

# Ramsar Information Sheet

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# Malta L-Għadira



Designation date 30 September 1988 Site number 410

Coordinates 35°58'12"N 14°20'44"E

Area 97,75 ha

# Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

# 1 - Summary

#### Summary

L-Għadira is a coastal wetland, consisting of a small salt marsh, a brackish water pool (locally rare habitat) with fluctuating salinity and adjacent sand dunes, garrigue/phrygana, steppe and agricultural land. The brackish water pool is an adequate habitat for the endemic killifish (Aphanius fasciatus) which is locally restricted to a few places and is threatened. Typical Mediterranean salt marsh vegetation is present with communities incorporating the sand dunes and rare, endangered (and endemic) fauna and flora. Furthermore, the adjacent garrigue areas consist of endemic flora, namely the Maltese Pyramidal Orchid (Anacamptis urvilleana) and the Maltese Spider Orchid (Ophrys melitensis). The area is an attraction to avifauna, especially water birds, some of which actually nest in the area while others rest on their migration or wintering (as globally threatened Aythya farina).

# 2 - Data & location

# 2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS	2.	1	.1	-	Name	and	address	of the	compiler	of th	nis R	JS
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2.1.1 - Name and address of the com	piler of this RIS
Responsible compiler	
Institution/agency	Environment & Resources Authority
Postal address	Hexagon House, Spencer Hill Marsa, MRS 1441
National Ramsar Administrati	ve Authority
Institution/agency	Environment & Resources Authority
Postal address	Hexagon House, Spencer Hill Marsa, MRS 1441
2.1.2 - Period of collection of data and  From year    To year    2.1.3 - Name of the Ramsar Site	1988
Official name (in English, French or	
Spanish)	L-Għadira
	d area of the Site since its designation or earlier update
(Update) The boundary has been d	
	indary has been extended
	ndary has been restricted
	<sup>3)</sup> B. Changes to Site area the area has decreased
<sup>(Update)</sup> The Site area has been c	
	elineated more accurately ☑
(Update) The Site area has increased becaus	
(Update) The Site area has decreased becaus	e of a boundary restriction $\square$
(Update) For secretariat only: Th	nis update is an extension $\square$
2.1.5 - Changes to the ecological cha	racter of the Site
(Update) 6b i. Has the ecological character of the applicable Criteria) change	
2.2 - Site location	
2.2.1 - Defining the Site boundaries	
b) Digital map/image <1 file(s) uploaded>	
Former maps	0
Boundaries description	

L-Ghadira is found within the Mellieha locality boundary, at 35.9719N / 14.3461E. To the north of the site is the Marfa Ridge whilst to the south is the Mellieĥa Ridge. The site incorporates a large part of the Mellieĥa Valley and a small part of the Marfa Ridge. The western part of the site adjoins the Rdumijiet ta' Malta: Ir-Ramla taċ-Ċirkewwa sar-Ramla tal-Mixquqa area. The seaward area to the east of the site, borders Il-Grigal ta' Malta Marine Protected Area. The Ramsar Site boundary aligns exactly with the Natura 2000 site L-Inhawi tal-Ghadira (MT0000015).

# 2.2.2 - General location

a) In which large administrative region does Reġjun Tramuntana, Malta (Northern Region, Malta) the site lie?

b) What is the nearest town or population centre?

# 2.2.3 - For wetlands on national boundaries only

a) Does the wetland extend onto the territory of one or more other countries? Yes O No oldot

b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party?

#### 2.2.4 - Area of the Site

Official area, in hectares (ha): 97.75

# 2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region							
EU biogeographic regionalization	Mediterranean							

# 3 - Why is the Site important?

#### 3.1 - Ramsar Criteria and their justification

#### Criterion 1: Representative, rare or unique natural or near-natural wetland types

Hydrological services provided

Maintenance of hydrological regimes through flood control. L-Għadira is a coastal wetland within a Mediterranean biogeographical regime. The saline marshland was subject to restoration works in the 1980s and consists of various pools and coastal lagoons retaining the seasonal precipitation waters throughout the year, becoming increasingly saline in summer.

Other ecosystem services provided

Area serves as a resting/feeding area for many migratory bird species and a few species also use the area as a nesting site. The area also serves as a habitat for few endemics such as the Maltese wall lizard (Podarcis filfolensis).

Other reasons

Saline marshland habitats are rare habitats overall in the Maltese Islands, with L-Ghadira being one of the few places where such habitats are found. They are consequently important for species that associate with such habitats, many of which (species) are overall rare in the Maltese Islands, even if abundant at L-Għadira.

#### ☑ Criterion 2 : Rare species and threatened ecological communities

L-Għadira hosts and supports a number species which are threatened at both national and international level. One particular species is the Sand Cricket (Brachytrupes megacephalus), an ammophilous species that favours arid sandy environments. A high proportion of this species can be found in the sand dune system adjoining the mentioned wetland. The wetland sustains a very good population of Mediterranean Optional text box to provide further killifish (Aphanius fasciatus), a rare species locally also designated as the National Fish of Malta. information Furthermore, I-Għadira acts as a nesting and breeding site for a number of protected species and provides an adequate feeding and resting area for a number of migratory bird species, which include threatened species in Europe, such as the Common Pochard (Aythya ferina), the Common Kingfisher (Alcedo atthis), the Curlew Sandpiper (Calidris ferruginea), the European Turtle-dove (Streptopelia turtur) and the Northern Lapwing (Vanellus vanellus).

#### Criterion 3 : Biological diversity

L-Ghadira hosts a range of hapitat types, such as coastal lagoons and sand dunes, which are locally rare. The aforementioned coastal lagoons support the best population of a Mediterranean killifish (Aphanius fasciatus) within the Maltese Islands, which although relatively abundant in this site, is otherwise considered as rare at a national level in view of its dependence on the mentioned locally rare habitats. On the other hand, the sand dunes at L-Ghadira host a stable population of the Sand Cricket (Brachytrupes megacephalus). Similarly, this sand dune system is also important for a number of various other sandassociated invertebrates that are restricted to sand dune habitats; as well as for rare flora, such as Elytrigia juncea and Euphorbia terracina, the latter having a restricted distribution in the Mediterranean. This site also acts as a nesting and breeding site for a number of protected species, such as the Cetti's Warbler (Cettia cetti), Zitting Cisticola (Cisticola juncidis), Sardinian Warbler (Sylvia melanocephala), the Spanish Sparrow (Passer hispaniolensis), the Little Ringed Plover (Charadrius dubius) and the Common Moorhen (Gallinula chloropus).

Criterion 4 : Support during critical life cycle stage or in adverse conditions

L-Ghadira serves as breeding ground for a variety of bird species, as well as an important feeding and resting area for migratory birds. The Black-winged Stilt (Himantopus himantopus) is establishing a breeding population within the lagoon of L-Għadira, with 3 successful nesting pairs in 2013. Other breeding birds at the reserve include the Little Ringed Plover (Charadrius dubius) and the Coomon Optional text box to provide further Moorhen (Gallinula chloropus), and the passerines the Zitting Cisticola (Cisticola juncidis), the Sardinian information Warbler (Sylvia melanocephala) and Cetti's Warbler (Cettia cetti). The Short-toed Lark (Calandrella brachydactyla) has a breeding population of 3-5 pairs at the garrigue patch situated in the western end of the site. The reserve is also an important stopover in both spring and autumn migration periods. Over 100 migratory bird species have been recorded at L-Ghadira Wetland Reserve and flocks of herons and egrets can exceed fifty birds at any one time. Passerines also winter within the reserve.

3.2 - Plant species whose presence relates to the international importance of the site

Phylum	Scientific name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
Plantae								
TRACHEOPHYTA/ LILIOPSIDA	Anacamptis pyramidalis		<b>2</b>		LC		Nationally Endemic; Annex II & IV species of Council Directive 92/43/EEC (Habitats Directive)	In this context, Anacamptis pyramidalis represents the Maltese: Anacamptis pyramidalis subsp. urvilleana, which is endemic to the Maltese Islands.
TRACHEOPHYTA/ MAGNOLIOPSIDA	Anthyllis hermanniae		Ø				Nationally Endemic	In this context, Anthyllis hermanniae represents the subspecies: Anthyllis hermanniae subsp. melitensis, which is endemic to the Maltese Islands.
TRACHEOPHYTA/ LILIOPSIDA	Carex extensa	V			LC		EN - National Red List	Species is listed in Red Data Book as Endangered in the Maltese Islands.
TRACHEOPHYTA/ MAGNOLIOPSIDA	Euphorbia melitensis		<b>2</b>				Nationally Endemic	Euphorbia melitensis is endemic to the Maltese Islands.
TRACHEOPHYTA/ MAGNOLIOPSIDA	Euphorbia terracina	V					VU - National Red List; Appendix II of CITES	Species is listed in Red Data Book as Vulnerable in the Maltese Islands.
TRACHEOPHYTA/ MAGNOLIOPSIDA	Hedysarum spinosissimum	V					VU - National Red List	Species is listed in Red Data Book as Vulnerable in the Maltese Islands.
TRACHEOPHYTA/ MAGNOLIOPSIDA	Limonium melitense		<b>2</b>				Nationally Endemic	Limonium melitense is endemic to the Maltese Islands.
TRACHEOPHYTA/ LILIOPSIDA	Ophrys flavicans		<b>2</b>		LC		Nationally Endemic; Annex II & IV species of Council Directive 92/43/EEC (Habitats Directive)	Ophrys flavicans does not occur in the Maltese Islands. This entry should read as Ophrys melitensis, which is endemic to the Maltese Islands.
TRACHEOPHYTA/ LILIOPSIDA	Ruppia drepanensis	<b>/</b>					EN - National Red List	Species is listed in Red Data Book as Endangered in the Maltese Islands.
TRACHEOPHYTA/ MAGNOLIOPSIDA	Salsola melitensis		<b>/</b>				Nationally Endemic	Salsola melitensis is endemic to the Maltese Islands.

3.3 - Animal species whose presence relates to the international importance of the site

		Species	Species								
		qualifies	contributes	Don		%	<b>IUCN</b>	CITES	CMS		
Phylum	Scientific name	under	under	Size	Period of pop. Est.	occurrence	Red	Annondiv	Appendix I	Other Status	Justification
		criterion	criterion	Size		1)	List		Appendix i		
		2 4 6 9	3 5 7 8								

Phylum	Scientific name	qua un crite	cies lifies der erion	Specie contribu under criterio	Pop. Size	Period of pop. Est. occurrer	IUCN Red List	CITES Appendix	CMS Appendix I	Other Status	Justification
Others									-		
ARTHROPODA/ INSECTA	Allophylax picipes									Nationally Endemic	This entry refers to Allophylax picipes melitensis, which is endemic to the Maltese Islands.
ARTHROPODA/ INSECTA	Ateuchetus semipunctatus	<b>2</b>					VU				Species is listed as VU at IUCN level.
ARTHROPODA/ INSECTA	Brachytrupes megacephalus									VU - National Red List; Annex II & IV species of Council Directive 92/43/EEC (Habitats Directive)	Species listed as vulnerable at IUCN level; and also within the Maltese Islands. Site is one of rare in Malta that is habitat of the species.
CHORDATA/ REPTILIA	Chalcides ocellatus	<b>2</b>								VU - National Red List; Annex IV species of Council Directive 92/43/EEC (Habitats Directive); Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as wilnerable. Site is one of its habitats.
CHORDATA/ REPTILIA	Chamaeleo chamaeleon	<b>2</b>					LC			VU - National Red List; Appendix II of CITES; Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as wilnerable. Site is one of its habitats.
CHORDATA/ AMPHIBIA	Discoglossus pictus	<b>2</b>					LC			VU - National Red List; Annex IV species of Council Directive 92/43/EEC (Habitats Directive); Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as wilnerable. Site is one of its habitats.
ARTHROPODA/ INSECTA	Erodius siculus melitensis									Nationally Endemic	Erodius siculus melitensis is endemic to the Maltese Islands.
CHORDATA/ REPTILIA	Hemidactylus turcicus						LC			VU - National Red List; Appendix III of Bern Convention	Species is listed in Red Data Book of Maltese Islands as vulnerable. Site is one of its habitats.
CHORDATA/ REPTILIA	Hemorrhois algirus	<b>2</b>					LC			VU - National Red List; Appendix III of Bern Convention	Species is listed in Red Data Book of Maltese Islands as wilnerable. Site is one of its habitats.
CHORDATA/ REPTILIA	Hierophis viridiflavus	<b>2</b>					LC			VU - National Red List; Annex IV species of Council Directive 92/43/EEC (Habitats Directive); Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as wilnerable. Site is one of its habitats.
CHORDATA/ MAMMALIA	Myotis punicus						DD			VU - National Red List; Annex II & IV species of Council Directive 92/43/EEC (Habitats Directive); Appendix II of CMS; Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as wilnerable. Site is used as a foraging site (roosting at locality close by).
ARTHROPODA/ INSECTA	Pimelia rugulosa									Nationally Endemic	This entry refers to Pimelia rugulosa melitana, which is endemic to the Maltese Islands.
CHORDATA/ MAMMALIA	Pipistrellus pipistrellus	<b>2</b>					LC			VU - National Red List; Annex IV species of Council Directive 92/43/EEC (Habitats Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is listed in Red Data Book of Maltese Islands as wilnerable.
CHORDATA/ MAMMALIA	Plecotus austriacus						NT			VU - National Red List; Annex IV species of Council Directive 92/43/EEC (Habitats Directive); Appendix II of CMS; Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as wilnerable.
CHORDATA/ REPTILIA	Podarcis filfolensis						LC			Nationally Endemic; Annex IV species of Council Directive 92/43/EEC (Habitats Directive); Appendix II of Bern Convention	Podarcis filfolensis is endemic to the Maltese Islands
ARTHROPODA/ INSECTA	Prionyx viduatus	<b>2</b>								VU - National Red List	Species listed as wlnerable in Red Data Book. Site a habitat for this species in Malta.
CHORDATA/ MAMMALIA	Rhinolophus hipposideros	<b>I</b>					LC			VU - National Red List; Annex II & IV species of Council Directive 92/43/EEC (Habitats Directive); Appendix II of CMS; Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as wilnerable. Roosts have not been recorded for this species within this site, although it is considered to be a resident in the area. The range within the site is therefore indeterminate.

Phylum	Scientific name	qua un crite	cies lifies der erion	Species contribute under criterion	Size	Period of pop. Est. occurrence	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
ARTHROPODA/ INSECTA	Smicromyrme rufipes	<b>2</b>								VU - National Red List	Species listed as vulnerable and endemic in Red Data Book. Site a habitat for this species in Malta.
ARTHROPODA/ INSECTA	Stenosis melitana									Nationally Endemic	Stenosis melitana is endemic to the Maltese Islands.
ARTHROPODA/ INSECTA	Stenosis schembrii									Nationally Endemic	Stenosis schembrii is endemic to the Maltese Islands.
CHORDATA/ MAMMALIA	Suncus etruscus						LC			VU - National Red List; Appendix III of Bern Convention	Species is listed in Red Data Book of Maltese Islands as wilnerable. Site is one of its habitats.
CHORDATA/ REPTILIA	Tarentola mauritanica						LC			VU - National Red List; Appendix III of Bern Convention	Species is listed in Red Data Book of Maltese Islands as wilnerable. Site is one of its habitats.
CHORDATA/ REPTILIA	Telescopus fallax						LC			VU - National Red List; Annex IV species of Council Directive 92/43/EEC (Habitats Directive); Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as wilnerable. Site is one of its habitats.
ARTHROPODA/ INSECTA	Tethina melitensis									Nationally Endemic	Tethina melitensis is endemic to the Maltese Islands.
CHORDATA/ REPTILIA	Zamenis situla			0000			LC			VU - National Red List; Annex II & IV species of Council Directive 92/43/EEC (Habitats Directive); Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as wilnerable. Site is one of its habitats.
Fish, Mollusc a	and Crustacea										
CHORDATA/ ACTINOPTERYGII	Aphanius fasciatus	<b>2</b>					LC			VU - National Red List; Annex II species of Council Directive 92/43/EEC (Habitats Directive); Appendix II & III of Bern Convention	Species listed as vulnerable in Red Data Book. Site is one of the remaining habitats in Malta.
Birds											
CHORDATA/ AVES	Acrocephalus scirpaceus						LC			Appendix II of CMS; Appendix III of Bern Convention	Species is of a breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Alauda arvensis	<b>V</b>					LC			Annex II species of the Directive 2009/147/EC (Birds Directive); Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Alcedo atthis	1					LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of Bern Convention	Species is listed as VU at IUCN level; Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Anas acuta	<b>V</b>					LC			Annex II & III species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Anas clypeata	1								Annex II & III species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Anas crecca	1					LC			Annex II & III species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Anas platyrhynchos	<b>V</b>					LC			Annex II & III species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory, wintering and breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Anas querquedula	<b>V</b>								Annex II species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Anthus campestris	1					LC			Annex I species of the Directive 2009/147/EC; Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.

Phylum	Scientific name	qu cr		ies er ion	co	Species ontribute under criterior 5 7	Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
CHORDATA/ AVES	Apus apus		2							LC			Appendix III of Bern Convention	Species is of a breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Apus pallidus		2							LC			Appendix II of Bern Convention	Species is of a breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Ardea purpurea	<b>V</b>	2							LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix II of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Ardeola ralloides	<b>V</b>	2							LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Aythya ferina	<b>V</b>	2							VU			Annex II & III species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is listed as VU at IUCN level; Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Aythya nyroca	<b>V</b> 6	7							NT		V	Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is listed in Appendix I of CMS; Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Calandrella brachydactyla	<b>V</b>	2							LC			VU - National Red List; Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as vulnerable.
CHORDATA/ AVES	Calidris canutus	<b></b>	2							NT		<b>4</b>	Annex II of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is listed in Appendix I of CMS
CHORDATA/ AVES	Calidris ferruginea	<b>V</b> 6	7							NT			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix II of Bern Convention	Species is listed as VU at IUCN level
CHORDATA/ AVES	Caprimulgus europaeus	<b>V</b>	2							LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Cettia cetti	<b>V</b>	2							LC			VU - National Red List; Appendix III of Bern Convention	Species is listed in Red Data Book of Maltese Islands as vulnerable.
CHORDATA/ AVES	Charadrius dubius		2							LC			Appendix II of CMS; Appendix II of Bern Convention	Species is of a breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Chloris chloris	<b>V</b>	7							LC			EN - National Red List; Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as endangered.
CHORDATA/ AVES	Circus aeruginosus	<b>V</b>	0							LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Circus pygargus	<b>V</b>	0							LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Cisticola juncidis		2							LC			Appendix II of CMS; Appendix III of Bern Convention	Species is of a breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Coturnix coturnix	<b>V</b>	2							LC			Annex II species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Egretta garzetta	<b>√</b> 6	2							LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of Bern Convention	Species is of a migratory and breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Emberiza calandra	<b>V</b>	2							LC			VU - National Red List; Appendix III of Bern Convention	Species is listed in Red Data Book of Maltese Islands as vulnerable.

Phylum	Scientific name	qual un crite	cies lifies der erion	Species contribute under criterion	Pop. Size	Period of pop. Es	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
CHORDATA/ AVES	Falco naumanni	<b>V</b>						LC		<b>✓</b>	Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix II of Bern Convention	Species is listed in Appendix1 of CMS; Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Falco tinnunculus	<b>V</b>						LC			Appendix II of CMS; Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as endangered.
CHORDATA/ AVES	Falco vespertinus	77						NT		V	Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix II of Bern Convention	Species is listed in Appendix I of CMS; Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Ficedula albicollis	1						LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Fringilla coelebs	77						LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Fulica atra	77						LC			Annex II & III species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Gallinago gallinago	<b>V</b>						LC			Annex II & III species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Gallinula chloropus							LC			Annex II species of the Directive 2009/147/EC (Birds Directive)	Species is of a breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Himantopus himantopus	<b>V</b>		000				LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix II of Bern Convention	Species is of a migratory and breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Hirundo rustica							LC			Appendix II of Bern Convention	Species is of a breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Ichthyaetus melanocephalus	1									Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix II of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	lxobrychus minutus	<b>V</b>						LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix II of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Lanius senator	77						LC			EN - National Red List; Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as endangered.
CHORDATA/ AVES	Larus cachinnans	77						LC			VU - National Red List; Annex II species of the Directive 2009/147/EC (Birds Directive); Appendix III of Bern Convention	Species is listed in Red Data Book of Maltese Islands as vulnerable.
CHORDATA/ AVES	Linaria cannabina	<b>V</b>						LC			EN - National Red List; Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as endangered.
CHORDATA/ AVES	Lymnocryptes minimus	77						LC			Annex II & III species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Milvus migrans	<b>V</b>						LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Muscicapa striata							LC			Appendix II of CMS; Appendix III of Bern Convention	Species is of a breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Nycticorax nycticorax	77						LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of Bern Convention)	Species is of a migratory nature, whereby the site is able support its population.

Phylum	Scientific name	Species qualifies under criterion	cont u cri	pecies tributes inder iterion	Pop. Size	% occurrence	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
CHORDATA/ AVES	Pandion haliaetus						LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Passer hispaniolensis				]		LC			Appendix III of Bern Convention	Species is of a breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Passer montanus				)		LC			VU - National Red List; Appendix III of Bern Convention	Species is listed in Red Data Book of Maltese Islands as vulnerable.
CHORDATA/ AVES	Pernis apivorus				)		LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Pluvialis apricaria	2200			]		LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Rallus aquaticus				)		LC			Annex II species of the Directive 2009/147/EC (Birds Directive); Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Scolopax rusticola						LC			Annex II & III species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Serinus serinus				)		LC			EN - National Red List; Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as endangered.
CHORDATA/ AVES	Streptopelia decaocto				]		LC			Annex II species of the Directive 2009/147/EC (Birds Directive); Appendix III of Bern Convention	Annex II species of the Directive 2009/147/EC (Birds Directive); Appendix III of Bern Convention Species is of a breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Streptopelia turtur				]		VU			Annex II species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species listed as VU at IUCN level; Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Sturnus vulgaris				)		LC			Annex II species of the Directive 2009/147/EC (Birds Directive)	Species is of a migratory, wintering and breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Sylvia conspicillata				)		LC			EN - National Red List; Appendix II of CMS; Appendix II of Bern Convention	Species is listed in Red Data Book of Maltese Islands as endangered
CHORDATA/ AVES	Sylvia melanocephala				)		LC			Appendix II of CMS; Appendix II of Bern Convention	Species is of a breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Tachybaptus ruficollis				)		LC			Appendix III of Bern Convention	Species is of a migratory, wintering and breeding nature, whereby the site is able support its population.
CHORDATA/ AVES	Tringa glareola						LC			Annex I species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix II of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Turdus merula				)		LC			Annex II species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Turdus philomelos						LC			Annex II species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.
CHORDATA/ AVES	Vanellus vanellus						NT			Annex II species of the Directive 2009/147/EC (Birds Directive); Appendix II of CMS; Appendix III of Bern Convention	Species is of a migratory nature, whereby the site is able support its population.

Previous records of Plecotus species in Malta have been attributed to Plecotus austriacus. However, recent studies showed that the Plecotus species present in Malta is Plecotus gaisleri (Gaisler's long-eared bat).

# 3.4 - Ecological communities whose presence relates to the international importance of the site

Name of ecological community	Community qualifies under Criterion 2?	Description	Justification
Salicornia and other annuals colonizing mud and sand	Ø	Formations composed mostly or predominantly of annuals, in particular Chenopodiaceae of the genus Salicornia or grasses, colonising periodically inundated muds and sands of marine or interior salt marshes.	Listed as Habitat 1310 under Annex I of Council Directive 92/43/EEC (Habitats Directive)
Mediterranean salt meadows (Juncetalia maritimi)	Ø	Mediterranean salt meadow communities, consisting mainly of Juncetalia maritimi.	Listed as Habitat 1410 under Annex I of Council Directive 92/43/EEC (Habitats Directive)
Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	Ø	Perennial vegetation of marine saline muds (schorre) mainly composed of scrubs and belonging to the Sarcocornetea fruticosi class.	Listed as Habitat 1420 under Annex I of Council Directive 92/43/EEC (Habitats Directive)
Dunes with Euphorbia terracina	Ø	Coastal dune grassland communities with Euphorbia terracina	Listed as Habitat 2220 under Annex I of Council Directive 92/43/EEC (Habitats Directive)
Thermo-Mediterranean and pre-desert scrub	Ø	Scrub formations characteristic of the thermo- Mediterranean zone.	Listed as Habitat 5330 under Annex I of Council Directive 92/43/EEC (Habitats Directive)
West Mediterranean clifftop phryganas	<b>Ø</b>	Rare, extremely local and isolated, cushion- forming thermo-Mediterranean sclerophyllous associations of clifftops.	Listed as Habitat 5410 under Annex I of Council Directive 92/43/EEC (Habitats Directive)
Pseudo-steppe with grasses and annuals of the Thero-Brachypodietea	Ø	Meso- and thermo-Mediterranean xerophile, mostly open, short-grass annual grasslands rich in therophytes, including therophyte communities of oligotrophic soils on baserich, calcareous substrates.	Listed as Habitat 6220 under Annex I of Council Directive 92/43/EEC (Habitats Directive)
Coastal lagoons	Ø	Lagoons are expanses of shallow coastal salt water, of varying salinity and water volume, wholly or partially separated from the sea by sand banks or shingle, or, less frequently, by rocks.	Listed as Habitat 1150 under Annex I of Council Directive 92/43/EEC (Habitats Directive)

# 4 - What is the Site like? (Ecological character description)

# 4.1 - Ecological character

L-Għadira is small salt marsh with brackish water pools with fluctuating salinity surrounded by sand dunes, garrigue/phrygana, steppe and agricultural land. The major change occurring in the site include decrease in water depth, increase in aquatic temperature, increase in habitat salinity, and decrease in oxygen concentration, amongst others. One of the species directly affected by these changes is Aphanius fasciatus. This fish is extremely important to the food web within the Wetland site since a wide range of shoreline birds feed exclusively on it. Site has a major role in flood control, whilst also providing habitats for rare flora and fauna, as well as a feeding/resting area for many migratory birds. Certain bird species, such as the globally endangered Aythya ferina, occasionally also use the area as a wintering site.

# 4.2 - What wetland type(s) are in the site?

#### Marine or coastal wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
E: Sand, shingle or pebble shores	L-għaram tar-ramel (sing. L-għarma tar-ramel)	3	1.13	Rare
H: Intertidal marshes	Bwar salmastri (sing. Bur salmastru)	4	0.62	Rare
J: Coastal brackish / saline lagoons	Bwar salmastri (sing. Bur salmastru)	1	3.78	Rare

#### Inland wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
Fresh water > Marshes on inorganic soils >> W: Shrub- dominated wetlands	Bwar salmastri (sing. Bur salmastru)	2	1.99	Rare

#### Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
Scrubs	5.69
Phryganas	5.45
Other lands	78.32
Pseudo-steppen	0.77

(ECD) Habitat connectivity

L-Għadira is made up of interconnected pools surrounded by soil banks with vegetation. This complex is enclosed within ditches and earth embankments and surrounded by fencing.

# 4.3 - Biological components

# 4.3.1 - Plant species

#### Other noteworthy plant species

Scientific name	Position in range / endemism / other
Brachypodium retusum	
Drimia pancration	
Euphorbia chamaesyce	
Himantoglossum robertianum	
Juncus acutus	
Juncus subulatus	
Melilotus messanensis	
Periploca laevigata	
Tamarix africana	
Thinopyrum junceum	
Triglochin bulbosum bulbosum	
	Brachypodium retusum Drimia pancration Euphorbia chamaesyce Himantoglossum robertianum Juncus acutus Juncus subulatus Melilotus messanensis Periploca laevigata Tamarix africana Thinopyrum junceum Triglochin bulbosum

Invasive alien plant species

Phylum	Scientific name	Impacts	Changes at RIS update
TRACHEOPHYTA/MAGNOLIOPSIDA	Acacia saligna	Actual (minor impacts)	No change
TRACHEOPHYTA/LILIOPSIDA	Agave americana	Actual (minor impacts)	No change
TRACHEOPHYTAMAGNOLIOPSIDA	Eucalyptus globulus	Actual (minor impacts)	No change
TRACHEOPHYTA/MAGNOLIOPSIDA	Lycium ferocissimum	Potential	No change
TRACHEOPHYTA/MAGNOLIOPSIDA	Opuntia ficus-indica	Actual (minor impacts)	No change

# 4.3.2 - Animal species

Phylum	Scientific name	Pop. size	Period of pop. est.	% occurrence	Position in range /endemism/other
CHORDATA/AVES	Acrocephalus arundinaceus				
CHORDATA/AVES	Actitis hypoleucos				
CHORDATAVAVES	Anthus pratensis				
CHORDATAVAVES	Anthus spinoletta				
CHORDATA/AVES	Anthus trivialis				
CHORDATAVAVES	Apus melba				
CHORDATA/MAMMALIA	Atelerix algirus				
CHORDATAVAVES	Buteo buteo				
CHORDATAVAVES	Calidris alba				
CHORDATAVAES	Calidris alpina				
CHORDATAVAVES	Calidris minuta				
CHORDATA/AVES	Calidris temminckii				
CHORDATA/AVES	Carduelis carduelis				
CHORDATA/AVES	Cecropis daurica				
CHORDATA/AVES	Charadrius alexandrinus				
CHORDATA/AVES	Charadrius hiaticula				
CHORDATA/AVES	Chlidonias leucopterus				
CHORDATA/AVES	Chroicocephalus genei				
CHORDATA/AVES	Chroicocephalus ridibundus				
MOLLUSCA/GASTROPODA	Cochlicella conoidea				
CHORDATA/AVES	Cuculus canorus				
ARTHROPODA/INSECTA	Dasylabris maura				
CHORDATA/AVES	Delichon urbicum				
MOLLUSCA/GASTROPODA	Ecrobia ventrosa				
CHORDATAVAES	Emberiza schoeniclus				
ARTHROPODA/INSECTA	Exochus mitratus				
CHORDATAVAES	Falco subbuteo				
CHORDATAVAES	Ficedula parva				
CHORDATAVAVES	Hippolais icterina				
CHORDATAVAVES	Hydroprogne caspia				

Phylum	Scientific name	Pop. size	Period of pop. est.	% occurrence	Position in range /endemism/other
CHORDATAVAVES	Jynx torquilla				
CHORDATAVAVES	Lanius collurio				
CHORDATAVAVES	Larus fuscus				
ARTHROPODA/INSECTA	Leptochilus medanae				
CHORDATAVAVES	Luscinia megarhynchos				
CHORDATA/AVES	Luscinia svecica				
CHORDATAVAVES	Merops apiaster				
CHORDATAVAVES	Motacilla alba				
CHORDATAVAVES	Motacilla cinerea				
CHORDATAVAVES	Motacilla flava				
CHORDATA/MAMMALIA	Mustela nivalis				
CHORDATA/MAMMALIA	Nyctalus noctula				
CHORDATAVAVES	Oenanthe isabellina				
ARTHROPODA/INSECTA	Otiorhynchus schembrii				
CHORDATAVAVES	Phalacrocorax carbo				
CHORDATAVAVES	Philomachus pugnax				
CHORDATAVAVES	Phoenicopterus ruber				
CHORDATAVAVES	Phoenicurus ochruros				
CHORDATAVAVES	Phoenicurus phoenicurus				
CHORDATAVAVES	Phylloscopus bonelli				
CHORDATAVAVES	Phylloscopus sibilatrix sibilatrix				
CHORDATAVAVES	Phylloscopus trochiloides				
CHORDATAVAVES	Phylloscopus trochilus				
CHORDATA/MAMMALIA	Pipistrellus kuhlii				
CHORDATA/AVES	Plegadis falcinellus				
CHORDATAVAVES	Podiceps cristatus				
CHORDATAVAVES	Porzana porzana				
CHORDATA/AVES	Prunella modularis				
ARTHROPODA/INSECTA	Pseudepipona tripunctata				
CHORDATA/AVES	Regulus regulus				
CHORDATA/AVES	Riparia riparia				
CHORDATAVAVES	Saxicola rubetra				
CHORDATA/AVES	Saxicola torquata torquata				
CHORDATAVAVES	Setophaga striata				
CHORDATA/AVES	Spinus spinus				
CHORDATA/AVES	Sylvia atricapilla				
CHORDATA/AVES	Sylvia borin				
CHORDATAVAVES	Sylvia cantillans				
					<u> </u>

Phylum	Scientific name	Pop. size	Period of pop. est.	% occurrence	Position in range /endemism/other
CHORDATA/AVES	Sylvia communis				
CHORDATAVAVES	Tringa erythropus				
CHORDATAVAVES	Tringa nebularia				
CHORDATAVAVES	Tringa ochropus				
CHORDATAVAVES	Tringa stagnatilis				
CHORDATAVAVES	Tringa totanus				
CHORDATAVAVES	Troglodytes troglodytes				

Invasive alien animal species

Phylum	Scientific name	Impacts	Changes at RIS update
CHORDATA/MAMMALIA	Rattus norvegicus	Actual (minor impacts)	No change

# 4.4 - Physical components

# 4.4.1 - Climate

Climatic region	Subregion
C: Moist Mid-Latitude	Csa: Mediterranean (Mild
climate with mild winters	with dry, hot summer)

4 4	12-	Gen	morn	hic	setting

4.2 - Geomorphic Setting	
a) Minimum elevation above sea level (in metres)	
a) Maximum elevation above sea level (in metres)	
Entire river basin	
Upper part of river basin $\Box$	
Middle part of river basin $\Box$	
Lower part of river basin	
More than one river basin $\Box$	
Not in river basin $\Box$	
Coastal 🗹	
Please name the river basin or basins. If the site lies in a sub-basin, please	also name the larger river basin. For a coastal/marine site, please name the sea or ocean.
Mediterranean sea.	

#### 4.4.3 - Soil

Mineral	$\overline{\mathscr{A}}$
(Update) Changes at RIS update	No change <b>⊚</b> Increase O Decrease O Unknown O
No available information	
Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)?	Yes O No <b>⊚</b>
Discourse in the footbase information on the continuous in	

Please provide further information on the soil (optional)

A national soil survey carried out between 2002 and 2004 around the Maltese Islands as part of the MALSIS 1 project indicated that soils in the area consist of Calcisols, Regosols, Leptosols and Luvisols (Sultana, D. (personal communication, 2021)).

# 4.4.4 - Water regime

vvater permanence	
Presence?	Changes at RIS update
Usually permanent water present	

Source of water that maintains character of the site

Presence?	Predominant water	er source Changes at RIS upda	te
Water inputs from	<b>v</b>	No change	
precipitation /ater inputs from surface		No change	
water Marine water		No change	
		'	
ter destination Presence?	Changes at RIS	update	
Marine	No change		
Presence?	Changes at RIS	undato	
Water levels fluctuating (including tidal)	No change		
and dune. Some of t arsh. The area retai	he engineering was rainwater in t	works in led to the formation he central pools all year rou	Id and other non-wetland habitats, including riparian vegetation and a remress of permanent pools with fluctuating water levels that affect the biota of the nd, which may also evaporate in very dry and hot seasons.
Confidentity of Surfe		water and groundwater at l-	I out in 2014, it is unlikely that there is a connectivity between the surface Ghadira.
5 - Sediment regim	10		
1.5 - Sediment regiment Significant accretion of	or deposition of sedi	ments occurs on the site	
· ·	or deposition of sedi		ge <b>⊚</b> Increase ◯ Decrease ◯ Unknown ◯
Significant accretion of significant accretion accr	or deposition of sedin (Update Se mation on sediment	Changes at RIS update No chardiment regime unknown (optional):	ge <b>⊚</b> Increase <sup>O</sup> Decrease <sup>O</sup> Unknown <sup>O</sup>
Significant accretion of sease provide further inform the area is characterial towever, the Maltese ides and plateau flar ultivation practices a litation process as a	cor deposition of sedio (Update) Se mation on sediment ised by relatively the north-western a nks within this are and poor erosion result of waters	control measures (Sultana leaching from the agricultu	ers) and is therefore subject to low sediment erosion rates (<1 t Ha-1 yr-1).  a large range in erosion rates, ranging from 5 to >75t Ha-1 yr-1. The valley the erosion rates, characterised by high topographic gradients, inappropria (2015). Sediment accumulates in the pools, which is mainly imparting from al land at the back of the wetland. The substrate of the water body is
Significant accretion of the area is characterilowever, the Maltese ides and plateau flar ultivation practices a illation process as a	cor deposition of sedio (Update) Se mation on sediment ised by relatively the north-western a nks within this are and poor erosion result of waters	control measures (Sultana	ers) and is therefore subject to low sediment erosion rates (<1 t Ha-1 yr-1).  a large range in erosion rates, ranging from 5 to >75t Ha-1 yr-1. The valley the erosion rates, characterised by high topographic gradients, inappropriar 2015). Sediment accumulates in the pools, which is mainly imparting from al land at the back of the wetland. The substrate of the water body is
Significant accretion of the area is characteriowever, the Maltese des and plateau flar ultivation practices a latation process as a haracterised by a mi	mation on sediment ised by relatively a north-western anks within this are und poor erosion result of waters exture of sand an	diment regime unknown (optional):  y flat topography (0 to 5met atreas are characterised by ea typically demonstrate hi o control measures (Sultana leaching from the agricultured clay characteristics of Valence (Sultana delay characteristics of Valence)	ers) and is therefore subject to low sediment erosion rates (<1 t Ha-1 yr-1).  a large range in erosion rates, ranging from 5 to >75t Ha-1 yr-1. The valley the erosion rates, characterised by high topographic gradients, inappropria 2015). Sediment accumulates in the pools, which is mainly imparting from all land at the back of the wetland. The substrate of the water body is lley fill and coastal setting.
Significant accretion of the area is characterilowever, the Maltese ides and plateau flar ultivation practices a illation process as a haracterised by a mi	mation on sediment ised by relatively enorth-western a nks within this and poor erosion result of waters ixture of sand an	control measures (Sultana leaching from the agricultural clay characteristics of Value Characteristics of Value Studies held between Janu44.4 NTU.	ers) and is therefore subject to low sediment erosion rates (<1 t Ha-1 yr-1).  a large range in erosion rates, ranging from 5 to >75t Ha-1 yr-1. The valley the erosion rates, characterised by high topographic gradients, inappropria (2015). Sediment accumulates in the pools, which is mainly imparting from al land at the back of the wetland. The substrate of the water body is
Significant accretion of the area is characterilowever, the Maltese ides and plateau flar ultivation practices as intation process as a haracterised by a mi	mation on sediment ised by relatively e north-western a nks within this arrival poor erosion result of waters ixture of sand an arrival poor erosion result of waters ixture of sand an arrival poor erosion result of waters ixture of sand an arrival poor erosion result of waters ixture of sand an arrival poor erosion erosion of sand an arrival poor erosion e	changes at RIS update. No chard diment regime unknown (optional):  y flat topography (0 to 5 metareas are characterised by ea typically demonstrate his control measures (Sultanal leaching from the agricultured clay characteristics of Valstudies held between January (August 1984).  Studies held between January (Natural light during the day).	ers) and is therefore subject to low sediment erosion rates (<1 t Ha-1 yr-1). a large range in erosion rates, ranging from 5 to >75t Ha-1 yr-1. The valley the erosion rates, characterised by high topographic gradients, inappropria (2015). Sediment accumulates in the pools, which is mainly imparting from all land at the back of the wetland. The substrate of the water body is ley fill and coastal setting.  ary and June 2020 showed that water turbidity varied between 9.25 NTU are
Significant accretion of the area is charactericon for the area is charactericon for the area is charactericon for the Maltese ides and plateau flar ultivation practices a control in the	mation on sediment ised by relatively e north-western a nks within this arrival poor erosion result of waters ixture of sand an arrival poor erosion result of waters ixture of sand an arrival poor erosion result of waters ixture of sand an arrival poor erosion result of waters ixture of sand an arrival poor erosion erosion of sand an arrival poor erosion e	changes at RIS update. No chard diment regime unknown (optional):  y flat topography (0 to 5 metal areas are characterised by ea typically demonstrate his a control measures (Sultanal leaching from the agricultured clay characteristics of Valstudies held between Janual 1.4.4 NTU.  Natural light during the day. Studies held between Janual 1.5.4.4 NTU.	ers) and is therefore subject to low sediment erosion rates (<1 t Ha-1 yr-1). A large range in erosion rates, ranging from 5 to >75t Ha-1 yr-1. The valley gh erosion rates, characterised by high topographic gradients, inappropriate 2015). Sediment accumulates in the pools, which is mainly imparting from all land at the back of the wetland. The substrate of the water body is lley fill and coastal setting.  Artificial light from adjacent coast road during the night.
Significant accretion of the area is charactericon for the area is charactericon for the area is charactericon for the Maltese ides and plateau flar ultivation practices a control in the	mation on sediment ised by relatively e north-western a nks within this arrival poor erosion result of waters ixture of sand an arrival poor erosion result of waters ixture of sand an arrival poor erosion result of waters ixture of sand an arrival poor erosion result of waters ixture of sand an arrival poor erosion erosion of sand an arrival poor erosion e	changes at RIS update. No chard diment regime unknown (optional):  y flat topography (0 to 5 metal areas are characterised by ea typically demonstrate his a control measures (Sultanal leaching from the agricultured clay characteristics of Valstudies held between Janual 1.4.4 NTU.  Natural light during the day. Studies held between Janual 1.5.4.4 NTU.	ers) and is therefore subject to low sediment erosion rates (<1 t Ha-1 yr-1). A large range in erosion rates, ranging from 5 to >75t Ha-1 yr-1. The valley gh erosion rates, characterised by high topographic gradients, inappropriate 2015). Sediment accumulates in the pools, which is mainly imparting from all land at the back of the wetland. The substrate of the water body is lley fill and coastal setting.  Artificial light from adjacent coast road during the night.
Significant accretion of the area is characterilowever, the Maltese ides and plateau flar ultivation practices as intation process as a haracterised by a mi	mation on sediment ised by relatively a north-western a nks within this and poor erosion result of waters ixture of sand an arbitrary and colour value of sand and water temperature	Changes at RIS update No chardiment regime unknown (optional):  y flat topography (0 to 5 meterial streams are characterised by the earth of the control measures (Sultanal leaching from the agricultured clay characteristics of Van Studies held between January 15.43°C and 25°C.	ers) and is therefore subject to low sediment erosion rates (<1 t Ha-1 yr-1). A large range in erosion rates, ranging from 5 to >75t Ha-1 yr-1. The valley gh erosion rates, characterised by high topographic gradients, inappropriate 2015). Sediment accumulates in the pools, which is mainly imparting from all land at the back of the wetland. The substrate of the water body is lley fill and coastal setting.  Artificial light from adjacent coast road during the night.
Significant accretion of the area is characterilowever, the Maltese ides and plateau flar ultivation practices as illustration process as a haracterised by a mi	mation on sediment ised by relatively a north-western a nks within this and poor erosion result of waters ixture of sand an arbitrary and colour value of sand and water temperature	Changes at RIS update No chardiment regime unknown (optional):  y flat topography (0 to 5 meterial streams are characterised by the earth of the control measures (Sultanal leaching from the agricultured clay characteristics of Van Studies held between January 15.43°C and 25°C.	ers) and is therefore subject to low sediment erosion rates (<1 t Ha-1 yr-1). a large range in erosion rates, ranging from 5 to >75t Ha-1 yr-1. The valley the erosion rates, characterised by high topographic gradients, inappropria (2015). Sediment accumulates in the pools, which is mainly imparting from all land at the back of the wetland. The substrate of the water body is elley fill and coastal setting.  The valley fill and coastal setting arry and June 2020 showed that water turbidity varied between 9.25 NTU and the value of the water body is early and June 2020 showed that water turbidity varied between 9.25 NTU and the value of t

# 4.4.7 - Water salinity

Hyperhaline/Hypersaline (>40 g/l) 

✓

 $^{(Update)}$  Changes at RIS update No change lacktriangle Increase O Decrease O Unknown O

Unknown  $\square$ 

# Please provide further information on salinity (optional):

Studies held between January and June 2020 showed that the salinity of the water at I-Għadira varied between 53.3ppt (≈53 g/l) and 85.96ppt (≈86 g/l).

# (ECD) Dissolved gases in water

Studies held between January and June 2020 showed that the level of dissolved oxygen gas within the water at I-Għadira varied between 65.35% and 88.95%.

# 4.4.8 - Dissolved or suspended nutrients in water

Dystrophic 🗹

(Update) Changes at RIS update No change 

■ Increase 

□ Decrease 

□ Unknown 

□

Unknown

Please provide further information on dissolved or suspended nutrients (optional):

Studies held between January and June 2020 show that concentrations of nitrates and phosphates at I-Għadira are very low, with readings of 0.002 <sup>x</sup>g-at N/L and 0.001 <sup>x</sup>g-at P/L respectively.

Despite the wide use of the trophic state index (TRIX) over different environments, it is not considered sufficient to inland surface and transitional waters in Malta. The determination of chlorophyll a & TRIX index are not adequate proxy of eutrophication status in transitional waters because primary production in these systems is not normally dominated by phytoplankton (except in deep estuaries) but it is carried out by angiosperms and macroalgae. An assessment of eutrophication potential was carried out using only nitrate concentrations and applying the French (Seq-eaux) categories for inland surface waters and transitional water bodies. According to this method I-Għadira is classified as Ultra-oligotrophic. This classification may be considered 'dystrophic' in the above-mentioned classification.

(ECD) Water conductivity

Studies held between January & June 2020 showed that water conductivity at I-Għadira varied between 76,883 & 115,00vS/cm

#### 4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the i) broadly similar  $\odot$  ii) significantly different O site itself:

# 4.5 - Ecosystem services

#### 4.5.1 - Ecosystem services/benefits

#### **Provisioning Services**

Ecosystem service	Examples	Importance/Extent/Significance			
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	Medium			

#### Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Groundwater recharge and discharge	High
Erosion protection	Soil, sediment and nutrient retention	High
Biological control of pests and disease	Support of predators of agricultural pests (e.g., birds feeding on locusts)	Medium
Hazard reduction	Flood control, flood storage	High

#### Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Picnics, outings, touring	High
Recreation and tourism	Nature observation and nature-based tourism	High
Spiritual and inspirational	Aesthetic and sense of place values	Medium
Scientific and educational	Educational activities and opportunities	Medium
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	High
Scientific and educational	Major scientific study site	High

#### Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance	
Biodiversity	Supports a variety of all life forms including plants, animals and microorganizms, the genes they contain, and the ecosystems of which they form a part	High	
Soil formation	Accumulation of organic matter	High	
Nutrient cycling	Storage, recycling, processing and acquisition of nutrients	High	

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes O No ● Unknown O

#### 4.5.2 - Social and cultural values

i) the site provides a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland

# Description if applicable

L-Għadira is used for educational awareness for school children and the general public. It is also used for recreational/scientific activities such as bird watching and photography.

ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland

#### Description if applicable

Very ancient cart-ruts in limestone are present at II-Bisqra, located behind L-Għadira; cart ruts are dated to the Bronze Age period by archaeologists and seem to be an ancient communication network across different parts of the Maltese Islands. Furthermore, there are a number of archaeological sites surrounding the area. To the east, there are the remains of a second century wreck that was excavated by Honor Frost in the 1967. To the north east of the site, there is a complex of caves, known as Għar Baqrat. To the south, there is another complex of caves known as Is-Sellum, where pottery shards dating to the Roman period were identified. To the south west, there are another two troglodyte clusters, one at II-Wied ta' Ġnien Ingraw and the other at iI-Wied ta' San Niklaw. Several authors referred to the Ġnien Ingraw complex as Calypso's cave. In the Wied of San Niklaw, a small complex of rock cut-tombs have been identified whilst one of the caves houses the remnants of a Medieval frescoe. Alongside the valley, pottery shards dating from prehistoric to the Roman period have also been found. To the north west of the site, there are other trogloditic dwellings and a rock-cut tomb. Classical pottery shards were also identified. Rubble walls are also found extensively throughout the site. Whilst there is no direct evidence, these troglodyte clusters may indicate that the Saline Vecchie (old salt pans) could have been used in ancient times.

iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples
iv) relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological
character of the wetland

# 4.6 - Ecological processes

4.0 - Lcological processes	
	L-Għadira is an important breeding place for various avifauna. Furthermore, the place is an important breeding ground for the Mediterranean Killifish (Aphanius fasciatus).
(ECD) Notable aspects concerning animal and plant dispersal	Malta's position on migratory route of many birds gives possibility for seed dispersal of plants.
(ECD) Notable aspects concerning migration	Malta lies within the Mediterranean/Black Sea flyway, which is one of three Palaearctic-African flyways connecting Europe with North Africa, which collectively constitute the largest bird migration system in the world.
of the above, and/or concerning ecosystem	The site is fenced and under active management, through a Management Agreement between ERA, BLM & MECP in accordance to Maltese law. More information is also available at: https://era.org.mt/wp-content/uploads/2020/06/20190923_MT0000015-Ghadira-SAC_SPA-3.

# 5 - How is the Site managed? (Conservation and management)

# 5.1 - Land tenure and responsibilities (Managers)

#### 5.1.1 - Land tenure/ownership

		owners	
I UL	JIIC	OWITEIS	HIIP

Category	Within the Ramsar Site	In the surrounding area
National/Federal government	<b></b> ✓	<b>/</b>

#### Private ownership

Category	Within the Ramsar Site	In the surrounding area
Other types of private/individual owner(s)	<b>/</b>	<b>2</b>

Provide further information on the land tenure / ownership regime (optional):

L-Inħawi tal-Għadira is practically all government property. There are only a few pockets that are privately-owned.

#### 5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:

The site is managed by non-governmental organisation on behalf of the Environment & Resources Authority (ERA), the competent authority responsible for the site. Such contract is a Management Agreement between ERA and Birdlife Malta (BLM), established through the vires of the Flora, Fauna and Natural Habitats Protection Regulations (SL 549.44).

Changes

In the surrounding area

Changes

Provide the name and/or title of the person or people with responsibility for the wetland:

Mr Stephen Saliba, Team Manager, Biodiversity and Water Unit

**Environment and Resources Authority** 

Postal address:

Hexagon House Spencer Hill Marsa, MRS 1441

**Actual threat** 

E-mail address: ramsar.malta@era.org.mt

Potential threat

# 5.2 - Ecological character threats and responses (Management)

#### 5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

Water regulation Factors adversely

affecting site

Water abstraction	Medium impact	Medium impact	<b></b>	No change		No change	
Agriculture and aquacultur	е						
Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes	
Annual and perennial non-timber crops	Medium impact	Medium impact	<b>2</b>	No change	<b>/</b>	No change	

Within the site

Transportat	tion a	nd ser	vice c	orridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Roads and railroads	Medium impact	Medium impact	✓	No change	✓	No change

# Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Recreational and tourism activities	Medium impact	Medium impact	✓	No change		No change

valural system modifications						
Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Dams and water	High impact	High impact	✓	No change		No change

#### asive and other problematic species and genes

nacive and called problem and general						
Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Invasive non-native/ alien species	Medium impact	Medium impact	<b>/</b>	No change		No change

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Excess heat, sound, light	Medium impact	Medium impact	✓	No change	<b>✓</b>	No change

#### Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Droughts	High impact	High impact	✓	No change		No change
Temperature extremes	High impact	High impact	<b>✓</b>	No change		No change

#### Please describe any other threats (optional):

For further information on pressures and threats, please refer to the following link: https://era.org.mt/wp-content/uploads/2020/06/20190923\_MT0000015-Ghadira-SAC\_SPA-3.pdf.

# 5.2.2 - Legal conservation status

#### Regional (international) legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
EU Natura 2000	L-Inħawi tal-Għadira	https://eur-lex.europa.eu/legal- content/EN/TXT/PDF/?uri=CELEX:32 021D0159&from=EN; https://natura2000.eea.europa.eu /; https://natura2000.eea.europa.eu /Natura2000/SDF.aspx?site=MT0000 015	whole
Other international designation	L-Inħawi tal-Għadira	https://www.coe.int/en/web/bern- convention/emerald-network; https://www.coe.int/en/web/bern- convention/emerald-viewer	whole

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Area of Ecological Importance	Bur salmastru fil-Ħofra (limiti tal-Mellieħa)	https://era.org.mt/wp-content/up loads/2019/10/GN_288_of_1995.pdf	partly
Area of Ecological Importance	Irdumijiet Ta' Madwar il- Kosta miċ-Ċirkewwa sa Bengħisa	https://era.org.mt/wp-content/up loads/2019/10/GN_400_of_1996.pdf	partly
Area of Ecological Importance (Buffer Zone)	L-art agrikola fl-arja tal- mejjieli u I-Għadira	https://era.org.mt/wp-content/up loads/2019/10/GN_491_of_2006.pdf	partly
Area of Ecological Importance (Buffer Zone)	L-għelieqi abbandunati u makkja ta's-Sdieri	https://era.org.mt/wp-content/up loads/2019/10/GN_491_of_2006.pdf	partly
Area of Ecological Importance and Site of Scientific Importance	II-bur salmastru u I-għaram tar-ramel tal-Għadira	https://era.org.mt/wp-content/up loads/2019/10/GN_491_of_2006.pdf	partly
Area of Ecological Importance and Site of Scientific Importance	lx-xagħri tal-Bisqra	https://era.org.mt/wp-content/up loads/2019/10/GN_491_of_2006.pdf	partly
Area of Ecological Importance and Site of Scientific Importance	L-għelieqi abbandunati u x- xagħri tal-Qammieħ	https://era.org.mt/wp-content/up loads/2019/10/GN_491_of_2006.pdf	partly
Area of High Landscape Value	Diversi Rdumijiet	https://era.org.mt/wp-content/up loads/2019/10/GN_400_of_1996.pdf	partly
Bird Sanctuary	II-madwar ta' I-Għadira, fil- Bajja tal-Mellieħa	https://legislation.mt/eli/sl/54 9.42/eng/pdf	whole
Site of Scientific Importance	II-bajja tar-ramel	https://era.org.mt/wp-content/up loads/2019/10/GN_491_of_2006.pdf	partly
Site of Scientific Importance	lż-Żrieżaq tat-tafal	https://era.org.mt/wp-content/up loads/2019/10/GN_491_of_2006.pdf	partly
Special Areas of Conservation – Site of International Importance	L-Inħawi tal-Għadira	https://era.org.mt/wp-content/up loads/2020/02/G_N_1522_of_2019.p df; https://era.org.mt/wp-content/up loads/2019/05/GN_1379_of_2016.pd f; https://era.org.mt/wp-content/up loads/2019/10/GN_112_of_2007-1.p df; https://era.org.mt/wp-content/up loads/2019/10/GN_877	whole
Special Protection Areas	L-Inħawi tal-Għadira	https://era.org.mt/wp-content/up loads/2020/02/G_N_1522_of_2019.p df, https://era.org.mt/wp-content/up loads/2019/05/GN_1379_of_2016.pd f, https://era.org.mt/wp-content/up loads/2019/10/GN_112_of_2007-1.p df, https://era.org.mt/wp-content/up loads/2019/10/GN_877	whole

# 5.2.3 - IUCN protected areas categories (2008)

	la Strict Nature Reserve
	Ib Wilderness Area: protected area managed mainly for wilderness protection
	Il National Park: protected area managed mainly for ecosystem protection and recreation
	Il Natural Monument: protected area managed mainly for conservation of specific natural features
V	V Habitat/Species Management Area: protected area managed mainly for conservation through management intervention
ø	/ Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation
	I Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

# 5.2.4 - Key conservation measures

# Legal protection

Legal protection					
	Measures	Status			
	Legal protection	Implemented			

Measures	Status
Habitat manipulation/enhancement	Implemented

#### **Species**

Measures	Status
Threatened/rare species management programmes	Implemented
Control of invasive alien plants	Implemented
Control of invasive alien animals	Implemented

#### **Human Activities**

Measures	Status
Communication, education, and participation and awareness activities	Implemented

#### Other:

All measures included in the Management Plan are ongoing.

#### 5.2.5 - Management planning

Is there a site-specific management plan for the site? Yes

Has a management effectiveness assessment been undertaken for the

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning Yes O No 

processes with another Contracting Party?

Please indicate if a Ramsar centre, other educational or visitor facility, or an educational or visitor programme is associated with the site.

As indicated earlier, the wetland is managed by BLM on behalf of the ERA, the competent authority responsible for the site, by means of a Management Agreement between the two mentioned parties, established through the vires of the Flora, Fauna and Natural Habitats Protection Regulations (SL 549.44). Furthermore, the site has a reception centre and a bird hide which is utilised both to raise awareness about nature conservation and the environment, and also to study and monitor bird species that reside, breed and/or migrate to the site. Records include: daily logs kept for different animal species, studies and nest records for breeding species and data for weather conditions and water quality. The interpretive centre found at L-Għadira receives a lot of visitors annually, including school children. It serves as a very important educational resource.

# 5.2.6 - Planning for restoration

Is there a site-specific restoration plan? Yes, there is a plan

# 5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Animal species (please specify)	Implemented
Plant species	Implemented
Birds	Implemented

"BirdLife Malta" (managing entity of the site) is conducting regular patrols in order to ensure no intrusions occur and to check the general condition of the site. In addition, an annual report on the status of the area and actions/measures from management plan implemented is submitted to competent authority (ERA) every 6 months.

# 6 - Additional material

#### 6.1 - Additional reports and documents

#### 6.1.1 - Bibliographical references

AIS (2014). Baseline surveys for inland surface and transitional waters hydromorphological, physicochemical and biological quality elements, Final report Available at: https://era.org.mt/wp-content/uploads/2019/05/PRJ-ENV75 FinalReport 170214 FINAL.pdf

ERA (2019). Habitats Directive: Report on implementation measures. Retrieved February 17, 2021, from Eionet: https://cdr.eionet.europa.eu/mt/eu/art17/envxngv\_g/

L-Inħawi tal Għadira, Natura 2000 Management Plan (SAC / SPA) Available at: https://era.org.mt/wp-content/uploads/2019/05/L-lnhawi\_tal-Ghadira ManagementPlan.pdf

Natur a 2000 Standard Data Form for L-Inhawi tal Ghadira. Available at: https://era.org.mt/wp-content/uploads/2020/06/20190923\_MT0000015-Ghadira-SAC\_SPA-3.pdf

Sche mbri, P. J., & Sultana, J. (1989). Red data book for the Maltese Islands. Malta: Department of Information. Available at: https://era.org.mt/wp-content/uploads/2019/05/RedDataBook-MalteseIslands-1989.pdf

Sultana, D. (2015). Numerical Modelling of Soil Erosion Susceptibility in the Maltese Islands using Geographic Information Systems and the Revised Universal Soil Loss Equation (RUSLE). Xjenza Online, 3:41-50. Available at: https://era.org.mt/wp-content/uploads/2020/12/Modelling\_Soil\_Erosion\_Maltese\_Islands-DSultata-2015.p df

The 2nd Water Catchment Management Plan for the Malta Water Catchment District (2015 - 2021) Available at: https://era.org.mt/wp-content/uploads/2019/05/2nd\_Water\_Catchment\_Management\_Plan-Malta\_Water\_in\_Mal tese\_Islands-3.pdf

#### 6.1.2 - Additional reports and documents

i, taxonomic lists of plant and animal species occurring in the site (see section 4.3)

<no file available>

ii. a detailed Ecological Character Description (ECD) (in a national format)

<no file available>

iii. a description of the site in a national or regional wetland inventory

<no file available>

iv. relevant Article 3.2 reports

<no file available>

v. site management plan

<1 file(s) uploaded>

vi. other published literature

<1 file(s) uploaded>

# 6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



L-Ghadira ( Environment & Resources Authority, 03-06-



L-Għadira ( Environment & Resources Authority, 01-02 2023 )



L-Ghadira ( Environment & Resources Authority, 01-02 2023 )



L-Ghadira ( Environment & Resources Authority, 01-02 2023 )

# 6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation 1988-09-30