



Background Document for Little shearwater *Puffinus assimilis baroli*



OSPAR Convention

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the “OSPAR Convention”) was opened for signature at the Ministerial Meeting of the former Oslo and Paris Commissions in Paris on 22 September 1992. The Convention entered into force on 25 March 1998. It has been ratified by Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom and approved by the European Community and Spain.

Convention OSPAR

La Convention pour la protection du milieu marin de l'Atlantique du Nord-Est, dite Convention OSPAR, a été ouverte à la signature à la réunion ministérielle des anciennes Commissions d'Oslo et de Paris, à Paris le 22 septembre 1992. La Convention est entrée en vigueur le 25 mars 1998. La Convention a été ratifiée par l'Allemagne, la Belgique, le Danemark, la Finlande, la France, l'Irlande, l'Islande, le Luxembourg, la Norvège, les Pays-Bas, le Portugal, le Royaume-Uni de Grande Bretagne et d'Irlande du Nord, la Suède et la Suisse et approuvée par la Communauté européenne et l'Espagne.

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This report has been prepared by Dr Nigel Varty and Ms Kate Tanner for BirdLife International as lead party for Little shearwater

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Background Document for Little shearwater *Puffinus assimilis baroli*

Executive Summary

This background document on Little shearwater – *Puffinus assimilis baroli* has been developed by OSPAR following the inclusion of this species on the OSPAR List of threatened and/or declining species and habitats (OSPAR agreement 2008-6). The document provides a compilation of the reviews and assessments that have been prepared concerning this species since the agreement to include it in the OSPAR List in 2003. The original evaluation used to justify the inclusion of *Puffinus assimilis baroli* in the OSPAR List is followed by an assessment of the most recent information on its status (distribution, population, condition) and key threats prepared during 2008-2009. Chapter 7 provides recommendations for the actions and measures that could be taken to improve the conservation status of the species. On the basis of these recommendations, OSPAR will continue its work to ensure the protection of *Puffinus assimilis baroli*, where necessary in cooperation with other organisations. This document may be updated to reflect further developments.

Récapitulatif

Le présent document de fond sur le *Puffin de Macaronésie* a été élaboré par OSPAR à la suite de l'inclusion de cette espèce/cet habitat dans la liste OSPAR des espèces et habitats menacés et/ou en déclin (Accord OSPAR 2008-6). Ce document comporte une compilation des revues et des évaluations concernant cette espèce qui ont été préparées depuis qu'il a été convenu de l'inclure dans la Liste OSPAR en 2003. L'évaluation d'origine permettant de justifier l'inclusion du *Puffin de Macaronésie* dans la Liste OSPAR est suivie d'une évaluation des informations les plus récentes sur son statut (distribution, population, condition) et des menaces clés, préparée en 2008-2009. Le chapitre 7 recommande des actions et mesures à prendre éventuellement afin d'améliorer l'état de conservation de l'espèce. OSPAR poursuivra ses travaux, en se fondant sur ces recommandations, afin de s'assurer de la protection du *Puffin de Macaronésie*, le cas échéant en coopération avec d'autres organisations. Le présent document pourra être actualisé pour tenir compte de nouvelles avancées.

1. Background Information

Name of species

Puffinus assimilis baroli Little shearwater.¹

Ecology and breeding biology

P. assimilis feed from the surface of the sea possibly on small fish, cephalopod and crustaceans and spend more time on water than other shearwaters. They breed in rocky ground, caves, cliffs, and stone walls. The rough nest is generally a tunnel in soft soil or a hole between rocks or under fallen boulders and they also use old tunnels of other species (Monteiro *et al.*, 1996a). Little is known about

¹ *P.a. baroli* is currently treated as a subspecies of *P. assimilis* following Brooke (2004), although some authorities give this as a full species – the Macaronesian shearwater *P. baroli*.

breeding habits, as they are winter breeders, laying eggs in January or February with chicks fledging in May and June. The birds frequently visit breeding sites outside breeding season.

2. Original Evaluation against the Texel-Faial selection criteria

List of OSPAR Regions and Dinter biogeographic zones where the species occurs

OSPAR Region V

Dinter biogeographic zones: Warm-temperate waters, Warm-temperate pelagic waters, Azores shelf, Atlantic (Deep Sea), North Atlantic Abyssal Province.

List of OSPAR Regions where the species is under threat and/or in decline

OSPAR Regions: V

Original evaluation against the Texel-Faial criteria for which the species was included on the OSPAR List

P.a.baroli was nominated in a joint submission by three Contracting Parties (Portugal, UK and Iceland) and in a separate submission by one Observer (BirdLife International), and was first listed by OSPAR in 2003. The criteria common to both nominations were decline, regional/local importance, and sensitivity, with information also provided on threat.

Regional importance. As a species *P. assimilis* is widely distributed and not considered to be endangered or threatened. At the time of listing, the Azores held the entire known breeding population of *P.a.baroli* in the OSPAR maritime area. The Wider Atlantic OSPAR Region (Region V) was therefore considered of regional importance for this subspecies.

Decline. ICES (2002) considered that evidence for a decline in breeding numbers within the OSPAR area was based on relatively poorly documented population trends in the Azores (Monteiro *et al.*, 1996b). However, ICES (2002) noted that there was very strong circumstantial evidence indicating that most areas of the Azores had become unsuitable as breeding habitat due to introduced rats and cats and established settlement on the main islands.

Sensitivity. *P.assimilis* was considered sensitive due to the small numbers breeding on the Azores. *P.a.baroli* breeds in winter therefore disturbance is less of an issue but predation (e.g. by rats) appears to have a significant impact on breeding distribution (ICES, 2002).

Threats. Predation at the breeding sites, by rats and cats, as well as by yellow-legged gulls *Larus cachinnans*, was considered to be the major threat to population at the time of listing. The adult birds were also considered to be susceptible to oil pollution whilst feeding at sea.

3. Current status of the species

Distribution in OSPAR maritime area

P.assimilis has a fragmented distribution in all three major oceans with most of its range in the southern hemisphere. It appears to be largely sedentary, which has encouraged a high degree of sub-speciation worldwide (Cramp and Simmons, 1977). *P.a.baroli* is an endemic European race that breeds in the archipelagos of Madeira, the Azores and the Canaries (Cramp and Simmons, 1977), so within the OSPAR area it only breeds in the Azores (area V). In the Azores, breeding has been recorded on the islands of Flores, Corvo, Graciosa and Santa Maria, but it probably occurs on all of the islands except Terceira. It is likely that further breeding sites remain to be discovered as it nests on

inaccessible cliffs. It is also recorded as a rare but regular species in the Bay of Biscay from August - October, where most records are associated with or near deep water areas (8/10 birds recorded over water > 4000 m, Hobbs *et al.*, 2003), so may range more widely than previously thought and it is possible that birds breeding on Madeira or on the Canaries occur in the OSPAR Maritime Area.

Population (current/trends/future prospects)

There is very limited information about population size and trends of *P.a.baroli* in the OSPAR Maritime Area. Current information suggests that it has a small population size and is considered rare. Monteiro *et al.*, (1999) estimated that there were 840 - 1530 pairs in the Azores in 28 colonies (this figure included several previously unknown colonies) during seabird surveys over the period 1996 - 1998. This represents the entire known breeding population within the OSPAR region. BirdLife International (2004) gives the EU breeding population of the subspecies as 5200 - 6900², consequently the Azores population represents approximately 16 - 22% of the European (global) breeding population of this subspecies.

According to BirdLife International, the EU breeding population suffered a 'moderate decline' between 1970 and 1990, although for the period 1990 - 2000 the breeding population was classified as 'stable' (BirdLife International, 2004)³. Population trends for this species in the Azores are poorly documented (Monteiro *et al.*, 1996a), but there is strong circumstantial evidence indicating that most areas of the Azores have been rendered unsuitable as breeding habitat due to the introduction of rats and cats by humans, and indeed almost all the remaining colonies of *P.a.baroli* are on rat and cat-free islets or on relatively inaccessible cliffs. If the threats from introduced predators continue at the breeding sites, then it is likely that the population of this species in the OSPAR area could decline further.

Condition (current/trends/future prospects)

No information is available on the age or size structure or productivity of the breeding population within the OSPAR area.

Limitations in knowledge

There is very little information available on this species within the OSPAR area. *P.a.baroli* is difficult to study, partly because it is a winter breeder, but also because the birds do not flock and are therefore difficult to observe at sea. Consequently, relatively little is known about its population or biology, including aspects such as the age of first breeding or breeding success rate at particular locations.

4. Evaluation of threats and impacts

The major threat to *P.a.baroli* appears to be predation at their breeding sites. The birds are taken by mammalian predators, such as rats and cats, as well as by yellow-legged gulls *Larus cachinnans* whose numbers appear to be increasing in the Azores. The adult birds are also susceptible to oil pollution whilst feeding at sea, although the impact of this is unknown, but they are considered less sensitive to human disturbance at their breeding sites than some other seabirds, as they breed during the winter months. It generally does not follow ships and is probably therefore less at risk from fisheries by-catch.

² Comprising 800 - 1500 in the Azores, 4000 - 5000 on Madeira, and c.400 in Spain (Canary Islands).

³ Although the trend in the Canary Islands during 1990 - 2000 was unknown, the species was thought to be stable in the Azores and its stronghold Madeira, and so was considered stable overall. Nevertheless, its population size renders it susceptible to the risks affecting small populations, and consequently it is provisionally evaluated as Rare (Zino *et al.* 1994c; BirdLife International, 2004).

Compared to other seabirds breeding in the Azores, mercury concentrations in food (average 72 +33 ppb dry weight) and feather samples (3.1 +- 0.1 ppm fw) of *P.a.baroli* were relatively low, which was attributed to their diet of epipelagic prey (compared to other seabirds that feed on mesopelagic species) (Monteiro *et al.*, 1998).

5. Existing Management measures

P.assimilis is listed on Annex 1 of the EU Birds Directive (79/406/EEC) and the subspecies *P.a.baroli* is listed on Annex II of the Bern Convention. *P.assimilis* is currently listed as of 'Least Concern' on the IUCN Red List (BirdLife International, 2008), and as SPEC category 3⁴ in BirdLife International (2004) and had the same listing (Category 3) in 1994 (Tucker and Heath, 1994).

In Spain, it is listed as 'Vulnerable' on the State Catalogue of Threatened Species (Order 9th of July 1998) and Law 42/2007: Annex IV⁵. In Portugal, the species is protected under 'Law-Decree 140/99' (published on 14 April 1999⁶) and modified under 'Law-Decree 49/2005 (published in 24 February 2005), which regulate implementation of the EC Birds and Habitats Directive. The national legislation has been adapted by the Azores regional government and has been published as 'Regional Law-Decree' (Decreto-legislativo-regional) n°18/202A2.

There have been very few specific conservation measures targeted at the species in the Azores. Between 2000 and 2002, a seabird biologist (Mark Bolton, University of Azores (Department of Oceanography and Fisheries)) created artificial nests for storm-petrels on Praia islet (Graciosa island), some of which were used by *P.a.baroli*. In 2008, 6 nest boxes showed signs of occupancy and in three of them a chick was ringed during the second week of June (Jöel Bried *in litt.* 2008). There has been very limited monitoring of *P.a.baroli* within the OSPAR area. Indeed monitoring appears to have occurred at only one colony in the Azores on Vila islet, Santa Maria Island and it is not clear how regular this has been (certainly took place in 2004 and 2008) and results have not been published. Unfortunately, very few nests are accessible. In most cases it is impossible to check for occupancy or for the presence of an egg/chick because the entrance diameter is hardly large enough to allow a human arm to enter, and the tunnels leading to the incubation chamber are often curved with sharp angles and stones or zig-zag, making it very difficult to use a burrowscope. As a result, only 15 nests are accessible on the entire Vila islet, and this has prevented a detailed demographic survey including capture-mark-recapture of the breeders (Jöel Bried *in litt.* 2008). Geolocators were attached to some birds during the 2007 and 2008 breeding seasons (Veronica Neves *in litt.* 2008), but the results have not been published.

⁴ Species whose global populations are not concentrated in Europe, but which have an Unfavourable conservation status in Europe.

⁵ It is also listed as 'Vulnerable' in the Canary Islands Catalogue of Threatened Species (Decree 151/2000, of 23rd of July) (although this is outside of the OSPAR area).

⁶ Available from http://www.estg.ipg.pt/legislacao_ficheiros/DL%20140-99.pdf

There are 9 marine protected areas in the Azores that are managed by the Environment Department. Thirteen Special Protected Areas (SPAs) have been designated under the EC Wild Birds Directive (79/409/EEC) and 17 Special Areas of Conservation (SACs) under the EC Habitats Directive (92/43/EEC) to protect coastal and marine biodiversity, including important breeding colonies of seabirds which includes *P.a.baroli*.⁷

Recent projects, including LIFE-EU funded projects, have developed management plans for some of the protected areas in the Azores, but enforcement of legislation remains problematic and management measures need to include protection at breeding sites, including predator control (especially rats), and minimising disturbance from human activity⁸. Measures to reduce the risk of pollution and to safeguard food supplies would benefit this species at sea.

6. Conclusion on overall status

The species only breeds in the Azores in OSPAR Region V, where it occurs on rat- and cat-free islets and islands with inaccessible cliffs. The last estimate of its population in the Azores (from data collected in the later 1990s) was put at between 840 - 1530 pairs. Little is known of its at-sea movements but it is recorded as a vagrant in more northern waters and may range widely. Population trends for this species in the Azores are poorly documented, but there is strong circumstantial evidence indicating that most areas of the Azores have been rendered unsuitable breeding habitat due to the introduction of rats and cats by humans, and the species is considered rare. There are very few specific conservation efforts directed at the species, although it does occur in several protected areas (how important these are is unknown). Consequently, it continues to qualify under the OSPAR criteria due to its small population size within the OSPAR Region, restricted number of breeding sites (Azores), uncontrolled threats (particularly rats and cats at breeding sites), and inadequate conservation measures.

7. Action should be taken at an OSPAR level?

Action/measures that OSPAR could take, subject to OSPAR agreement

OSPAR Actions

Communication: OSPAR should contact the European Commission, the International Maritime Organisation and other relevant authorities to:

- a. notify them of the listing under OSPAR, threats facing the species, and the willingness of OSPAR to co-operate in developing conservation measures;

⁷ The species is believed to be present in the following SPAs: Costa e Caldeirão do Corvo (SPA - PTZPE0020P; Costa Nordeste, Flores (PTZPE002); Costa Sul e Sudoeste, Flores (PTZPE0021); Caldeira e Capelinhos, Faial (PTZPE0023); Ilheu de Baixo, Graciosa (PTZPE0029); Ilheu da Praia, Graciosa (PTZPE0030); Ilheu do topo e Costa adjacente, S.Jorge (PTZPE0028) and Ilheu da Vila, Sta. Maria (PTZPE0034). The species is also listed for 18 IBAs in Portugal (Costa das Flores, Costa do Corvo, Costa Sudeste do Pico, Faial da Terra e Ponta do Arnel, Ilhas Desertas, Ilhéu da Baleia e Ponta da Barca, Ilhéu da Praia, Ilhéu da Vila, Ilhéu das Lagoínhas e Costa Adjacente, Ilhéu de Baixo e Costa Adjacente, Ilhéu do Topo e Costa Adjacente, Ilhéus do Porto Santo, Mistério da Prainha, Mosteiros – Bretanha, Ponta da Malbusca e Ponta do Castelete, Ponta de São Lourenço, Ponta dos Rosais – Urzelina, and Selvagens. It also occurs at 5 IBAs in Spain (Anaga rocky islets, Island of Lobos, Lanzarote islets, Santo Domingo coastal cliffs, South-west coast of La Gomera) although these are in the Canary Islands, outside of the OSPAR region.

⁸ Conservation management measures have been directed at this species in the Canary Islands, including: recovery of injured chicks, control of alien species, and assessment of the impact of fisheries on the birds, all funded by the Canary Islands Governments (Javier Pantoja *in litt.*, 2008).

- b. request information on the effectiveness of any measures taken for the protection of this species.

Awareness raising: OSPAR should work with relevant Contracting Parties (see Table 1 below) to raise awareness of status and threats to the species among both management authorities and general public⁹.

Monitoring and assessment: OSPAR should work with relevant Contracting Parties to facilitate development of a monitoring and assessment strategy for *P.a.baroli*, involving relevant international authorities, and deliver to national contacts. This should build upon the starting point provided in this section and take into account the need to:

- a. assess and monitor species status (distribution, population size, breeding success, trends) in the Atlantic, particularly Portuguese (especially around the Azores) and Spanish waters but also French waters (Bay of Biscay), including identification of main feeding areas and confirmation of scale of threat from alien predators at breeding sites;
- b. promote and co-ordinate the collection of information on the numbers, distribution and activities of *P.a.baroli*, and identification of key threats (co-ordinate monitoring across the OSPAR Area).

OSPAR's work on coordination of assessment and monitoring should address this need.

Further research: OSPAR should emphasise to relevant scientific funding bodies the following research needs with respect to *P.a.baroli*:

- a. further research to investigate the potential for using artificial nest boxes to increase nesting success on islands in the Azores.
- b. further research on possible effects of light pollution: if this is found to be an important factor affecting the species, establish programmes for recovery of birds disorientated by light pollution.

Actions/measures for relevant Contracting Parties

OSPAR should recommend that relevant Contracting Parties undertake the following actions and measures, and establish a mechanism by which Contracting Parties report back on the implementation of these actions and measures, and the implementation of the monitoring and assessment strategy, so that progress can be evaluated in conjunction with the future assessment of the statuses of the species:

- a. MPAs: protect sites important to this species as OSPAR MPAs, with management plans for these MPAs that include conservation of *P. a. baroli*;
- b. Breeding colony protection: take steps to protect breeding colonies from predation (*i.e* in the Azores), this should include routine monitoring of rat presence at offshore islet colonies, for early warning should rats occur;
- c. Monitoring and Assessment: develop and implement the above monitoring and assessment strategy in the OSPAR area.

⁹ This could perhaps best be achieved, at least initially, through a brochure and accompanying web site that lists all OSPAR Listed features, the threats they face, and recommended conservation actions.

Table 1: Summary of key threats and existing protection for *P. a. baroli*

Key threats	Predation at breeding sites (mammalian predators and Yellow-legged Gulls) Oil pollution while feeding at sea	
Relevant Contracting Parties	Portugal (Azores) Also Portugal and Spain for important populations bordering the OSPAR area, which may enter OSPAR Region IV.	
Other responsible authorities	EC IMO	
Already protected? Measures adequate?	Birds Directive – Annex I (<i>Puffinus assimilis</i> , not the subspecies) Bern Convention Annex II	There are SPAs in the Azores in which this species occurs, the species is protected under national and local legislation in Portugal and Spain, and some very limited monitoring occurs on the Azores. However, whether conservation status of species has improved as a result of these actions is unknown (as there appears to be no assessment by national parties of the effectiveness of conservation measures).

Brief summary of the proposed monitoring system

Given the lack of systematic monitoring for the species within the OSPAR area and the small and vulnerable breeding population on the Azores, OSPAR could play an important role in helping to design, promote and coordinate and implement the collection of information on the numbers, distribution and activities of *P.a.baroli* and identification and control of the key threats. Relevant Contracting Parties (Portugal but also Spain due to the population on the Canaries), should be tasked to report to OSPAR on:

- Annual monitoring, including data on breeding numbers and productivity at accessible sites on the Azores
- Establishment of ringing scheme for chicks at colonies
- Annual monitoring of predation by introduced mammals and yellow legged gulls at target colonies
- Annual collation of information of at-sea sightings in the Bay of Biscay and more northern waters.
- Further data collection at the colonies where resources allow (covering diet, feeding ecology, chick provisioning rates, chick survival and growth rates)

A monitoring programme would be best organised through the development of a specific OSPAR monitoring plan for *P.a.baroli*.

Annex 1: Overview of data and information provided by Contracting Parties

Contracting Party	Occurs in Contracting Party's Maritime Area *	OSPAR nominated Contact Point (in bold), or other contributor providing information	Contribution made to the assessment (e.g. data/information provided, national reports, references or weblinks)
Belgium	Vagrant		
Denmark	Vagrant		
European Commission			
France	Vagrant		
Germany	Vagrant		
Iceland	?		
Ireland	Vagrant		
Netherlands	?		
Norway	?		
Portugal	Yes (only Azores within OSPAR Area)	Ricardo S Santos (DOP-UAC) ricardo@notes.horta.uac.pt Pedro Geraldès (SPEA) pedro.geraldes@spea.pt Veronica Neves neves_veronica@yahoo.com and Jöel Bried joelbried@yahoo.com	Information on presence on Azores, current legal protection, conservation measures, including monitoring and also on species in Madeira (regional protection and monitoring), provided.
Spain	Yes (but breeds outside OSPAR Area)	Ricardo Calmaestra/ Javier Pantoja (DG Biodiversity-Min. Environment) JPantoja@mma.es	Information on presence in Spanish waters, legal protection and current conservation measures in Canary Islands (outside OSPAR) including monitoring, provided.
Sweden	?		
UK	Vagrant		

* - Information from BirdLife International (2008); '?' signifies occurrence information not available from BirdLife International's database.

Summaries of country-specific information provided

Portugal. The first known breeding record for Little Shearwater from the Azores was in 1953 on São Miguel (Bannerman and Bannerman, 1966). The species has been recorded on 8/9 islands and 5/19 islets in the Azores, and almost all the remaining colonies of *P.a.baroli* are on rat and cat-free islets or, where they occur on the main islands, on relatively inaccessible cliffs (De Leon *et al.*, 2005). There were an estimated 840 - 1530 pairs of little shearwaters breeding in the Azores in 28 colonies over the period 1996 - 1998 (Monteiro *et al.*, 1999).

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**OSPAR's vision is of a clean, healthy and biologically diverse
North-East Atlantic used sustainably**

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