

**Social and Environmental Impact Assessment for Rössing Uranium's Proposed  
Desalination Plant near Swakopmund**

**BASELINE REPORT  
Bird assessment**

**Additional study: Monitoring of Damara Terns at  
Mile 4 Salt Works, summer 2014/2015**

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## 1. Introduction

The Damara Tern *Sternula balaenarum* is Near Threatened in Namibia (Simmons, Brown & Kemper in press 2015) and also globally Near Threatened (IUCN 2015). The species is little known and faces several conservation issues (Braby 2011). A recent review of all accessible information of breeding populations in Angola, Namibia and South Africa identified 70 breeding colonies globally for the species (Braby 2011). Most of the population (98%) breeds in Namibia, where overall breeding success (measured as the probability of fledging one chick per pair, per season) is estimated at only 0.36.

A bird assessment study was completed for the Social and Environmental Impact Assessment for Rössing Uranium's Proposed Desalination Plant near Swakopmund, Namibia in August 2014. Although a literature search and local sources indicated that Damara Terns have been recorded and have bred regularly at this site (Braby 2011; Boorman M pers. comm.), more detailed and updated information was required on the present distribution, numbers and breeding success at this site, which according to the bird assessment study should be categorised as sensitive, together with a buffer zone.

This study was therefore initiated to investigate and update the above aspects for the summer 2014-2015 season.

## 2. Methods



Figure 1. The site used historically for breeding by Damara Terns (red marker) and the present main study site at Mile 4 Salt Works; a roosting area was subsequently confirmed and investigated (yellow marker).

The site used historically for breeding by Damara Terns ("breeding site", centred at 22.590871S 14.524030E, see above; Figure 1) and surrounding areas were visited two to three times weekly from 15 September 2014. The following aspects were recorded: numbers, calling and courtship behaviour,

incubation, chicks and fledglings. Observations were made from a vehicle, with the minimum of walking to minimise disturbance.

From 28 February 2015, when numbers had started decreasing at the breeding site once chicks had fledged, a second site was also investigated and monitored, where the terns had been reported to roost ("roosting site", 22.589381S 14.508257E; Figure 2). The last visit to this site was made on 18 April 2015. The data in Figure 1 and 2 represent the pooled counts at both sites, where these figures overlap.

### 3. Results

The first adults (10 birds) were recorded at the breeding site and surrounding areas on 11 October 2015 (Figure 2). Up to 32 adults were observed here at any one time up to 28 February 2015, when the counts at the roosting site began. One breeding adult with a red ring was observed at the breeding site, apparently ringed as a chick in 2012 (S Braby pers. comm.). The first count at the roost site on 28 February 2015 was 29 adults, reaching 52 on 14 March 2015 and decreasing to only one on 4 April 2015. No birds were counted on 18 April 2015.

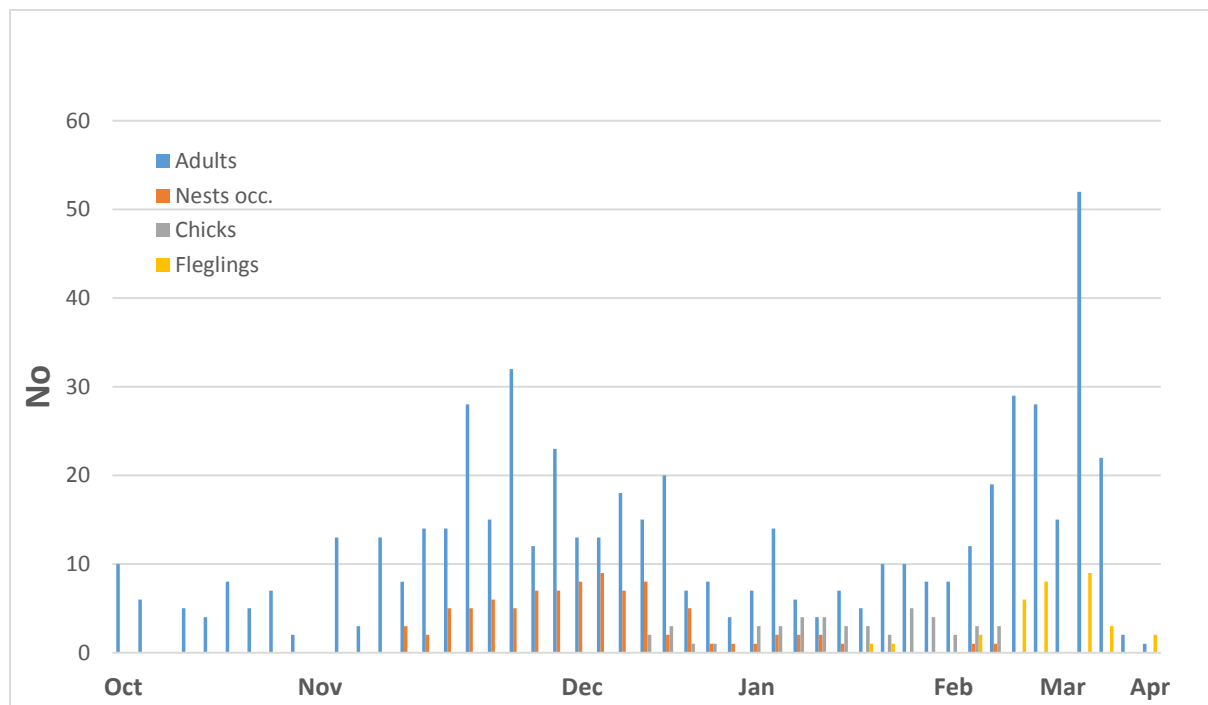


Figure 2. Numbers of Damara Tern adults, nest sites occupied, chicks and fledglings at Mile 4 Salt Works, October 2014 – April 2015.

By 14 November 2014 three nest sites had been occupied, with a maximum of eight sites occupied at any one time up to 14 January 2015 (Figure 2 and 3). A maximum of 15 nest sites was recorded, although the incidence of re-laying is not known. Some nesting sites were close to busy through-roads. At least seven chicks were recorded. It is possible that numbers of both nests and chicks were

higher, but access on foot to all the potential nesting sites was minimised in order to avoid unnecessary disturbance.

The first fledgling was recorded on 17 January 2015, with a maximum of nine on 14 March 2015 at the roosting site.

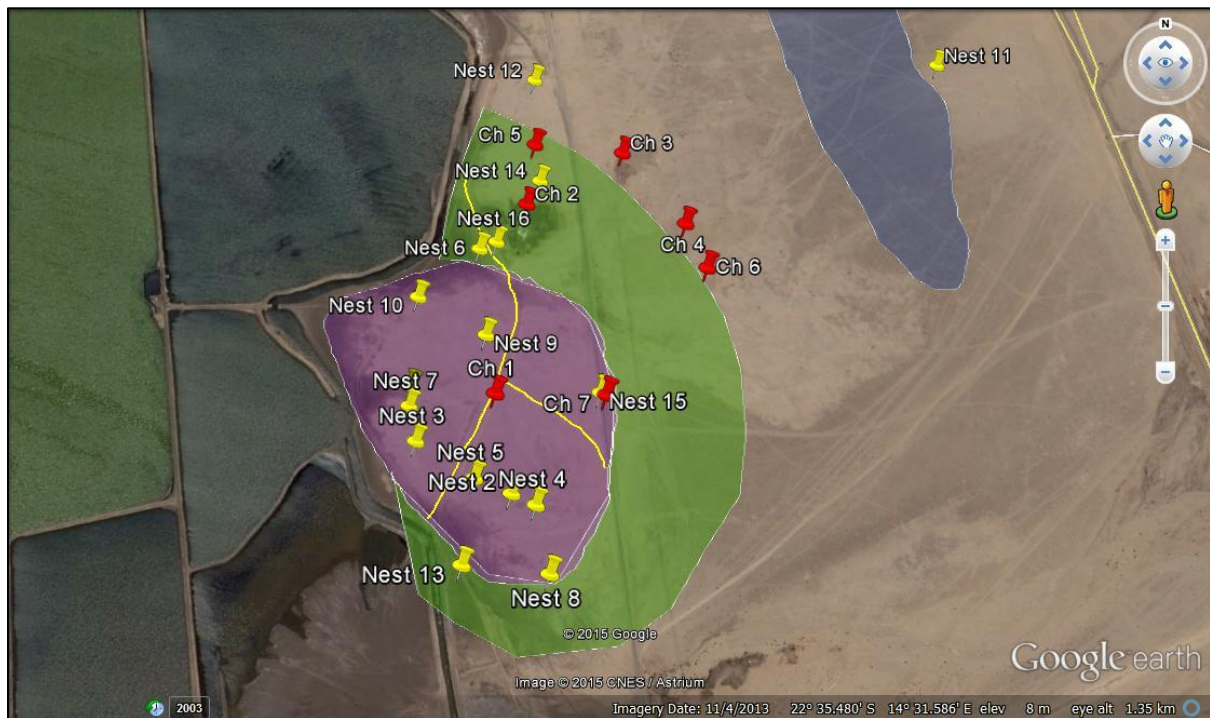


Figure 3. Nest sites occupied by Damara Terns at Mile 4 Salt Works, 14 November 2014 – 10 February 2015 (yellow markers), and sites where chicks were recorded (red markers). Purple indicates sensitive breeding area identified in the EIA, with green as a buffer area.

#### 4. Discussion

In 2011 the global breeding population of Damara Terns was estimated at 1,001-2,685 breeding pairs or 5,370 breeding individuals (Braby 2011). This estimate is substantially lower than the 13,500-14,000 individuals initially estimated by Simmons *et al.* (1998a; IUCN 2015), which is now considered a probable over-estimate (Braby 2011). A more recent (conservative) estimate places the entire breeding population at only 900 pairs (R Braby pers. comm. July 2014). Earlier estimates at Mile 4 Salt Works include 24 adults in 1977 (Underhill & Whitelaw 1977); and 10-20 pairs in 2008-2010 (Braby 2011) and 10-15 pairs in 2013-2014 (M Boorman pers. comm.).

The present study has shown that the Mile 4 breeding site and surrounding areas were used by at least 32 adult Damara Terns during the peak of the season, whereas up to 52 adults were recorded at the roost site in March 2015. These latter numbers could, however, have been supplemented by birds moving in from other areas, in preparation for the migration northwards in April/May. These findings indicate that the area as a whole is important for around 2% of the entire population, and thus of conservation significance. The study confirms that the original core breeding area and buffer zone (as identified in the Bird Assessment Report for the EIA for the Rössing Desalination Plant; also see Figure

3) remain relevant; in addition, the area designated as a "roosting site" (see Figure 1) is also of importance for this subpopulation, including as a nursery area.

At least seven chicks were recorded, with nine fledglings at the roost site in March 2015. From the above count of 52 adults (or 26 pairs) and nine fledglings, breeding success can be tentatively estimated at 0.35 fledglings per pair; however, as mentioned above, this figure may include birds (of both ages) from other areas. This breeding success rate is in line with the estimate of 0.36 fledglings per pair for the species (Braby 2011).

The study confirmed that the categorisation of the breeding area as "sensitive" in terms of the EIA can be justified, given that at least 15 nests sites were occupied over the past season; this number could, however, include re-lays. It also showed that the area demarcated as a buffer area is equally important as a nursery area for rearing chicks before they fledge. It is speculated that this could be due to the amount of cover present in the form of dips and rocky outcrops, which provide a means of escaping the impacts of vehicular and other forms of human disturbance as well as from predators. However, other as yet unidentified factors could also be involved. At this stage the ponds in the saltworks are the closest source of food, particularly the "oyster pond" north of the breeding site, and the pond in the upper north-east. Once the chicks have fledged, the roosting site to the west becomes more important. As it is closer to the sea, this could indicate that this is the favoured source of food at this stage.

Threats faced by Damara Terns throughout their breeding range include the following (Braby 2011):

- Coastal development causing colony extinctions; coastal development has been the major cause of declines in similar species;
- Off-road driving causing disturbance to breeding areas, resulting in low reproductive success; and
- Anthropogenic activities that result in increases in predator densities (e.g. offal from fishing that attracts larger numbers of black-backed jackals).

The birds at Mile 4 appeared to be very sensitive to an approach on foot, whereas traffic on roads fairly close to a nesting site did not appear to be as much of a disturbance. The incidence of vehicle tracks, including of motor cycles and quadbikes, in the Damara Tern breeding area is cause for concern. According to the owners of the saltworks, this disturbance is on the increase (D Klein pers. comm.). This type of disturbance could become unsustainable if control is not increased. Uncontrolled (feral) dogs were also observed in the area.

## **5. Recommendations**

Mile 4 Salt Works is important for 2% of the entire population of Damara Terns, and thus of conservation significance. The following recommendations are based on the broad conservation actions proposed by Braby (2011) and IUCN (2015), namely:

- Mile 4 Salt Works should be protected as an important breeding colony site in Namibia; and
- Population trends should continue to be monitored at this site.

## **Acknowledgements**

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## **References**

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## APPENDIX 1: PHOTOGRAPHS

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1. Damara Tern adult at Mile 4 Salt Works, December 2014.



2. Damara Tern adult and chick at Mile 4 Salt Works, December 2014.



3. Damara Tern chick near busy through-road at Mile 4 Salt Works, December 2014 (see No. 4).



4. Damara Tern chick near busy through-road at Mile 4 Salt Works, December 2014 (see No. 3).



5. Damara Tern adult (circle) nesting near busy through-road (arrow) at Mile 4 Salt Works, January 2015.



6. Vehicular disturbance in Damara Tern breeding area at Mile 4 Salt Works, February 2015.



7. Damara Tern roosting site on west of Mile 4 Salt Works, March 2015.



8. Damara Terns at roosting site on west of Mile 4 Salt Works, March 2015.



9. Damara Terns at roosting site on west of Mile 4 Salt Works, March 2015: (front) left – adult; front centre and right – fledglings.



10. Damara Tern fledgling at roosting site on west of Mile 4 Salt Works, March 2015.