

Pterodroma madeira -- Mathews, 1934

ANIMALIA -- CHORDATA -- AVES -- PROCELLARIIFORMES -- PROCELLARIIDAE

Common names: Zino's Petrel; Freira; Madeira Petrel; Pétrel de Madère

European Red List Assessment

European Red List Status

EN -- Endangered, (IUCN version 3.1)

Assessment Information

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Assessment Rationale

European regional assessment: Endangered (EN)

EU27 regional assessment: Endangered (EN)

This species qualifies as Endangered because it has an extremely small population breeding on six cliff ledges in the central mountain massif of Madeira. A fire at the breeding colony in 2010 decimated fledgling numbers, although the long-term effects on the population size and trend are as yet unknown. Should new studies reveal the population to be decreasing, the species's status would warrant revising.

Occurrence

Countries/Territories of Occurrence

Native:

Portugal

Population

The European population is estimated at 70-80 pairs, which equates to 130-160 mature individuals. The entire population is found in the EU27. For details of national estimates, see [Supplementary PDF](#).

Trend

Prior to the 2010 fires, the breeding population was stable or increasing slightly (Barov and Derh 2011); with recent increases in population estimates likely the result of increased survey effort (I. Ramirez in litt. 2005). It is too early to determine the effects of the 2010 fires on the long-term trend of the species. However, should new studies reveal the population to be decreasing, the species's status would need to be reassessed. For details of national estimates, see [Supplementary PDF](#).

Habitats and Ecology

This species breeds on ledges on inland cliffs at 1600 m. Good vegetation and sufficient earth to dig burrows is essential for nesting (Hagemeijer and Blair 1997). During the day it is seen no closer than 3–5 km to the shore and only returns at night (Tucker and Heath 1994). The breeding season begins in early April with egg-laying occurring May to early June. Clutch size is a single egg (Carboneras et al. 2014). Little is known about the diet but regurgitated material has contained small fish, squid and crustaceans (Tucker and Heath 1994). The species is migratory however there is little information on where it goes outside of the breeding season. Current evidence indicates most birds disperse widely to Mauritania and Senegal, NE Brazil, and the tropical waters along the southern Mid-Atlantic Ridge to St Helena and west of the Gulf of Guinea (Carboneras et al. 2014).

Habitats & Altitude

Habitat (level 1 - level 2)	Importance	Occurrence
Marine Neritic - Macroalgal/Kelp	suitable	breeding
Marine Neritic - Macroalgal/Kelp	suitable	non-breeding
Marine Neritic - Pelagic	major	breeding
Marine Neritic - Pelagic	major	non-breeding

Habitats & Altitude			
Habitat (level 1 - level 2)		Importance	Occurrence
Marine Neritic - Seagrass (Submerged)		suitable	breeding
Marine Neritic - Seagrass (Submerged)		suitable	non-breeding
Marine Neritic - Subtidal Loose Rock/pebble/gravel		suitable	breeding
Marine Neritic - Subtidal Loose Rock/pebble/gravel		suitable	non-breeding
Marine Neritic - Subtidal Rock and Rocky Reefs		suitable	breeding
Marine Neritic - Subtidal Rock and Rocky Reefs		suitable	non-breeding
Marine Neritic - Subtidal Sandy		suitable	breeding
Marine Neritic - Subtidal Sandy		suitable	non-breeding
Marine Neritic - Subtidal Sandy-Mud		suitable	breeding
Marine Neritic - Subtidal Sandy-Mud		suitable	non-breeding
Marine Oceanic - Epipelagic (m)		major	breeding
Marine Oceanic - Epipelagic (m)		major	non-breeding
Rocky areas (eg. inland cliffs, mountain peaks)		major	breeding
Altitude	1600-1700 m	Occasional altitudinal limits	

Threats

Following the removal of all livestock from the breeding areas, the ecosystem had been recovering well prior to the 2010 fire, although breeding only occurs on ledges that were never accessible to grazing animals (D. Menezes and P. Oliveira in litt. 2007). The fire in 2010 (see Zino and Biscoito 2011) highlights the vulnerability of the species to such events, since it breeds on only six ledges at one location. As well as having a catastrophic impact on the survival of the year's fledglings and some adults, fires also increase soil erosion and make the habitat more barren, making the chicks more vulnerable to predation (P. Oliveira in litt. 2010). Currently, the main threats are predation of eggs and chicks by introduced black rats (*Rattus rattus*) and of nesting adults by feral cats (*Felis catus*). The increasing number of visitors at night may also cause disturbance to breeding birds, although this is being carefully monitored by the relevant authorities (D. Menezes and P. Oliveira in litt. 2007). The sole remaining breeding site is threatened by the construction of a NATO radar station on the summit of Mt Areeiro which began in November 2009. Although an Environmental Impact Assessment has been conducted to minimise the threat to the species, it is still feared that the construction and presence of the station will have a negative impact (Barov and Derhé 2011). The species is also potentially threatened by climate change because it has a geographically bounded distribution: its altitudinal distribution falls entirely within 1,000 m of the highest mountain top within its range (1,861 m) (BirdLife International unpublished data). Shepherds formerly collected juveniles for food, and egg-collectors have raided nest-burrows in the past.

Threats & Impacts					
Threat (level 1)	Threat (level 2)	Impact and Stresses			
Biological resource use	Hunting & trapping terrestrial animals (intentional use - species is the target)	Timing	Scope	Severity	Impact
		Past, Likely to Return	Majority (50-90%)	Slow, Significant Declines	Past Impact
		Stresses			
Species mortality; Reduced reproductive success					
Climate change & severe weather	Habitat shifting & alteration	Timing	Scope	Severity	Impact
		Future	Whole (>90%)	Unknown	Unknown
		Stresses			
Ecosystem degradation; Indirect ecosystem effects					
Human intrusions & disturbance	Recreational activities	Timing	Scope	Severity	Impact
		Ongoing	Minority (<50%)	Unknown	Unknown
		Stresses			
Species disturbance; Reduced reproductive success					
Invasive and other problematic species, genes & diseases	Black Rat (<i>Rattus rattus</i>)	Timing	Scope	Severity	Impact
		Ongoing	Majority (50-90%)	Unknown	Unknown
		Stresses			
Reduced reproductive success					

Threats & Impacts					
Threat (level 1)	Threat (level 2)	Impact and Stresses			
Invasive and other problematic species, genes & diseases	Domestic Cat (<i>Felis catus</i>)	Timing	Scope	Severity	Impact
		Past, Likely to Return	Minority (<50%)	Rapid Declines	Past Impact
		Stresses			
Species mortality					
Invasive and other problematic species, genes & diseases	Domestic Sheep (<i>Ovis aries</i>)	Timing	Scope	Severity	Impact
		Past, Unlikely to Return	Majority (50-90%)	No decline	Past Impact
		Stresses			
Ecosystem degradation					
Invasive and other problematic species, genes & diseases	Goat (<i>Capra hircus</i>)	Timing	Scope	Severity	Impact
		Past, Unlikely to Return	Majority (50-90%)	No decline	Past Impact
		Stresses			
Ecosystem degradation					
Natural system modifications	Increase in fire frequency/intensity	Timing	Scope	Severity	Impact
		Ongoing	Whole (>90%)	Unknown	Unknown
		Stresses			
Ecosystem degradation; Species mortality; Reduced reproductive success					

Conservation

Conservation Actions Underway

The species is protected under Portuguese law. The breeding sites have been designated a Special Protection Area (SPA) under the EU's Wild Birds Directive and lie within the Parque Natural da Madeira. A European Action Plan was published in 1996 and its implementation reviewed in 2010 (Barov and Derhé 2011). Successful predator control and research has been carried out since 1986 by the Freira Conservation Project and the Parque Natural da Madeira, which has led to increases in the productivity of this species (Zino et al. 2001, Carlile et al. 2003). This programme was expanded in 2001 with additional funding provided by a multidisciplinary EU LIFE project, which also enabled the purchase of c.300 ha of land around the main breeding site (Menezes and Oliveira 2003, Unwin 2004). A project on the identification of marine IBAs in Portugal may allow the species to be studied at sea (I. Ramirez in litt. 2005). Over 2007-2010, dataloggers were attached to 14 breeding birds to determine the distribution of the birds at sea and seasonal changes in distribution from the breeding to non-breeding season (Zino et al. 2011). The Parque Natural da Madeira and SPEA have been monitoring the colony intensively since the 2010 fire and have developed an action plan for the breeding colony which includes immediate emergency measures to mitigate the consequences of the fire along with more long-term activities. As part of the emergency measures following the fires, anti-erosion coconut mesh was installed on the breeding ledges to protect the soil in some of the most critical places and c. 100 natural nests were restored, while 60 new artificial nests were built. A protective cordon was also built around the known breeding areas, with cat traps and bait boxes (BirdLife International 2012, D. Menezes in litt. 2012).

Conservation Actions Proposed

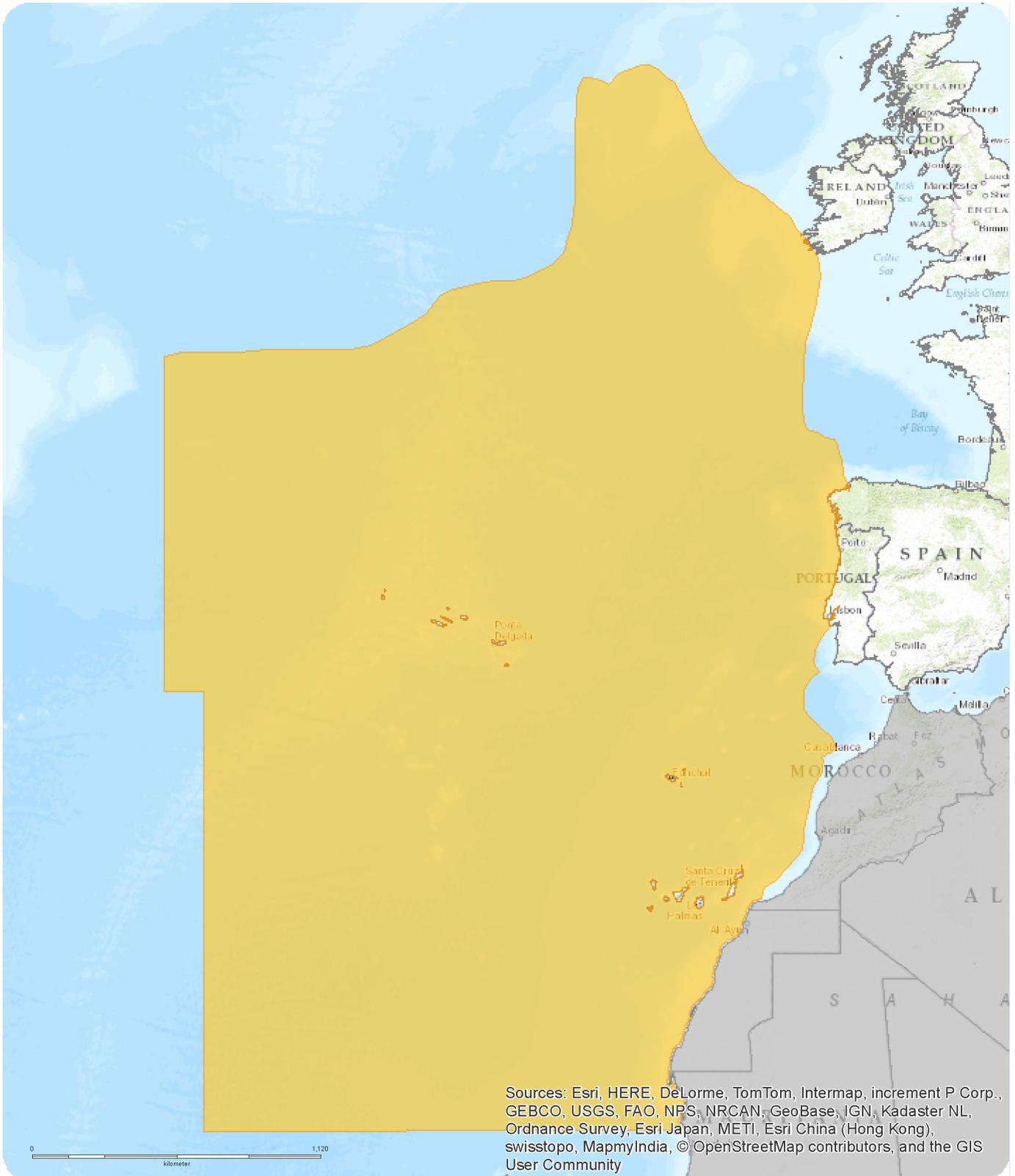
Investigate novel methods of cat predator control and continue control of rats. Exclude grazing stock from potential breeding areas. Continue research to determine the species's population status and distribution, such as searching for new breeding ledges. Monitor the known breeding population. Establish a management plan for the Parque Natural da Madeira. Control human access and disturbance to breeding sites. Assess the potential impact of the proposed radar station. Assess the impact of the 2010 fires on the species's population size and trends.

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European Regional Assessment



Pterodroma madeira

Range

- Extant (breeding)
- Extant (resident)

Citation:
BirdLife International (2015)
European Red List of Birds



Map created 05/12/2015



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