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EDITORIAL

This issue brings exciting news of the marking of several new power lines as a mitigation for bird collisions. Our utilities, including NamPower and Namdeb, are to be congratulated on their efforts to make our power lines more bird-friendly!

The spotlight falls increasingly on renewable energy – both solar and wind – to supplement existing power supplies. This is particularly pertinent in view of December's COP21 UN Climate Change Conference in Paris. Potential impacts of renewable energy are mentioned as a reminder for us to ensure that what is "clean" is also "green".

Power line surveys have covered some 548 km during the past six months, recording 31 incidents (0.06 per km). A total of 59 surveys has been completed from January-October 2015, covering an impressive 786 km with 52 incidents (0.07 per km). Note that these data are still uncorrected for bias. Incidental reports also continue to come in, and we thank all those who are our eyes and ears out there for this ongoing support and interest. Of special note is a multiple collision of six Greater Flamingos; this sad incident serves as our first confirmed record of their use of the Swakop River as a flight corridor.

Finally, our Environmental Information Service (EIS) brings news of exciting new "citizen science" activities – offering us a chance to make our observations count.



The new 132 kV Kuiseb-Walvis Bay power line has been marked as a mitigation for bird collisions (above); fitting of markers for mitigation (below; *photos Ann Scott*).

NAMPOWER MAKES NEW KUISEB-WALVIS BAY POWER LINE BIRD-FRIENDLY

In line with the theme of World Migratory Bird Day 2015, "Energy - Make it bird-friendly", NamPower has marked a key section of the new 132 kV Kuiseb-Walvis Bay power line as a mitigation against collisions of wetland birds. These include Red Data intra-African migrant species such as the charismatic Lesser Flamingo and Greater Flamingo.

This year on 9-10 May 2015, World Migratory Bird Day aimed to highlight the importance of applying energy technologies that will prevent, minimise and mitigate the impact on migratory birds and their habitats (www.worldmigratorybirdday.org; see previous issue).



The Walvis Bay Wetlands (Lagoon) is an Important Bird Area and a coastal Ramsar Site, regarded as the most important coastal wetland in the southern Sub-region and one of the most important in Africa (*photo Ann Scott*).



The Greater Flamingo and the Lesser Flamingo are both Red-listed, intra-African migrants, and a charismatic attraction to birders and other tourists at Walvis Bay and elsewhere in Namibia (*photo Ann Scott*).

The new Kuiseb-Walvis Bay power line consists of two parallel 132 kV structures with 24 m high steel monopoles. These lines run from the Kuiseb Substation in the east to join the C34 road up to the intersection with the C14 road, and then westwards to Walvis Bay. The line was completed in mid-2015.

The Environmental Impact Assessment (EIA) for the construction of this line highlighted 4 km of the route opposite the Walvis Bay sewage ponds, in the area known as Bird Paradise, as having a high potential risk for bird collisions. Apart from the above two flamingo species, other Red-Listed aquatic bird species with the potential for collisions in this area include Great White Pelican, Black Stork, Caspian Tern, Hartlaub's Gull, Maccoa Duck and Black-necked Grebe – all nomadic species. Other non-Red Listed species could also be at risk.

NamPower has therefore mitigated this stretch of the line, using a combination of marking devices (namely alternating spiral double loop bird flight diverters [BFDs] and large fluorescent black and white "flappers" [the latter shown on p1]) to make the lines more visible. The marking design is experimental, and set up in such a way that comparisons will be possible between three marked sections, alternating with two comparable non-marked sections (see p3). Mitigation is an ongoing experimental process, to test and find the best marking methods.

Walvis Bay is closely associated with several Important Bird Areas (IBAs). The Walvis Bay Wetlands (Lagoon) in the south is an IBA and also a coastal Ramsar Site, regarded as the most important coastal wetland in the southern Sub-region and one of the most important coastal wetlands in Africa. The wetland birdlife in this area is prolific and includes 35 Red-Listed species, a number of endemic and near-endemic species and also various migrant and nomadic species.

Regular monitoring of this section of line is essential, and the NamPower/Namibia Nature Foundation Strategic Partnership has been conducting regular surveys on the

old line since September 2014, providing a baseline before the construction of the new line (see below). All mortalities are recorded and entered into a central data base, as a basis for future mitigation decisions.

Several other new lines in the area have been marked in a similar way, including the Lithops-Walmund line, at the Swakop River crossing and eastwards; and the Lithops-Husab line, at the Khan River crossing. Both lines are also being monitored. New transmission and smaller distribution lines are being marked in other areas of the country, according to the recommendations of EIAs.

The NamPower/Namibia Nature Foundation Strategic Partnership was launched in 2008 in order to address wildlife and power line interactions in Namibia. Management decisions need to be based on good data, and the Partnership is busy collating records of wildlife and power line incidents. Migrant and/or nomadic bird species have been involved in the greater part of these incidents to date, chiefly bustards (more than 50% of the incidents, and up to 75% in the south) and flamingos (25%), both mainly in collisions with power lines.

Flamingos, especially, are prone to collisions due to their habit of flying low at times and at night or in poor light, in groups. Bustards are large and heavy, with limited manoeuvrability and restricted by a "blind spot" when flying forward. The collision risk for both is heightened by adverse weather conditions, with poor visibility.

The conservation of migratory birds needs to be considered in all phases of energy development at multiple levels - locally, nationally and internationally. Concerted conservation actions by governments, nature conservation organisations, scientists and the energy sector as well as the general public are thus necessary to ensure that our energy is truly sustainable and nature friendly.

NamPower is to be congratulated on its willingness to try and ensure that the benefits of sustainable energy can be realised while addressing the risk of potential harm to migratory and other birds and their habitats.

PROVISIONAL RESULTS OF MONITORING OF WALVIS BAY – KUISEB POWER LINE AT BIRD PARADISE

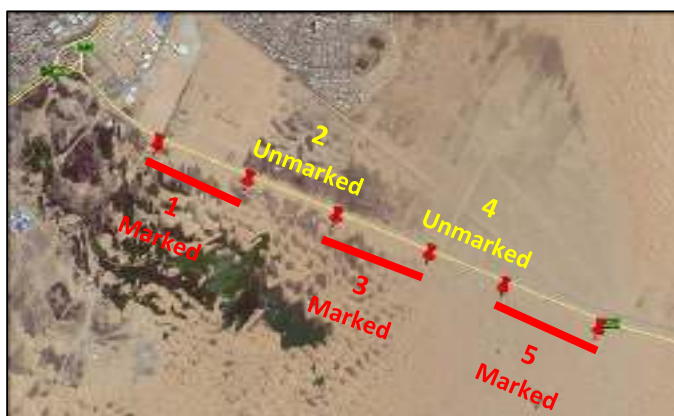
As mentioned above, a 3.9 km section of both the old and the new Kuiseb-Walvis Bay power line has been monitored by the Partnership every 1-2 months to compare the effectiveness of marking in three sections, vs two unmarked sections (see map below for marking design). The old line was monitored during the pre-construction phase, from 26/9/14 to 26/3/15; the new line, marked in May 2015, has been monitored again since then.

The provisional data are shown in Table 1; however caution is needed with interpretation. Many of the bird remains recorded pre-mitigation are from old, accumulated carcasses that have lain there for some time, uncovered when the wind blows the sand away.

Recent activities in the vicinity of the power line have been accompanied by an increase in water seepage right up to the power lines, that has attracted flamingos and other birds to this dangerous zone and increased the likelihood of collisions. The seepage has since dried up. Some incidents took place on the border of marked/unmarked sections, which does not give a clear-cut result. Despite these constraints, the picture that is starting to emerge is that marking appears to be having some effect, with relatively lower numbers of incidents post-mitigation. The high numbers of flamingo collisions after marking (with most in the unmarked section, No. 2) may be attributed in part to the above-mentioned periods of seepage beneath the power lines. The most activity is in sections 1-3, adjacent to the sewage ponds. Monitoring will continue, and we look forward to establishing the long term trends in this experiment.

Table 1. Provisional summary of survey results: Walvis Bay-Kuiseb 132 kV power line (26/9/14 – 27/10/15)

Monitoring period	Section of study area (3.9 km in total)					Total
	All unmarked - pre-mitigation					
Pre-mitigation: 26/9/14 – 26/3/15	12 flamingo 5 wader 2 duck/coot 1 crane 2 cormorant 1 unknown	3 flamingo 3 wader 1 moorhen	5 flamingo 10 wader 1 duck 1 sparrow	3 flamingo	1 flamingo	24 flamingo 18 wader 3 duck/coot 1 moorhen 1 crane 2 cormorant 1 sparrow 1 unknown
Total	23	7	17	3	1	51
Marked May 2015	1 Marked (west)	2 Unmarked	3 Marked	4 Unmarked	5 Marked (east)	
Post-mitigation 10/6/15 – 27/10/15	3 flamingo 1 Black-necked Grebe 1 coot	11 flamingo 1 Black-necked Grebe 1 duck	1 flamingo	1 flamingo	0	16 flamingo 2 Black-necked Grebe 1 coot 1 duck
Total	5	13	1	1	0	20



Marking design for a 3.9 km section of the Kuiseb-Walvis Bay 132 kV power line at Bird Paradise (based on a Google Earth map).

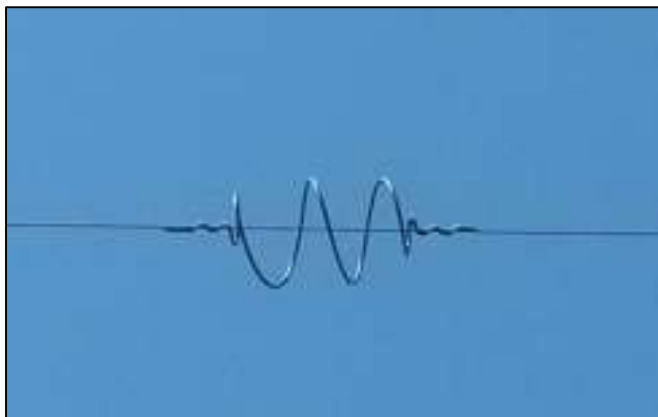


Flamingo collision (bottom right) on an unmarked section of the line (photo Ann Scott).

NAMDEB MARKS 66 KV LINE RE-ROUTE AT LÜDERITZ

Pankratius Kondjamba, Electrical Engineer, Namdeb Diamond Corporation (Pty) Ltd, Oranjemund (email Pankratius.Kondjamba@namdeb.com)

5/5/2015: I thought I should share the Bird Flight Diverters (BFDs) that we installed on the 66kV Line re-route near Lüderitz (see photos below) as per the recommendations from the report on Birds Specialist study which formed part of the EIA. The line was completed last year (2014).



Marking of the 66kV Line re-route near Lüderitz
(photos Pankratius Kondjamba, Namdeb).

UPDATE ON BIRDS AND RENEWABLE ENERGY



Photovoltaic (PV) solar farm showing typical arrangement of photovoltaic panels (Sam Ralston, BirdLife South Africa).

The need for energy - and energy that is cleaner - has resulted in a "clean energy revolution" that is busy taking place worldwide. In South Africa the renewable energy industry is burgeoning, and spreading to neighbouring countries. In Namibia, interest in both solar and wind energy developments is also on the increase.

International Renewable Energy Symposium

The first International Renewable Energy Symposium (IRES 2015) was hosted by the Namibia Energy Institute in Windhoek on 29-30 October 2015. One of the objectives was to create a platform for participants to explore options of increasing access to energy. The Partnership was fortunate to attend this thought-provoking event. Namibia is one of the many countries in the SADC region that is struggling to meet the fast-growing energy demand. In addition, a shortage of electricity infrastructure is undermining efforts to achieve more rapid economic development. The region in general will depend on the availability of well-trained manpower to harness the abundantly available energy resources. Experts are confident that the best solutions to these challenges rest in renewable resources that will create economic opportunities. Delegates to the conference identified gaps, challenges and opportunities to change the *status quo*.



Delegates at the first International Renewable Energy Symposium (IRES) in Windhoek in October 2015
(Official photograph - taken by a drone).

The symposium marked the milestone launch of the Southern African Sustainable Energy Network (SASEN). This year, Namibia had the honour of being selected by SADC Ministers of this sector, to host a new SADC Centre for Renewable Energy and Energy Efficiency (SACREE).

Best practice guidelines for renewable energy developments

BirdLife South Africa has taken the lead as a strong proponent for the responsible development of a renewable energy industry in the region. If well-sited and managed, wind turbines and solar farms need not pose unacceptable risks to wildlife, and provide a clean, sustainable source of almost carbon-free electricity. However, if poorly planned and constructed in the wrong places, such developments can have negative impacts on the environment and present risks to birds through collisions with infrastructure, displacement of priority species, barrier effects to bird movements, and changes to habitats.

Proactive, wise decisions about the development of "clean" energy that is also "green" need to be well informed. BirdLife South Africa is helping to address and minimise these impacts, and has compiled the comprehensive guideline documents below:

- Best practice guidelines for avian monitoring and impact mitigation at proposed wind energy development sites in southern Africa (BirdLife South Africa / Endangered Wildlife Trust)

Compiled by AR Jenkins, CS van Rooyen, JJ Smallie, JA Harrison, M Diamond & HA Smit, 2015.

Recent UPDATE, downloadable from the EAPAN website (www.eapan.org, under Resources; also see previous newsletter, No. 15; and <http://www.birdlife.org.za/conservation/terrestrial-bird-conservation/birds-and-renewable-energy>).

- Birds and Solar Energy Best Practice Guidelines. Best Practice Guidelines for assessing and monitoring the impact of solar energy facilities on birds in southern Africa (BirdLife South Africa)

Compiled by AR Jenkins, S Ralston & HA Smit-Robinson, 2015.

DRAFT for comment, available from Samantha Ralston at BirdLife South Africa, email energy@birdlife.org.za

The above guidelines were developed to ensure that any negative impacts on threatened or potentially threatened bird species are identified and effectively mitigated using structured, methodical and scientific methods. At present, our understanding of the impacts of utility-scale solar energy facilities on birds is limited. It is therefore essential that we gather relevant and accurate data at proposed new developments to anticipate and fully document actual impacts in order to ensure the future sustainability of this industry.

As with the guidelines for wind energy developments, a

multi-tiered approach is proposed for assessing and monitoring, with the overarching aims of 1) informing current environmental impact assessment processes, 2) developing our understanding of the effects of solar energy facilities on southern African birds, and 3) identifying the most effective means to avoid, minimise, and mitigate these impacts.

What are the renewable energy generation options for Namibia?

Options for renewable (utility-scale) energy generation are described in more detail in the guideline documents above; there is also a wealth of information on the internet. A brief summary is provided below.

Solar energy

The above guidelines mention that two broad types of utility-scale solar power generators or Solar Energy Facilities (SEFs) are currently available in southern Africa:

- Photovoltaic (PV) SEFs, that convert solar radiation directly into electricity by exposing solar cells to incoming radiation, either by arranging them conventionally in multiple flat panels, or by using lenses or reflective surfaces to concentrate radiation onto a smaller array of more efficient cells; and
- Concentrated Solar Power (CSP) SEFs, that use an array of reflective surfaces (arranged as troughs, fresnels or dishes) to focus the sun's heat onto a receiving element, which in turn is used to heat water to generate steam to turn turbines or generators. The reflected heat is mostly concentrated onto a central receiver tower and standby focal points (although there is also other technology within CSP).

Impacts

Solar energy can impact avifauna directly by injuring or killing birds that collide with photovoltaic panels or



Concentrated Solar Power (CSP) Facility - Parabolic (curved) troughs concentrate sunlight on the central receiver tower (*after Smit 2012*).

reflective Concentrated Solar Power heliostats, or with associated infrastructure. At CSP power tower facilities, birds may also be burned when they fly through concentrated beams of solar flux. The theory (as yet unproven) is that this effect may be exacerbated if the reflective surfaces making up the solar hardware serve to attract birds to the area.

Solar developments can also impact birds indirectly by destroying or degrading large areas of habitat, displacing sensitive species, by causing disturbance (at both the construction and operational phases) that affects the presence or breeding and/or foraging success of key species, and by depleting or polluting ground water in efforts to keep solar panels and heliostats clean.

Please consult the above guideline documents for recommendations on reducing the above impacts.

Wind energy

Wind energy typically makes use of one or more turbines to generate electricity. Wind power is one of the most advanced and affordable renewable energy technologies available today.

The size of wind turbines varies from the smallest unit, used for applications such as battery charging for auxiliary power, to slightly larger turbines that can be used for making contributions to a domestic power supply while (potentially) selling unused power back to the utility supplier via the electrical grid; to arrays of large turbines in the same location, known as wind farms and used for production of electricity on a large scale.



Impacts

The most prevalent impacts of wind energy facilities on birds are the mortality of susceptible species, primarily in collisions with development hardware, and the displacement of sensitive species from development areas. Bat mortalities may also take place on the infrastructure.

The above guideline documents contain recommendations on reducing the above impacts.

Arrays of large turbines in the same location are known as wind farms and are used for production of electricity
(*Sam Ralston, BirdLife South Africa*).

PROJECT RELATED REPORTS

Flight paths for wetland flagships project

The GPS satellite transmitter fitted to our Greater Flamingo marked with a green ring NFL at Mile 4 Saltworks on 16 November 2015 (see previous newsletters) continued to transmit accurate GPS signals until 2/7/15. As expected, the battery power was then reaching its end. The weaker "doppler" signals continued until 28/10/15. Sadly, this bird was brought in on 4/11/15 after being harassed and apparently wounded by dogs, and died on 9/11/15. Although there was no movement inland (due to insufficient rainfall, or rainfall of unsuitable timing for breeding there), our bird made a brief visit to Walvis bay and back between 20/5/15 and 4/6/15 (see map below). At Mile 4 Saltworks the flamingos showed strong and consistent habitat preferences for the "oyster pond" to the east, and the adjacent pond to the west. These preferred feeding sites have been investigated in detail by Wendy Swart of the Windhoek International School (see report in Namibia Crane News, No. 54: <http://www.nnf.org.na/CRANES/products.htm> under Newsletters).

The tracking of flagship Red Data wetland bird species such as flamingos is a ground-breaking initiative of the "Flight Paths for Wetland Flagships" project, funded and supported by the Environmental Investment Fund of Namibia (EIF), the Nedbank Go Green Fund and the NamPower/NNF Strategic Partnership. It is hoped that the flight paths that emerge will indicate focal areas for addressing potential interactions between flamingos and overhead lines – one of the main concerns of the Partnership (<http://www.nnf.org.na/project/nampowernnf-partnership/13/5/5.html>).

We would like to thank all those who are supporting this project in different ways, including the Klein family for access to the Mile 4 Saltworks, and Mark Boorman, Dr Sandra Dantu, Dr John Mendelsohn and the Swart Family for their interest and support for these tracking efforts.



Winter scavenging rates under power lines in the Karoo, South Africa

Jessica Shaw, Rona van der Merwe, Emily van der Merwe & Peter Ryan (email shawmjessica@gmail.com)

Abstract - African Journal of Wildlife Research 45(1): 122–126 (April 2015)

Avian mortality from collision with overhead wires is a serious conservation problem; the power grid in South Africa is extensive, raising concern about the threat posed to the collision-prone species such as Ludwig's Bustard (*Neotis ludwigii*). Calculating accurate fatality rates is difficult, with periodic carcass searches on power lines likely to underestimate true rates. Removal of carcasses between searches is a major biasing factor, so a winter scavenger experiment was conducted in the Hantam Karoo to ascertain scavenging rates. Camera traps were used to monitor the fate of 15 Egyptian Goose (*Alopochen aegyptiaca*) carcasses deployed as surrogates for collision victims. A range of avian and small mammalian scavengers fed extensively on 12 of the geese *in situ* and, while wary of the cameras, Cape foxes (*Vulpes chama*, n=7) and a domestic cat (n=1) removed eight carcasses. Scavenging intensity was high, with all geese scavenged within a week and 60% unlikely to be found over a normal three-month

carcass search interval. This contrasts with previous records of low summer removal rates at this site, highlighting the importance of calculating seasonal bias correction factors. Camera traps were useful to document scavenging behaviour and identify the scavenger guild in this area.

Camera traps keep a beady eye on bird activities at the Khan River crossing

Swakop Uranium (SU) has come to the fore with providing invaluable assistance to mount the Partnership's two Cuddeback camera traps at the Khan River crossing, to monitor possible bird activity in the vicinity of the Lithops-Husab power line. This line was marked as part of the EIA recommendations, and ongoing monitoring will help confirm which bird species are using the area, including at night. Special thanks to Theo Uvanga, Calvin Sisamu and Immanuel Kalomho of SU and to Andries Botes, Duncan Moth & Team of Enl Electrical for their willing help with mounting the cameras; to NamPower for support; and to SU for ongoing monitoring of the results. Bird movements are unfortunately few and far between during the present dry conditions, but we are hoping for some action during the rainy season.



Camera trap images of typical scavengers feeding on goose carcasses during a winter scavenger experiment in the Karoo (top to bottom): yellow mongoose and Cape fox (nocturnal image taken with infrared flash; source JM Shaw).



Staff from Swakop Uranium and Enl Electrical with Mike Scott in the Khan River valley (photo Ann Scott).

POWER LINE SURVEYS: MAY – OCTOBER 2015

Over the past six months our team has completed 45 surveys, covering some 548 km. Relatively few incidents are still being recorded: 31 or 0.06 incidents per km, possibly due to the dry conditions over the previous summer, and the lack of rain so far this season, with reduced plant growth and associated food for nomadic species such as bustards. The highest number of incidents is still on the Walvis Bay-Kuiseb line in the Bird Paradise area (where the new line that has been built has been marked by NamPower as mitigation [see above]), and on the Trekkopje ByPass near Arandis (where planning is well underway for a similar marking experiment).

A total of 59 surveys has been completed from January-October 2015, covering 786 km. The 52 incidents recorded amount to 0.07 per km. Note that these figures have not yet been corrected for scavenger or observer bias, which would give a higher estimate (this research [see p8] still has to be done for Namibia).

Many thanks to all our faithful supporters for this ongoing effort, including those who help us identify the remains! It should be noted that much of this survey work is done on foot, sometimes under hot and windy conditions.

Special thanks to Swakop Uranium, who have been doing two surveys per month at the Husab Mine since June 2014: participants from May-October 2015 include Abraham Amuthenu, Percy Hoebeb, Immanuel Kalomho, Ignatius Katupao, Ronald Munjede, Andrea Roxin, Ilka Schröer, Calvin Sisamu, and Claudia Vahekeni; and to Rössing Uranium (Ltd), who have done repeat surveys from August 2014: participants from May-October 2015 include Loide Hausiku, Inekela Iiyambo and Vistorina Nangola (apologies if we have unintentionally left anyone out).

Date	Line	Km	kV & marking	Participants	Results	Tot.
6/5/15	Lithops-Walmund (to Swakop River)	24	220 kV steel pylons	A & M Scott	2 L Bustard 1 Flamingo	3
6/5/15	Lithops-Walmund (from Swakop River - Walmund)	18	220 kV steel pylons	A & M Scott	0	0
7/5/15	Walmund-Kuiseb-Walvis Bay	33	220 kV + Kamerad; double steel monopole + Kamerad	A & M Scott	1 Crow	1
7/5/15	Walvis Bay - Swakopmund	30	X-mas tree (un-energised)	A & M Scott	0	0
15/5/15	Khan-Rössing	6	220 kV steel pylons	Rössing Uranium Ltd	0	0
15/5/15	Rössing Arandis airfield	5.5	22 kV A-frame	Rössing Uranium Ltd	0	0
15/5/15	Rössing CMC	0.4	X-mas tree (low voltage)	Rössing Uranium Ltd	0	0
29/5/15	Husab-Lithops	18	Steel monopole double circuit 132 kV + steel pylon 220 kV	Swakop Uranium	4 Feather + 3 bones	3
29/5/15	Husab Mine on-site	18	132 kV (steel) + 33 kV (wooden)	Swakop Uranium	0	0
4/6/15	Trekkopje-Wlotzka	11	Double line to Bypass: guyed steel tower (220 kV) + Kamerad (66 kV); steel self-supporting tower to Trekkopje S/S; double H-pole 66 kV to Wlotzka	Wicus Meyer & J Biljon (NamPower)	2 L Bustard	2
10/6/15	Kuiseb-Walvis Bay (Bird Paradise)	3.9	Double 66 kV Kamerad (double steel monopole under construction)	A & M Scott	1 Flamingo 1 Coot	2
10/6/15	Kuiseb-Walvis Bay (airport)	3.4	New 132 kV double steel monopole	A & M Scott	0	0
16/6/15	Khan-Rössing	6	220 kV steel pylons	Rössing Uranium Ltd, A & M Scott	1 Speckled Pigeon	1
16/6/15	Rössing Arandis airfield	5.5	22 kV A-frame	Rössing Uranium Ltd, A & M Scott	0	0
16/6/15	Rössing CMC	0.4	X-mas tree (low voltage)	Rössing Uranium Ltd, A & M Scott	0	0

Date	Line	Km	kV & marking	Participants	Results	Tot.
26/6/15	Husab-Lithops	18	Steel monopole double circuit 132 kV + steel pylon 220 kV	Swakop Uranium	0	0
26/6/15	Husab Mine on-site	18	132 kV (steel) + 33 kV (wooden)	Swakop Uranium	1 Korhaan	1
22/7/15	Khan-Rössing	6	220 kV steel pylons	Rössing Uranium Ltd	0	0
22/7/15	Rössing Arandis airfield	5.5	22 kV A-frame	Rössing Uranium Ltd	0	0
22/7/15	Rössing CMC	0.4	X-mas tree (low voltage)	Rössing Uranium Ltd	0	0
23/7/15	Inhoek S/S west (Khorixas)	6	33 kV HLPCD	Gottlieb Geiseb (Namibia Rare Earths), A & M Scott	0	0
23/7/15	Welwitschia-Fransfontein	8.5	66 kV double Kamerad	David Kayofa & Norman Mbirijona (NamPower), A & M Scott	0	0
31/7/15	Husab-Lithops	18	Steel monopole double circuit 132 kV + steel pylon 220 kV	Swakop Uranium	1 feather (dove)	0
31/7/15	Husab Mine on-site	18	132 kV (steel) + 33 kV (wooden)	Swakop Uranium	0	0
5/8/15	Kuiseb-Walvis Bay (Bird Paradise)	3.9	New 132 kV double steel monopole	A & M Scott	6 Flamingo 1 Black-necked Grebe 1 Cormorant (old)	8
5/8/15	Kuiseb-Walvis Bay (airport)	3.4	New 132 kV double steel monopole	A & M Scott	0	0
17/8/15	Khan-Rössing	6	220 kV steel pylons	Rössing Uranium Ltd	0	0
17/8/15	Rössing Arandis airfield	5.5	22 kV A-frame	Rössing Uranium Ltd	0	0
17/8/15	Rössing CMC	0.4	X-mas tree (low voltage)	Rössing Uranium Ltd	0	0
20/8/15	Khurub-Aussenkehr	40	66 kV wooden H-pole	Chris Brown	0	0
11/9/15	Husab-Lithops	18	Steel monopole double circuit 132 kV + steel pylon 220 kV	Swakop Uranium	0	0
11/9/15	Husab Mine on-site	18	132 kV (steel) + 33 kV (wooden)	Swakop Uranium	0	0
16/9/15	Kuiseb-C34 road	13	New 132 kV double steel monopole	Karl-Heinz Wagner & Jürgen Senke (NamPower)	0	0
17/9/15	Kuiseb-Walvis Bay (Bird Paradise)	3.9	132 kV double steel monopole	A & M Scott	8 Flamingo 2 Waterbird 1 Duck	11
22/9/15	Khan-Rössing	6	220 kV steel pylons	Rössing Uranium Ltd	0	0
22/9/15	Rössing Arandis airfield	5.5	22 kV A-frame	Rössing Uranium Ltd	0	0
22/9/15	Rössing CMC	0.4	X-mas tree (low voltage)	Rössing Uranium Ltd	0	0
23/9/15	Trekopje-Wlotzka	67	Double line to Bypass: guyed steel tower (220 kV) + Kamerad (66 kV); steel self-supporting tower to Trekopje S/S; double H-pole 66 kV to Wlotzka	A & M Scott	2 L Bustard 2 R Korhaan 1 Flamingo	5

Date	Line	Km	kV & marking	Participants	Results	Tot.
2/10/15	Husab-Lithops	18	Steel monopole double circuit 132 kV + steel pylon 220 kV	Swakop Uranium	0	0
2/10/15	Husab Mine on-site	18	132 kV (steel) + 33 kV (wooden)	Swakop Uranium	0	0
8/10/15	Khan-Rössing	6	220 kV steel pylons	Rössing Uranium Ltd	0	0
8/10/15	Rössing Arandis airfield	5.5	22 kV A-frame	Rössing Uranium Ltd	0	0
8/10/15	Rössing CMC	0.4	X-mas tree (low voltage)	Rössing Uranium Ltd	0	0
27/10/15	Kuiseb-Walvis Bay (Bird Paradise)	3.9	132 kV double steel monopole	A & M Scott	1 Flamingo	1
27/10/15	Walvis Bay - Swakopmund	30	X-mas tree (un-energised)	A & M Scott	0	0

Due to space constraints, only a selection of photographs from all the above surveys and other activities is included. Thank you all for your contributions!



POWER LINE INCIDENTS: JANUARY 2014* – NOVEMBER 2015

*Additional to previous incidents for 2014

Kori Bustard collision & outage

Aranos/Kalkpan Retic. – Bloukop
33 kV HLPCD to A-frame strain pole.

Reported by AC van Zyl
9 January 2014

Near-Threatened in Namibia



Genet electrocution

Aranos/Kalkpan Retic. –
Bloukoppomp
25 05 50.1S 19 50 20.9E

33 kV /25 KVA transformer
Reported by SN Fukwa & AC van Zyl
25 January 2014



Lappet-faced Vulture electrocution

Aranos/Kalkpan Retic. – Turksvypan
Pump 1 (fly-angle pole)

33 kV HLPCD
Reported by AC van Zyl
14 August 2014

Vulnerable in Namibia

Black-chested Snake-eagle (subadult) electrocution

Aranos/Leonardville/Werda
33 kV strain pole

Reported by AC van Zyl & H Kooper
24 April 2014



Giant Eagle-Owl electrocution

Aranos/Kalkpan Retic. – Turkvypan
Pump 1

33 kV /25 KVA transformer
Reported by H Kooper & AC van Zyl
26 May 2014



Spotted Eagle-Owl electrocution

Aranos/Kalkpan Retic. – Bloukop
Pump

33 kV /25 KVA transformer
Reported by AC van Zyl
19 July 2014



**Secretarybird collision/
electrocution**

Aranos/Aminuis Retic. – Meerboom
T-off
33 kV HPCD
Reported by AC van Zyl
2 September 2014

Vulnerable in Namibia



White-backed Vulture electrocution

Aranos/Kalkpan Retic. – Turksvypan
2nd
33 kV HPCD / 25 KVA transformer
Reported by AC van Zyl & H Kooper
18 October 2014

Endangered in Namibia



Three-banded Plover collision

Husab Mine – site power line
network
22.589722S 15.020833E

33 kV line
Reported by Ignatius Katupao & Ilka
Schröer
23 July 2015



Pied Crow electrocution

Husab Mine – site power line
network
22.587617S 15.016033E
33 kV line and transformer
Reported by Andrea Roxin & Ilka
Schröer
6 July 2015



Genet electrocution & outage

Stampriet S/S – Transformer 1
(voltage regulators)
66 kV / 22 kV substation
Reported by AC van Zyl
9 November 2014



Great White Pelican collision

Oranjemund-Namdeb
28 32.249S 16 35.937E
66 kV
Reported by Holger Kolberg
27 June 2015

Vulnerable in Namibia



Greater Flamingo collision (6 birds)

Swakop River plots

22 kV ERONGO RED line across river

22.64689S 14.69172E

Reported by Sybille & Peter Ermann
& Mark Boorman

22 November 2015

Vulnerable in Namibia

*This is the first evidence of flamingos colliding on power lines across the Swakop River; a strong westerly wind was blowing at the time, with much dust; the birds were flying eastwards.



Ludwig's Bustard collision on fence

Farm south of Grünau

28 13 34.0S 17 57 53.9E

Reported by Peter Cunningham

25 July 2015

Endangered in Namibia



Martial Eagle (subadult) at Husab Mine

Arandis

This beautiful live eagle was seen perching on the on-site 132 kV steel (un-energised) overhead line

Reported by Carlene Binneman
(Swakop Uranium)

21 October 2015

Endangered in Namibia



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What's new?

New citizen science projects

The citizen science section of the EIS has been completely revamped. The recording system for the mammal and carnivore atlas has been replaced and all existing records from the previous system have been migrated into the new system. The new system offers a lot of flexibility in extracting information so you can, for example, query the data by drawing a polygon on a map, specifying a date range or species, or data collector.

In addition, we are happy to launch some new projects:

- an atlas of amphibians
- an atlas of alien plants

» Go to the new [Atlasing in Namibia section](#) of the EIS and take a look!

Number of records in the EIS: 10,907