

IL-MAJJISTRAL PARK

Breeding Bird Survey Report

2020



Contents

Introduction.....	2
The Target bird species.....	2
Materials and methods.....	3
Recording breeding birds.....	3
Estimation of the number of breeding pairs.....	4
Number of dates and the time devoted for survey.....	4
Migratory and wintering birds.....	4
Record Sheets.....	4
Habitats and nesting in the Park.....	6
The sections of the Park.....	7
Sections of the Park surveyed.....	7
The sections.....	8
Target species noted in the different sections during the survey.....	15
The target species recorded in the different sections.....	16
The sites, the target birds recorded, and estimated number of breeding pairs.....	16
Estimation of the number of breeding pairs in the sections, and in the Park.....	25
Maps showing possible nesting sites for some species.....	26
Results.....	38
Threats to breeding birds.....	38
Notes on results obtained in survey.....	38
Percentage of Majjistral bird population with total population (breeding pairs) of Maltese Islands.....	40
Discussion of results obtained in Breeding Bird Survey 2020.....	40
Pictures of typical habitats and some nesting sites in the Park.....	42
Appendix – wintering and migratory bird species recorded in survey.....	45
Contributors to Il-Majjistral Park Breeding Bird Survey Report 2020.....	45
References.....	45
Acknowledgements.....	45



Breeding Bird Survey – Majjistral Nature and History Park: Report 2020

Introduction

Majjistral Nature and History Park is a sizeable area of the Maltese islands, covering 2.5 square kilometres of land in the north-west. Eleven species of birds nest regularly in the Park, with a further 1 species recorded nesting irregularly.

Il-Majjistral Park Breeding Bird Survey 2020 (here referred to as the survey) was the first survey to be done specifically for Majjistral Park (here referred to as the Park). The survey was done by theoretically dividing the Park into sections, and visiting these areas and recording breeding birds. It was hoped that all the sections will be visited at least once during the survey.

The time frame of the survey was envisaged to be between March and end June. The first start date was 9 March. The end date was 15 May; unfortunately the survey had to be cut short because of an injury to the observer. A further visit to one site (BB13) was done on 15 June 2020 mainly to see if any Short-toed Larks were present (visit done from stationary point at BB13 car park).

The survey took place generally from the paths, whenever paths were present. During the walk notes were lodged down by the observer. This observer was the same one throughout the whole survey. When walking, silence and careful observations were important, so as to hear and see signs of breeding birds. Stops for a few minutes also took place regularly.

Records were put into sheets. A total of 72 sheets were filled. During the survey migratory and wintering birds were also noted down.

The Target bird species

The survey was principally based on fourteen species of birds known to nest in the Maltese islands (table 1 below). These are called here as the **target species**. Ten of these nest regularly in Majjistral Park. Another species, the Tawny Pipit, was recorded breeding for the first time at Majjistral in 1993, and then in 2006 and 2011 (Reference 4). The Feral Pigeon, a descendent of the Rock Dove, nests in urban and non-urban areas in the Maltese islands, and was considered a target species, possibly breeding in the Park. The Swallow is a rare breeder in the Maltese Islands, with most breeding records coming from Gozo. This species has nested at the park in some of the barracks, but has not been noted nesting in recent times. The survey also recorded down the Yellow-legged Gulls observed; this species has never been noted nesting in the Park, but it is observed regularly and could be a potential breeder.

Another species – the Yelkouan Shearwater – is known to nest regularly in the Park (Reference 3). However this species was not a target species in this survey. These birds come to their nesting sites in the cliffs only at night.

During the survey attention was also given to species other than those in Table 1 showing breeding behaviour.

Breeding Bird Survey 2020	Target Species- common name and scientific name
A: Regular breeding birds at Majjistral Park *	1. Blue Rock Thrush <i>Monticola solitarius</i>
	2. Sardinian Warbler <i>Sylvia melanocephala</i>
	3. Spectacled Warbler <i>Sylvia conspicillata</i>
	4. Zitting Cisticola <i>Cisticola juncidis</i>
	5. Cetti's Warbler <i>Cettia cetti</i>
	6. Short-toed Lark <i>Calandrella brachydactyla</i>
	7. Spanish Sparrow <i>Passer hispaniolensis</i>
	8. Tree Sparrow <i>Passer montanus</i>
	9. Collared Dove <i>Streptopelia decaocto</i>
	10. Corn Bunting <i>Emberiza calandra</i>
B: Irregular breeder at Majjistral Park	11. Tawny Pipit <i>Anthus campestris</i>
C: Possible breeder at Majjistral Park	12. Feral Pigeon <i>Columba livia domestica</i>
D: Past breeder at Majjistral Park	13. Swallow <i>Hirundo rustica</i>
E: Regular breeder in the Maltese islands but not in Majjistral Park	14. Yellow-legged Gull <i>Larus michahellis</i>

Table 1: Target species in breeding bird survey Majjistral Park 2020. * = excludes the Yelkouan Shearwater *Puffinus yelkouan*. These birds nest in cliffs, including Majjistral Park, and visit their nests only at night.

Materials and methods

The materials used were a binocular, sheets of blank papers to lodge down on, pens and pencils.

Potential breeding birds were noted down. Care was taken not to record the same bird more than once. The section or sections visited were surveyed on foot. As far as possible this was done along existing paths. Walking was done at a slow pace, with some stops.

A record of the weather conditions was also kept. Data from the field was transferred to sheets (see Figure 1 page 5). Areas and lengths of sections of the Park were measured using Google maps.

Recording breeding birds

Target bird species 1-10 (see table 1 above), known to nest regularly in the Maltese Islands, were recorded breeding in the Park during the survey if one or more of the following was noticed:

- I. Heard singing regularly from one area, in suitable breeding habitat
- II. Heard in alarm calls, in suitable breeding habitat
- III. Seen in display flights, in suitable breeding habitat
- IV. Seen in copulation
- V. Carrying nesting material
- VI. Agitated behaviour of adults, suggesting that there is a nest or fledged young nearby
- VII. Nest of current season seen

Target bird species 12 was recorded as breeding/probably breeding if the birds were seen entering holes in cliffs, heard singing or calling, or in copulation at good nesting sites (cliffs in the case of the Park), or fledged young seen. Target bird species 11, 13 and 14 would be confirmed breeding if a nest with eggs or young would be found. Target species 14 (Yellow-legged Gull) was only recorded if it was passing close to the coast or overhead, and not far off at sea (at coastal areas).

Estimation of the number of breeding pairs

Species 1-14 encountered during the survey were counted, and notes taken of their behaviour (e.g. only seen, heard singing, display flights, etc.). For one species, the Spanish Sparrow, no actual count was made because the bird was found to be very common to abundant in all sections and impossible to count at times. In this survey this species was recorded as N (nesting).

The minimum and maximum number of pairs in each section surveyed for a target species was estimated:

- I. Minimum as the minimum number of that species recorded in breeding activity on the surveyed dates.
- II. Maximum as the maximum number of that species recorded in breeding activity on the surveyed dates.
- III. Estimation of the maximum and minimum numbers recorded and then based on the
 - Actual nesting habitat available in the section
 - The nesting territories required for a target species recorded
 - The abundance or otherwise of a target species in relation to breeding in the Maltese Islands.

The symbol ? means that the bird could well be a breeder in the area, but is not confirmed by I to VII above.

Number of dates (surveys) and the time devoted for survey

The total number of dates in this survey was 67. These dates were spanned in 35 days, with 72 hrs and 30 minutes.

Migratory and wintering birds

Migratory and wintering birds seen during the survey were also recorded. A total of 42 species were lodged down. This is shown in the Appendix, Table 21 page 45.

Record Sheets

Below is an example of the sheet used to input down target species, other bird species and relevant notes.

Majjistral Breeding Bird Survey

Sheet number

Date: 2020

Time:

Area:

Weather:

Species	Numbers and notes	Other species recorded –	Notes
Blue Rock Thrush			
Sardinian Warbler			
Spectacled Warbler			
Zitting Cisticola			
Cetti's warbler			
Short-toed Lark			
Spanish Sparrow			
Tree Sparrow			
Collared Dove			
Corn Bunting			
Tawny Pipit			
Feral Pigeon/Rock Dove			
Swallow			
Yellow-legged Gull			

Figure 1: The sheets for inputting bird records for each session in the office, after notes were taken in the field.

Habitats and nesting in the Park

The area of the Park offers different habitats that are suitable for the target species to breed in, particularly cliffs, expanses of rocky ground with garigue or similar habitat, steppe habitats, maquis (especially in the rdum areas), fallow fields and agricultural areas. The barracks area is also ideal for some target species to nest in.

Species	Habitats and nesting sites for the species in the Park	Nest building (in relation to the Park)
Blue Rock Thrush	Cliffs	Builds a nest in holes or crevices
Sardinian Warbler	Garigue, maquis, fields	Builds nest in shrubs, trees or other vegetation, generally low above ground
Spectacled Warbler	Garigue, steppe, fields	Builds nest in shrubs, low above ground
Zitting Cisticola	Garigue, steppe, areas with grasses, fields	Builds nest mainly in grasses, also shrubs or other vegetation, low above ground
Cetti's Warbler	Maquis habitat in rdum	Builds nest in dense vegetation, low above ground such as in a shrub
Short-toed Lark	Garigue, steppe, fields	Builds nest directly on ground, by scraping small depression, usually in the shade of a small plant
Spanish Sparrow	Cliffs, boulders at sea, trees, barracks and other buildings	Builds nest practically everywhere including electricity posts, trees, ventilators, rubble walls, holes and crevices in old buildings (barracks) and in cliffs and sea boulders, etc.
Tree Sparrow	Barracks	Builds nest in holes and crevices in barracks
Collared Dove	Barracks area	Builds nest in trees
Corn Bunting	Garigue, steppe, fields	Nests low near ground among the vegetation such as grasses
Tawny Pipit	Garigue	Builds nest on the ground
Feral Pigeon/Rock Dove	Cliffs	Builds nest on a ledge, in holes and crevices
Swallow	Barracks, old farmhouses	Builds a nest with mud and vegetation inside barracks
Yellow-legged Gull	Cliffs	Cliff ledge

Table 2: Target species and nesting places in the Park.

The sections of the Park

The area was theoretically divided into 14 sections. This is shown in Figure 2 below.



Figure 2: The theoretical divisions of the Park for the breeding bird survey 2020. BB stands for Breeding Bird Area.

Sections of the Park surveyed

From the 14 theoretical divisions, two sites, BB3 and BB4 were most surveyed (15 and 13 times respectively), while the least surveyed were BB7 and BB8 (one time). Two sites (BB6 and BB14) were not surveyed. The number of visits (surveys) per section is shown in Table 3 below. Surveys were either done for one particular section only, or different sections were surveyed in same day visits. Surveys were carried out mainly on existing paths, and on foot.

Sections of the Park in Breeding Bird Survey 2020	Number of surveys per section
BB1	3
BB2	7
BB3	15
BB4	13
BB5	8
BB6	0
BB7	1
BB8	1
BB9	7
BB10	3
BB11	3
BB12	2
BB13	4
BB14	0
Total number of surveys	67

Table 3: Number of surveys per section of the Park.

The sections

BB1 – Breeding Bird Area 1

This area comprised part of the Ramla tal-Mixquqa green area.



Ramla tal-Mixquqa bay
– BB1

BB2 – Breeding Bird Area 2

This area comprised the barrack entrance to visitor centre and beyond.



Visitor centre area –
BB2

BB3 – Breeding Bird Area 3

This area comprised the shooting ranges, the valley area and the agricultural fields (BB3 extension).



Ranges area – BB3

BB4 – Breeding Bird Area 4

This area comprised part of Xaghra tal-Qortin, Xaghra tal-Majjiesa and Majjiesa point.



Majjiesa area and rdum area – BB4

BB5 – Breeding Bird Area 5

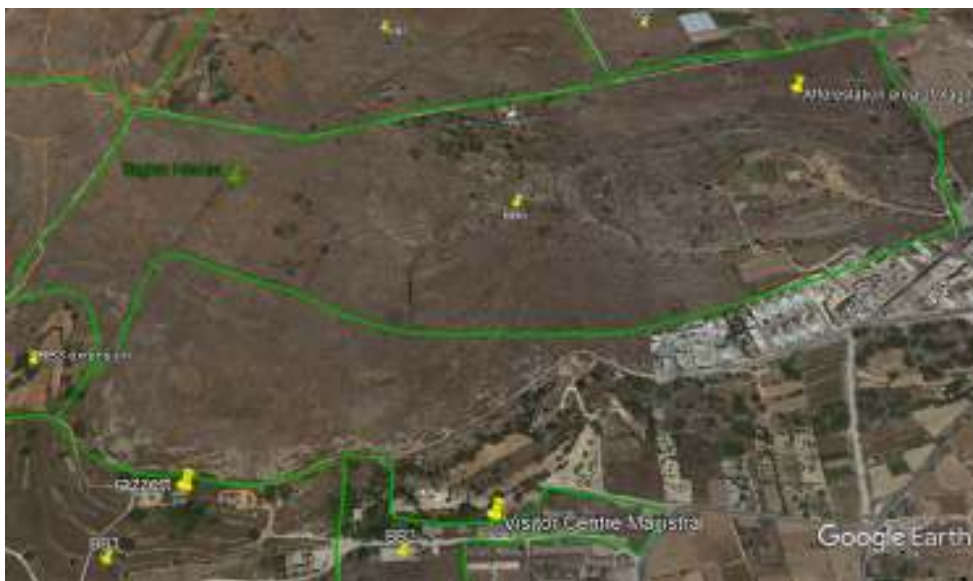
This area comprised Xaghra tal-Qortin.



Xaghra tal-Qortin and rdum area – BB5

BB6 – Breeding Bird Area 6

This area comprised part of Xaghra I-Hamra.



Xaghra I-Hamra – BB6

BB7 – Breeding Bird Area 7

This area comprised part of Xaghra l-Hamra.



Part of Xaghra l-Hamra
– BB7

BB8 – Breeding Bird Area 8

This area comprised an area known as Tal-Qortin, adjacent to Xaghra l-Hamra.



Tal-Qortin – BB8

BB9 - Breeding Bird Area 9

This area comprised the double-corbelled stone hut, the pill box and the stone stairways (Minzell) (at the junction of BB5 and this BB)



Double-corbelled stone hut, pill box area and rdum area – BB9

BB10 – Breeding Bird Area 10

This area comprised the Ta' Ċiantar tower and to the south west of it.



Ta' Ċiantar tower area and to its south-west, and rdum area – BB10

BB11 – Breeding Bird Area 11

This area comprised the land north of Ta Ċiantar tower.



North of Ta' Ċiantar tower with the rdum area – BB11

BB12 – Breeding Bird Area 12

This area lies at the border of the Park.



The border of the Park – BB12

BB13 – Breeding Bird Area 13

This area lies at the north border of the Park, il-Prajjet



Il-Prajjet – BB13

BB14 – Breeding Bird Area 14

This area lies at the border of the Park, adjacent to il-Prajjet (BB13) area



Qasam Barrani – BB14

Target species *noted* (☑) in the different sections during the survey

	BB1	BB2	BB3	BB4	BB5	BB6	BB7	BB8	BB9	BB10	BB11	BB12	BB13	BB14
BRT		☑	☑	☑	☑			☑	☑	☑	☑	☑	☑	
SARD W		☑	☑	☑	☑			☑	☑	☑			☑	
SPEC W				☑	☑			☑	☑	☑	☑			
ZITT C		☑	☑	☑	☑		☑	☑	☑	☑	☑	☑	☑	
CETTI W	☑	☑	☑	☑	☑				☑					
STL			☑	☑	☑				☑	☑	☑	☑		
SP SP	☑	☑	☑	☑	☑		☑	☑	☑	☑	☑	☑	☑	
T SP		☑		☑	☑								☑	
COL D		☑											☑	
COR B			☑						☑	☑	☑	☑		
TAW P			☑	☑	☑				☑			☑		
FER P		☑	☑	☑	☑		☑	☑	☑	☑	☑		☑	
SWL		☑	☑	☑	☑				☑	☑	☑		☑	
YLG			☑	☑	☑		☑		☑	☑	☑		☑	
	BB1	BB2	BB3	BB4	BB5	BB6	BB7	BB8	BB9	BB10	BB11	BB12	BB13	BB14

Table 4: Target species seen (not necessarily breeding) during the survey in the different sections. Sections BB6 and BB14 were not surveyed.

Codes:

BRT= Blue Rock Thrush
SARD W = Sardinian Warbler
SPEC W = Spectacled Warbler
ZITT C = Zitting Cisticola
CETTI W = Cetti's Warbler
STL = Short-toed Lark
SP SP = Spanish Sparrow
T SP = Tree Sparrow
COL D = Collared Dove
COR B = Corn Bunting
TAW P = Tawny Pipit
FER P = Feral Pigeon
SWL = Swallow
YLG = Yellow-legged Gull

The target species recorded in the different sections

The target species that was recorded in all the sites surveyed (12 sites) was the Spanish Sparrow. The bird with the lowest number of records from all the sites was the Collared Dove.

Target species and the number of sections they were recorded in is shown in Table 5 below.

Target Species	Recorded in number of sections surveyed
Spanish Sparrow	12
Zitting Cisticola	11
Blue Rock Thrush	10
Feral Pigeon	10
Sardinian Warbler	9
Yellow-legged Gull	9
Swallow	8
Short-toed Lark	7
Spectacled Warbler	6
Cetti's Warbler	6
Corn Bunting	5
Tawny Pipit	5
Tree Sparrow	3
Collared Dove	2

Table 5: Recorded target species in the sections of the Park.

The sites, the target birds recorded, and estimated number of breeding pairs

The estimation of breeding pairs is based upon information obtained only in the survey dates. The area of il-Majjistral is about 2.5 square kilometres, and in this area are private grounds, preventing bird studies in them. Much of the surveying was done along existing paths only. Sections BB6 and BB14 were not surveyed due to an injury to the observer which brought a halt to surveying and collection of field data.

BB1 – Ramla tal-Mixquqa

This site was surveyed three times -5 and 6 March, and 6 May.

Target species recorded: Cetti's Warbler and Spanish Sparrow.

Cetti's Warbler was heard singing repeatedly on every visit from among the wooded area of the bay. Only 1 bird was heard singing at a time. Spanish Sparrows were common, and nests were constructed in the Tamarisk trees.

Species	Remarks	Estimate number of breeding pairs in site
Cetti's Warbler	Recorded on all three surveys. One bird heard singing during each of the three visits.	1
Spanish Sparrow	Recorded on all dates. Birds were numerous in area, nests seen in Tamarisk trees.	N (nesting)

Table 6 – BB1 breeding bird species

BB2 – Visitor centre area

This site was surveyed seven times – 4, 10 and 20 March, 6 April, 14 April, 21 April, and 4 May 2020.

Target species recorded: Blue Rock Thrush, Sardinian Warbler, Zitting Cisticola, Cetti's Warbler, Spanish Sparrow, Tree Sparrow, Collared Dove, Feral Pigeon, and Swallow.

Species	Remarks	Estimate number of breeding pairs in site
Blue Rock Thrush	Recorded on one date, 1 single male bird, singing briefly and alighting on barrack. No breeding behaviour, could be visiting site to predate sparrows' nests.	0
Sardinian Warbler	Recorded on four dates, maximum two birds in one day. Heard alarm calls, singing and in display flights. One nest with eggs in Lentisk shrub found just outside visitor centre.	2-5
Zitting Cisticola	Recorded on four dates, maximum 3 birds in one day. Observed singing in air.	3-5
Cetti's Warbler	Recorded on four dates, maximum birds per day was of 2. Heard singing from three different sites.	1-2
Spanish Sparrow	Recorded on all dates. Nests and young birds seen. Also seen copulating. Nests in ventilators and holes in barracks, inside barracks, in electricity pylons, and eucalyptus trees.	N
Tree Sparrow	Recorded on two dates in visit. Maximum number of birds per day was of 2. A breeding colony in one of the barracks that was present in recent years was not seen in this survey.	2-5
Collared Dove	Recorded on all dates, maximum number of birds per day was 5. Seen singing, and in display flights.	3-5
Feral Pigeon	Recorded on all dates, maximum number of birds per day was 11.	0
Swallow	Recorded on one date with 2 birds.	0

Table 7 – BB2 breeding bird species

BB3 – Ranges and Valley Area

This area was surveyed 15 times – 9, 10, 17, 24, March; 1, 2, 3, 6, 15, 17, 21, 30 April; 4, 13 and 15 May 2020.

Target species recorded: Blue Rock Thrush, Sardinian Warbler, Zitting Cisticola, Cetti's Warbler, Short-toed Lark, Spanish Sparrow, Corn Bunting, Tawny Pipit, Feral Pigeon, Swallow and Yellow-legged Gull.

Species	Remarks	Estimate number of breeding pairs in site
Blue Rock Thrush	Recorded on ten visits, maximum number of birds per day was of 5. Singing and song flight at cliffs, and resting on cliff edges. Visits inland also, on wires and barracks, probably predated nests of Spanish Sparrows.	2-3
Sardinian Warbler	Recorded on eleven dates during visit to site, maximum number of birds per day was of 11. Singing and song flights, and alarm calls. Birds present also in rdum.	8-11
Zitting Cisticola	The second most numerous breeding bird recorded here. Recorded on all dates, maximum number of birds per day was of 16. Besides singing, one bird was observed chasing another one (territorial dispute).	10-16 pairs
Cetti's Warbler	Recorded on nine dates, maximum number of birds per day was of 2 birds in one day. One bird was heard singing regularly from near the hotel area (eight times), and another bird heard once from north-east area along park boundary.	1-2
Short-toed Lark	Recorded only one time. Bird flew from ground and went on to another section, singing.	0-1
Spanish Sparrow	Recorded on all dates. Most numerous breeding bird. Birds nested in pylons and buildings. Regularly seen along cliffs and boulders, and nesting there as well.	N
Corn Bunting	One bird recorded on three dates. Heard singing in ranges.	0-1
Tawny Pipit	Recorded on four dates, maximum number of birds in one day was 4.	0
Feral Pigeon	Recorded on one date with three birds including 1 in Rock Dove Plumage.	0
Swallow	Recorded on five dates, maximum number of birds for one day was 50+. A few birds recorded singing.	0
Yellow-legged Gull	Recorded on three dates, maximum number of birds in one day was 5.	0

Table 8 – BB3 Ranges and valley area breeding birds

BB3- Extension to Area BB3 – Agricultural fields

This area was visited two times – 10th and 17th March.

Target species recorded: Blue Rock Thrush, Sardinian Warbler, Zitting Cisticola, Cetti's Warbler, and Sardinian Warbler.

Species	Remarks	Estimate number of breeding pairs in site
Blue Rock Thrush	One male bird seen on one day.	0
Sardinian Warbler	Recorded on both dates, maximum birds per day was of 3.	1-2
Zitting Cisticola	Recorded on both dates. Maximum birds per day was of 5.	2-5
Cetti's Warbler	Recorded on both dates. Maximum one bird every day.	1
Spanish Sparrow	Recorded on both dates, common.	?

Table 9 – BB3 extension breeding birds

BB4 – Xagħra tal-Qortin up to Majjiesa point

This site was visited 13 times – 12, 20, 24, and 26 March; 6, 15, 16, 17, 21, and 30 April; 4, 11 May and 13 May. Target species recorded: Blue Rock Thrush, Sardinian Warbler, Spectacled Warbler, Zitting Cisticola, Cetti's Warbler, Short-toed Lark, Spanish Sparrow, Tree Sparrow, Tawny Pipit, Feral Pigeon, Swallow, and Yellow-legged Gull.

Species	Remarks	Estimate number of breeding pairs in site
Blue Rock Thrush	Recorded on the thirteen dates, with maximum number of birds per day was of 15. Observed singing and also seen in song flights. Alarm calls also heard. Birds seen at the cliffs and also on the garigue. One male seen chasing female.	10-15
Sardinian Warbler	Recorded on eight dates, maximum birds per one day was 6. Birds mainly present in the rdum.	5-6
Spectacled Warbler	Recorded on eleven dates, maximum number of birds per one day 4. Observed singing, in alarm calls, and in song flights.	3-5
Zitting Cisticola	Recorded on eleven dates, maximum number of birds per day was of 6. Observed singing. Two birds were once seen fighting together (territorial disputes). Birds present also in the rdum.	5-10
Cetti's Warbler	Recorded on nine dates, maximum birds per day was of 1 bird, possibly 2. Present only in rdum.	1
Short-toed Lark	Recorded on nine dates, maximum number of birds per day was of 6. First record 6 April. Some only seen flying off ground and not singing.	3-5
Spanish Sparrow	Recorded on all dates. Birds nest in cliffs and in boulders.	N
Tree Sparrow	Recorded on one date, of 1 bird.	?
Tawny Pipit	Recorded on three dates. Maximum birds per day was two.	0
Feral Pigeon	Recorded on ten dates, maximum number of birds per day was of 10 (a flock). Birds recorded flying over and resting on cliffs, and once heard calling from cliffs. Birds in rock dove plumage were also seen.	5-10
Swallow	Recorded on ten dates, maximum number of birds per day was of 30. A few recorded singing while in flight.	0
Yellow-legged Gull	Recorded on twelve dates, maximum number of birds per day was of 19. Majority were adults. Heard calling on several occasions. Flying, some seen settling on sea, none settled on cliffs.	0

Table 10 – BB4 Breeding bird species

BB5 – Xagħra tal-Qortin and associated rdum

This site was visited eight times – 20 and 24 March; 1, 6, 7, and 30 April; 4 and 13 May.

Target species recorded: Blue Rock Thrush, Sardinian Warbler, Spectacled Warbler, Zitting Cisticola, Cetti's Warbler, Short-toed Lark, Spanish Sparrow, Tree Sparrow, Tawny Pipit, Feral Pigeon, Swallow, and Yellow-legged Gull.

Species	Remarks	Estimate number of breeding pairs in site
Blue Rock Thrush	Recorded on eight dates. Maximum number of birds per day was 5. Birds mainly seen in cliffs area. Singing.	2-3
Sardinian Warbler	Recorded on four dates, maximum number of birds per day was 2. Birds present also in rdum. Singing and in alarm calls.	2-5
Spectacled Warbler	Recorded on four dates, maximum number of birds per day was of 2. Heard singing.	1-2
Zitting Cisticola	Recorded on eight dates, maximum number of birds per day was of 4. Present also in rdum. Singing.	4-5
Cetti's Warbler	Recorded on three dates, maximum number of birds per day was of one bird singing. Present only in rdum.	1
Short-toed Lark	Recorded on eight dates, maximum number of birds per day was of 10. Singing, some seen only flying and not singing. First record was of one bird passing over (calling, not singing) on 20 March.	5-6
Spanish Sparrow	Recorded on all dates.	N
Tree Sparrow	Recorded on one day; 2 birds together, flying to cliffs; then 1 was seen flying back to land a few minutes later (same bird from 2?). Heard calling.	?
Tawny Pipit	Recorded on four dates, maximum number of birds per day was of 3.	0
Feral Pigeon	Recorded on two dates, maximum number of birds per day was of 6 (flock). Birds could be nesting in cliffs.	?
Swallow	Recorded on five dates, maximum number of birds per day was of 5. Recorded two individuals singing (on different days)	0
Yellow-legged Gull	Recorded on three dates, all adult birds. Maximum number of birds per day was of 5. One seen alighting on boulder close to cliffs.	0

Table 11 – BB5 breeding bird species

BB6 - This area comprised part of Xagħra l-Ħamra.

This site was not surveyed.

BB7 –This area comprised part of Xagħra l-Ħamra.

This site was surveyed one time – 18 March.

Target species recorded: Zitting Cisticola, Spanish Sparrow, Feral Pigeon, and Yellow-legged Gull.

Species	Remarks	Estimate number of breeding pairs in site
Zitting Cisticola	Maximum 10 birds recorded, seen or singing.	8-10
Spanish Sparrow	Recorded.	?
Feral Pigeon	3 birds were recorded	0
Yellow-legged Gull	2 birds together soaring over.	0

Table 12 – BB7 breeding bird species

BB8 - This area comprised an area known as Tal-Qortin, adjacent to Xagħra l-Hamra.

This site was surveyed one time - 13 March.

Target species recorded: Blue Rock Thrush, Sardinian Warbler, Spectacled Warbler, Zitting Cisticola, Spanish Sparrow, and Feral Pigeon.

Species	Remarks	Estimate number of breeding pairs in site
Blue Rock Thrush	One bird recorded. Seen.	0
Sardinian Warbler	Two birds recorded.	1-2
Spectacled Warbler	Only one bird noticed, seen not heard.	0-1
Zitting Cisticola	8 birds recorded singing, and one bird with nesting material in beak.	8-10
Spanish Sparrow	Recorded.	N
Feral Pigeon	Eight birds, with 3 in Rock Dove plumage.	0

Table 13 – BB8 breeding bird species

BB9 - This area comprised the double-corbelled stone hut, the pill box and the stone stairways (Minzell) (at the junction of BB5 and this BB).

This site was visited 7 times – 10, 20, and 24 March, 1, 7, and 30 April, and 4 May.

Target species recorded: Blue Rock Thrush, Sardinian Warbler, Spectacled Warbler, Zitting Cisticola, Cetti's Warbler, Short-toed Lark, Spanish Sparrow, Corn Bunting, Tawny Pipit, Feral Pigeon, Swallow and Yellow-legged Gull.

Species	Remarks	Estimate number of breeding pairs in site
Blue Rock Thrush	Recorded on six dates, maximum number of birds per day was of eight. Singing, alarm calls and display flights, mainly at cliffs.	5-8
Sardinian Warbler	Recorded on four dates, maximum number of birds per day was of 2. Birds heard singing, in alarm calls, and also carrying nesting material. Birds present also in rdum. Agitated pair observed in rdum.	4-5
Spectacled Warbler	Recorded on three dates, maximum number of birds per day was of 3. Singing and alarm calls. Birds present also in rdum.	2-3
Zitting Cisticola	Recorded on six dates. Maximum number of birds per day was of 3. Present also in rdum.	2-5
Cetti's Warbler	Recorded on one date, maximum number of birds for this day was 1. Heard singing, in rdum.	0-1
Short-toed Lark	Recorded on three dates, maximum number of birds per day was of 4. Singing.	2-4
Spanish Sparrow	Recorded on every date. Nests were also located in the pill box.	N
Corn Bunting	Recorded on one day with 4 birds observed (2 together, flew off from ground and called. Another one took off from ground at junction to BB8). Probably migratory, as not seen or heard again.	0
Tawny Pipit	Recorded on two dates, highest number per day was of 4.	0
Feral Pigeon	Recorded on four dates, maximum number of birds per day was of 5. One was seen in rock dove plumage, but had a ring (so it was not wild but a racing pigeon). Birds seen on ground and flying, and heard calling in rdum.	2-5
Swallow	Recorded on three dates, maximum number of birds per day was of 15. Also heard singing.	0
Yellow-legged Gull	Recorded on five dates, maximum number of birds per day was of 3 that settled on the sea. Birds also heard calling.	0

Table 14 – BB9 breeding bird species

BB10 – This area comprised the Ta’ Ċiantar tower and to the south west of it.

This site was visited three times – 17 and 24 March, and 15 May.

Target species recorded: Blue Rock Thrush, Sardinian Warbler, Spectacled Warbler, Zitting Cisticola, Short-toed Lark, Spanish Sparrow, Corn Bunting, Feral Pigeon, Swallow, and Yellow-legged Gull.

Species	Remarks	Estimate number of breeding pairs in site
Blue Rock Thrush	Recorded on three dates, maximum birds per day was of 5. Singing and alarm calls.	2-3
Sardinian Warbler	Recorded on one date with one bird singing in wooded private area.	1
Spectacled Warbler	Recorded on three dates, maximum birds per day was of 2. Singing and alarm calls noticed. Birds present also in rdum.	2
Zitting Cisticola	Recorded on three dates, maximum birds per day was of 8. Singing. Birds present also in rdum.	5-8
Short-toed Lark	Recorded on one day, with 2 bird observed.	0-2
Spanish Sparrow	Recorded on three dates. Nests seen in Ta Ċiantar tower.	N
Corn Bunting	Recorded on one date of 1 bird singing.	0-1
Feral Pigeon	Recorded on two dates, maximum number of birds per day was 10+. Birds in Rock Dove plumage also observed. Birds only seen flying.	0
Swallow	Recorded on three dates, maximum number of birds per day was 6.	0
Yellow-legged Gull	Recorded on one date, 1 adult bird.	0

Table 15 – BB10 breeding bird species

BB11 - This area comprised the land north of Ta Ċiantar tower.

This site was visited three times – 17 March, 14 and 15 May.

Target species recorded: Blue Rock Thrush, Spectacled Warbler, Zitting Cisticola, Short-toed Lark, Spanish Sparrow, Corn Bunting, Feral Pigeon, Swallow, and Yellow-legged Gull.

Species	Remarks	Estimate number of breeding pairs in site
Blue Rock Thrush	Recorded on three dates, maximum number of birds per day was of 6. Singing and alarm calls. In coastal area, except 1 bird.	4-6
Spectacled Warbler	Recorded on two dates, maximum number of birds per day was 2. Singing and alarm calls.	1-2
Zitting Cisticola	Recorded on three dates, maximum number of birds per day was of 5. Birds present also in rdum. Heard singing.	5-8
Short-toed Lark	Noticed on two dates, maximum number of birds per day was of 3. Birds seen flying, singing in the air, and one chased another one in the air.	2-3
Spanish Sparrow	Recorded on all dates.	N
Corn Bunting	Recorded on one date, with 1 bird singing.	0-1
Feral Pigeon	Recorded on two dates, maximum number of birds per day was 1. Birds were in Rock Dove plumage. Seen flying over, going in cliffs nearby.	0
Swallow	Recorded on three dates, maximum number of birds per day was of 5. One singing while flying.	0
Yellow-legged Gull	Recorded on two dates, maximum number of birds per day was of 5. All adults.	0

Table 16 – BB11 breeding bird species

BB12 - This area lies at the border of the Park.

This site was visited two times – 30 March, and 13 May. Last visit was short and mainly done for Short-toed Larks.

Target species recorded: Blue Rock Thrush, Zitting Cisticola, Short-toed Lark, Spanish Sparrow, Corn Bunting, and Tawny Pipit.

Species	Remarks	Estimate number of breeding pairs in site
Blue Rock Thrush	Recorded 1 bird singing.	0
Zitting Cisticola	Recorded on both dates, maximum number of birds per day was of 4.	3-5
Short-toed Lark	Recorded on one date (13 May) with 4 birds noticed singing in air.	2-4
Spanish Sparrow	Recorded on both dates.	?
Corn Bunting	1 bird heard singing on one date.	0-1
Tawny Pipit	One bird on one date.	0

Table 17 – BB12 Breeding bird species

BB13 - This area lies at the north border of the Park, il-Prajjet.

This site was visited four times – 11 and 27 March, 7 May, and 15 June.

Target species recorded were: Blue Rock Thrush, Sardinian Warbler, Zitting Cisticola, Spanish Sparrow, Tree Sparrow, Collared Dove, Feral Pigeon, Yellow-legged Gull, and Swallow.

Species	Remarks	Estimate number of breeding pairs in site
Blue Rock Thrush	Recorded on three dates, with maximum number of birds per day was of 7. Alarm calls, singing, and display flights observed. Mainly coastal but birds seen also inland, including on derelict hide.	5-7
Sardinian Warbler	Recorded on three dates, maximum number of birds per day was of 4. Singing and alarm calls heard.	4-5
Zitting Cisticola	Recorded on all dates, maximum number of birds per day was of 9. Singing.	9-10
Spanish Sparrow	Recorded on all dates. Birds nesting in cliffs.	N
Tree Sparrow	Recorded on one date with 1 bird seen twice; flying from cliffs inland, back to cliffs direction later on. Could be same bird.	?
Collared Dove	Heard on one date. Probably nesting nearby.	0
Feral Pigeon	Recorded on all dates. Birds seen resting on cliffs, some in Rock Dove plumage. Maximum number of birds per day was of 16 birds. Birds seen/heard singing, and heard calling from cliffs.	10-15
Swallow	Two birds together recorded on one date.	0
Yellow-legged Gull	Recorded on four dates, maximum birds per survey was of 8. Mainly adults. Heard calling, and one adult seen chasing other adult.	0

Table 18 – BB13 Breeding bird species

BB14 - This area lies at the border of the Park, adjacent to il-Prajjet (BB13) area

This site was not surveyed

Estimation of the number of breeding pairs in the sections, and in the Park

The numbers given here are the maximum numbers recorded for the different sections. Sections 6 and 14 were not surveyed.

BB= Breeding Bird areas (Sections)

N= nesting (used for one species – Spanish Sparrow)

? = bird could well be a breeder in the area, but is not confirmed

BB	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Tot
BRT			3	15	2				8	3	6		7		44
SARD W		5	13	6	5			2	5	1			5		42
SPEC W				5	2			1	3	2	2				15
ZITT C		5	21	10	5		10	10	5	8	8	5	10		97
CETTI W	1	2	3	1	1				1						9
STL			1	5	6				4	2	3	4			25
SP SP	N	N	N	N	N		?	N	N	N	N	?	N		N
T SP		5													5
COL D		5													5
COR B			1							1	1	1			4
TAW P															0
FER P				10					5				15		30
SWL															0
YLG															0

Table 19: Estimation of the number of breeding pairs in the sections and as a whole in the Park (Tot)

Codes:

BRT= Blue Rock Thrush
 SARD W = Sardinian Warbler
 SPEC W = Spectacled Warbler
 ZITT C = Zitting Cisticola
 CETTI W = Cetti's Warbler
 STL = Short-toed Lark
 SP SP = Spanish Sparrow
 T SP = Tree Sparrow
 COL D = Collared Dove
 COR B = Corn Bunting
 TAW P = Tawny Pipit
 FER P = Feral Pigeon
 SWL = Swallow
 YLG = Yellow-legged Gull

Maps showing possible nesting sites for some species

Below are maps showing some sections of the Park with possible locations of nesting sites for some species, greatest concentration, or other notes according to the survey. Bird breeding behaviour includes singing in same area, alarm calls and display flights.

Blue Rock Thrush



The greatest concentration of Blue Rock Thrushes in the Park was recorded in section BB4, particularly the rdum around Majjies Point

Sardinian Warbler



Sardinian Warbler (SW) in BB2, showing two areas where birds were frequently recorded singing during the survey



Sardinian Warbler (SW) in BB3, showing two areas where it was frequently recorded singing during the survey



Sardinian Warbler (SW) in rdum of BB3, from where it was frequently heard singing during the survey

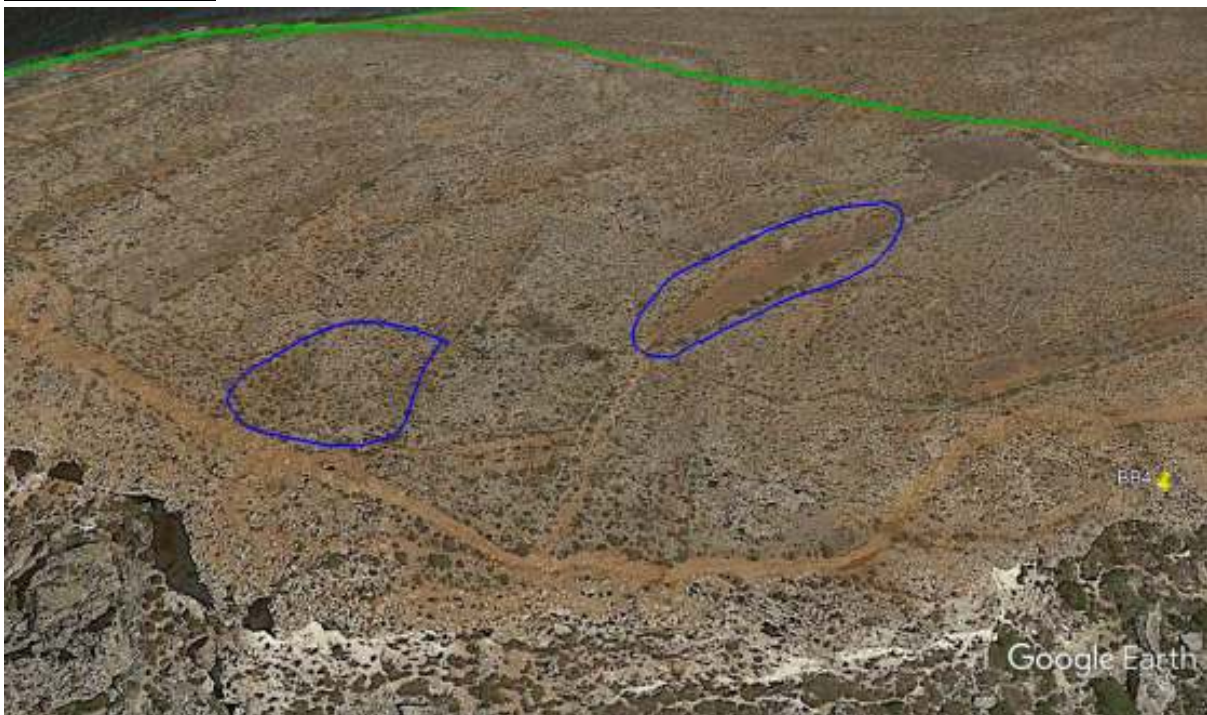


Sardinian Warbler in BB4 – greatest concentration in section BB4 was recorded in this area (circled by blue line)



Sardinian Warbler (SW) in BB13, where it was frequently heard singing during the survey, circled by blue line

Spectacled Warbler



Spectacled Warbler in BB4, where it was frequently heard singing, alarm calls and flight displays, in area circled by blue line, suggesting 2 pairs were present



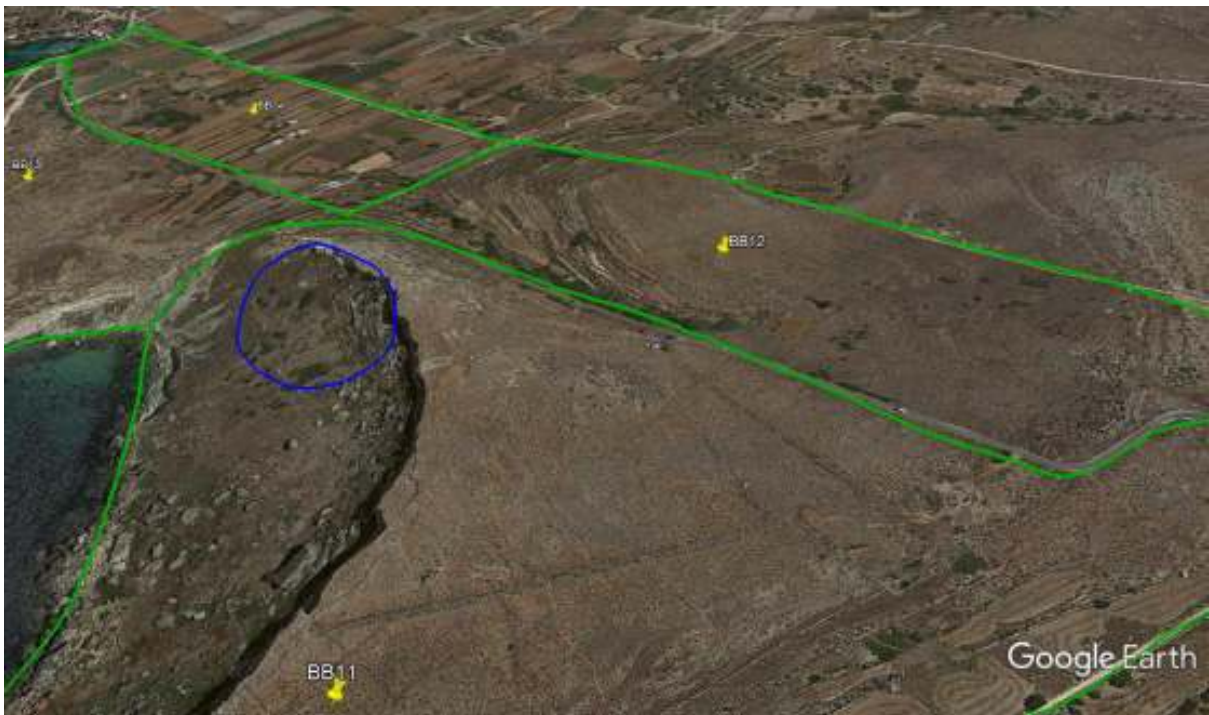
Spectacled warbler in BB5, where it was frequently heard singing, circled by blue line



Spectacled Warbler in BB9, where it was frequently heard singing, circled by blue line



Spectacled Warbler in BB10, where it was frequently heard singing and in alarm calls, circled by blue line



Spectacled Warbler in BB11 where it was heard singing, circled by blue line

Zitting Cisticola



Perfect steppe habitat for nesting Zitting Cisticola in BB2, circled by blue line



Greatest concentration of Zitting Cisticola in BB3 was recorded in this part during the survey, circled by blue line

Cetti's Warbler



Two areas where Cetti's Warbler (CW) were heard singing frequently in BB2

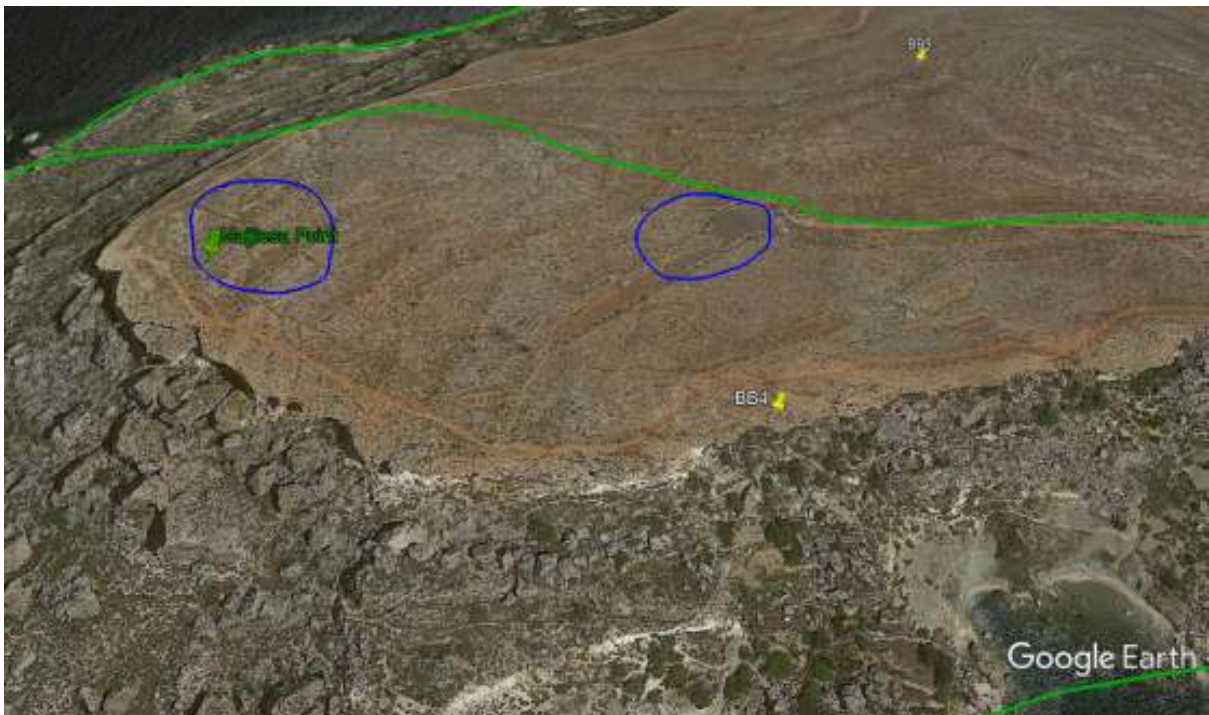


Cetti's Warbler (CW) heard singing frequently in BB4. Nest could be located in adjacent private camp site



Cetti's Warbler (CW) where it was heard singing in BB5

Short-toed Lark



BB4 – Short-toed Lark, possible site of 2 pairs where birds were heard frequently singing in the air, circled by blue line

Collared Dove



Area where Collared Dove (CD) in BB2 was frequently heard singing (cooing) and doing flight displays. Another area lied outside BB2, shown by red icon

Corn Bunting



Corn Bunting in BB3, from where it was frequently heard singing

Feral Pigeon



Feral Pigeon in BB4 and BB5, area of cliffs where it was recorded calling and sitting, circled by blue line



BB13 – Good nesting habitat of Feral Pigeon, where it was heard singing and calling from cliffs, especially from the western area, circled by blue line

Results

Results obtained in this survey showed that 11 species of birds were nesting in the Park (Table 20). Apart from these, no other species was observed in breeding behaviour. The results achieved from the survey also show that the three most numerous breeders in the Park were the Spanish Sparrow, Zitting Cisticola and Blue Rock Thrush. The species and estimate number of pairs according to the survey is shown in Table 20 below. This number is the **maximum** number estimated in the survey. These results should be taken in context of various factors (see Discussion on results obtained, page 40).

Species	Estimated Number of pairs
Spanish Sparrow	Common to abundant
Zitting Cisticola	97
Blue Rock Thrush	44
Sardinian Warbler	42
Feral Pigeon	30
Short-toed Lark	25
Spectacled Warbler	15
Cetti's Warbler	9
Tree Sparrow	5
Collared Dove	5
Corn Bunting	4

Table 20: The species and estimated maximum number of pairs in the Park

Threats to breeding birds

In the survey threats identified for breeding birds (and other wildlife in the Park) included:

- I. Hunting of wild birds in spring, and activity associated with it, including letting dogs without leash and hunters walking all over the area and not sticking to the paths
- II. Dogs, other than hunters' dogs, without a leash
- III. General public not always sticking to paths, this including people riding bicycles
- IV. Offroaders passing at high speed, disturbing nesting birds

Notes on results obtained in survey

BB1 – This area was easy to survey. Two species were recorded here. The breeding number of Cetti's Warbler as 1 can be taken as accurate.

BB2 – For the Zitting Cisticola, there is good habitat for more pairs to be nesting. The number of Sardinian Warbler nesting of 2-5 pairs seems to be a very good number, considering a breeding territory range of 7.3 pairs per 100,000 square metres (Reference 2).

Another species- the Tree Sparrow – number of nesting pairs could be higher than 5, since these birds nest in colonies. Survey was conducted along the road, and any colony in barracks away from road could not be seen. One nesting site in one of the barracks along the road was this year deserted, as no birds were seen there, contrary to previous years. This barrack was occupied by Spanish Sparrows.

BB3 – One Cetti's Warbler heard singing regularly in this area could well be nesting in private camp ground, just outside the Park.

One Corn Bunting was heard singing from area where it was heard in previous years, and known to nest in the area. The fact that it was heard only on three dates, and not heard any more in later dates, could well mean that this bird did not nest, or its nest failed, in this area.

BB4- This site was found to hold the highest number of breeding Blue Rock Thrush. Birds were also frequently seen on the garigue area. The cliffs length in BB4 is about 1.15 Km, and area of rdum is over 200,000 square metres. Considering that this bird has a relatively small breeding territory, (1 pair per 10,000 square metres – Reference 1), the area holds a good nesting site in the coastal cliffs and boulders area for many pairs (up to 20 as per Reference 1). On the 20th March two adult male birds were seen close to each other, separated by less than 50 metres apart, on top of the cliffs, and no fighting or other dispute happened. So in this occasion at least, there were no territorial disputes.

The Sardinian Warbler's number of maximum of 6 pairs might be a conservative figure, given that there is good nesting habitat and enough space for more breeding territories of this common breeding bird. Calculating that 7.3 pairs can be found in breeding territory of 100,000 square metres (Reference 2), there is enough space in the area for about 15 pairs.

BB5 – The small number of breeding Blue Rock Thrush is here reflected on numbers seen as well as on the relatively short coastline of less than 400metres. The greatest concentration of Short-toed Lark in the Park was recorded in this area, with a maximum of 10 birds on one date.

BB6 – No data, as site was not surveyed.

BB7 – Only one target species nesting was recorded – the Zitting Cisticola. The site was visited only once, from the road (southern area) so it's full potential as an area for nesting species was not fully explored. The area holds potential breeding grounds for both the Zitting Cisticola and the Sardinian Warbler (surprisingly not heard or seen on this date).

BB8 – Three target species were recorded nesting. Once again this site was visited only once, so its potential for nesting species was not fully explored. The area holds potential breeding grounds for both Sardinian Warbler, Spectacled Warbler and Zitting Cisticola, so it is very probable that there are more breeding pairs of these species than actually estimated in this survey.

BB9 – The total cliff length in this section is here is around 530 metres with an area of around 830, 000 sq. metres. Taking the breeding territory of Blue Rock Thrush as 1 per 10,000 metres square (Reference 1) the maximum of 8 pairs according to the number of birds in breeding behaviour observed in survey is a good estimate. The pairs of nesting Cetti's Warbler in this area was put as 0 to 1 because of a possibility that this bird could be the same one heard in the rdum of adjacent section (BB4).

BB10 – The small number of breeding Blue Rock Thrush is here reflected on numbers seen as well as on the relatively short coastline of less than 300metres, though the total rdum area is about 87,700 square metres. Sardinian Warbler figures of 1 pair is also low, considering that the bird is a common breeding bird in Malta and there is good breeding habitat in the rdum, if not on the garigue plateau. The Short-toed Lark number is put as 0-2 since the 2 birds observed flew from this area and went singing high up in air in adjacent section. The Corn Bunting was also put as 0-1 pair, since this bird could be same one in adjacent BB11.

BB11 – The cliff length is here about 730 metres. Area of rdum is about 69, 800 square metres. The total area of the garigue plateau is over 121, 700 square metres. The total cliff length in this section is here is around 730 metres with an rdum area of around 69, 800 square metres. Taking the breeding territory of Blue Rock Thrush as 1 pair per 10,000 metres square (Reference 1), the maximum of 6 pairs according to the number of birds in breeding behaviour observed in survey is a good estimate. The Corn Bunting was put as 0-1 pair, since this bird could be same one in adjacent BB10.

BB12- The area was not surveyed throughout, so target species nesting populations is only partial, and the area's full breeding potential was not fully explored. For example a maximum of 5 pairs of Zitting Cisticola is very low for the area, considering the bird is a common breeder in Malta and this area BB12 holds good breeding grounds

for this species, especially the valley area with agricultural land. The Corn Bunting was put at 0-1 pair, since this bird could be same one in adjacent BB11.

BB13- The coastline here is about 1.20Km long, with cliffs and low-lying rocky areas. Area is about 145,810 square metres. Taking the breeding territory of Blue Rock Thrush as 1 pair per 10,000 metres square (Reference1), the maximum of 7 pairs estimated in this area could be due to the fact that the coastline here is not all cliffs. The Feral Pigeon was recorded in highest breeding concentration in this section.

Percentage of Majjistral bird population (breeding pairs) with total population (breeding pairs) of Maltese Islands

The percentage of the Majjistral population with the total Maltese population is shown in Table 21 below. The figures of the maximum pairs breeding in the Maltese Islands are taken from the Malta Breeding Bird Atlas 2018.

Species	Maximum pairs breeding in Maltese Islands (Ref. 3) (whole population)	Maximum pairs estimated in Majjistral Breeding Bird Survey 2020	Percentage of whole population (pairs) in Majjistral Park
Blue Rock Thrush	1204	44	3.65
Sardinian Warbler	13, 727	42	0.31
Spectacled Warbler	1162	15	1.29
Zitting Cisticola	18,614	97	0.52
Cetti's Warbler	1745	9	0.52
Short-toed Lark	6434	25	0.39
Tree Sparrow	78	5	6.41
Collared Dove	383	5	1.30
Corn Bunting	37	4	10.81
Feral Pigeon	589	30	0.50

Table 21 – Percentage of breeding birds in Majjistral Park of the maximum pairs breeding in the Maltese Islands. Excludes Spanish Sparrow. Maximum pairs for whole Maltese population is taken from the Malta Breeding Bird Atlas 2018 (Reference 3).

Discussion of results obtained in Breeding Bird Survey 2020

Results obtained in this survey has to be taken in the context of various factors, including the following:

- I. Not all of the Park's area was surveyed
- II. Some sections of the Park were surveyed for a few times
- III. Some sections of the Park were not surveyed throughout
- IV. Weather conditions were not always favourable on all dates
- V. The survey finalized earlier than was expected, due to injury to the observer
- VI. Some areas could not be surveyed properly due to the bird hunting season in April 2020

The Breeding Bird Survey 2020 has confirmed 10 wild species and 1 feral species (Feral Pigeon) of breeding birds in the Park. The most fragile of these is the Corn Bunting, with a critical number of only 4 pairs maximum.

The results of this survey confirmed that one of Malta's abundant breeding bird – the Zitting Cisticola – is also present in the Park in very good numbers, and is the second highest counted breeding bird in this survey after the even more abundant Spanish Sparrow (see Table 20), and was recorded in all the Park sections surveyed except at Ramla tal-Mixquqa (see Table 5). Good numbers of Blue Rock Thrush, Sardinian Warbler, Spectacled Warbler, and Short-toed Lark were also recorded. The maximum number of pairs at 9 for the Cetti's Warbler is a fairly good number, especially considering that there is not much breeding habitat for this species in the Park, apart from the rdum area.

Surveys of areas BB6 and BB14 would have definitely yielded more breeding pairs of Zitting Cisticola and Sardinian Warbler, and perhaps Spectacled Warbler as well.

Zitting Cisticola is a polygamous species, and an average male attracts 3 females; a most successful male can attract up to 11 successive females; sometimes many females breed simultaneously in one territory of a male Zitting Cisticola (Reference 1). Given this fact, and that some areas of the Park were not surveyed, or some sites not fully surveyed, the number of Zitting Cisticola in the Park is very probably higher than the figure given in Table 20.

Table 21 above shows a significant score for 2 species – Tree Sparrow at 6.41% of the maximum whole Maltese population, and also of Corn Bunting at 10.81% of whole Maltese population. The Tree Sparrow was not recorded nesting in Majjistral Park in the Malta Breeding Bird Atlas 2018, when it was definitely nesting in the Barracks area (Alex Casha pers. observations), and in the opinion of the author of this report (Casha) the figure of just 78 pairs for the whole Maltese Islands as listed in the Atlas 2018 is a very low figure. Corn Bunting figures for the Park have to be taken in the context of the notes above, particularly that birds heard singing in adjacent sections (BB10, BB11, BB12) could be same bird, and that there was a possibility that the bird singing in section BB3 could not have nested at all.

The Park's size of 2.5 square kilometres is quite a large area and a challenge for one field observer, especially given its terrain including the coastal cliffs and associated habitats, as well as private grounds. Hunting season coinciding with the nesting season (April) was also a problem for collecting data, as some areas were difficult to access since these were occupied by men with guns at peak migration periods. On some days weather was not ideal for gathering of field data particularly during strong winds.

The results obtained in the first ever **Majjistral Park Breeding Bird Survey 2020** shows that the Park is an important area for 10 species of breeding birds (excluding the Feral Pigeon). It is vital, therefore, that the Park is protected, and that any management or activities are done in line with the protection of these breeding birds (and any other wildlife) of the Park.



Pictures of typical habitats and some nesting sites in the Park



Open rocky landscape, garigue and rocky steppe habitat – good nesting habitats for Spectacled Warbler, Zitting Cisticola, Short-toed Lark, Corn Bunting and Tawny Pipit



Rdum habitat – good nesting habitat for Blue Rock Thrush, Spanish Sparrow and Feral Pigeon.



Garigue habitat and cliff at rdum – good nesting habitat for Spectacled Warbler, Sardinian Warbler, Blue Rock Thrush, Spanish Sparrow and Feral Pigeon.



Dense vegetation and maquis habitat in rdum – good nesting habitat for Cetti’s Warbler and Sardinian Warbler



Steppe habitat – good nesting habitat for Zitting Cisticola



Nesting site of Zitting Cisticola at Barracks area



Coniferous trees (Cypress) - good for nesting Collared Dove in Barracks area



Old military buildings - good nesting sites for Spanish Sparrow and Tree Sparrow

Nest of Spanish Sparrow



The pillbox – good nesting sites for Spanish Sparrow



Nest of Spanish Sparrow in pillbox



Far left picture: Small trees and shrubs at visitor centre - good nesting sites for Sardinian Warbler. Left picture: Nest of Spanish Sparrow on pylon and electricity wires in Barracks area

Appendix – wintering and migratory bird species recorded in survey

Wintering and migratory bird species observed during survey are listed in Table 21 below.

1. Little Egret	15. Sand Martin	29. Stonechat
2. Marsh Harrier	16. House Martin	30. Northern Wheatear
3. Montagu's Harrier	17. Swallow	31. Isabelline Wheatear
4. Pallid Harrier	18. Red-rumped Swallow	32. Black-eared Wheatear
5. Kestrel	19. Tawny Pipit	33. Blackcap
6. Lesser Kestrel	20. Tree Pipit	34. Whitethroat
7. Turtle Dove	21. Meadow Pipit	35. Subalpine Warbler
8. Swift	22. Yellow Wagtail	36. Ruppell's Warbler
9. Bee-eater	23. White Wagtail	37. Wood Warbler
10. Roller	24. Robin	38. Willow Warbler
11. Hoopoe	25. Nightingale	39. Chiffchaff
12. Wryneck	26. Black Redstart	40. Spotted Flycatcher
13. Sky Lark	27. Redstart	41. Pied Flycatcher
14. Lesser short-toed Lark	28. Whinchat	42. Collared Flycatcher

Table 21: Wintering and migratory bird species observed during il-Majjistral Breeding Bird Survey 2020.

Contributors to Il-Majjistral Park Breeding Bird Survey Report 2020

Project leader: Darren Saliba

Field observer and data collector: Alex Casha

Assistants to the observer: Tamsin Caruana on 4 dates, and Sarah Ferriere on 2 dates

References:

1. Reference 1 –del Hoyo, J., Elliott, A., Sargatal, J., & Christie, D.A. (eds.), 1992-2013. **The Handbook of the Birds of the World** (multi-volume series). Lynx Edicions.
2. Reference 2 – Joseph M Bas, Pere Pons, & Crisanto Gomez, 2005. **Home Range and Territory of the Sardinian Warbler *Sylvia melanocephala* in Mediterranean Shrubland**. Bird Study Volume 52, Issue 2, Pages 137-144. <https://doi.org/10.1080/00063650509461383>
3. Reference 3 – Epsilon Malta Ltd, Nature Conservation Consultants, 2019. **Malta Breeding Bird Atlas 2018**. Wild Birds Regulation Unit, Ministry for the Environment, Sustainable Development and Climate Change
4. Reference 4 – Sultana, J., Borg, J.J., Gauci, C. & Falzon, V., 2011. **The Breeding Birds of Malta**. BirdLife Malta

Acknowledgements

Majjistral Park wishes to thank Raymond Galea for providing the Malta Breeding Bird Atlas 2018.

