

## Conservation importance of previously undescribed abundance trends: increase in loggerhead turtle numbers nesting on an Atlantic island

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SUPPLEMENTARY TABLE 1 The conservation status of the loggerhead turtle *Caretta caretta* for each of the Regional Management Units as published in the IUCN Red List of Threatened Species in 2017 (last assessment in 2015; Casale & Tucker, 2017).

Regional Management Unit	Conservation status
Mediterranean	Least Concern
Southwest Indian	Near Threatened
Northwest Indian	Critically Endangered
Northeast Indian	Critically Endangered
Southeast Indian	Near Threatened
North Pacific	Least Concern
South Pacific	Critically Endangered
Northwest Atlantic	Least Concern
Southwest Atlantic	Least Concern
Northeast Atlantic	Endangered
<i>Global</i>	Vulnerable

### Reference

CASALE, P. & TUCKER, A.D. (2017) *Caretta caretta*. In *The IUCN Red List of Threatened Species*. IUCN, Gland, Switzerland.

SUPPLEMENTARY TABLE 2 Monitoring efforts on all beaches of Sal between 2008 and 2017. Thanks to increased funding available to the project, monitoring efforts have expanded on the island throughout the study period. Nesting beaches are divided into different sections to facilitate beach monitoring (Fig. 1). FNS, full-night surveys (20.00–07.00); IS, island surveys (starting at 06.00 and carried out at least fortnightly); MS: morning surveys (starting at 07.00); PNS, partial night surveys 20.00–01.00; X, no data collected.

Beach	Section	Code	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Algodoeiro	Black Sand Beach	1	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS
	Paradise Beach	2	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	PNS + MP	PNS + MP	PNS + MP	MP	MP
	Tortuga	3	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	PNS + MP	MP	MP	MP	MP
Baía Negra	Baía Negra 1	4	X	X	X	MP	PNS + MP	PNS + MP	PNS + MP	PNS + MP	PNS + MP	PNS + MP
	Baía Negra 2	5	X	X	X	MP	PNS + MP	PNS + MP	PNS + MP	PNS + MP	PNS + MP	PNS + MP
	Baía Negra 3	6	X	X	X	MP	PNS + MP	PNS + MP	PNS + MP	PNS + MP	PNS + MP	PNS + MP
Costa Fragata	Cabeça Salinas	7	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS
	Igrejinha	8	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
	Kite Beach	9	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS
	Ponta Jelonga	10	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS
	Salinas	11	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS
East Coast	Feijoal	12	IS	IS	IS	IS	IS	FNS + MS	FNS + MS	IS	IS	FNS + MS
	Parda	13	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
	Pedra de Lume	14	IS	IS	IS	IS	IS	FNS + MS	FNS + MS	IS	IS	FNS + MS
	Pedra Furada	15	X	X	X	X	X	IS	IS	IS	IS	IS
	Praia Chano	16	X	X	X	X	IS	PNS	FNS + MS	FNS + MS <sup>‡</sup>	IS	FNS + MS <sup>‡</sup>
Ribeira de Tarafe	17	X	X	X	X	IS	IS	FNS + MS	FNS + MS <sup>‡</sup>	IS	IS	
Monte Leão	Madama	18	IS	IS	IS	IS	MP	FNS + MS	FNS + MS	FNS + MS <sup>‡</sup>	IS	FNS + MS
	Monte Leão	19	PNS <sup>1/2</sup> + MP	PNS <sup>1/2</sup> + MP	PNS <sup>1/2</sup> + MP	PNS	FNS + MS	FNS + MS	FNS + MS	FNS + MS <sup>‡</sup>	IS	FNS + MS
Murdeira	Murdeira 1	20	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
	Murdeira 2	21	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
	Prainha 1	22	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
	Prainha 2	23	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
North	Cadjetinha	24	IS	IS	IS	IS	IS	IS	IS	IS	X	X
	Fontona	25	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
	Joaquim Petinha	26	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
	Palmeira	27	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
Ponta Preta	Ponta Preta	28	FNS + MS	PNS	PNS	MP	MP	MP	MP	MP	MP	MP
	RIU	29	FNS + MS	PNS	PNS	MP	MP	MP	MP	MP	MP	MP
Santa Maria	Antonio Sousa	30	MP	MP	MP	MP	MP	MP	MP	MP	MP	MP
	Pontão	31	MP	MP	MP	MP	MP	MP	MP	MP	MP	MP

(continued)

Beach	Section	Code	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	Ponta Sinó	32	MP	MP	MP	MP	MP	MP	MP	MP	MP	MP
	Santa Maria	33	MP	MP	MP	MP	MP	MP	MP	MP	MP	MP
Serra Negra	Bay 1	34	PNS <sup>1/2</sup> + MP	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS
	Bay 2	35	PNS <sup>1/2</sup> + MP	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS
	Bay 2	36	PNS <sup>1/2</sup> + MP	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS
	Bay 4	37	PNS <sup>1/2</sup> + MP	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS	FNS + MS
West Coast	Calheta Funda 1	38	IS	IS	IS	IS	IS	IS	FNS + MS	FNS + MS	IS	FNS + MS
	Calheta Funda 2	39	IS	IS	IS	IS	IS	IS	FNS + MS	FNS + MS	IS	FNS + MS
	Calheta Funda 3	40	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
	Calhetinha	41	IS	IS	IS	IS	IS	IS	FNS + MS	FNS + MS	IS	FNS + MS
	Prainhas	42	IS	IS	IS	IS	IS	IS	FNS + MS	FNS + MS	IS	FNS + MS

<sup>1/2</sup>Surveys were carried out every other night.

<sup>3</sup>Surveys stopped mid August after a human attack on one observer.

<sup>4</sup>Surveys stopped for 2 weeks after heavy rain made the beach inaccessible.

SUPPLEMENTARY TABLE 3 Observed and estimated number of nests on Sal during 2008–2017. Because surveying effort was not constant at all beach sections during the entire study period, we made conservative estimates of the number of nests at a given section for a year during which no data were collected for that section. In addition, during the first 3 years of beach monitoring the number of nests was probably underestimated, so a correction was applied. In 2016 and 2017 we surveyed all sections and hence the observed and estimated numbers are identical.

Nesting season	Observed no. of nests	Estimated no. of nests
2008	340	506
2009	1,071	1,545
2010	504	734
2011	649	707
2012	2,606	2,751
2013	2,102	2,208
2014	1,559	1,650
2015	1,207	1,287
2016	4,129	4,129
2017	7,771	7,771

SUPPLEMENTARY TABLE 4 Sources of the data presented in Fig. 5. Where the study period extended over more than one nesting season, when possible the most recent annual nest number is given.

Location	Annual nest numbers	Period	Reference
Angola	210	2005	Brian, 2007
Australia (Western Australia, Dirk Hartog Island)	> 1,000 <sup>†</sup>	2011	Reinhold & Whiting, 2014
Australia (Western Australia, Gnaraloo Bay)	405	2008-2015	Thomson et al., 2016
Australia (Western Australia, South Muiron Islands)	700-1,700 <sup>‡</sup>	1986-1999	Baldwin et al., 2003; clutch frequency = 4.78 nests per season (Thomson et al., 2016)
Australia (Queensland)	> 1,000 <sup>‡</sup>	1999	Limpus & Fien, 2009; clutch frequency = 3.4 nests per season (Limpus, 1985)
Bahamas (Cay Sal Bank)	500-600	Unknown	Addison, 1997 as cited in Ehrhart et al., 2003
Brazil	7,540	2013	Casale & Marcovaldi, 2015
Cape Verde (Boa Vista)	13,955	2007-2009	Marco et al., 2012
Cape Verde (Sal)	7,771	2008-2017	Current study
Cuba	111	2005	Moncada et al., 2006 as cited in SWOT, 2007
Cyprus	817	2004-2013	Casale, 2015a
Greece	3,472	1984-2007	Margaritoulis et al., 2003
Israel	121	2013	Casale, 2015a
Japan	8,394	2009-2013	Casale & Matsuzawa, 2015
Libya	138	2005	Hamza & Elghmati, 2005
Mexico	961	2005	FFC México, 2006
Mozambique	295	2013	Nel & Casale, 2015
New Caledonia	680 <sup>‡</sup>	2006-2007	Étaix-Bonnin et al., 2011; clutch frequency = 3.4 nests per season (Limpus, 1985)
Oman (Arabian Sea Coast)	2,200 <sup>‡</sup>	1989	Baldwin et al., 2003; clutch frequency = 4.4 nests per season (Rees et al., 2008)
Oman (Halaniyat Islands)	> 3,300 <sup>‡</sup>	1989	Baldwin et al., 2003; clutch frequency = 4.4 nests per season (Rees et al., 2008)
Oman (Masirah Island)	64,561	2010-2014	Casale, 2015b

<sup>‡</sup>For studies that reported annual number of nesting females rather than annual nest numbers, we estimated annual nest numbers using local clutch frequencies found in the literature. If local clutch frequencies were not found in the literature for a particular site, we used clutch frequencies reported at the nearest rookery.

<sup>†</sup>A mean of 143 nests laid over a 13-day study period was reported; it is possible that annual nest numbers are in excess of 10,000 over the course of a 6-month nesting season.

*(continued)*

Location	Annual nest numbers	Period	Reference
South Africa	2,216	2013	Nel & Casale, 2015
Turkey	2,145	Unknown	Margaritoulis et al., 2003
USA (Florida)	72,863	2010	Richards et al., 2011
USA (Georgia)	1,987	2011	OBPA, 2013
USA (North Carolina)	947	2011	OBPA, 2013
USA (South Carolina)	3,992	2011	OBPA, 2013

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