

## Azorean barnacle

*Megabalanus azoricus*



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### **Geographical extent**

OSPAR Regions : V

Biogeographic zones: Macaronesian: Azores

Region specified for decline and/or threat: V

*Megabalanus azoricus* is considered to be endemic to the Azores Archipelago, although the phylogenetic relationship to the *Megabalanus* occurring on Madeira and St. Helena is still not clear (Southward, 1998).

### **Application of the Texel-Faial criteria**

There was a joint nomination by three Contracting Parties for the Azorean barnacle to be placed on the OSPAR list. The criteria were the global/regional importance, rarity, sensitivity, keystone status and decline. Information was also provided on threat.

### Global/regional importance

The OSPAR Maritime Area is of global and regional importance for this species as it is considered to be endemic to the Azores.

### Rarity

*M.azoricus* has a very restricted distribution in coastal habitat around the Azores where it is generally confined to a narrow subtidal area, from the infralittoral fringe down to 5 m depth, exceptionally to 15-40 m, on bedrock in areas that are moderately to highly exposed to wave action.

### Sensitivity

The Azorean barnacle is considered to be very sensitive due to the restricted habitat in which it occurs and the ease with which it can be collected. This is the case as most of the population is concentrated a few meters below the surface. The zone that it colonises also makes it very vulnerable to contamination by oil pollution that washes ashore.

### Keystone species

The empty shells of the barnacles are a vital habitat for the blennies *Parablennius ruber* *P. incognitus* and *Coryphoblennius galerita* as they provide shelter and substrata for egg deposition during reproduction. A large number of invertebrate species, including hydroids, sponges, polychaetes, crustaceans, molluscs, echinoderms (*Ophiotrix fragilis*, *Arbacia lixula* and *Paracentrotus lividus*), and bryozoans also use the empty shells.

### Decline

The available quantitative and anecdotal information points to at least a significant decline around the Azores following the increase in exploitation over the last two decades.

### Threat

The main threat to the Azorean barnacle is overexploitation as it is considered to be a delicacy on the islands of the Azores. Degradation of suitable habitat and poor water quality are other threats to this species.

### **Relevant additional considerations**

### Sufficiency of data

There is limited information on the status, harvesting and ecology of *M.azoricus* at the present time. Knowledge of its reproductive and recruitment success is also sparse. It seems that this is a fast growing, hermaphroditic species with seasonal spawning. The roles of complementary males and self-fertilisation need to be assessed. It has been suggested that the length of first sexual maturity is 12 mm (rostral diameter – major length of the top of shell) (Regala, 1999).

### Changes in relation to natural variability

Little is known about natural variability of the population of *M.azoricus* and knowledge of its reproductive and recruitment success is sparse. Predation by gastropods (*Stramonita haemastoma*) and blennies (*P. incognitus*) may control the populations of this barnacle and storms may influence the population size, especially in overcrowded areas.

### Expert judgement

Expert judgement has played a part in putting this species forward for the OSPAR list. This is because there is limited information on its status but available quantitative and anecdotal information point to a decline. The threat to the Azorean barnacle is clear as it is harvested from shallow sublittoral areas around the

islands of the Azores. An important additional consideration is that it appears to be endemic to the Azores and therefore to the OSPAR Maritime Area.

**Threat and link to human activities**

Cross-reference to checklist of human activities in OSPAR MPA Guidelines

*Relevant human activity:* Fishing, hunting, harvesting; *Category of effect of human activity:* Biological – removal of target species; Chemical – hydrocarbon contamination.

The main threat to this species is clearly linked to a human activity, as it is due to the collection of barnacles for consumption.

**Management considerations**

Management actions to safeguard this species should concentrate on regulating the fishery. This could include no-take zones, permits, minimum sizes, quotas and the need to provide landings records. A ban on fishing and trade was introduced for a year in 1984 but the fishery is not subject to any regulation at the present time.

**Further information**Nominated by:

Joint submission by Iceland, Portugal and UK

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Useful References

Regala, J.T. 1999. Contribuição para o estudo da biologia da craca dos Açores, *Megabalanus azoricus* (Pilsbry, 1916). *Relatório de Estágio do Curso de Licenciatura em Biologia Marinha e Pescas*. UCTRA, Universidade do Algarve, Faro. 47+xv pp.

Southward, A.J. (1998) New observations on barnacles (Crustacea:Cirripedia) of the Azores Region. *Arquipélago* 16A:11-27.

*This is an updated version of the case report that appears in the OSPAR Publication: Case Reports for the OSPAR List of threatened and/or declining species and habitats. OSPAR Publication number 2008/358. Information in the case report has been updated by Dr Susan Gubbay under contract to OSPAR*