

***Musschia isambertoii* M. Seq., R. Jardim, M. Silva & L. Carvalho**



Photo - Carlos Viveiros

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The name of this species is dedicated to ***Isamberto Silva*** a Nature Warden

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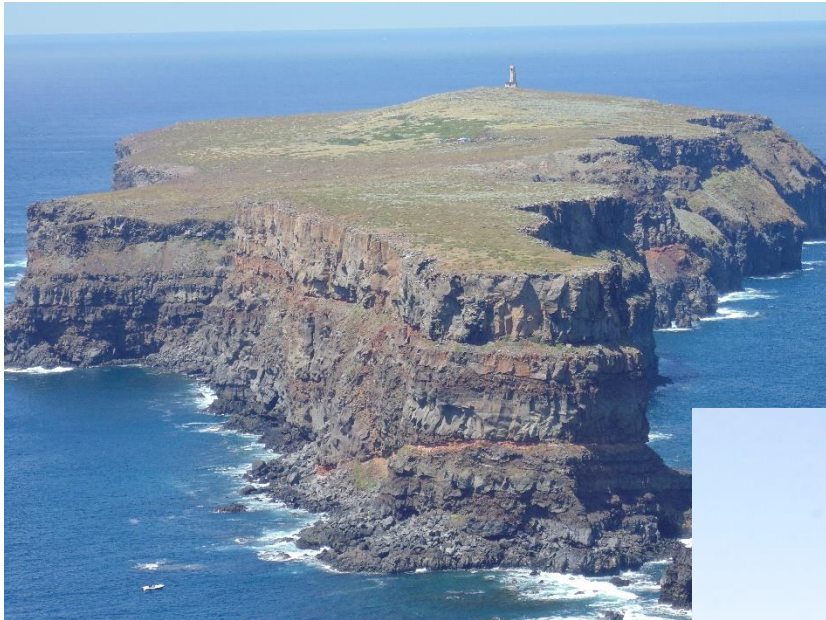
Madeira archipelago (Madeira, Porto Santo, Desertas Islands)



The Desertas Islands comprise three islands: Ilhéu Chão, Deserta Grande and Bugio

M. Isambertoii grow at Deserta Grande islet and is one of the most endangered endemic plants of the Madeira archipelago, considered as Critically Endangered

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Ilhéu Chão



Bugio



Deserta Grande

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The IFCN (Instituto das Florestas e Conservação da Natureza) ensure the management of protected areas and the Natura 2000 Network in its terrestrial, marine coastal and offshore aspects.

Deserta Grande is a protected area from Natura 2000 Network and received by the Council of Europe the Diploma for Protected Areas in March 2014.

Nature Wardens are present all year in Deserta Grande and ensure logistical operations to this Island.



Landing at Deserta Grande



IFCN facilities at Deserta Grande



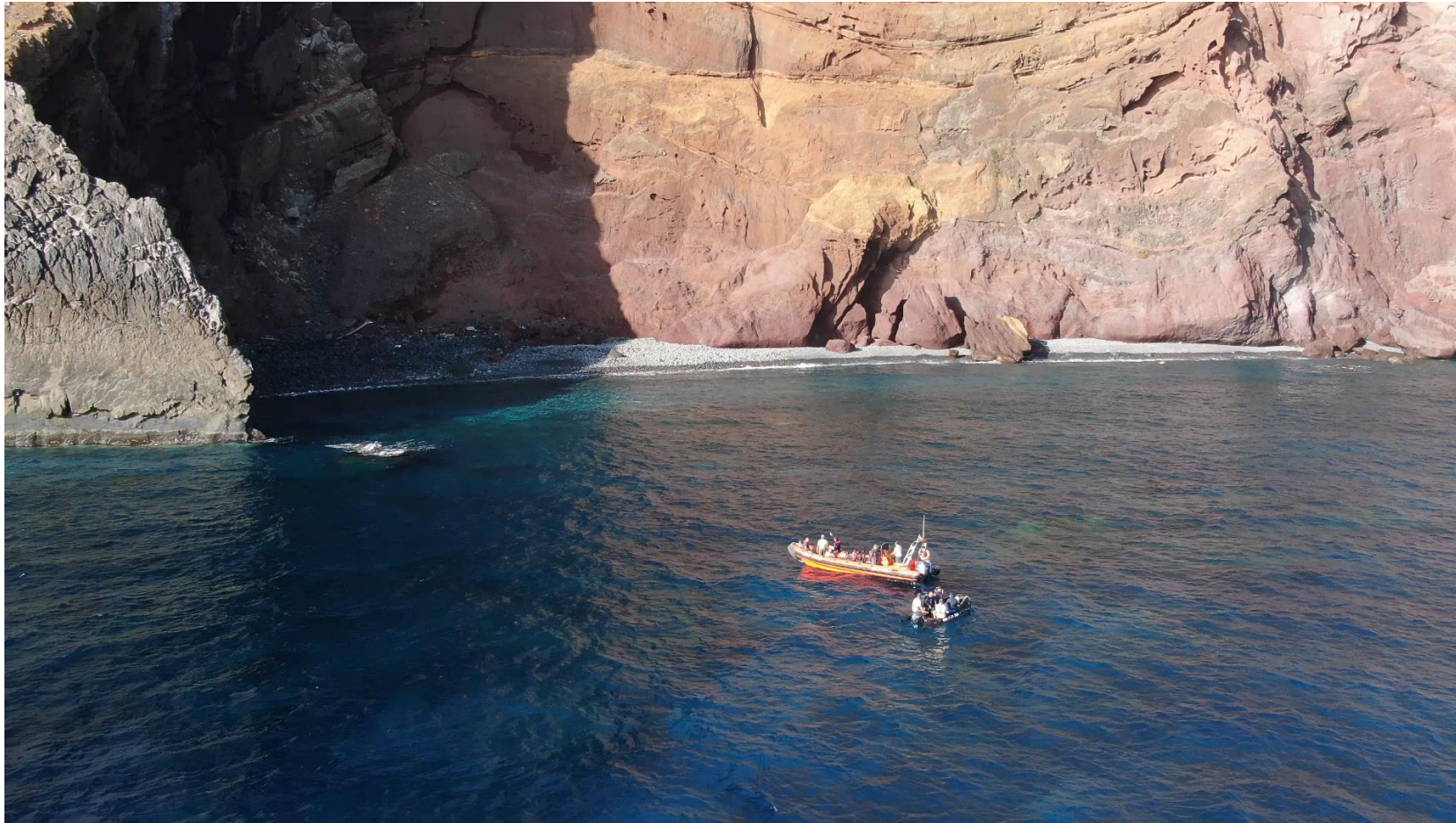
Habitat

Porto das Moças (Deserta Grande) – location of *M. isambertoii* habitat (it seems that is the only one!)

Accessibility

Only possible by the sea with the help of human resources by Nature Wardens and materials from IFCN .

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Main threats

Goats
Floods
Erosion



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Germination trials

The seeds seem to germinate well in the soil, but *ex situ* subsequent growth to flowering has not been possible until now.

Possible causes of *ex-situ* grow failure

1. Herbivory by caterpillar
2. Edaphoclimatic conditions to grow unknown

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What has been done to long term preservation of this species?

SSC group name: IUCN SSC Macaronesian Island Plant Specialist Group

Title of proposal: Preliminary conservation actions of *Musschia isambertoii*

Grant funds: Planta! - Plantlife Conservation Society's

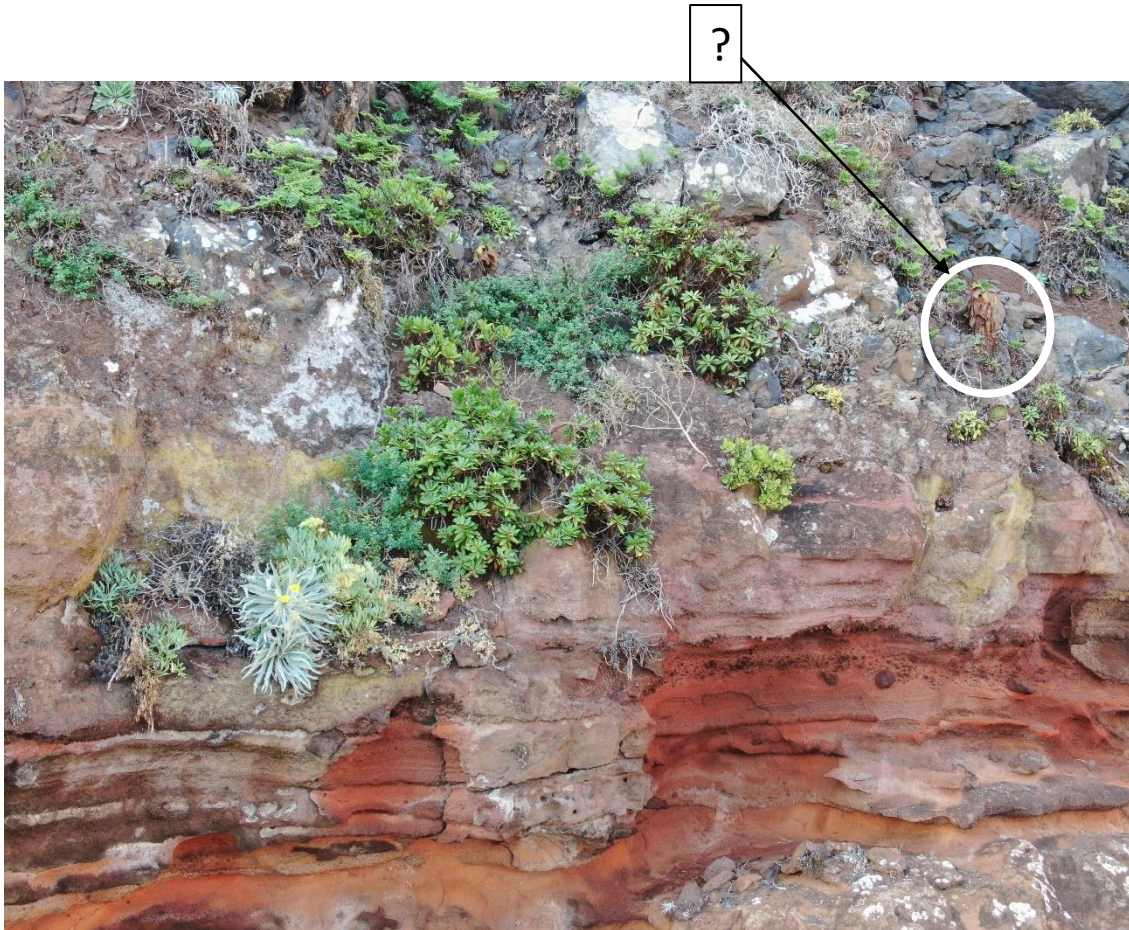
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Preliminary conservation actions of *Musschia isambertoii*

1. Inventory of the *M. isambertoii* habitat (Porto das Moças)
2. Fence site (Porto das Moças) to prevent goats into the habitat of the species
3. Adapt the existing greenhouse in Deserta Grande to propagate *M. isambertoii* through seed germination
4. Fence an 100 m² area at Deserta Grande facilities to produce a duplicate of the original population to easily collect seeds for future reinforcement of the species in the natural habitat
5. Assess translocation of plantlets to other islets of the Madeira archipelago namely Ilhéu Chão.

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In this first survey, habitat was monitored with drone. It's was not possible to confirm any adult or plantlets of *M. isambertoii* in the field, whether on the cliff or on the ground.



Species at the habitat		Índices (1)	
Indigenous species	<i>Sideroxylon mirmulans</i> R.Br.	+	
	<i>Musschia aurea</i> (L.f.) Dumort.	+	
	<i>Matthiola maderensis</i> Lowe	+	
	<i>Tolpis succulenta</i> (Dryand.) Lowe	+	
	<i>Globularia salicina</i> Lam.	+	
	<i>Phyllis nobla</i> L.	+	
	<i>Crithmum maritimum</i> L.	+	
	<i>Micromeria thymoides</i> (Sol. ex Lowe) Webb & Berthel. subsp. <i>thymoides</i>	+	
	<i>Sonchus ustulatus</i> Lowe subsp. <i>imbricatus</i> (Lowe) R.Jardim & M. Seq.	+	
	<i>Silene uniflora</i> Roth	+	
	<i>Olea maderensis</i> (Lowe) Rivas Mart. & del Arco	+	
	<i>Calendula maderensis</i> DC.	+	
	<i>Stachys ocymastrum</i> (L.) Briq.	+	
	<i>Maytenus umbellata</i> (R.Br.) Mabb.	+	
	<i>Sinapidendron sempervivifolium</i> Menezes	+	
	<i>Aeonium glandulosum</i> (Aiton) Webb & Berthel.	+	
	<i>Plantago maderensis</i> Decne.	+	
	<i>Monizia edulis</i> Lowe	+	
	<i>Andryala glandulosa</i> Lam. subsp. <i>glandulosa</i>	+	
	<i>Davallia canariensis</i> (L.) Sm.	+	
	<i>Teline paivae</i> (Lowe) P.E. Gibbs & Dingwall	+	
	Exotic species	<i>Reseda luteola</i> L.	+
		<i>Papaver somniferum</i> L.	+
<i>Orobanche</i> sp.		+	
<i>Nicotiana tabacum</i> L.		+	
	<i>Lagurus ovatus</i> L.	+	
Indigenous species regeneration (2):		FV	
Exotic species regeneration (2):		U1	
Natural habitat conservation (%):		FV 50	
		U1 50	
		U2	

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Further goals/projects

1. Consolidate knowledge about the soil and climate conditions of seed germination and plant growth until fruiting
2. *Ex situ* consolidation of replicas of natural populations at Desertas and other institutions outside Madeira
3. Upgrade the currently existing IFCN infrastructures or create a new one to ensure successful propagation of *M. isambertoii*
4. Assess translocation of plantlets/seeds to other islets of the Madeira archipelago namely Ilhéu Chão
5. Maintenance of the existing fence in the habitat of the species
6. Reintroduction at least in two goat free places at Deserta Grande (Tabaqueira e Pedregal)

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Possible collaboration with Chester/Kew

1. Consolidate knowledge about the soil and climate conditions of seed germination and plant growth until fruiting
2. Production of seeds and/or plantlets for *ex situ* and *in situ* conservation actions
3. *Ex situ* consolidation of replicas of natural population outside Madeira to easily produce seeds and plantlets for reinforcement/introduction of the species in Deserta Grande and/or Ilhéu Chão
4. Upgrade the currently existing IFCN infrastructures or create a new one to ensure successful propagation of *M. isambertoii* if necessary and after knowing reproductive biology