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SELVAGENS ISLANDS NATURE RESERVE
(PORTUGAL)

Appraisal report
Mr Joe Sultana (Malta)

Document prepared by
the Directorate of Culture and Cultural and Natural Heritage
1. The Islands - Background information

The Selvagens Islands are situated in the sub-tropical zone of the north-east Atlantic (30°10'N, 15°32'W), about 160 miles south of Madeira and 80 miles north of the Canary Islands. The three most important islands are Selvagem Grande (245 ha.), Selvagem Pequena (20 ha.) and Ilhéu de Fora (8.1 ha.). Selvagem Grande, which is surrounded by cliffs, rises up to a plateau with an average altitude of about 100m. Selvagem Pequena is low and flat, has an irregular shape, and is almost totally covered with calcereous sand except for a huge rock outcrop, which rises into a pinnacle 45m high, and a rocky shore. Ilhéu de Fora is even lower (highest altitude 18m) and is almost totally covered with calcereous sand.

The wardens are the only inhabitants of the islands. They are posted on Selvagem Grande. Wardens are also posted during the summer months, on the second largest island, Selvagem Pequena.

The islands are of great scientific importance. They are of considerable botanical interest, particularly Selvagem Pequena and Ilhéu de Fora, which still hold their original flora, including several endemic Macaronesian plants. The islands host the largest colony in the atlantic of Cory’s Shearwater Calonectris diomedea borealis and practically the whole European population of the White-faced Storm-petrel Pelagodroma marina. Three other birds of the procellaridae family, Macaronesian Shearwater Puffinus baroli, Bulwer’s Petrel Bulweria bulwerii and Madeiran Storm-petrel Oceanodroma castro also nest in the archipelago. These, and other biota, including the islands’ interesting geology, highlight the ecological importance of this archipelago.

2. Land tenure and legal status

When the Portuguese Government acquired the islands in 1971 the exploitation of the islands’ biodiversity was stopped and the islands and their surrounding maritime zone were designated a reserve. In March 1978 a regional decree confirmed this status by banning all activities likely to impair the native flora and fauna and the geological and archaelogical aspects. Public access is strongly controlled and permits are issued only for awareness, educational and scientific purposes. Sea vessels are allowed to anchor only at specific points and for a maximum of 48 hours. Only visitors, such as naturalists, who are carrying out studies, are allowed to stay on land overnight.

The islands are owned by the autonomous region of Madeira, and are inhabited only by the wardens and at times also by scientists who acquire a permit to carry out studies on the biodiversity of the islands.

The Portuguese Government have so far always supported the Madeira Regional Government on this matter in accordance with the provisions of Act no. 15/86 of 21 May 1986. This support is very crucial and is reflected in the first recommendation attached to the award of the European Diploma in 1992 which emphasises the fact that the Madeira Regional Government should be supported in all matters concerning the Selvagens Islands nature reserve.

The Madeira Nature Park, which supervises and manages the Selvagens Islands Nature Reserve, is committed to maintain and enhance the reserve’s ecological importance. The original recommendations have been largely implemented successfully.
3. European Diploma Award & Renewals

The Selvagens Islands Nature Reserve was awarded the Council of Europe's European Diploma, category A, in 1992 and subsequently renewed in 1997, 2002, & 2007 (see table 1. below). In 2007 the Diploma was awarded until 18 May 2012. No on-the-spot appraisal was carried out then, however discussions were held between the Secretariat and the site manager.

<table>
<thead>
<tr>
<th></th>
<th>Date</th>
<th>Type</th>
<th>Resolution Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>18.05.199</td>
<td>Diploma Award</td>
<td>Resolution (92) 18 adopted by the Committee of Ministers at the 476th meeting of the Ministers' Deputies.</td>
</tr>
<tr>
<td>7</td>
<td>30.09.199</td>
<td>1st Renewal</td>
<td>Resolution (97) 19 adopted by the Committee of Ministers at the 602nd meeting of the Ministers' Deputies.</td>
</tr>
<tr>
<td>2</td>
<td>11.09.200</td>
<td>2nd Renewal</td>
<td>Resolution (2002) 5 adopted by the Committee of Ministers at the 807th meeting of the Ministers' Deputies.</td>
</tr>
<tr>
<td>7</td>
<td>24.10.200</td>
<td>3rd Renewal</td>
<td>Resolution (2007) 10 adopted by the Committee of Ministers at the 1009th meeting of the Ministers' Deputies.</td>
</tr>
</tbody>
</table>

Table 1: European Award & Renewals to Selvagens Islands.

4. Terms of reference

The period of validity of the European Diploma awarded to the Selvagens Islands Nature Reserve was due to expire in the year 2012. It was therefore necessary to consider renewing it for a further period of five years. For this purpose, and in accordance with the regulations in force, it was decided that an on-the-spot appraisal would be carried out to judge whether the conditions of the site are the same as when the Diploma was awarded, or whether they have improved or deteriorated.

The Secretariat of the Council of Europe informed the undersigned that he was entrusted with this task in a letter dated 23rd June 2011.

5. Details of visit

The official visit started from the 12th to 16th September. The programme of the visit is shown in Table 2, and the participants taking part in the discussion meeting with stakeholders are listed in Table 3.

On the morning of the 13th September the undersigned was informed that the visit to the Selvagens may have to be cancelled due to a heavy persisting sea swell. The wardens on Selvagem Grande sent a message by radio to the Park authorities at Madeira that the heavy swell would make it nearly impossible to land. However the Naval Authorities decided to give it a try and the naval ship left Funchal late in the afternoon heading for the islands. In fact landing with the help of the wardens’ dinghy was only possible with great difficulties on the two main islands, Selvagem Grande and Selvagem Pequena, and it was not possible to visit Ilhéu de Fora.
<table>
<thead>
<tr>
<th>Date &amp; time</th>
<th>Details of the programme</th>
</tr>
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<tbody>
<tr>
<td>12.09.201</td>
<td><strong>morning</strong> Meeting and discussion with Dr Paulo Oliveira, Director of Parks and Ms. Carolina Santos, the Co-ordinator of Selvagens Nature Reserve, at the Park Authority's headquarters.</td>
</tr>
</tbody>
</table>
| 13.09.201   | **noon** Discussion meeting with several stakeholders regarding Selvagens Islands. See Table 3 for the list of participants.  
**afternoon**  
Meeting by Lucia Silva, a journalist of Jornal da Madeira.  
Meeting with the Madeira Regional Secretary for the Environment and Natural Resources, Manuel António Rodrigues Correia, accompanied by the Director of Parks, Dr Paulo Oliveira.  
Business lunch with the Portuguese Naval authorities at Madeira: Navy Commander Pedro Manuel Filipe do Amaral Frazão, Officers and Captain of the ship Schultz Xavier, Captain Lieutenant Francisco José de Brito Pereira Cavaco. |
| 14.09.201   | **morning**  
Arriving near Selvagem Grande at 0800hrs after a 15-hour sea trip. Witnessing the unloading of the monthly provisions and equipment, and the onloading of the refuse removed from Selvagem Grande.  
**afternoon**  
Ship moving closer to Selvagem Pequena and disembarking with the wardens' dinghy on the 2nd largest island. Witnessing the unloading of provisions and equipment for the wardens and the loading of refuse from the islet. Touring Selvagem Pequena with Ms Carolina Santos and one of the wardens. Landing on the 3rd largest island Ilheu de Fora cancelled due to heavy sea swell. Before dusk departing to Selvagem Grande where we disembarked again with the wardens' dinghy and stayed overnight on the island. A short tour of the island around the warden's residence and locating many young borealis at nesting sites. Staying overnight on Selvagem Grande. |
| 15.09.201   | **morning & afternoon** Touring Selvagem Grande in the company of Ms Carolina Santos and two of the wardens. Departing by the navy ship to Madeira at 1530. |
| 16.09.201   | **morning** Arriving at Funchal at 06.00 hrs, well in time for the return flight. |

Table 2: Programme of Visit
### Stakeholders Discussion Meeting

<table>
<thead>
<tr>
<th>Participants</th>
<th>Positions &amp; representations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paulo Oliveira</td>
<td>Head of the Madeira Natural Park Services</td>
</tr>
<tr>
<td>Isabel Freitas</td>
<td>Head of the Environmental Education Division of the Madeira Natural Park Services Services</td>
</tr>
<tr>
<td>Carolina Santos</td>
<td>Coordinator of the Selvagens Islands Nature Reserve</td>
</tr>
<tr>
<td>Ricardo Gouveia</td>
<td>Coordinator of the Nature Wardens of the Madeira Natural Park Services</td>
</tr>
<tr>
<td>Captain Lieutenant Francisco José de Brito Pereira Cavaco</td>
<td>Commander of ship Schultz Xavier: Representing Madeira Maritime Zone Command</td>
</tr>
<tr>
<td>Sergeant Cavaleiro</td>
<td>Representing Republican National Guard Territorial Command</td>
</tr>
<tr>
<td>João Correia</td>
<td>Head of the Regional Body responsible for the Environment and member of the Scientific Committee of the Madeira Natural Park Services</td>
</tr>
<tr>
<td>Manuel Biscoito</td>
<td>Head of the Funchal City Hall Science Department and member of the Scientific Committee of the Madeira Natural Park Services</td>
</tr>
<tr>
<td>José Augusto</td>
<td>Representing the Regional Body responsible for the Forestry</td>
</tr>
<tr>
<td>Susana Teixeira</td>
<td>Representing the Regional Body responsible for the Tourism</td>
</tr>
<tr>
<td>Nuno Gouveia</td>
<td>Head of the Fisheries Inspection Service Division of the Regional Body responsible for the Fisheries</td>
</tr>
<tr>
<td>Francis Zino</td>
<td>Associate researcher of the Funchal Museum of Natural History</td>
</tr>
<tr>
<td>Cátia Gouveia</td>
<td>Representative the Regional Coordinator of the Society for the Study of Birds</td>
</tr>
<tr>
<td>Thomas Dellinger</td>
<td>Scientist of the Centre for Macaronesian Studies at the University of Madeira</td>
</tr>
<tr>
<td>João Paulo Mendes</td>
<td>Head of the Association of the Madeira Nature Wardens</td>
</tr>
<tr>
<td>Luís Dias</td>
<td>Co-Owner of the regional touring agency, Ventura do Mar, (organising bird watching and dolphin-watching tours, including ornithological expeditions to Selvagens Islands).</td>
</tr>
</tbody>
</table>

Table 3: Participants taking part in the stakeholders meeting organised by the Park authorities on 12th September.

6. Logistic support from the Portuguese Navy

The Portuguese Navy continues to provide the necessary transport for the relief of wardens, for technicians to carry out maintenance works on the tower light house on Selvagem Grande and the beacon on Selvagem Pequena, for members of scientific teams and official visitors, for all supplies, including drinking water and food, and for bringing back to Madeira waste and refuse. The navy is also expected to enforce compliance with anti-pollution regulations in the waters of the Selvagens Islands, although in practice this is indeed very difficult. Rubbish and waste washed ashore is a regular, chronic problem which the reserves’
authorities cannot do anything to prevent it happening. The wardens themselves, with great difficulties, make great efforts to collect oil particles and other waste washed ashore.

7. Supervision and Management of the Selvagens.

The management and conservation of the whole group of the islands depends heavily on the presence of the wardens. Their presence during the whole year on Selvagem Grande and on Selvagem Pequena (the latter from April to November) is indispensable. Considering the hostile natural environment of the islands it is good to note that the warden’s living quarters, as well as the adjoining accommodation for visitors, on Selvagem Grande are well maintained and reasonably comfortable. The place is kept clean and the whole system has an excellent waste management programme, which is seen to by the wardens. Rainwater is also collected into a cistern and electricity is provided by the use of solar panels. The radio/phone system which provides the capacity for wardens to contact their authorities in Madeira and their families have been improved but there is still room for more improvement.

Two wardens are also stationed on Selvagem Pequena for some months from where they can also visit and keep an eye on Ilhéu de Fora, with the help of an inflatable dinghy. These two small islands, which are of great ecological importance, are very vulnerable, and any landing from fishing vessels or pleasure sea-crafts would be detrimental to the unique flora and fauna of these two smaller islands, particularly the famous colony of the White-faced Storm Petrel Pelagodroma marina, which nests in burrows in the sand that covers most of the two islands. Eleven species of flora are endemic to the Selvagens and most of these are found on Selvagem Pequena and Ilhéu de Fora. The vegetation of these two islands is composed of native plants, the populations of which are stable and healthy.

The small wooden living quarters on Selvagem Pequena have been improved in recent years. Electricity is provided by solar panels and links are maintained by a radio/telephone system. However, as with the accommodation, there is still room for improvement.

8. Eradication of alien species, namely Nicotania glauca, Oryctolagus cuniculus and Mus musculus from Selvagem Grande.

The Tobacco plant was introduced on Selvagem Grande in the 19th century and in some parts of the island, particularly on the plateau surface, covered relatively large areas. Controlling this invasive species started in 2001 and now it has almost been completely eradicated. During the present on-the-spot appraisal no live specimens have been noted.

In 2001 the management of the Natural Park of Madeira also had a plan for the eradication of two rodent species, namely the Rabbit Oryctolagus cuniculus and the Mouse Mus musculus in the shortest time frame possible during that period when the elimination of the tobacco plant would be nearly complete. Whilst the Rabbit was having a great negative impact on the original flora of the island, the mouse was detrimental to the chicks of the small petrel species which nest underground and in rubble walls, as well as to other fauna species such as the Berthelot’s Pipit Anthus berthelottii, the Lizard Teira dugesii selvagensis and the Gecko Tarentola bischoffi. The two reptile species are endemic to the Selvagens Islands. After a three years eradication programme which started in 2002, both alien species had been removed from the Island, and now species are much more in evidence on the main island, something which could be witnessed during the present on-the-spot appraisal. 600 individuals of Anthus berthelottii were counted on the islands in 2008 during the research programme Equipa Atlas 2008.

The vegetation started to recover immediately and the flora has greatly improved due to the success of the eradication project. The annual reports sent to the council of Europe by the
Madeira Park authorities show that throughout Selvagem Grande, endemic species like *Monanthes lowei* and *Schizogyne sericea* have increased their abundance and ground cover. This also happened with other indigenous and macaronesian endemic species like *Centaurea melitensis*, *Chenopodium coronopus*, *Lycopersicum esculentum*, *Spergularia falax* and *Anagalis arvensis*. During my visit I could witness that since my last visit in 2001 there has been a significant increase of vegetation cover by the indigenous flora.

The breeding success of Cory's shearwaters *Calonectris diomedea borealis* on Selvagem Grande has been monitored since 1982, and this provided the opportunity to show the positive effect of the eradication programme on the breeding seabirds. A paper by Zino et al. published in 2008 in the journal *Oryx* show that significantly more birds fledged from the study sites in the five breeding seasons after the eradication than in the 13 seasons prior to it. During this short visit one could also get the impression of this success story due to the large number of successful occupied nesting sites that were observed.

### 9. The Drystone Rubble Walls

The ancient drystone rubble walls, which were referred to as dykes in the earlier on-the-spot appraisals, are an interesting feature of the plateau surface of Selvagem Grande. These were probably built to prevent soil erosion and to provide shelter to what was grown in the fields. When built, some of these walls included square-shaped holes at ground level to provide nesting sites for Cory’s Shearwaters. These rubble walls also provide nesting sites to the small petrel species. In fact one of the original recommendations attached to the award was to restore these walls. would greatly benefit the breeding sea birds, particularly the small petrels. According to the annual reports which the Madeira Park Authorities send to the Council of Europe the maintenance of these drystone rubble walls (dykes) is considered as one of the priority duties of the nature wardens of the Island. The walls on the plateau surface are now well preserved and only a couple of the walls on the gentle slope to the west of the warden’s building need to be restored. It has been noted that in these derelict walls, nest-boxes for *Bulweria bulwerii* made up of plastic containers have been set up and some of them were occupied successfully by the birds.

### 10. The Breeding Shearwaters & Petrels

Apart from the interesting flora found on the Selvagens, the islands host important sea bird colonies. The populations of breeding shearwaters and petrels have been estimated as shown in Table 4. With regards to *C.d. borealis* and *P.m. hypoleuca* there is evidence that the breeding pairs have increased in recent years.

<table>
<thead>
<tr>
<th>Species</th>
<th>Breeding Pairs</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Calonectris diomedea</em></td>
<td>ca. 30,000</td>
</tr>
<tr>
<td><em>Pelagodroma marina</em></td>
<td>98,000 - 121000</td>
</tr>
<tr>
<td><em>Bulweria bulwerii</em></td>
<td>ca. 4000</td>
</tr>
<tr>
<td><em>Oceanodroma castro</em></td>
<td>ca. 1500</td>
</tr>
<tr>
<td><em>Puffinus assimilis baroli</em></td>
<td>2050-4900</td>
</tr>
</tbody>
</table>

The other breeding sea-birds on the Selvagens Islands are Larus michahellis atlantis (12 pairs on Selvagem Grande and 7-11 pairs on Selvagem Pequena e Ilhéu de Fora) and Sterna hirundo (30-60 pairs on Selvagem Pequena e Ilhéu de Fora) Catry et al., 2010.

Catry et al. (2010) who carried out bird studies on the two smaller islands, Selvagem Pequena e Ilhéu de Fora, in May 2005 and June 2010, wrote that the number of Pelograma marina may be higher than previously thought, with a new estimate (which still holds a considerable margin of uncertainty) of at least 62,550 pairs on the two islets. The authors also estimated that the 7-11 pairs breeding on Selvagem Pequena e Ilhéu de Fora feed predominantly on Pelograma marina and may predate between 2882 and 4472 birds per breeding season.

11. Research Projects

Research projects are regularly carried out in the Selvagens. Following is a selected list from those carried out from 2006 to 2010.

1. The project “Restoration of the terrestrial habitat of Selvagem Grande”, which was started in January of 2001, continued in 2006 - 2010. This project involved an intensive monitoring of flora and fauna to evaluate
   (a) the effects of the programme on non-target species (namely geckos (Tarentola boettgeri) and pipits (Anthus bertheloti) and to
   (b) the regeneration of the natural habitats of the island, was carried out by Serviço do Parque Natural da Madeira (SPNM) and the University of Lisbon.

2. A study on the ecology of Cory’s shearwaters (POCTI/ MAR/58778/2004) supported by Fundação para a Ciência e a Tecnologia (FCT - Portugal).

3. Monitoring and control of the Yellow-legged Gull Herring gull, Larus cachinnans atantis under the responsibility of the SPNM

4. Monitoring of the Cory's shearwater, Calonectris diomedea borealis, by SPNM and Dr Frank Zino; continuation of a long term research.

7. Tracking seabirds using data-loggers by specialists from different Portuguese scientific institutions.

8. Inventory of the marine fauna and flora of Selvagem Pequena by the SPNM and Estação de Biologia Marinha do Funchal.

9. Geological studies by the University of Dusseldorf.

10. Phylogeography and population genetics of geckos of the Tarentola boettgeri / bischoffi complex in Macaronesia by Imperial College of London.

11. Monitoring of Selvagens gecko population (Tarentola boettgeri bischoffi) restoration by Faculdade de Ciências da Universidade de Lisboa.

13. Fauna and Flora inventory by Museu Municipal do Funchal (História Natural).

14. Phylogeography and evolutionary relationship of *Euphorbia anachoreta* with other Macaronesian related species (such as *E. piscatoria*, *E. regis-jubae*, *E. lamarckii*, *E. aphylla* among others) and the conservational status of this endemic species by Institut Botanic de Barcelona CSIC-ICUB.

15. Genetic differentiation study on coastal fish species – Gobiidae and Bleniidae by Universidade da Madeira.

16. Inventory of the fauna, flora and marine habitats from 70m altitude to 2000m deep, and delineation of the coastline by Task Group for the Extension of the Portuguese Continental Shelf, involving the participation of about 70 researchers and students of Universities, Laboratories and Associated National and International Institutions.

**12. Scientific Publications**

Several papers have been published after carrying out research in the Selvagens. Following is a selection of papers published or in press from 2006 to 2010 listed in a chronological order.


13 Advocacy & Public access

The Parque Natural da Madeira use television and radio programmes and publish a lot of illustrated material to raise awareness about the importance of the Selvagens Islands Nature Reserve. Booklets, pamphlets, brochures, postcards, posters & T-Shirts are regularly produced. Opportunity was taken this year, the 40th anniversary of Selvagens Islands as a nature reserve.

From 2007 to 2010, 715 boats involving about 2300 people were given permission to visit the islands. These permits were given mainly from July to October and each permit was only valid for 48 hours. Visitors are not allowed to stay overnight except on special occasions. Supervised walking tours along designated paths on Selvagem Grande are also organised by the wardens.

14. Acknowledgements

I would like to put on record my sincere thanks and appreciation to

(a) Dr Paulo Oliveira, Head of the Madeira Natural Park Services and Ms Carolina Santos Coordinator of the Selvagem Islands Nature Reserve for organizing my visit, for their hospitality
and for being so patient with me. Ms Santos also accompanied me on the trip to the Selvagem Islands;

(b) The Madeira Regional Secretary for the Environment and Natural Resources, Manuel António Rodrigues Correia for giving me the opportunity to meet him and discuss the importance of the Selvagens;

(c) The Navy Commander Pedro Manuel Filipe do Amaral Frazão and the Captain of the ship Schultz Xavier, Captain Lieutenant Francisco José de Brito Pereira Cavaco for going out of their way to take me to the islands in spite of the adverse conditions due to a heavy swell;

(d) The Wardens for making my landing and stay on the Selvagens a comfortable one and for showing me round the two larger islands and answering all my questions.

(e) All the participants, who attended the stakeholders meeting (mentioned in Table 3) for sharing with me a lot of information as well as giving me the opportunity to discuss their involvement.

(f) Dr Frank Zino for the information he shared with me regarding his research on the seabirds of the selvagens.

(g) Dr Eladio Fernandez-Galiano, Head, and Mrs Francoise Bauer and Ms Marie-Laure Lambour Secretariat members at the Biological Diversity Unit – Council of Europe, for their constant support in carrying out on-the-spot appraisals.

15. References:


16. Conclusions & Recommendations

The original conditions have been adhered to and the recommendations have been largely accomplished. I would like to reiterate that the Parque Natural da Madeira has been consistent in doing its best in upholding and maintaining the standards of the reserve. The Madeira Regional Government have so far always given the required support to the Parque Natural da Madeira, financing staff recruitment and operational costs. The Portuguese Navy has been consistent in transporting wardens, provision and supplies to the Islands. This assistance is indispensable.

I have no hesitation in recommending the renewal of the European Diploma. It should however attach the following condition & recommendations:

**Condition:**
That the Portuguese Government continues to take the necessary steps to preserve the current islands status of the Selvagens Islands and to unequivocally support the Madeira Regional Government in all matters concerning the nature reserve, in accordance with the provisions of Act No. 15/86 of 21 May 1986.

**Recommendations:**
(a) all precautions should continue to be taken to ensure that no species of plants and animals are introduced.

(c) The accommodation and the radio/phone system which provides the capacity for wardens to contact their authorities in Madeira and their families should continue to be improved.

(d) studies to survey the effect of the eradication of the alien species on the flora and fauna should be continued for the next few years.

(e) efforts should be made to eliminate the breeding of the Yellow-legged Gull (L. m. atlantis) on Selvagem Pequena and Ilhéu de Fora.

(f) the awareness of the importance of the geological heritage should be increased