Annex 1: Consideration of the conservation status of Quail and Turtle Dove

Key to conservation status codes

Category	European species of global conservation concern	Conservation status in Europe	Global population or range concentrated in Europe
SPEC 1	Yes	–	–
SPEC 2	No	Unfavourable	Yes
SPEC 3	No	Unfavourable	No
Non-SPEC^{E}	No	Favourable	Yes
Non-SPEC	No	Favourable	No

Source: BirdLife International (2004: xiii)

Categories of Species of European Conservation Concern (SPECs) and Non-SPECs

Each species is initially assessed against the IUCN Red List Criteria (IUCN 2001) at a European level, and then against the additional criteria derived mainly from Birds in Europe I (Tucker and Heath 1994). All population size thresholds refer to minimum population estimates. In descending order of threat, a species is evaluated as:	
Critically Endangered (CR)	if its European population meets any of the IUCN Red List Criteria (A to E) for Critically Endangered. Such species have an Unfavourable conservation status in Europe because they are considered to be facing an extremely high risk of extinction in the wild (IUCN 2001).
Endangered (EN)	if its European population meets any of the IUCN Red List Criteria (A to E) for Endangered. Such species have an Unfavourable conservation status in Europe because they are considered to be facing a very high risk of extinction in the wild (IUCN 2001).
Vulnerable (V)	if its European population meets any of the IUCN Red List Criteria (A to E) for Vulnerable. Such species have an unfavourable conservation status in Europe because they are considered to be facing a high risk of extinction in the wild (IUCN 2001).
Declining (D)	if its European population does not meet any IUCN Red List Criteria, but declined by more than 10% over 10 years (i.e. 1990–2000) or three generations, whichever is longer. Such species have an Unfavourable conservation status in Europe because they are unable to maintain their populations and/or natural ranges in the long-term. [Birds in Europe I classified species as SPECs if the size of their population or range declined between 1970–1990 by **20%** or more in 33–65% of the population (or by 50% or more in 12–24% of the population). Given the shorter time period covered by Birds in Europe II, an overall decline exceeding **10%** is comparable with this approach.]
Rare (R)	if its European population does not meet any IUCN Red List Criteria and is not Declining, but numbers fewer than 10,000 breeding pairs (*or* 20,000 breeding individuals *or* 40,000 wintering individuals), and is not marginal to a larger non-European population. Such species have an Unfavourable conservation status in Europe because the small size of their population renders them more susceptible to accelerated declines as a result of: • break-up of social structure; • loss of genetic diversity; • large-scale population fluctuations and catastrophic chance events; • existing or potential exploitation, persecution or disturbance by humans.
Depleted (H)	if its European population does not meet any IUCN Red List Criteria and is not Rare or

	Declining, but has not yet recovered from a moderate or large decline suffered during 1970–1990, which led to its classification as Endangered, Vulnerable or Declining in Birds in Europe I. Such species have an Unfavourable conservation status in Europe because they have already undergone a population decline of the type that various directives, conventions and agreements intend to prevent, and have not yet recovered.
Localised (L)	if its European population does not meet any IUCN Red List Criteria and is not Declining, Rare or Depleted, but is heavily concentrated, with more that 90% of the European population occurring at 10 or fewer sites (as listed in Heath and Evans 2000). Such species have an Unfavourable conservation status in Europe because their dependence on a small number of sites renders them more susceptible to accelerated declines as a result of: • large-scale population fluctuations and catastrophic chance events; • existing or potential exploitation, persecution and disturbance by humans.
Secure (S)	if its European population does not meet any of the criteria listed above. Such species have a Favourable conservation status in Europe.
In addition, a species is considered to be:	
Data Deficient (DD)	if there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A species in this category may be well studied, and its biology well known, but appropriate data on its abundance and/or distribution in Europe are lacking. Data Deficient is therefore not a category of threat (IUCN 2001).
Not evaluated (NE)	if its European population has not yet been evaluated against the criteria.
Source: BirdLife International (2004: 8)	

Species trends in Birds in Europe (2004)

'Worst case' trend scenario 1990–2000	1990–2000 trend category	Criteria met
>30% decline	Large decline	IUCN Red List Criteria
10–29% decline	Moderate decline	Declining
<10% decline and <10% increase	Stable	-
10–29% increase	Moderate increase	-
>30% increase	Large increase	-
Unknown (insufficient data)	Unknown	-

Source: BirdLife International (2004)

1A. Conservation Status of the Common Quail (*Coturnix c. coturnix*)

SPEC 3 (1994: 3) Status: (Depleted); Criteria: Large historical decline.
European IUCN Red List Category: —; Criteria: — (BirdLife International, 2004)

Conservation status	
	
Least Concern (IUCN 3.1)[1]	
Scientific classification	
Kingdom:	Animalia
Phylum:	Chordata
Class:	Aves
Order:	Galliformes
Family:	Phasianidae
Subfamily:	Perdicinae
Genus:	*Coturnix*
Species:	***C. coturnix***
Binomial name	
Coturnix coturnix (Linnaeus, 1758)	

Source: http://en.wikipedia.org/wiki/Coturnix_coturnix and http://www.birdlife.org/datazone/speciesfactsheet.php?id=194

1.1 This species has an **extremely large range**, and hence does not approach the thresholds for Vulnerable under the range size criterion (Extent of Occurrence <20,000 km^2 combined with a declining or fluctuating range size, habitat extent/quality, or population size and a small number of locations or severe fragmentation). Despite the fact that the population trend appears to be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable under the population trend criterion (>30% decline over ten years or three generations). The **population size is extremely large**, and hence does not approach the thresholds for Vulnerable under the population size criterion (<10,000 mature individuals with a continuing decline estimated to be >10% in ten years or three generations, or

with a specified population structure). For these reasons the species is evaluated as Least Concern (BirdLife International, 2014a)[1].

1.2 *Coturnix coturnix* is a widespread summer visitor to much of Europe, which accounts for less than a quarter of its global breeding range. Its European breeding population is very large (>2,800,000 pairs) and fluctuates, but underwent a large decline during 1970–1990, especially in central and eastern Europe. Although the species increased in northern and central Europe during 1990–2000, declines continued in south-eastern Europe, and the total population size probably remains below the level that preceded its decline. Consequently, BirdLife International (2004) provisionally evaluated this species at the Pan-European level as **Depleted**.

1.3 The EU Management plan for Quail 2009-2011 (Perennou 2009) aims *inter alia* to "**restore the species to a favourable conservation status through reversing the declines in SE Europe and maintaining its natural genetic diversity"**. The Management Plan notes that the conservation status of Quail within the EU Territory is favourable (Perennou 2009:10), with the EU Quail population numbering some 884,000–1,912,000 calling males. Perennou (2009) also notes that the analysis of the population estimates and trends for Quail is imprecise, resulting in large differences between minimum and maximum numbers which are due to a combination of reasons, including:

- methodological difficulties, which stem from the fact that breeding females are very difficult to detect and because, once paired, the males stop crowing. This often leads to broad ranges for national estimates, most of which do not actually rely on any field census at all. Therefore, national population estimates cannot be reliably summed up at the European level.

- inadequacy of large-scale compilations, due to the fact that the breeding pair in this species is an ephemeral phenomenon and consequently the number of singing males is widely considered by specialists to be a much more practical index of population abundance than the number of breeding pairs. Broad-scale compilations (e.g. Birdlife International 2004, Tucker & Heath 1994) often use the latter index, and also combine data relating to pairs (though inaccessible in practice, with rare exceptions) with data on calling birds (by nature unpaired).

[1] http://www.birdlife.org/datazone/speciesfactsheet.php?id=194

1.4 There are also high inter-annual fluctuations in breeding numbers for any given country, which do not necessarily reflect the actual variability in the total population size for Quail, but rather a variability in the amplitude of the pre-breeding migration northwards. Perennou (2009) further states that Quail numbers seem to be growing strongly in Arabia and Morocco and probably in all the Maghreb countries. These birds do not constitute separate populations, but are part of the population that breeds in Europe in variable proportions from one year to the next. According to Perennou (2009), an overall analysis of Quail population trends in fact indicates that, following a decline in the 1970s (the precise quantitative amplitude of which is unknown because of the lack of earlier, reliable pan-European estimates or indexes), the overall population trend of sedentary and short migrants seems to be increasing over that of the long migrants in the Palearctic region, leading to an overall population trend which is now "likely increasing in the EU" with the exception of south-eastern Europe.

1.5 Similarly, Guyomarc'h (2003) states that figures for breeding pairs in different countries are considered inaccurate because these estimates are replicated from year to year without revision. They ignore variables such as: exchanges between the Maghreb and Europe; high mobility; possible multiple-breeding attempts; and successive pairs. Thirdly, counts of couples or pairs (a very ephemeral phenomenon in this species) are mixed with data from counts of singing males (by nature "unmated" single males). He also states that there was a decrease in the Quail population in the 1970's north of ca. 45º, but that in the 1990's an overall population increase seems to have taken place.

1.6 BirdLife International (2004) notes that the European breeding population for Quail is very large (>2,800,000 pairs) but underwent a decline during 1970-1990s, especially in central and eastern Europe. According to BirdLife International (2004), the EU breeding population ranges between 811,666 and 1,588,988 pairs. Indeed, it is pertinent to note that only between 5% and 24% of the global Quail population breeds in Europe, with 43-54% of the European population breeding in Russia (BirdLife International 2004) where the population is now considered stable. Between 23–38% of the European Quail population breeds in the EU (BirdLife International 2004), 33-57% of which breeds in Spain. France, Germany, Italy, Poland and Portugal also have large stable or increasing quail populations (Perennou 2009). BirdLife

International (2014a) maintains that this species is declining owing to netting of migrating birds and that local declines may be caused by changing agricultural practices, especially increased use of pesticides.

1.7 Guyomarc'h (2003) calculated a population range of 697,000 to 2,298,710 breeding pairs, based on information obtained from 26 countries (including Russia and Turkey, but excluding Former Yugoslavia) and between 3,749,000 and 7,725,000 calling males, based on data obtained from 19 countries. Perennou (2009) gives an estimate of approximately 2.7–4.6 million breeding pairs across a total of 30 countries, including Russia (European part), Turkey (estimate for Turkey being 300–800 thousand pairs) and Ukraine. He also gives an estimate of 2.8–5.3 million calling males, based on data from just 17 countries.

1.8 The European Commission's *Guide to Sustainable Hunting under the Birds Directive* (EC 2008) lists the Quail as a huntable species with unfavourable conservation status (SPEC 3: Vulnerable, Large Decline) (EC, 2008:90).

1.9 The European Bird Census Council report (EBCC, 2013a) presents an updated population trends and indices of 163 common European bird species for the time period 1980–2011 that have been produced by the Pan-European Common Bird Monitoring Scheme (PECBMS) in 2013. However, neither EBCC (2012a,b) nor EBCC (2013a,b) include the Quail in its European index of common breeding birds. Hence no evaluation of the population trends for this species could be obtained through the Pan-European Common Bird Monitoring Scheme.

1.10 Within the territory of the European Union (EU 28), the change in the minimum number of pairs is -1.81% and the change in the maximum number of pairs is -0.56%. Conversely, the change in the geomean population is -0.98% (Table 1). **According to BirdLife International (2004), this equates to a Stable trend classification for the minimum, maximum and geomean number of breeding pairs (a change not more than 10% is considered to be Stable)**.

Table 1 **Quail EU Breeding Population** (Bold = Ring Recoveries)

Country	EU Ring Recoveries in Malta (n=19)	Breeding Pairs (Min - Max)		Trend	Mag. % (Max - Min)		Max % Change (Min Pairs)	Max % Change (Max Pairs)	Max % Change (Average Pairs)
Austria		5,000	15,000	Increase	20	29	1450	4350	2900
Belgium		2,400	5,700	Stable	0	19	-	-	-
Bulgaria		8,000	15,000	Decline	0	19	-1520	-2850	-2185
Croatia		10,000	15,000	Increase	50	79	7900	11850	9875
Cyprus		1,000	4,000	Stable	0	9	-	-	-
Czech Rep.		5,000	10,000	Increase	50	79	3950	7900	5925
Denmark		200	600	Increase	80	80	160	480	320
Estonia		10	50	Stable	0	19	-	-	-
Finland		10	100	Increase	500	500	50	500	275
France		100,000	500,000	Fluctuating	20	29	-	-	-
Germany		12,000	32,000	Increase	0	19	2280	6080	4180
Greece		2,000	5,000	Decline	0	19	-380	-950	-665
Hungary	**8%**	**70,000**	**94,000**	**Stable**	**0**	**19**	**-**	**-**	**-**
Rep. Ireland		0	20	Fluctuating	20	29	-	-	-
Italy	**92%**	**5,000**	**20,000**	**?**	**-**	**-**	**-**	**-**	**-**
Latvia		20	500	Increase	80	80	16	400	208
Lithuania		1,000	2,000	Increase	30	49	490	980	735
Luxembourg		10	25	Stable	0	19	-	-	-
Malta		1	3	Decline	30	49	0	-1	-1
Netherlands		2,000	6,500	Increase	64	64	1,280	4,160	2,720
Poland		100,000	150,000	Increase	?	?	-	-	-
Portugal		5,000	50,000	Stable	0	19	-	-	-
Romania		160,000	220,000	Decline	0	19	-30,400	-41,800	-36,100
Slovakia		2,000	6,000	Stable	0	19	-	-	-
Slovenia		1,000	2,000	Stable	0	19	-	-	-
Spain		320,000	435,000	?	-	-	-	-	-
Sweden		10	40	Fluctuating	20	29	-	-	-
UK		5	450	Stable	0	1	-	-	-
Totals	100%	811,666	1,588,988				-14,724	-8,897	-11,811
				Percentage change			**-1.81%**	**-0.56%**	**-0.98%**
				Trend (EU Population)			**Stable**	**Stable**	**Stable**

Breeding records in Malta

1.11 Several scientific reports, including that by Raine *et al*. (2009)[2] and Sultana *et al*. (2011)[3], indicate that *Coturnix coturnix* does not breed regularly in the Maltese Islands, and only occasionally visits the Islands in limited numbers during migration. However, Sultana *et al*. (2011) do point out that the Quail "is quite common in some years with occasional large influxes, especially in April and September". In his migration study, Thomaidis (2010) maintains that the mean numbers of quail observed were significantly higher in spring migration periods of 2008 and 2009, compared to the autumn ones. The following table lists the mean number of quail during the peak migration dates.

Year (Spring)	Peak dates	Mean number of birds per day
2008	April 17th April 29th	2.47 1.93
2009	April 9th April 16th April 23th April 27th	1.38 2.88 2.22 1.45

1.12 Sultana *et al.* (2011) maintain that in the past *Coturnix coturnix* bred regularly in Malta and that "scattered pairs still bred in the 1940s and early 1950s, but there have been very few records since then". BirdLife (2004) quotes 1–3 breeding pairs of Quail in Malta in the period 1990–2000. However, data from other sources indicates that this species is in fact a very rare breeder. For instance Wright (1864) mentioned that a few Quail breed in Malta in March. Despott (1916) cited Schembri (1843) who wrote that Quail breed in Malta in May. Roberts (1954) only cited Despott on Quail breeding in Malta, whereas Gibbs (1951) mentioned that "there are also scattered pairs of Corn Buntings *Emberiza calandra* and a very few Quail *Coturnix coturnix*". Bannerman and Vella-Gaffiero (1976) mentioned only two occasions of nesting, in 1972 and 1976, also mentioned by Sultana and Gauci (1982). De Lucca (1969) referred

[2] Raine, A; Sultana, J. & Gillings, G. (2009): *Malta Breeding Bird Atlas 2008*. Malta: BirdLife Malta, 94pp.
[3] Sultana, J; Borg, J.J.; Gauci, C. & Falzon, V. (2011): *The Breeding Birds of Malta*. Malta: BirdLife Malta, 379pp.

to Quail as an occasional breeding visitor in the spring and Raine *et al*. (2009) also list Quail as an irregular breeding species. Finally, Sultana *et al*. (2011) mention two additional nests found in 1901, one in Malta and another in Gozo. They provide only 9 confirmed nesting records of Quail between 1972 and 2009.

Ring recoveries in Malta

1.13 Table 2 provides data on the ring recoveries of this species in Malta from other EU Member States, the respective number of breeding pairs, together with the overall direction of the population trend. Figure 1 illustrates the EU population trend categories of this species per Member State. The respective EU source (reference) population trend categories, on the basis of ring recoveries in Malta, are shown in Figure 2. The source (reference) population is Stable in both the minimum number of pairs (0% change) and maximum number of pairs (0% change), although it should be pointed out that the overall trend of the Italian population is unknown (BirdLife International, 2004).

Table 2 **Quail ring recoveries in Malta from other EU Member States and corresponding population trend**

Country	EU Ring Recoveries in Malta (n=19)	Breeding Pairs (Min - Max)		Trend	Mag. % (Max - Min)		Max % Change (Min Pairs)	Max % Change (Max Pairs)
Hungary	8%	70,000	94,000	Stable	0	19	-	-
Italy	92%	5,000	20,000	?	-	-	-	-
Total	100%	**75,000**	114,000				-	-
				Percentage change			**0%**	**0%**
				Trend (Ring Recoveries)			**Stable**	**Stable**

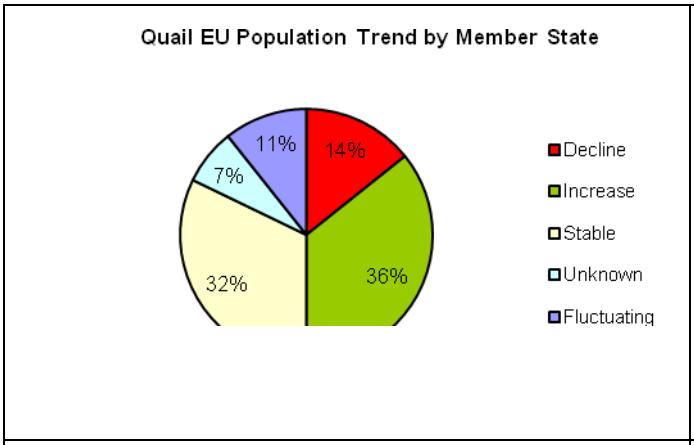

Fig. 1: Quail EU population trend by Member State

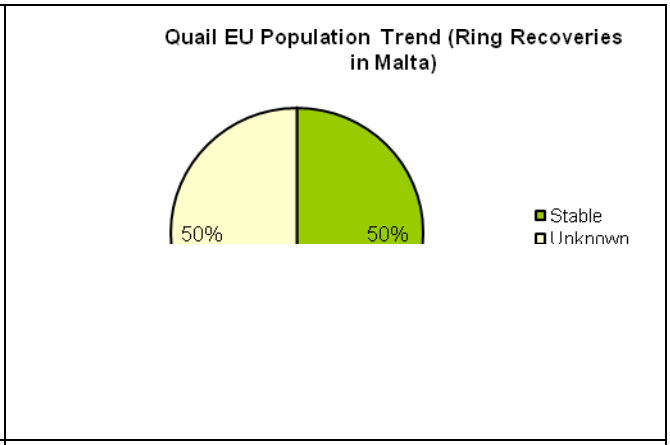

Fig. 2: Quail EU population trend (ring recoveries in Malta)

Data sources: BirdLife International (2004); Raine (2007)

1B. Conservation Status of the Turtle Dove (*Streptopelia turtur*)

SPEC 3 (1994: 3) Status: Declining; Criteria: Moderate continuing decline. European IUCN Red List Category: —; Criteria: — (BirdLife International, 2004)

Conservation status
 Least Concern (IUCN 3.1)[1]

Scientific classification	
Kingdom:	Animalia
Phylum:	Chordata
Class:	Aves
Order:	Columbiformes
Family:	Columbidae
Genus:	*Streptopelia*
Species:	***S. turtur***

Binomial name
Streptopelia turtur (Linnaeus, 1758)

Synonyms
Turtur communis

Source: http://en.wikipedia.org/wiki/European_Turtle_Dove and http://www.birdlife.org/datazone/speciesfactsheet.php?id=2498.

1.14 This species has an **extremely large range**, and hence does not approach the thresholds for Vulnerable under the range size criterion (Extent of Occurrence <20,000 km^2 combined with a declining or fluctuating range size, habitat extent/quality, or population size and a small number of locations or severe fragmentation). Despite the fact that the population trend appears to be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable under the population trend criterion (>30% decline over ten years or three generations). The **population size is extremely large**, and hence does not approach the thresholds for Vulnerable under the population size criterion (<10,000 mature individuals with a continuing decline estimated to be >10% in ten years or three generations, or

with a specified population structure). For these reasons the species is evaluated as Least Concern (BirdLife International, 2014b)[4].

1.15 *Streptopelia turtur* is a widespread summer visitor to much of Europe, which accounts for less than half of its global breeding range. Its European breeding population is very large (>3,500,000 pairs), but underwent a moderate decline between 1970–1990. Although the species was stable or increased in various countries, especially in central Europe, during 1990–2000, most populations—including sizeable ones in Spain, Russia and Turkey—declined, and the species underwent a moderate decline (>10%) overall. Consequently, it is evaluated as **Declining** (**Moderate continuing decline**) at the Pan-European level (BirdLife International, 2004). According to the EU Management plan for Turtle Dove 2007-2009 (Lutz 2007), this species has an Unfavourable Conservation Status within the EU, based on the fact that Turtle Dove populations are showing decreasing trends in a number of Member States.

1.16 The Turtle Dove is listed as a Class 3 European Species of Conservation Concern (SPEC 3) and red-listed in the United Kingdom in view of its breeding decline. It is specifically due to this decline in the UK that it has been included as a priority species in the UK biodiversity action plan. In May 2012, 'Operation Turtle Dove' was launched jointly by the Royal Society for the Protection of Birds and a number of partners, including Natural England. The aim of the project is threefold:

1. building on research into the Turtle Dove breeding grounds in England
2. establishing feeding habitat over core breeding range through advisory and farmer initiatives
3. research into factors operating during migration and at wintering areas

1.17 The project's website (http://operationturtledove.org/) asserts that the main causal factor leading to the decline of this species in England is pesticide use (and subsequent lack of suitable food) exacerbated by habitat loss. This assertion is echoed by several contributors to the subject and online articles[5]. Browne & Aebischer (2004) cited in Loveridge *et al* (2006) found that "the observed decline in UK breeding turtle doves could be entirely explained by

[4] http://www.birdlife.org/datazone/speciesfactsheet.php?id=2498
[5] E.g.: http://ecowatch.com/2013/12/13/pesticides-to-blame-for-declining-turtle-dove-population/

changed UK farming practices with no direct evidence for a damaging impact of hunting". The RSPB also maintains that the reduction in nesting attempts "...has been associated with a reduction in available weed seeds on farmland and a dietary switch from weed seeds to cereals over the same time period" (Source: http://www.rspb.org.uk/ourwork/projects/details/256862-turtle-dove-monitoring). Conversely, in its species factsheet, BirdLife International (2014b) attributes this decline to ongoing habitat destruction as well as unsustainable levels of exploitation.

1.18 A crucial component of 'Operation Turtle Dove' is the installation of satellite tagging to determine the migratory routes and wintering grounds of this species since, as specified in the project's website, "[w]e have little knowledge of Turtle Dove migration routes, and virtually no data on population connectivity and wintering ecology". At this juncture it should be noted that, according to Raine (2007), Malta has no records of ring recoveries pertaining to Turtle Doves that originated from the UK. Turtle Dove is a quarry species in nine EU Member States, in view of its inclusion in Annex II, Part B of Directive 2009/147. It should be noted that according to the Turtle Dove Management Plan referred to above, the population in the EU 25 is around 1.6 to 2.6 million breeding pairs and this species is considered to be stable in Central Europe, including in nearby Italy.

1.19 The European Commission's *Guide to Sustainable Hunting under the Birds Directive* lists the Turtle Dove as a huntable species with Unfavourable Conservation Status (SPEC 3: Declining, Moderate Decline) (EC, 2008:90). According to the European Bird Census Council (EBCC, 2013a)[6], both the long-term trend (1980–2011) and the short-term trend (1990–2011) for the Pan-European population of the Turtle Dove is classified as Moderate Decline (Table 3). The overall change at the Pan-European level between 2010 and 2011 was -0.01% in the long-term slope and -0.05% in the short-term slope (Table 4).

Table 3 Short-term and long-term trend classification of the Turtle Dove (Pan-European)

	Short-term trend (1990–2011)	Long-term trend (1980–2011)
Streptopelia turtur	Moderate decline	Moderate decline

Source: EBCC (2013a)

[6] http://www.ebcc.info/wpimages/video/Leaflet2013.pdf

Table 4 **Turtle Dove long-term and short term percentage trend change (2010–2011)**

Year	Species	Trend 1980 (%)	Long-term Slope (SE)	% change	Trend 1990 (%)	Short-term Slope (SE)	% change	Habitat
2010	*Streptopelia turtur*	-73	0.9611	-3.89%	-29	0.9884	-1.16%	farm
2011	*Streptopelia turtur*	-74	0.961	-3.9%	-30	0.9879	-1.21%	farm
			Overall change (2010–2011)	**-0.01%**			**-0.05%**	

Data sources: EBCC (2012a, 2012b, 2013a, 2013b)

1.20 Voříšek & Škorpilová (2010) maintain that the population index of Turtle Dove within the territory of the European Union (EU 27) has fallen "from 100% in 1980 to 31% (32% smoothed index) in 2008". The authors also point out that "the smoothed index shows rapid decline of the breeding population in 1980s and less steep decline since early 1990s", concluding that "the breeding population of Turtle Dove in the EU has significantly declined to the level of almost one third of its numbers in 1980", that "the population appears to be depleted with no signs of recovery" and that the "data from recent years suggest further decline of the population" (Voříšek & Škorpilová, 2010).

1.21 BirdLife International (2004) data for the Turtle Dove populations within the current territory of the European Union (EU 28, including Croatia) indicates that the change in the minimum number of pairs is -25.08% and the change in the maximum number of pairs is -17.82%. Conversely, the change in the geomean population is -20.50% (Table 5). **According to BirdLife International (2004), this equates to a Moderate Decline for the minimum, maximum and geomean number of breeding pairs (a change not more than 10% is considered to be Stable)**. Table 5 provides population counts and trends for each Member State within the territory of the European Union.

Table 5 **Turtle Dove EU Breeding Population** (Bold = Ring Recoveries)

Country	EU Ring Recoveries in Malta (n=37)	Breeding Pairs (Min - Max)		Trend	Mag. % (Max - Min)		Max % Change (Min Pairs)	Max % Change (Max Pairs)	Max % Change (Average Pairs)
Austria	**3%**	**8,000**	**15,000**	**Stable**	**0**	**19**	**-**	**-**	**-**
Belgium		5,800	9,600	Decline	50	79	-4,582	-7,584	-6,083
Bulgaria		20,000	100,000	Stable	0	19	-	-	-
Croatia	**3%**	**50,000**	**100,000**	**Increase**	**0**	**19**	**9,500**	**19,000**	**14,250**
Cyprus		5,000	15,000	Decline	0	19	-950	-2,850	-1,900
Czech Rep.	**25%**	**60,000**	**120,000**	**Stable**	**0**	**19**	**-**	**-**	**-**
Denmark		25	75	Decline	50	50	-13	-38	-25
Estonia		4,000	8,000	Decline	20	29	-1,160	-2,320	-1,740
Finland		5	30	Decline	80	80	-4	-24	-14
France	**3%**	**150,000**	**450,000**	**Increase**	**10**	**10**	**15,000**	**45,000**	**30,000**
Germany	**6%**	**55,000**	**81,000**	**Decline**	**20**	**29**	**-15,950**	**-23,490**	**-19,720**
Greece		10,000	30,000	Decline	0	19	-1,900	-5,700	-3,800
Hungary	**6%**	**165,000**	**215,000**	**Stable**	**0**	**19**	**-**	**-**	**-**
Italy	**51%**	**200,000**	**400,000**	**Stable**	**0**	**19**	**-**	**-**	**-**
Latvia		500	2,000	Decline	50	79	-395	-1,580	-988
Lithuania		2,000	5,000	Decline	30	49	-980	-2,450	-1,715
Luxembourg		1,800	2,000	Stable	0	19	-	-	-
Malta		2	5	Decline	0	19	0	-1	-1
Netherlands		10,000	12,000	Decline	53	53	-5,300	-6,360	-5,830
Poland	**3%**	**40,000**	**70,000**	**Decline**	**0**	**19**	**-7,600**	**-13,300**	**-10,450**
Portugal		10,000	100,000	?	-	-	-	-	-
Romania		15,000	25,000	Increase	0	19	2,850	4,750	3,800
Slovakia		15,000	30,000	Stable	0	19	-	-	-
Slovenia		2,000	3,000	Stable	0	19	-	-	-
Spain		790,000	1,000,000	Decline	30	49	-387,100	-490,000	-438,550
Sweden		0	1	?	-	-	-	-	-
UK		44,000	44,000	Decline	42	42	-18,480	-18,480	-18,480
Total	100%	1,663,132	2,836,711				-417,064	-505,426	-461,245
				Percentage change			**-25.08%**	**-17.82%**	**-20.50%**
				Trend (EU Population)			**Moderate Decline**	**Moderate Decline**	**Moderate Decline**

Breeding records in Malta

1.22 Breeding records for this species in Malta are rare and very limited. Wright (1864) wrote that Turtle Doves have been observed from time to time to

breed in Gozo. Roberts (1954) only cited Wright. De Lucca (1969) does not mention Turtle Dove nesting on the Islands. Bannerman and Vella-Gaffiero (1976) cited Schembri (1843) who assured that few pairs bred in Gozo where trees were more numerous than in Malta. Sultana and Gauci (1982) reported that a few birds were present during the summer and attempted to breed, but only one pair nested in 1956, recorded by Attard (1964). It should also be noted that in 2007 the former Ministry for Rural Affairs and the Environment (MRAE) commissioned a study on farmland birds in the Maltese Islands, which study was conducted by BirdLife Malta. This produced a breeding bird atlas, published in 2009 by Raine *et al*. (2009). Turtle Dove was included in the assessment but no breeding of this species was confirmed. Notwithstanding this, Raine *et al*. (2009) included Turtle Dove with the breeding birds; this was rectified in by Sultana *et al*. (2011), also published by BirdLife Malta, where the species is classed as an irregular breeding bird. The authors point out that due its popularity with hunters "…the few birds that linger in spring and summer and attempt to breed are given no chance to succeed" (Sultana *et al.*, 2011:309). However, the authors also note that during the two-year spring hunting ban between 2008 and 2009, "…pairs or displaying males of Turtle Doves were recorded on a number of dates from May to July at several sites, including Ta' Qali, Mizieb, Buskett and Foresta 2000…[but] no breeding was confirmed" (Sultana *et al*., 2011:310).

1.23 In this respect, Turtle Dove breeding records are very limited (Sultana *et al*., 2011). It is indicated that "some pairs" nested in Gozo in the 19th Century, with no specific details. Records of nesting for the 20th Century are also scant: Sultana *et al*. (2011) reports that some birds tried to breed in 1963, and that "in 1956 another pair … had nested and hatched one young [but]… the nest was robbed of the fledgling"[7]. Sultana *et al*. (2011) also indicates that since then no nesting from truly wild birds was confirmed. In this respect, Raine *et al*. (2009) notes that display flights were also recorded in June "long after the migration period has ended"[8]. It is also relevant to note that Sultana *et al*. (2011) document that in April-May 2010, a pair of former captive Turtle Doves released in the wild (on the island of Comino) in February of the same year nested, with two hatchlings. None returned in 2011 to breed.

1.24 Raine *et al*. (2009) in Malta Breeding Bird Atlas 2008 as well as in the 2009 Rare Bird Breeding Report (Raine 2009) noted that display flights were

[7] Sultana *et al.*, 2011: 310
[8] Raine *et al.*, 2009: 36

recorded but no case of breeding was confirmed. Sultana *et al*. (2011) classed Turtle Dove as an irregular breeding species. Thomaidis (2010) maintains that the mean numbers of turtle doves observed per day were significantly higher during the spring migration periods of 2008 and 2009, compared to the autumn ones. The following table lists the mean number of turtle doves during the peak migration dates.

Year (Spring)	Peak dates	Mean number of birds per day
2008	April 14th April 20th April 29th April 30th May 3rd	98.41 26.25 11.11 13.33 8.48
2009	April 9th April 15th April 23rd April 27th	5.39 7.35 32.97 11.13

1.25 Besides citing Schembri and Wright, Sultana *et al*. cite Attard (1964) reported two confirmed cases of Turtle Dove breeding in Gozo, one in 1956 and the other in 1963. Sultana *et al*. also documented that in 2010 a number of captive turtle doves were released on the island of Comino and at least two pairs bred in the wild. Two other pairs were observed displaying and mating and a juvenile was seen in June. All these birds left Comino and none returned to breed again.

Ring recoveries in Malta

1.26 Table 6 provides data on the ring recoveries of this species in Malta, the respective number of breeding pairs, together with the overall direction of the population trend. Figure 3 illustrates the EU population trend categories of this species per Member State. The respective EU source (reference) population trend categories, on the basis of ring recoveries in Malta, are shown in Figure 4. The source (reference) population is Stable in both the minimum number of pairs (+0.13% change) [Fig. 5] and maximum number of pairs (+1.88% change) [Fig. 6].

Table 6 **Turtle Dove ring recoveries in Malta from other EU Member States and corresponding population trend**

Country	EU Ring Recoveries in Malta (n=37)	Breeding Pairs (Min - Max)		Trend	Mag. % (Max - Min)		Max % Change (Min Pairs)	Max % Change (Max Pairs)
Austria	3%	8,000	15,000	Stable	0	19	-	-
Croatia	3%	50,000	100,000	Increase	0	19	9,500	19,000
Czech Rep	25%	60,000	120,000	Stable	0	19	-	-
France	3%	150,000	450,000	Increase	10	10	15,000	45,000
Germany	6%	55,000	81,000	Decline	20	29	-15,950	-23,490
Hungary	6%	165,000	215,000	Stable	0	19	-	-
Italy	51%	200,000	400,000	Stable	0	19	-	-
Poland	3%	40,000	70,000	Decline	0	19	-7,600	-13,300
Total	100%	**728,000**	1,451,000				950	27,210
						Percentage change	**+0.13%**	**+1.88%**
						Trend (Ring Recoveries)	**Stable**	**Stable**

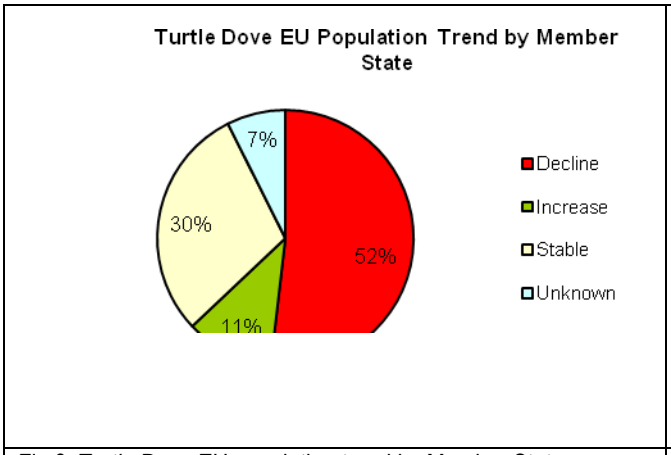

Fig.3: Turtle Dove EU population trend by Member State

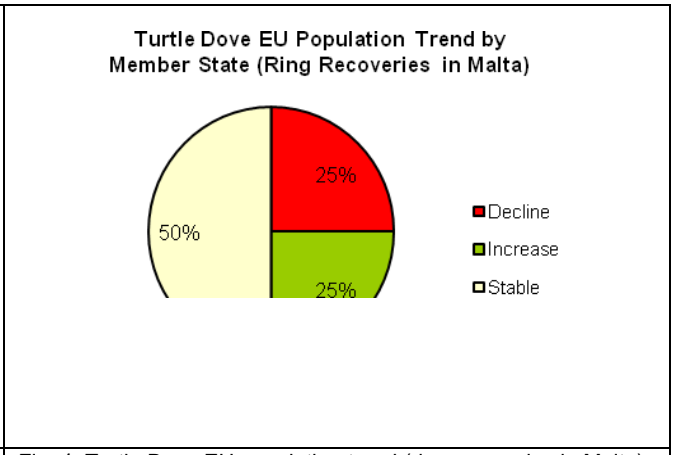

Fig. 4: Turtle Dove EU population trend (ring recoveries in Malta)

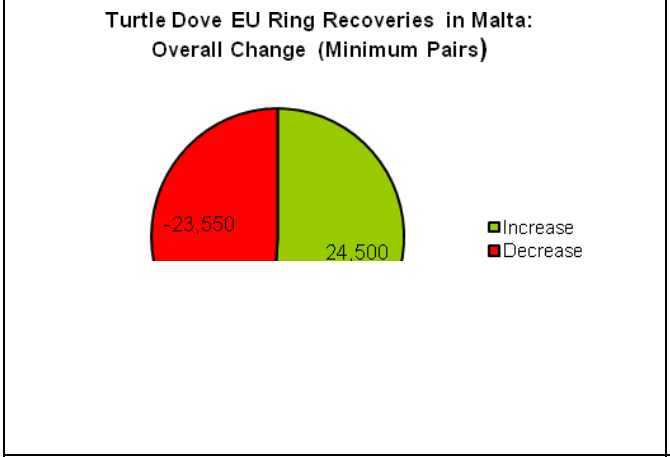

Fig. 5: Turtle Dove EU ring recoveries: overall change (min pairs)

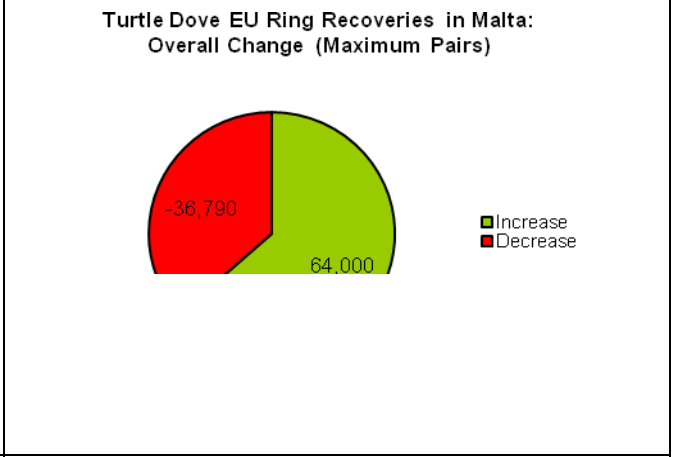

Fig. 6: Turtle Dove EU ring recoveries: overall change (max pairs)

Data sources: BirdLife International (2004); Raine (2007)

1C. Conclusions regarding the conservation status of *Coturnix coturnix* and *Streptopelia turtur*

1.27 Both species are characterised by extremely large populations and geographical range. BirdLife International (2004) classifies the Pan-European populations of the Turtle Dove as having undergone a **Moderate continuing decline** and the Quail as provisionally **Depleted**. According to the most recent dataset compiled by the European Bird Census Council, the Turtle Dove is classified as **Moderate Decline** (EBCC, 2013a) and thus has an Unfavourable Conservation Status at the **Pan-European Level**. However, the Quail is not included in the Pan-European Common Bird Monitoring Scheme.

1.28 **Within the EU territory** (EU 28), the Turtle Dove population trend is also classified as **Moderate Decline** (Min Pairs: -25.08%; Max Pairs: -17.82%; Geomean: -20.50%) but the Quail population trend is **Stable**[9] (Min Pairs: -1.81%; Max Pairs: -0.56%; Geomean: -0.98%). The situation with respect to the **reference populations** of the two species, which form a subset of the EU population based on **ring recoveries in Malta** (Raine, 2007), is different. The minimum and maximum number of pairs of Turtle Dove and Quail reference populations are classified as **Stable,** as follows: Turtle Dove reference population (Min Pairs: +0.13%; Max Pairs: +1.88%); Quail reference population (Min Pairs: 0%; Max Pairs 0%).

[9] According to BirdLife International (2004), a change of not more than 10% in 10 years is considered as Stable.

References

Bannerman, D.A. and J.A. Vella-Gaffiero. (1976). *Birds of the Maltese Archipelago*. Museums Department, Valletta, Malta.

BirdLife International (2004). *Birds in Europe: population estimates, trends and conservation status* (BirdLife Conservation Series No. 12). BirdLife International, Cambridge, U.K.

BirdLife International (2014a). Species factsheet: *Coturnix coturnix*. Available at: http://www.birdlife.org/datazone/speciesfactsheet.php?id=194

BirdLife International (2014b). Species factsheet: *Streptopelia turtur*. Available at: http://www.birdlife.org/datazone/speciesfactsheet.php?id=2498

De Lucca, C. (1969). *A revised check-list of the birds of the Maltese Islands*. E.W. Classey Ltd., Hampton, Middlesex, England.

Despott, G. (1916). *Notes on the ornithology of Malta*. Ibis 5: 281-349, 466-501

EBCC (2012a). *Population trends of common European birds 2012*. Pan-European Common Bird Monitoring Scheme (PECBMS). European Bird Census Council. Available at: http://www.ebcc.info/wpimages/video/Leaflet2012.pdf

EBCC (2012b). *Trends of common birds in Europe, 2012 update*. European Bird Census Council. Available at: http://www.ebcc.info/trends2012.html

EBCC (2013a). *Population trends of common European birds 2013*. Pan-European Common Bird Monitoring Scheme (PECBMS). European Bird Census Council. Available at: http://www.ebcc.info/wpimages/video/Leaflet2013.pdf

EBCC (2013b). *Trends of common birds in Europe, 2013 update*. European Bird Census Council. Available at: http://www.ebcc.info/trends2013.html

EC (2008). *Guide to sustainable Hunting under the Birds Directive*. EU Commission-Environment, Brussels.

Ecoserv (2014). *Report on a survey of the influx of migratory common quail and turtle dove over the Maltese Islands*. May 2014.

Gibbs, J. (1951). *The birds of the Maltese Islands*. Ibis 93: 109-127.

Guyomarc'h, J.C. (2003). *Elements for a common quail (*Coturnix c. coturnix*) management plan*. Game and Wildlife Science 20: 1-92.

Loveridge, A. J., Reynolds, J. C. and Milner-Gulland, E. J. (2006). *Does sport hunting benefit conservation?* Available at: http://www.iccs.org.uk/wp-content/papers/Loveridge2006chapter.pdf

Lutz, M. (2007). *European Union Management Plan for Turtle Dove* Streptopelia turtur *2007-2009.* Technical Report 007 - 2007. EU Commission, Brussels. 42 pp.

Perennou, C. (2009). *European Union Management Plan 2009-2011 – Common Quail* Coturnix coturnix. Technical Report 2009-032. EU Commission, Brussels. 69 pp.

Raine, A. (2007). *The international impact of hunting and trapping in the Maltese islands.* BirdLife Malta, Malta.

Raine, A. (2009). *2009 Rare Bird Breeding Report*. BirdLife Malta, Malta.

Raine, A., Sultana, J. and Gillings, S. (2009). *Malta breeding Bird Atlas 2008*. BirdLife Malta, Malta.

Roberts, E.L. (1954). *The birds of Malta*. Progress Press, Malta

Schembri, A. (1843). *Catalogo Ornithologico del Gruppo di Malta*. Anglo Maltese, Malta.

Sultana, J. and C. Gauci. (1982). *A new Guide to the birds of Malta*. Malta Ornithological Society, Malta.

Sultana, J., Borg, J.J., Gauci, C. and Falzon, V. (2011). *The breeding Birds of Malta*. BirdLife Malta, Malta.

Thomaidis, C. (2010). *Study of the migration patterns of turtle dove Streptopelia turtur and quail Coturnix coturnix over the Maltese Islands*. Report prepared for the Ministry of rural Affairs and the Environment and Office of Prime Minister, Malta. 56 pp.

Tucker, G.M. and Heath, M.F. (1994). *Birds in Europe: their conservation status*. BirdLife Conservation Series No. 3. BirdLife International, Cambridge, U.K.

Voříšek & Škorpilová (2010). *European trends of Turtle Dove* (Streptopelia turtur). Pan-European Common Bird Monitoring Scheme (PECBMS). Available at: www.ebcc.info/pecbm.html

Wright, C.A. (1864). *List of birds observed in the Islands of Malta and Gozo*. Ibis 6: 42-73, 137-157.