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**INTERNATIONAL SINGLE SPECIES ACTION PLAN FOR  
THE SOOTY FALCON 2024- 2036**

*(Prepared by the Coordinating Unit of the Raptors MOU)*

**Summary:**

This document provides an update on the status of development of the International Single Species Action Plan for the Sooty Falcon (ISSAP). A selection of key sections of the final draft ISSAP is made available as Annex to the present document and the full draft Plan is made available as an Information Document. The Scientific Council is invited to review the Annex and develop recommendations, as appropriate, for the consideration of the Standing Committee, as mandated in Decision 14.146.

## INTERNATIONAL SINGLE SPECIES ACTION PLAN FOR THE SOOTY FALCON 2024- 2036

### Background

1. In 2013, the Coordinating Unit of the Raptors MOU, mandated by the First Meeting of Signatories to the Raptors MOU (Abu Dhabi, 2012), commissioned the development of a draft International Single Species Action Plan for the Sooty Falcon (ISSAP), also establishing at the time a Sooty Falcon Working Group to support the development of that plan (see document [UNEP/CMS/Raptors/MOS2/8](#), paragraphs 16-19).
2. At the Second Meeting of Signatories to the Raptors MOU (Trondheim, October 2015), the Coordinating Unit drew the attention of Signatories to the fact that financial resources were urgently needed to organise an action planning workshop that would enable finalising the draft ISSAP initiated in 2013 (see document [UNEP/CMS/Raptors/MOS2/Report](#), paragraph 174). Such resources, however, did not become available, which impeded the developed draft from being duly reviewed and finalised.
3. Since 2013, the global conservation status of the Sooty Falcon deteriorated. Its shift from Near Threatened (2008-2016) to Vulnerable in 2017 ([BirdLife International 2021. Falco concolor. The IUCN Red List of Threatened Species. Accessed 9 May 2023](#)) only reiterated the urgency of putting an ISSAP in place.
4. With financial resources becoming available in 2022, the Coordinating Unit was able to contract a consultant to coordinate the updating and finalisation of the 2013 draft ISSAP. To support the work, the mentioned Sooty Falcon Working Group was revitalised, integrating representatives of Sooty Falcon Range States, independent specialist ornithologists, and other individuals working on Sooty Falcon conservation to contribute technical advice and other relevant expertise.
5. The above was reported at the Third Meeting of Signatories to the Raptors MOU (Dubai, July 2023) in document [UNEP/CMS/RAPTORS/MOS3/Doc.13.3](#). At that meeting, Signatories to the MOU invited the Coordinating Unit to ask the Fourteenth Meeting of the Conference of the Parties to CMS (COP14, Samarkand, February 2024) to request the Scientific Council to review the ISSAP and formulate its recommendations, as appropriate for consideration by the Standing Committee.
6. Agreeing to the Coordinating Unit's request, COP14 adopted Decision 14.146 (see documents [UNEP/CMS/COP14/Report](#) and [UNEP/CMS/Decisions COP14](#)) that asks the Standing Committee, following consultation with the Scientific Council, to consider and adopt the ISSAP upon its finalization, in the intersessional period between COP14 and the Fifteenth Meeting of the kind.

### Discussion and analysis

7. The final draft of the ISSAP, which is now available as information document (UNEP/CMS/scC-SC7/Inf.6.3.1, in English only) to the present document, results from an extensive research and consultation process:
  - a) review of literature published between 1825 and 2023 to gather the best available scientific information on Sooty Falcon biology, ecology, conservation status and threats across the distribution range of the species;
  - b) analysis of distribution data available in avian databases;

- c) analysis of responses to a circulated questionnaire aimed at collecting information at national levels on the sizes and trends of breeding, migrating and wintering populations, sites of importance for the species, threats, and conservation actions implemented;
- d) consultation with the Sooty Falcon Working Group for technical advice, review of ISSAP drafts, and sharing of data; and
- e) ISSAP draft revision by Sooty Falcon Range States and Raptors MOU Signatories.

A selection of key sections of the ISSAP is provided in the Annex to the present document.

8. The ISSAP aims to reduce the risk of extinction of the Sooty Falcon by halting the decline of its population to a point where it qualifies for downlisting to at least Near Threatened by 2036. The 12-year Plan covers approximately three generations of the species and puts in place actions under three objectives: (1) protect the species; (2) improve knowledge through monitoring and research; and (3) exchange lessons learnt and raise awareness. Each action of the Plan is accompanied by an intended outcome, target countries and stakeholders, and an indication of implementation priority. All Range States of the Sooty Falcon are called to implement the Plan.
9. It is recommended that a mid-term review of the Plan's implementation be undertaken in 2030 and a final review and update in 2036. Lastly, to coordinate, oversee and report on the implementation progress, the Plan also recommends that a dedicated coordinating entity be established.

#### Recommended actions

10. The Sessional Committee is recommended to review the Annex to the present document and develop any recommendations, as appropriate, for the consideration of the Standing Committee.

# Key Excerpts of the International Single Species Action Plan for the Sooty Falcon 2024-2036

*This document reproduces key excerpts of the International Single Species Action Plan for the Sooty Falcon 2024-2036*

## Executive summary

The Sooty Falcon, *Falco concolor*, is a medium-sized falcon with long and narrow wings whose tips extend noticeably beyond the tail when in perched position. A long-distance migrant, the species breeds discontinuously in 16 countries over the vast area ranging from the central-eastern Sahara, along the Red Sea, to the southern Gulf<sup>1</sup> regions—the Red Sea comprising the core of the species' breeding distribution. After reproduction, Sooty Falcons migrate across eastern Africa and the Mozambique Channel towards the south-western and central-western parts of Madagascar, where they winter.

There are 29 Range States to the Sooty Falcon (Bahrain, Central African Republic, Chad, Democratic Republic of the Congo, Djibouti, Egypt, Eritrea, Ethiopia, Iran (Islamic Republic of), Israel, Jordan, Kenya, Kuwait, Libya, Madagascar, Mozambique, Oman, Pakistan, Rwanda, Saudi Arabia, Somalia, South Africa, South Sudan, Sudan, Uganda, United Arab Emirates, United Republic of Tanzania, Yemen and Zambia) and the species is vagrant in an additional 19 countries.

Sooty Falcons face a series of threats across their range: urban, industrial and energy development; disturbance by tourists and fishers; lack of knowledge on the species; introduced terrestrial predators; locust and *Quelea* control operations; hunting and taking; lack of knowledge on the impacts of climate change; and poisoning and habitat degradation from agricultural intensification. Many of these threats are estimated to be of very high, high or potentially high importance with regards to their scope, severity and irreversibility.

Sooty Falcon population estimates have varied widely and been inconsistent over time. Notwithstanding, the best available data to date indicates that no Sooty Falcon breeding population is increasing; all surveyed populations are either declining or their trend is unknown. Small and medium populations have, in particular, shown marked declines. Overall, the available data indicates that the global population of this species consists of 1,149-1,597 breeding pairs (2,298-3,194 mature individuals), which represents an 18-20% population loss over the past 10 years.

A precautionary approach to the conservation of the Sooty Falcon requires that action be taken to reduce the species' risk of extinction. For this, an International Single Species Action Plan has been developed for the Sooty Falcon using the best information available (in the literature, avian databases, and through expert consultation) on the biology, ecology, conservation status and threats to the species.

The International Single Species Action Plan for the Sooty Falcon 2024 – 2036 aims to reduce the risk of extinction of the Sooty Falcon by halting the decline of its population to a point where it qualifies for downlisting to at least Near Threatened. Ensuring that this is achieved requires Range States and other stakeholders to take concerted, as well as unilateral action.

The 12-year-long Plan covers approximately three generations of the species and puts in place actions under three objectives: (1) protect the species; (2) improve knowledge through monitoring and research; and (3) exchange lessons learnt and raise awareness. Each action of the Plan is accompanied by an outcome, target countries and stakeholders, and an indication of implementation priority. All Range States of the Sooty Falcon are called to implement the Plan.

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<sup>1</sup> In the present document, 'the Gulf' means Arabian Gulf and Persian Gulf.

It is recommended that a mid-term review of the Plan's implementation be undertaken in 2030 and a final review and update in 2036. Lastly, to coordinate, oversee and report on the implementation progress it is also recommended that a dedicated coordinating entity be established.

## The International Single Species Action Plan

### Aim

The International Single Species Action Plan for the Sooty Falcon 2024 – 2036 (ISSAP) aims to reduce the risk of extinction of the Sooty Falcon (*Falco concolor*) by halting the decline of its population to a point where it qualifies for downlisting to at least Near Threatened. The ISSAP has been developed using the best information available on the biology, ecology, conservation status and threats to the species.

### Geographical scope

The ISSAP applies to the 29 following countries, which are considered Range States of the Sooty Falcon:

**Bahrain**, Central African Republic, **Chad\***, Democratic Republic of the Congo\*, **Djibouti\***, **Egypt\***, **Eritrea**, Ethiopia\*, **Iran (Islamic Republic of)\***, **Israel\***, **Jordan\***, Kenya\*, **Kuwait**, **Libya\***, Madagascar\*, Mozambique, **Oman**, **Pakistan\***, Rwanda, **Saudi Arabia\***, Somalia\*, South Africa\*, South Sudan, **Sudan\***, Uganda, **United Arab Emirates\***, United Republic of Tanzania, **Yemen\*** and Zambia.<sup>2</sup>

These countries are called to implement the specific actions set forth in this ISSAP.

### Implementation timeframe, oversight and review

The generational length of the Sooty Falcon has been estimated at 4.1 years and the International Union for Conservation of Nature (IUCN) Red List Authority has suggested that future changes to the conservation status of the species be evaluated over a three-generation period (BirdLife International 2021). As such, the present ISSAP is planned for a 12-year period, from 2024 to 2036.

A mid-term review of implementation progress should be undertaken six years following the Plan's commencement (i.e., in 2030), and a final review and update during the last year of implementation (2036). An emergency review and update should be conducted in the event of a sudden, significant negative impact to one or more populations of the Sooty Falcon, or if such an impact is believed likely to occur.

It is recommended that a coordinating entity is established to coordinate, oversee and report on progress in implementing the Plan.

### Methodology

In 2013, the Coordinating Unit of the Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia (Raptors MOU) commissioned the development of a draft International Single Species Action Plan for the Sooty Falcon, also establishing at the time a Sooty Falcon Working Group (SFWG) and circulating a questionnaire on the species (see Annexes 7 and 8) to support the development of that action plan. However, due to resource constraints, the draft action plan developed back then (i.e., Gallo-Orsi et al. 2014) could not be finalised (for more information, see document [UNEP/CMS/Raptors/MOS3/Doc.13.3](https://www.unep.org/resources/publication/UNEP/CMS/Raptors/MOS3/Doc.13.3)).

<sup>2</sup> Countries in **bold** are those in which the species breeds or has bred; the asterisk (\*) indicates the countries that are Signatories to the Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia (Raptors MOU).

In 2022, the availability of new financial resources enabled the Coordinating Unit to update and finalise the draft ISSAP initiated in 2013. This updating and finalisation work is summarised into the following components:

**i) Literature review**

A review of literature published between 1825 and 2023 (search engines: BHL<sup>3</sup>, Google Scholar<sup>4</sup>, ResearchGate<sup>5</sup>) was undertaken to gather the best available scientific information on Sooty Falcon biology, ecology, conservation status and threats across the distribution range of the species. A total of 450 relevant publications were identified, many of which are cited in the present document (see References).

**ii) Avian database review**

Information on Sooty Falcon distribution was also obtained from relevant avian databases (i.e., African Raptor Data Bank, the Niger Bird Data Base, WABDaB<sup>6</sup>, e-bird<sup>7</sup>, and GBIF<sup>8</sup>) between 2022 and 2023.

**iii) Questionnaires**

A questionnaire was developed (see Annex 5) to collect information at national levels on the sizes and trends of breeding, migrating and wintering populations, sites of importance for the species, threats, and conservation actions implemented.

The questionnaire was circulated in November 2022 to 83 non-governmental organisations (most of them from the BirdLife Partnership), local and international species experts, and representatives of Range States of the species. A snowball referral approach was used to identify additional relevant experts. A total of 30 questionnaire responses were received, contributing information on 16 (out of 29) Sooty Falcon Range States. Annex 6 details all contributions received (see Annex 6).

**iv) SFWG technical advice**

The SFWG was revitalised to support the development of the ISSAP, specifically by sharing technical advice, reviewing iterations of the ISSAP, and sharing relevant data. The SFWG integrated representatives of Sooty Falcon Range States, independent specialist ornithologists, and other individuals working on Sooty Falcon conservation.

As many aspects of the species' biology and ecology are not yet well researched, collecting information from both formal and informal sources (such as expert elicitation, personal communication and personal observation) proved valuable for updating and finalising the ISSAP. The collation of information sourced via the above-described means has resulted in the present document, which comprises the most comprehensive and latest effort to compile and collate all information available on the Sooty Falcon.

The ISSAP contains information on the species' biology, ecology and threats, addressing also protection status, monitoring efforts and relevant international tools and instruments. A precautionary approach to the conservation of the Sooty Falcon requires that action be taken to reduce the species' risk of extinction. As such, the ISSAP culminates with a list of proposed conservation actions to be implemented over the next 12-year period, from 2024 to 2036.

## Threats

Little information is available on specific threats to Sooty Falcon, and the small size of its population, as well as the limited knowledge on its biology and ecology make it challenging to accurately assess the

<sup>3</sup> <https://www.biodiversitylibrary.org>.

<sup>4</sup> <https://scholar.google.com>.

<sup>5</sup> <https://www.researchgate.net>.

<sup>6</sup> <https://www.wabdab.org>.

<sup>7</sup> <https://ebird.org/home>.

<sup>8</sup> <https://www.gbif.org>.

impact of any threat. Using the information gathered (see Methodology), the present section summarises the best available information on threats to the species across its range.

Known or presumed threats to the species are listed below, and each has been ranked according to its perceived importance, largely based on the best available knowledge, such as expert opinion and recent literature (see References and Annexes 1 and 2). The ranking scheme used accounts for the scope, severity and irreversibility of threats (IUCN-SSC 2017), as follows:

**Very High** - The threat is likely to be pervasive in its scope, affecting the target across all or most (71-100%) of its occurrence/population. The effects of the threat cannot be reversed, and it is very unlikely the target can be restored, and/or it would take more than 100 years to achieve.

**High** - The threat is likely to be widespread in its scope, affecting the target across much (31-70%) of its occurrence/population. The effects of the threat technically can be reversed, and the target restored but it is not affordable and/or it would take 21-100 years to achieve.

**Medium** - The threat is likely to be restricted in its scope, affecting the target across some (11-30%) of its occurrence/population. The effects of the threat can be reversed, and the target restored with a reasonable commitment of resources and/or within 6-20 years.

**Low** - The threat is likely to be very narrow in its scope, affecting the target across a small proportion (1-10%) of its occurrence/population. The effects of the threat are easily reversible, and the target can be easily restored at a relatively low cost and/or within 0-5 years.

## Urban, industrial and energy development

**Importance:** *Very High*

**Mainly affecting:** *Breeding areas*

Development of tourist infrastructure, housing and shrimp farms resulting in the loss of habitat suitable for the species and its prey have been reported in relation to the Arabian Red Sea islands (Shobrak and Aloufi 2014), Israel (Hatzofe pers. comm. 2013), Oman (Eriksen pers. comm. 2013) and Yemen (Al-Saghier pers. comm. 2013). In the United Arab Emirates, breeding pairs disappeared from the islands of Zarku, Sir Bani Yas and Dalma due to the combination of oil industry development and the establishment of sizeable human populations since about 1980 (Shah et al. 2008; Jennings 2010). The rapid increase in land reclamation in Bahrain has resulted in significant changes to coastal and marine environments, including the devastating loss of 95% of mangrove cover (Naser 2022). The widespread implementation of solar energy facilities in Israel raises the need to evaluate potential detrimental impacts on the species (Goren pers. comm. 2023). For example, in Israel, three individuals were burnt over the period of one year by a solar tower located 16 km from the nearest breeding site (Hatzofe pers. comm. 2023). Negative effects occur not only at or near breeding sites but within a 5 km radius around nesting areas, where falcons hunt (Walter 1979). Mining activity (for the extraction of gold, copper, and other minerals) and its associated roadway construction may also be a rising threat to Sooty Falcons in certain areas, such as in Jordan (Khoury pers. comm. 2023). Ultimately, habitat loss at breeding sites can affect the species by reducing the availability of nesting sites and by reducing the habitat preferred by migrating passerines, therefore reducing prey availability.



## Disturbance by tourists and fishers

**Importance:** *High*

**Mainly affecting:** *Breeding areas*

Tourism around the Red Sea and the Sea of Oman has increased significantly in the recent years. Islands that were once only rarely visited by a few fishers or military personnel are now regular destinations for divers, attracted by the coral and the rich underwater biodiversity (Ansari et al. 2022). These visitors frequently camp on the beaches and risk disturbing birds nesting on the ground or in the low cliffs (Williams 1991; Jennings 2010; McGrady et al. 2010; McGrady et al. 2019). Fishers are reported to use a number of Red Sea islands for wood collection or as meeting points and are likely to cause disturbance (PERSGA/GEF 2003; Coles and Williams 2004). Sooty Falcons nesting inland, particularly in Egypt, Israel and Jordan are known to be affected by disturbance from the expansion of rock climbing and hiking activities (Goren and Granit 2014; Salama et al. 2020). Tourism activities in breeding habitat have been found to effectively disturb breeding pairs (Goren and Granit 2014; Salama et al. 2020). When this disturbance occurs during the early stages of pair formation and nest selection, it can substantially reduce nest site availability for prospective breeding pairs (Williams 1991; Coles and Williams 2004). During the incubating period or when chicks are 1-2 weeks old, human presence may force adults to leave their eggs or chicks exposed to the sun and to high temperatures, which may lead to death (Williams 1991). In fact, under such intense conditions, even short periods of exposure can prove lethal.

## Lack of knowledge on the species

**Importance:** *High*

**Mainly affecting:** *Breeding and non-breeding areas*

Research conducted on Sooty Falcon has been limited in time, inconsistent and has not provided a comprehensive analysis of the species across its distribution range. This impacts the ability to recognise, evaluate and accurately locate potential threats, as well as to identify and implement measures that can attenuate them. For instance, the poor understanding of breeding population sizes and dynamics across various countries constrains the accurate estimation of the global population's size (see Population size and trend). Furthermore, migratory pathways, mortality factors, and survival rates of young and non-breeding individuals are poorly understood (Javed et al. 2012; McGrady et al. 2016; AlJahdhami et al. 2020). Consequently, the impact of potential threats, such as the use of chemical substances for pest control in regions where birds migrate or winter, cannot be assessed (Mullié et al. 2023). Adding to these knowledge gaps, a lack of coordination across stakeholders has prevented the implementation of coordinated avian monitoring programmes that could contribute data on Sooty Falcons.

## Introduced terrestrial predators

**Importance:** *Potentially High*

**Mainly affecting:** *Breeding areas*

On the many islands that have no mammalian predators, Sooty Falcons sometimes nest on easily accessible sites, including on the ground at the base of cliffs, amongst low vegetation or sometimes in fully open areas. The highest density of breeding pairs recorded has been found on low, sandy or coral islets where the birds nest on the ground (Gaucher et al. 1995; Coles and Williams 2004). Introduced predators on islands are a serious threat particularly for threatened bird species (BirdLife International 2013). Predators may reach the islands during particularly low tides but are most likely to be introduced by humans intentionally or unintentionally (Gaucher et al. 1995). Sooty Falcons do not breed on the Hawar Island (Bahrain) due to the presence of feral cats (Jennings 2010). Pairs often nest in hard-to-access ledges on cliffs, but if ground predators reach islands hosting large populations the impact could



be catastrophic for those populations. The introduction of terrestrial predators such as rats, mongooses and cats, would certainly result in the disappearance of the vast majority of breeding pairs that breed in accessible locations.

## Locust and Quelea control operations

**Importance:** *Potentially High*

**Mainly affecting:** *Non-breeding areas*

Outside the breeding season, Sooty Falcons are largely insectivorous and during the post nuptial migration they follow rains and the related swarming of colonial insects (Buij 2011), such as ants (Antinori and Salvadori 1873), locusts (Heuglin 1861; Rand 1936) and dragonflies (Zefania 2001). Desert (*Schistocerca gregaria*), Migratory (*Locusta migratoria*) and Red (*Nomadacris septemfasciata*) Locusts are often the target of large-scale pest control operations using conventional pesticides, such as organochlorines, organophosphates, carbamates and synthetic pyrethroids (i.e., Mullié et al. 2023). In east Africa, the locust crisis (2019-2021) resulted in over 1.6 million hectares being treated (Mullié et al. 2023). Insecticides can cause primary but more often secondary poisoning, which can lead to death or reduced fecundity (Xirouchakis 2004; Guitart et al. 2010; Caloni et al. 2018). Likewise, chemical compounds used to control Red-billed Quelea (*Quelea quelea*) are likely to have an adverse impact on non-target species, such as the Sooty Falcon (Bruggers et al. 1989; Ogada 2014). There is no direct evidence of the importance of this threat to the Sooty Falcon, but the potential impact on the species is high, particularly in Kenya and Madagascar. This island has recently experienced two invasions of migratory locusts, one from 1997 to 2000 (covering 4.2 million hectares) and another from 2013 to 2016 (covering 2.3 million hectares; FAO-UN 2018). The management strategy targeting migratory locusts has failed repeatedly despite repeated restructuring projects and significant international assistance (Zhang et al. 2019). The simultaneous presence of large numbers of wintering Sooty Falcons feeding on insects increases the risk of secondary poisoning (Caloni et al. 2018).

## Hunting and taking

**Importance:** *Medium*

**Mainly affecting:** *Breeding and non-breeding areas*

The species is legally protected in many of its range countries. This excludes Libya and Yemen, both of which host breeding populations. However, law enforcement is often inadequate. Illegal killing of Sooty Falcons has been reported to occur in many countries: Egypt (Sándor pers. comm. 2013, Megalli pers. comm. 2013), Iran (Islamic Republic of) (potential, Zadegan pers. comm. 2013), Jordan (El-Moghrabi pers. comm. 2013), Kenya (Thomsett pers. comm. 2013), Libya (Hering pers. comm. 2013), Madagascar (Réné de Roland pers. comm. 2013, 2023), Saudi Arabia (Gaucher et al. 1995; Shobrak pers. comm. 2013), and Yemen (Al-Saghier pers. comm. 2013). One satellite tagged falcon was reportedly shot in the Democratic Republic of the Congo in 2011 (Gschweng pers. comm. 2013).

Sooty Falcons are known to be taken or trapped in Egypt, Jordan, north Africa, Oman and Saudi Arabia (McGrady et al., 2016, 2018; Riad et al. 2021). Sooty Falcons are not suitable for falconry due to their size and propensity to take insect prey, nevertheless the species is reportedly captured to be used as a lure for trapping Lanner (*F. biarmicus*), Peregrine (*F. peregrinus*) and Saker Falcons (*F. cherrug*; Gaucher et al. 1995; Shobrak pers. comm. 2013; Zadegan pers. comm. 2013). Falcon trappers may catch Sooty Falcons as by-catch, and these may be kept as a curiosity or sold (Jennings 2010). Young individuals have been seen for sale in markets in Bahrain (Jennings 2010). In western Kenya, killing of wild birds for food apparently takes place on a large-scale using poison (Thomsett pers. comm. 2013). In Madagascar, intense rain and strong winds associated with cyclones make the birds easy prey for the local population, who catch them for food (Réné de Roland pers. comm. 2023).

## Lack of knowledge on the impacts of climate change

**Importance:** *Medium*

**Mainly affecting:** *Breeding and non-breeding areas*

Extensive research has been conducted on the heightened vulnerability of birds to climate change, uncovering substantial effects on their distribution, life-history characteristics, and overall performance (Li et al. 2022; McLean et al. 2022). Increasing temperatures have led to earlier spring migration, affected physical conditions, diminished breeding success, and contributed to declines in certain bird populations (Li et al. 2022; McLean et al. 2022). Additionally, climate change has the potential to impact the timing of insect emergence and swarming, consequently threatening to alter the availability of prey during the migration and wintering periods of Sooty Falcons. Overall, species that are already nearing their upper limits of thermal tolerance or inhabit regions with limited water availability are likely to encounter the most immediate threat (Cruz-McDonnell and Wolf 2016; Iknayan and Beissinger 2018).

## Poisoning and habitat degradation from agricultural intensification

**Importance:** *Unknown, possibly Medium*

**Mainly affecting:** *Breeding and non-breeding areas*

Agricultural intensification and particularly an increase in the use of pesticides in areas frequented by hunting Sooty Falcons may result in the loss of prey species or reduced survival or reproductive success of the Sooty Falcons through pesticide bioaccumulation (Dudley and Alexander 2017; McGrady et al. 2016). This threat occurs not only at or near the breeding sites but also along migration routes and in areas used by floating Sooty Falcons (Maitima et al. 2009; Regasa et al. 2021). Agriculture can also encroach into natural habitats and the spread of drought-tolerant crops may expand the use of pesticides (Thomsett pers. comm. 2013). In wintering areas (Madagascar, southern Africa) important habitat loss and degradation, driven by agriculture expansion (Botha pers. comm. 2013; Musyoki pers. comm. 2013) and deforestation, are taking place (Maitima et al. 2009). Although the Sooty Falcon seems to utilise a range of natural and semi natural habitats, these changes are affecting its prey and therefore potentially its survival (Magioli et al. 2021; Howes et al. 2023).

## Conservation actions

The International Single Species Action Plan for the Sooty Falcon 2024 – 2036 (ISSAP) aims to reduce the risk of extinction of the Sooty Falcon by halting the decline of its population to a point where it qualifies for downlisting to at least Near Threatened. Ensuring that this is achieved requires Range States and other stakeholders to take concerted, as well as unilateral action. The present section lays out a plan for such action over a 12-year period, from 2024 to 2036, which equates to approximately three generations of the species (the generational length of the Sooty Falcon has been estimated at 4.1 years and the IUCN Red List Authority has suggested that future changes to the conservation status of the species be evaluated over a three-generation period; BirdLife International 2021).

The ISSAP contains a series of actions divided into three objectives: (1) protect the species; (2) improve knowledge through monitoring and research; and (3) exchange lessons learnt and raise awareness. Each action of the ISSAP is accompanied by an outcome, target countries and stakeholders, and an indication of implementation priority.

### Aim of the International Single Species Action Plan for the Sooty Falcon 2024 – 2036:

To reduce the risk of extinction of the Sooty Falcon by halting the decline of its population to a point where it qualifies for downlisting to at least Near Threatened by 2036

#### Objective 1 – Protect the species

Action	Outcome	Countries <sup>9</sup>	Stakeholders	Priority
1.1 Enact legislation at national level across the species' range to legally protect it from unsustainable killing and take (including the poaching of eggs and chicks) and disturbance	The species is legally protected across its range against unsustainable killing and take, as well as disturbance	AE, BH, CD, CF, DJ, EG, EH, ER, IL, IR, JO, KE, KW, LY, MG, MZ, OM, PK, RW, SA, SD, SO, SS, TD, TZ, UG, YE, ZA, ZM	Relevant national authorities	High

<sup>9</sup> Bahrain (BH), Central African Republic (CF), Chad (TD), Democratic Republic of the Congo (CD), Djibouti (DJ), Egypt (EG), Eritrea (ER), Ethiopia (EH), Iran (Islamic Republic of) (IR), Israel (IL), Jordan (JO), Kenya (KE), Kuwait (KW), Libya (LY), Madagascar (MG), Mozambique (MZ), Oman (OM), Pakistan (PK), Rwanda (RW), Saudi Arabia (SA), Somalia (SO), South Africa (ZA), South Sudan (SS), Sudan (SD), Uganda (UG), United Arab Emirates (AE), United Republic of Tanzania (TZ), Yemen (YE), Zambia (ZM).

<p><b>1.2</b> Ensure adequate national-level enforcement of protective measures against unsustainable killing and take, as well as disturbance</p>	<p>Regulations relating to preventing killing, take and disturbance are adequately enforced at national levels</p> <p>Hatching and fledging success are increased and desertion of nesting sites is reduced</p>	<p>AE, BH, CD, CF, DJ, EG, EH, ER, IL, IR, JO, KE, KW, LY, MG, MZ, OM, PK, RW, SA, SD, SO, SS, TD, TZ, UG, YE, ZA, ZM</p>	<p>Relevant national authorities</p>	<p>High</p>
<p><b>1.3</b> Enact legislation at national level to legally protect known breeding sites from damage and disturbance, including through restricting human access by implementing buffer zones and seasonal closures at breeding sites, by regulating outdoor recreational activities (trekking, hiking, camping, bathing, boating, and others) in the vicinity of coastal and inland breeding sites, and by requiring any visitors (particularly to core and island breeding sites) to be accompanied by duly trained guides</p>	<p>Known breeding sites are legally protected from damage and disturbance across the species' range</p>	<p>AE, BH, DJ, EG, ER, IL, IR, JO, LY, OM, PK, SA, YE</p>	<p>Relevant national authorities</p>	<p>High</p>
<p><b>1.4</b> Ensure adequate national-level enforcement of protection against damage and disturbance of breeding sites</p>	<p>Regulations relating to preventing damage and disturbance of breeding sites are adequately enforced at national levels</p> <p>Disturbance during the breeding season (1 June – 30 November) is prevented, and the risk of ground predator introduction is minimised all year round</p> <p>Human encroachment into core breeding areas is prevented</p> <p>Nest site disturbance by outdoor recreational activities is avoided and unsuccessful breeding along coastal, island and inland areas is reduced</p>	<p>AE, BH, DJ, EG, ER, IL, IR, JO, LY, OM, PK, SA, YE</p>	<p>Relevant national authorities</p>	<p>High</p>

	The negative impact of human activities on contiguous breeding sites is mitigated			
<b>1.5</b> Place appropriate signage around core breeding areas to deter human encroachment	Unauthorised visitors are deterred from entering or landing within core breeding areas	AE, BH, DJ, EG, ER, IL, IR, JO, LY, OM, PK, SA, YE	Relevant national authorities	Medium
<b>1.6</b> Develop and implement control plans for non-native invasive predators in breeding sites	Predation by non-native invasive predators is minimised and eliminated where possible	AE, BH, DJ, EG, ER, IR, OM, SA, YE	Relevant national authorities	High
<b>1.7</b> Identify and implement pest control strategies that do not cause Sooty Falcon mortality	Strategies and best practice are developed jointly by Range States, CMS, FAO, UNEP and others to reduce the additive mortality of migrating and wintering birds resulting from locust and Red-billed Quelea control operations Range States implement such strategies and best practice	CD, CF, EH, ER, IL, KE, MG, MZ, RW, SA, SD, SO, SS, TD, TZ, UG, ZA, ZM	Relevant national authorities, IGOs, NGOs	Medium
<b>1.8</b> Develop national action plans for the conservation of the species	Action plans for the conservation of the species are developed by Range States	AE, BH, CD, CF, DJ, EG, EH, ER, IL, IR, JO, KE, KW, LY, MG, MZ, OM, PK, RW, SA, SD, SO, SS, TD, TZ, UG, YE, ZA, ZM	Relevant national authorities, NGOs	Medium

**Objective 2 – Improve knowledge through monitoring and research**

Action	Outcome	Countries	Stakeholders	Priority
<b>2.1</b> Improve population estimates across the species' range	Current population sizes are ascertained across the species' distribution range	AE, BH, DJ, EG, ER, IL, IR, JO, MG, LY, OM, PK, SA, YE	Research institutions, relevant national authorities, non-governmental organisations (NGOs)	Medium
<b>2.2</b> Improve the understanding of the species' distribution range	The present distribution of the species is assessed, and the various areas of its range are identified (core areas of the range that are consistently occupied, peripheral areas that	AE, BH, DJ, EG, ER, IL, IR, JO,	Research institutions,	Medium

	are intermittently occupied, and degraded areas that have experienced population declines)	LY, OM, PK, SA, YE	relevant national authorities, NGOs	
<b>2.3</b> Develop and adopt a shared species research and monitoring scheme	A coordinated research and monitoring scheme addressing population status, trends and distribution is implemented and able to inform and evaluate conservation actions on breeding, migration and wintering grounds	AE, BH, DJ, EG, ER, IL, IR, JO, MG, LY, OM, PK, SA, YE	Relevant national authorities, inter-governmental organisations (IGOs), NGOs	High
<b>2.4</b> Research threats to the species along its migratory routes	Studies utilising Global Positioning System (GPS) tracking and on-the-ground investigations are initiated and continued to assess potential threats to the species during dispersal and seasonal movements	AE, BH, CD, CF, DJ, EG, EH, ER, IL, IR, JO, KE, KW, LY, MG, MZ, OM, PK, RW, SA, SD, SO, SS, TD, TZ, UG, YE, ZA, ZM	Research institutions, relevant national authorities, NGOs	Medium
<b>2.5</b> Research the causes of post-fledging and adult mortality	The causes of mortality are better comprehended	AE, BH, CD, CF, DJ, EG, EH, ER, IL, IR, JO, KE, KW, LY, MG, MZ, OM, PK, RW, SA, SD, SO, SS, TD, TZ, UG, YE, ZA, ZM	Research institutions, relevant national authorities, NGOs	Medium
<b>2.6</b> Research the impact of secondary poisoning on populations	Possible impacts of secondary poisoning from pest control programmes on survival rates of migrating individuals are ascertained	CD, CF, ER, ET, KE, MG, MZ, RW, SD, SO, SS, TD, TZ, UG, ZA, ZM	Research institutions, relevant national authorities, NGOs	High
<b>2.7</b> Research the impact of solar and wind energy infrastructure on populations	Possible impacts of solar and wind energy infrastructure on individuals are ascertained	IL, JO, SA	Power and utility companies, research institutions, relevant national authorities, NGOs	Medium
<b>2.8</b> Research the impact of climate change on populations	Possible impacts of climate change on survival rates of breeding and migrating individuals are ascertained	AE, BH, DJ, EG, EH, ER, IL, JO, KE, LY, MG, MZ,	Research institutions,	Medium

		OM, SA, SO, TZ, YE, ZA	relevant national authorities, NGOs	
<b>2.9</b> Investigate the viability of artificial nest provision to promote (re)colonisation of suitable breeding sites and deploy such nests where appropriate	The number of nesting locations in areas that are currently populated is enhanced and/or the recolonisation of adjacent areas that have been deserted due to human activities is facilitated	AE, BH, DJ, EG, ER, IL, IR, JO, LY, OM, PK, SA, YE	Research institutions, Relevant national authorities, NGOs	High
<b>2.10</b> Research Sooty Falcon genomics to better understand the species' vulnerability to threats	The genetic diversity of the species, its migration patterns, threats, and population size, trends and connectivity are better understood	AE, BH, CD, CF, DJ, EG, EH, ER, IL, IR, JO, KE, KW, LY, MG, MZ, OM, PK, RW, SA, SD, SO, SS, TD, TZ, UG, YE, ZA, ZM	Research institutions, Relevant national authorities, NGOs	Medium

**Objective 3 – Exchange lessons learnt and raise awareness**

Action	Outcome	Countries	Stakeholders	Priority
<b>3.1</b> Communicate the findings of the ISSAP to governments, researchers, the private sector and the public	Awareness of the latest information available on the species is established	AE, BH, CD, CF, DJ, EG, EH, ER, IL, IR, JO, KE, KW, LY, MG, MZ, OM, PK, RW, SA, SD, SO, SS, TD, TZ, UG, YE, ZA, ZM	Relevant national authorities, IGOs, NGOs	High
<b>3.2</b> Disseminate experiences in the management of breeding sites	Breeding States learn from one another about best management options	AE, BH, DJ, EG, ER, IL, IR, JO, LY, OM, PK, SA, YE	Relevant national authorities, NGOs	Medium
<b>3.3</b> Disseminate experiences in adequate management of wintering habitats	Wintering States learn from one another about best management options	KE, MG, MZ, SA, TZ	Relevant national authorities, NGOs	Medium
<b>3.4</b> Launch national or local campaigns on the importance of protecting the species	Awareness of the need to protect the species and its habitat is raised among individuals, entities and economic sectors with the potential to impact population trends	AE, BH, CD, CF, DJ, EG, EH, ER, IL, IR, JO, KE,	Relevant national authorities,	Medium



		KW, LY, MG, MZ, OM, PK, RW, SA, SD, SO, SS, TD, TZ, UG, YE, ZA, ZM	NGOs, Estate developers	
<b>3.5</b> Establish joint awareness programmes that bring Range States and communities together	Range States and their communities maximise efforts to conserve the species	AE, BH, CD, CF, DJ, EG, EH, ER, IL, IR, JO, KE, KW, LY, MG, MZ, OM, PK, RW, SA, SD, SO, SS, TD, TZ, UG, YE, ZA, ZM	Relevant national authorities, IGOs, NGOs	High
<b>3.6</b> Establish an International Sooty Falcon Day	Awareness of the need to protect the species and its habitat is raised among the public, entities and economic sectors in Range States and non-Range States	AE, BH, CD, CF, DJ, EG, EH, ER, IL, IR, JO, KE, KW, LY, MG, MZ, OM, PK, RW, SA, SD, SO, SS, TD, TZ, UG, YE, ZA, ZM, Vagrancy States <sup>10</sup>	Relevant international organisations	Medium
<b>3.7</b> Create enabling conditions for the establishment of sustainable birding tourism	Sustainable birding tourism enterprises are established and contribute awareness on the need to conserve the species	AE, BH, CD, CF, DJ, EG, EH, ER, IL, IR, JO, KE, KW, LY, MG, MZ, OM, PK, RW, SA, SD, SO, SS, TD, TZ, UG, YE, ZA, ZM	Relevant national authorities, NGOs	Medium

<sup>10</sup> Algeria, Botswana, Cameroon, Comoros, France, Italy, Lebanon, Mali, Malawi, Mauritius, Morocco, Namibia, Niger, Seychelles, Syria, Togo, Tunisia, Türkiye, Zimbabwe.