trade. These plants have been and continue to be legalized and incorporated into private collections and their use as parental stock for the propagation of seedlings for both the domestic and international cycad trade cannot be ruled out. The international trade in *E. msinganus* started in 1983 (then the Msinga form of *E. natalensis*) and by 2009 a total of 500 specimens had been exported from South Africa, the bulk of the trade (80%) having had occurred after 1994 when the cycad protection measures in Gauteng were particularly weak. No conservation benefit for the species or its habitat is derived from the trade *E. msinganus*.

Micro-chips inserted into wild plants have proven to be largely ineffective for establishing wild origins of cycads and have failed to deter poachers. The failure of the legal protection measures has been further exacerbated by prosecutors and magistrates who are not well informed about South Africa's cycad extinction crisis and the small fines issued and minimal jail sentences passed for cycad related offenses are ineffective deterrents.

There is currently no management plan for the species. The species' biology, which is characterized by a poor dispersal ability and slow growing long-lived adults that regenerate predominantly from seed, renders *E. msinganus* particularly vulnerable to overutilization. All of this, together with the species' extremely poor conservation status, the continued poaching pressure, the capacity and budgetary constraints that prevent Ezemvelo Kwazulu-Natal Wildlife from curbing poaching, the lack of conservation incentives and the continuing ineffective implementation of the existing strict protection measures for cycads on a national basis present a scenario that is unfavourable for the survival of *E. msinganus* in the wild (Figure 1). In order to decrease the risk to this species and prevent its imminent extinction, a concerted effort to address all of these factors is essential.

The NDF for *E. msinganus* demonstrates that this species is at an extremely high risk of unsustainable utilization (Figure 1) and in fact poaching for horticultural/ornamental purposes has already reduced it to the brink of extinction. The Scientific Authority is unable to state with any confidence that the export of artificially propagated *E. msinganus* specimens from South Africa will not have a detrimental impact on the wild population. **The Scientific Authority is therefore unable to issue a positive NDF for *E. msinganus* at this time.**

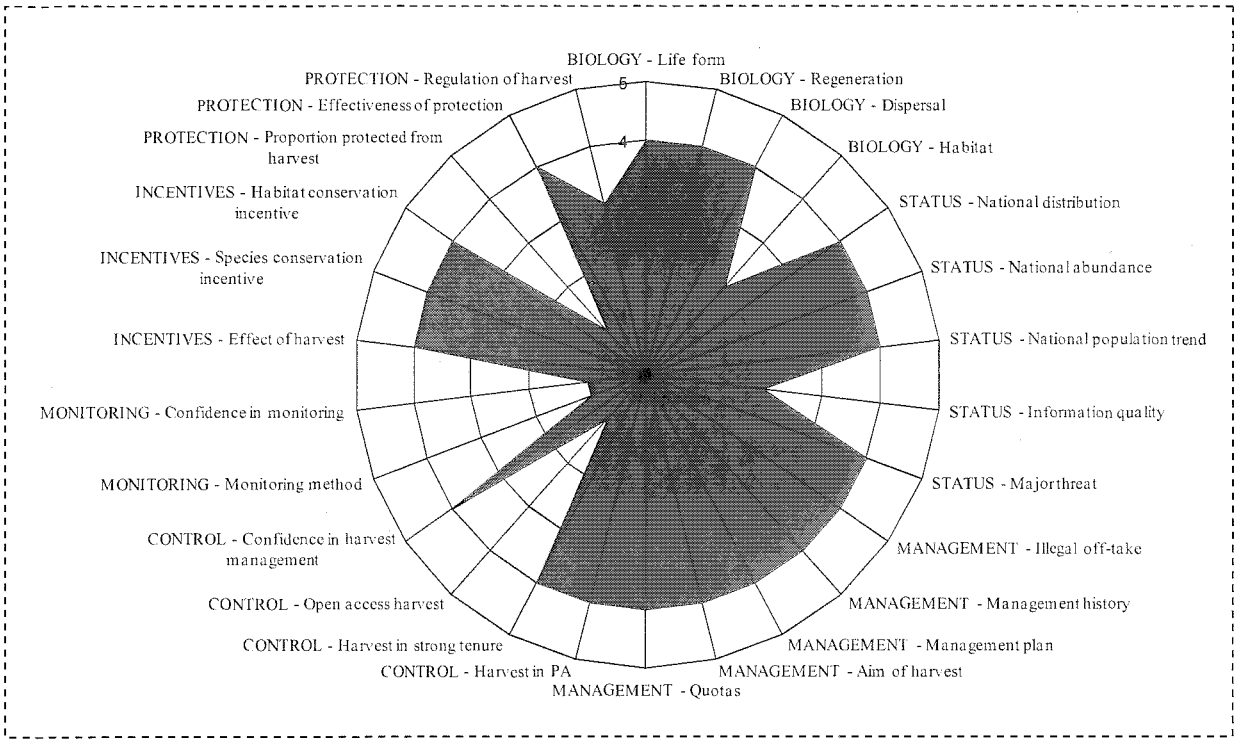

Figure 1. Radar chart summarizing the non-detriment finding undertaken for *Encephalartos msinganus* in accordance with the CITES NDF checklist. Higher scores are indicative of higher risks to the species.

13. ***Ceratotherium simum simum*** (Reference Number: Cer_sim_Aug2012)

Summary of findings

The South African population of *Ceratotherium simum simum* (white rhinoceros) is included in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) for the exclusive purpose of allowing international trade in live animals to appropriate and acceptable destinations and the export of hunting trophies. In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species. This document details the undertaking of a non-detriment finding (NDF) (Figure 1) for *C. simum simum* and is based on the best current available information.

The white rhinoceros is a long-lived species with a low reproductive rate. It is relatively adaptable, being able to survive in a variety of grassland and savanna habitats. Individuals disperse rapidly into new areas and in unfenced areas can move over very large distances. The species is sensitive to human activity and is thus conservation dependent, occurring solely in protected areas and on game farms.

The distribution of the white rhinoceros in South Africa is fragmented. However, it is a widespread and common species in the country, with the approximate size of the national population estimated to number 18,800 individuals in 2010, a significant increase from the approximately 6,000 white rhinos in 1991. Analyses undertaken by the IUCN African Rhino Specialist Group indicate that the national average growth rate of the white rhino population was just over 7% from 1991 to 2010. A number of key events apparently contributed to the exponential increase in the national population of white rhino since the late 1800s, such as the advent of translocations and policy changes both locally and internationally that created economic incentives for the private ownership and protection of rhinos. There is however some uncertainty about the future national population trend since population models indicate that the white rhino population in the Kruger National Park, which represents just over 50% of the national herd, may be expected to fluctuate non-directionally between 9,000 and 12,000 animals.

The current major threat to South Africa's white rhino population is the continuing loss of individuals to poaching for their horn. During 2010, 1.8% of the national population was lost to poaching, while 2.4% of the national population, effectively representing 30% of the potential annual population increment, was illegally killed in 2011. The rate of poaching has increased exponentially nationwide from 0.03 rhinos per day prior to 2007 to 1.23 rhinos per day in 2011. While 1.69 rhinos were poached per day in the first quarter of 2012, the rate of poaching has dramatically declined in the second quarter to less than 1 rhino per day. Disinvestment of private rhino owners, especially in the provinces of Limpopo and Mpumalanga, is a further negative consequence of poaching due to the rising costs of security. Since approximately 23% of the national herd is kept on 22,274 km^2 of privately owned land, the loss of private sector interest in keeping white rhinos is a significant concern for the conservation of the species and the reduced introduction of rhinos to new areas is expected to result in a decline in the metapopulation growth rate. The average value of white rhino sold by the three biggest sellers between 2008 and 2011 has decreased by just over R29,000 per head. This translates into a R424 million loss in white rhino asset value to the country between 2008 and mid 2011. Increased poaching also means there will be fewer surplus rhino that could be removed from populations to maintain productive densities and then sold. If turnover were to drop to half the 2008-2011 levels over the next 10 years, revenue that could have been generated from the sale of a surplus of approximately 6,920 white rhinos over a period of 10 years would be reduced by just under a quarter of a billion Rand, revenue that could have been used to purchase new conservation land and to fund anti-poaching measures. Although the off-take from poaching is still at levels that are sustainable and are not yet causing a population decline, if the rate of poaching increase from 2010 to 2011 continues, there will be a detectable negative population growth rate in the Kruger National Park by 2016. A similar national trend is anticipated. However, the decreased poaching rate recorded for the second quarter of 2012 may in fact mean that the year of anticipated population decline would be pushed back to 2018.

A high proportion (73%) of the white rhino population is generally well managed within protected areas, with off-takes managed in terms of ecological management plans. The white rhino population in the Kruger National Park (just over 50% of the national population) is managed in accordance with an adaptive management plan. In KwaZulu-Natal, a management strategy and a status reporting framework currently supports harvest management for the species. There are no provincial plans in the remaining 8 provinces. A national biodiversity management plan for white rhino is currently being revised by the SADC Rhino Management Group (RMG) in accordance with the format for Biodiversity Management Plans (section 43 of the National Environmental Management: Biodiversity Act (NEMBA) of 2004).

Legal harvest of white rhinos (i.e. hunting) is economically motivated and is regulated through a system of permits, mostly on private land. Prior to 2005, the number of white rhinos hunted was generally a function of market forces, with the market supporting the hunting of an average of 36 – 70 animals annually. Harvest has increased since 2005 to an average of 116 hunted animals (0.6% of the national population) annually, with less than 10 of these hunted from state controlled protected areas. Setting a hunting quota has been unnecessary to date as the off-take has been well within sustainable levels. Legal hunting, combined with the impact of poaching, has not yet reached a level where it has caused a cessation in population growth. An estimated 1.4% of the national herd is translocated to other areas annually. However, the removal of live animals for translocation purposes is not considered to be a form of harvest as these animals are not permanently removed from the national population.

Hunting of white rhinos is well managed in the province of KwaZulu-Natal, while in certain provinces management of hunting on private land faces some challenges. In at least two provinces the numbers of white rhino kept on private land is inadequately known, and therefore sustainability of hunting, particularly in smaller populations, is also unknown, while management plans for ensuring sustainable harvest are lacking. High confidence can be placed in the monitoring of illegal and legal harvest in the Kruger National Park and KwaZulu-Natal as a whole, which together make up 70% of the national herd. However, highly variable monitoring of hunting is undertaken for the remainder of the national herd. Although the hunting permit system requires that all hunts are attended by conservation officials, this is not implemented effectively in at least two provinces.

The financial gains to the state and the private sector generated from owning, selling, translocating, viewing via ecotourism and hunting white rhino has greatly contributed to the conservation of this species in South Africa, and the white rhino population is now 10 times larger than the 1,800 individuals in the 1960s. Due to the significant economic benefits of hunting to game farmers (worth approximately $19 million over the period 2004 – 2008), together with live sales and ecotourism, the private sector has increasingly stocked these animals, effectively maintaining rapid metapopulation growth and contributing to the expansion of the species' range with a further 22,274 km^2 added to the conservation estate in South Africa. Live sales of surplus animals to the private sector have also been highly beneficial to conservation agencies, generating vital conservation revenue and preventing overstocking in established populations.

The 77% of the national herd that is kept in state controlled protected areas is strictly protected from excessive hunting, with on average only 10 animals legally hunted annually. However, the increasing poaching rate is indicative of the limited effectiveness of the current protection measures, despite the significant resources that have been deployed towards gaining control over illegal activities. Nevertheless there may be signs that these measures are having a positive impact with the reduction in rhinos lost per day having dropped to less than 1 in the second quarter of 2012. Poaching has occurred in most protected areas and some protected areas (e.g. the Kruger National Park and Pilanesberg National Park) are struggling to combat these illegal activities. Improved protection measures (enhanced intelligence gathering and effective prosecution with deterrent sentences) are required to both combat and prevent poaching.

In conclusion, the non-detriment finding (Figure 1) undertaken for the white rhinoceros as summarized in the analyses of the key considerations above, demonstrates that legal international trade in live animals and the export of hunting trophies poses a low risk to the survival of this species in South Africa and should be allowed to continue, provided that effective measures are put in place to curb the illegal hunting of white rhino. Currently legal and illegal harvests combined are still within sustainable levels. On average 116 white rhinos are legally hunted annually (0.6% of the national population), while approximately 2.4% of the national population is currently lost to poachers, well below the net 7.1% rate of increase in the white rhino population. The population is thus currently growing at about 4% per annum.

It has been argued that a quota system for hunting of white rhino is unnecessary at this stage because legal hunting, even factoring in the animals lost to poaching, is currently sustainable and is market driven (requiring less regulatory management). However, due to the increasing poaching rate and problems with the implementation and enforcement of the hunting permit system in some provinces, it is anticipated that this situation will change and a quota system should be developed by the SADC Rhino Management Group for future application. Improved implementation of the current regulatory system as well as the introduction of an integrated permit system that provides for a more streamlined process that has greater general support and that incentivizes greater participation by land owners is recommended, along with the gathering of additional data on hunted populations.

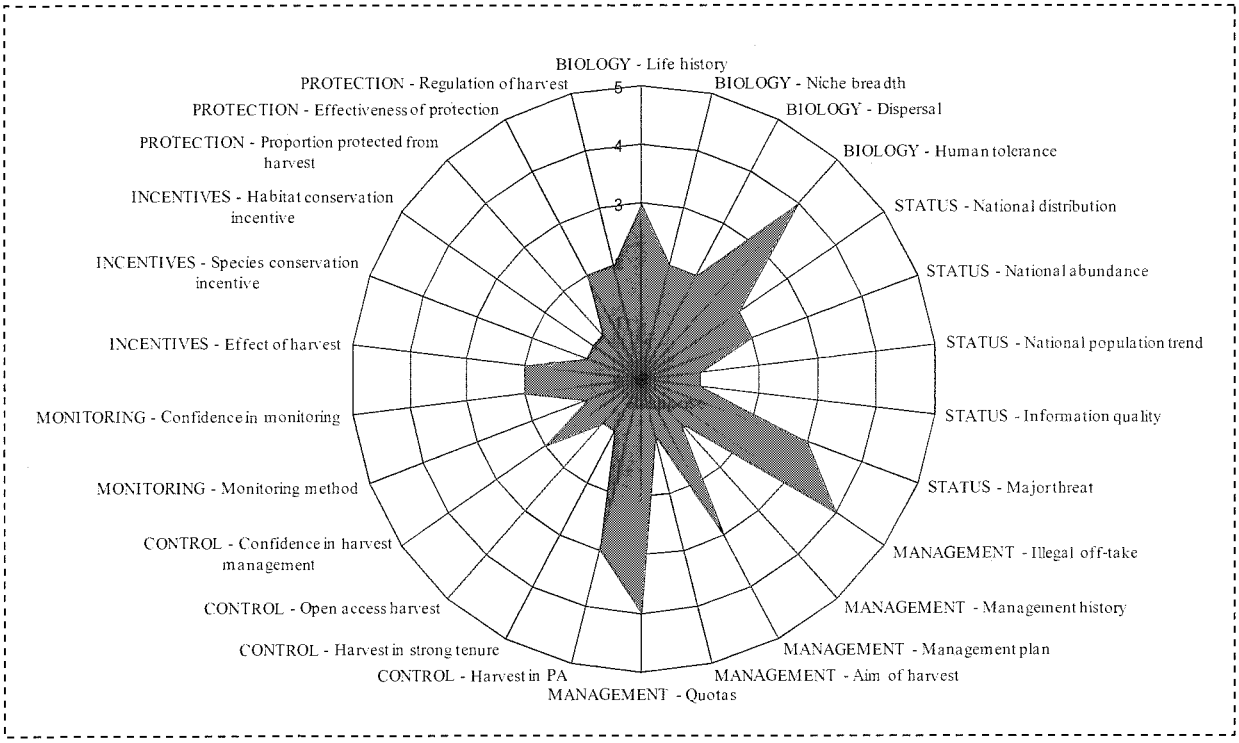

Figure 1. Radar chart summarizing the non-detriment finding assessment for *Ceratotherium simum simum* (white rhinoceros) in accordance with the CITES NDF checklist. Higher scores are indicative of higher risks. The limited area shaded in the radar chart demonstrates an overall low risk to the species.

14. ***Hippopotamus amphibius* (Hippopotamus)** (Reference Number: Hip_amp_Apr2011)

Summary of findings

The non-detriment finding undertaken for *Hippopotamus amphibius* (Hippopotamus) demonstrates that international trade poses a low risk to this species in South Africa. The species is well managed and the Scientific Authority does not have any current concerns relating to the harvest of the species.

The biological characteristics of the species do not render it at a high risk to over-harvesting (Figure 1). Although a long-lived species with a low reproductive rate compared to some other larger mammals, hippos are generally tolerant of human activities and are regarded as a pest species outside of protected areas, particularly in communal areas. Although restricted to areas in proximity of water, individuals are able to disperse efficiently between water sources. The species is reasonably adaptable to different environments and hippos are known to forage in agricultural lands.

The national status of *Hippopotamus amphibius* favours sustainable utilization (Figure 1). The species is regionally listed in the IUCN Red List category of Least Concern and there are currently no major threats facing the species. Although the regional population is fragmented, the species is widespread in the country, occurring in all provinces but most numerous in Limpopo, Mpumalanga, North West Province and KwaZulu-Natal. Hippos are regarded as common in South Africa, with recent quantitative data indicating that the regional population is comprised of more than 6300 individuals. The national population is increasing, especially within the Kruger National Park but also within protected areas in North West Province. Animals emigrating out of these protected areas have resulted in a significant increase in hippo numbers in surrounding lands where they are often regarded as pests. The removal of problem hippos is however offset by the introduction of hippos onto private land in Gauteng, North West Province and KwaZulu-Natal.

The weakest area of the non-detriment finding for *Hippopotamus amphibius* relates to the absence of a system of quotas for regulating harvest (Figure 1). However, the legal harvest of hippos, which includes harvesting for hunting trophies, harvesting for biological control and killing of damage causing animals, is minimal, with population management and control being the predominant aim of the harvest. Legal harvest takes place predominantly in protected areas and on commercial farms, the latter characterized by strong local control over resource use. Illegal off-take is of minor concern. The species is furthermore well managed and there are sufficient controls in place to ensure sustainability in the event of an increase in harvesting pressure or a proposal to harvest large numbers of individuals from the population. Mpumalanga has a policy for handling damage causing animals and there is a framework for regulating damage causing animals in KwaZulu-Natal. Hunting on game farms in all provinces is regulated by permitting systems and culling of hippos on protected areas is undertaken in accordance with the goals of approved local management plans. Monitoring of the effects of harvest (Figure 1) is based on direct population estimates. There are budgetary, manpower and logistical constraints for the implementation of management plans and monitoring programmes, although most culling operations for hippos are nevertheless effectively implemented and regular monitoring of hippo numbers does take place.

Compared to other large animals such as the white rhino, the conservation of this species has not benefited significantly from the hunting and game farming industries and likewise there is a low benefit for habitat conservation (Figure 1). This lack of conservation incentives, however, is not thought to affect the overall low risk outcome of the non-detriment finding.

The effective protection of the species from harvest also contributes to the low risk that international trade poses to the species (Figure 1). Around 75% of the South African hippo population is legally excluded from harvest, which is regarded as effective since a very small percentage of the hippo population is lost to poaching.

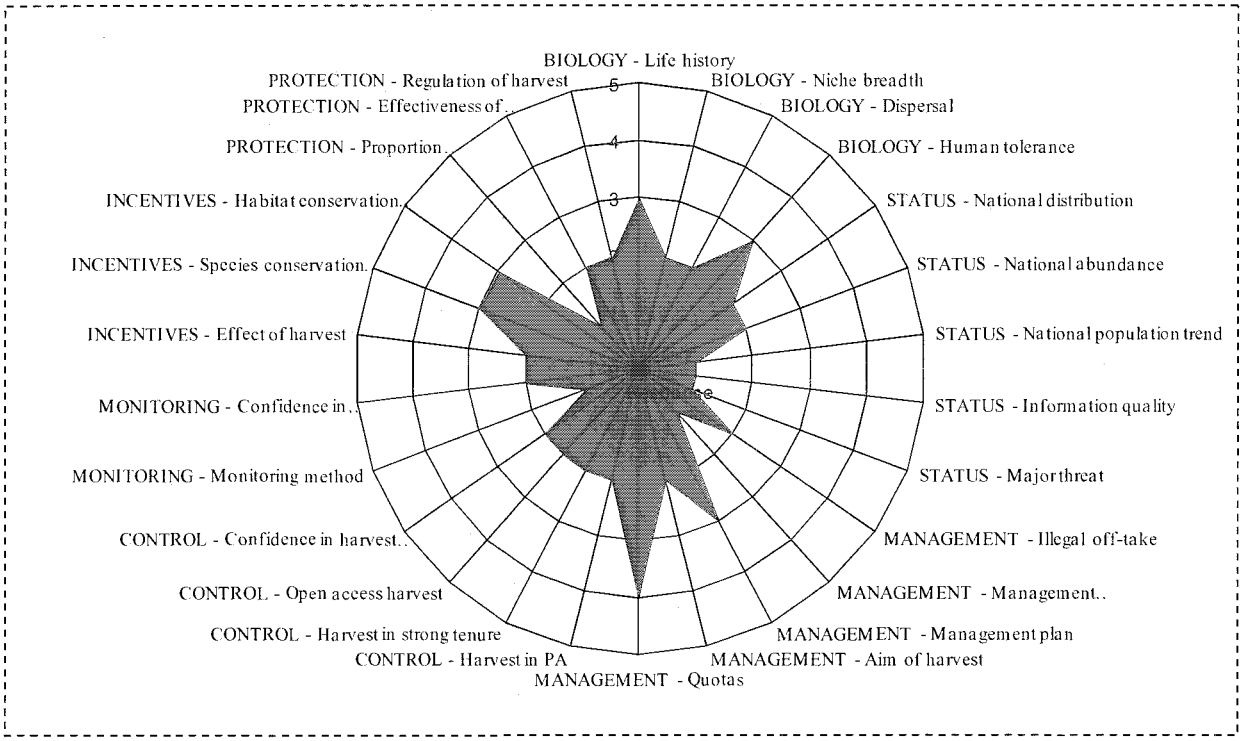

Figure 1. Radar chart summarizing the non-detriment finding evaluation for *Hippopotamus amphibius* (Hippopotamus) in accordance with the CITES NDF checklist. The limited areas shaded in the radar chart demonstrate an overall low risk to the species.