Species Action Plan for the Marbled Teal */Marmaronetta angustirostris/* in the European Union

Prepared by:

SEO/BirdLife

BirdLife INTERNATIONAL

On behalf of the European Commission

Species action plan for the Marble Teal *Marmaronetta angustirostris* in the European Union

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International Species Working Group
n/a

Reviews: This is the first revision of this action plan. Next revision should be planned for 2018 unless important changes in the situation of the population warrant an earlier revision.

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Geographical scope
The action plan needs implementation in the following range-states of the Marbled Teal: Spain, Italy, Tunisia, Morocco, Algeria (Western Mediterranean population)

Map 1. Distribution range of the Marbled Teal (BirdLife International 2008)

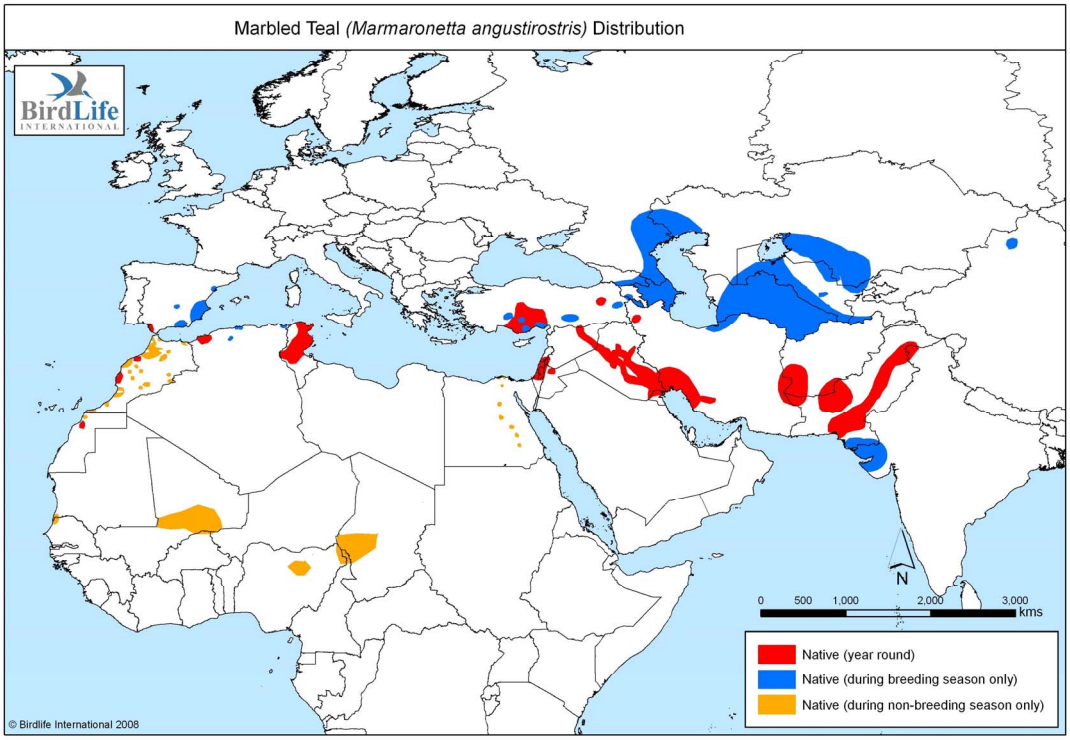

Table 1. Range states for which this Action Plan is relevant in EU
(According to data on distribution by BirdLife International 2008)

Range states	Breeding	Migration	Wintering
Italy	***yes***	***No***	***occasionally***
Spain	***yes***	***Yes***	***yes***

Table of Contents

0. EXECUTIVE SUMMARY

The Marbled Teal *Marmaronetta angustirostris* is distributed in the Mediterranean Region (Spain, Italy, Turkey, Algeria, Egypt, Israel, Lebanon, Morocco, Syria and Tunisia), central and south Western Asia and Western Africa. In Europe Marbled Teal only breeds in Armenia, Azerbaijan, Italy, Russia, Spain and Turkey. Four separate biogeographical populations have been identified. This action plan is focused on the western Mediterranean sub-population, as the only one effectively using EU territory.
In the EU the Marbled Teal breeds locally in Spain and Italy, which accounts for less than a quarter of its global breeding range. Its European Union breeding population is very small and has undergone a large decline because of destruction and degradation of is breeding habitat.

This species appears to have suffered from a rapid population decline, as recorded in its core wintering range. It therefore qualifies as Vulnerable in the IUCN Red List of Threatened species. Apparent recent increases in the western Mediterranean population probably reflect improved observer coverage rather than genuine changes. This population has suffered a widespread loss of habitat and a long-term decline over the past century. Also at European Level the species is classified as Vulnerable, while it is classified as Endangered at EU level.

The species is legally protected in the EU and in Algeria, Morocco and Tunisia.

Conservation programmes have been carried out in Spain and Italy. Survey and research projects have been carried out also in Morocco, Tunisia, and Libya.

The conservation of the species in Europe and the Mediterranean region requires action on several fronts. The most important one is the effective conservation of wetlands of importance for the species, paying particular attention to breeding sites. A large proportion of them already have some form of protection status but are still being degraded by a variety of threats, such as hydrological changes within their catchments or inappropriate management.

Threats and limiting factors

In descending importance order:

- Habitat degradation
- Hunting
- Introduction of alien and invasive species
- Habitat loss
- Lead poisoning
- Genetic pollution
- Disturbance

The **Goal** of this Action Plan is to improve the conservation status of the **Western Mediterranean population of the Marbled Teal to favourable.**

The **Objective** is to down-list the EU population threat status to Near Threatened in 20 years.

Results

1. Improved habitat quality and availability
    - 1.1 National and international policies for protecting the species and its habitats are developed and implemented.
    - 1.2 Improved protection and proper management of critical sites.

2. Reduced direct mortality
    - Result 2.1 Number of Marbled Teal shot significantly reduced
    - Result 2.2 Lead poisoning and other avoidable mortality causes removed

3. Accurate and up-date information available to decision makers
    - Result 3.1 Up-to-date population data always made available
    - Result 3.2 Threats and limiting factors clearly understood.

Priority actions

- Manage habitats to increase Marbled Teal breeding success and reduce mortality
- Increase awareness of the need to protect the Marbled Teal and its habitat in particular among hunters
- Create new breeding and wintering habitat for Marbled Teal
- Ensure maximum benefit is obtained from international conventions in protecting sites for Marbled Teal
- Secure financial support for countries with fewer funds to aid the implementation of their hunting laws
- Conduct regular surveys at known breeding sites
- Conduct regular, simultaneous surveys of all important sites at a national level

1. BIOLOGICAL ASSESSMENT

Taxonomy and biogeographic populations

Class: Aves
Order: Anseriformes
Family: Anatidae
Genus: *Marmaronetta*
Species *Marmarionetta angustirostris* (Ménétriés, 1832)

The Marbled Teal is a monotypic species thought to be an evolutionary link between the tribe *Anatini* (dabbling ducks) and *Aythyni* (diving ducks) within the family Anatidae.

The focus of this Action Plan is the Western Mediterranean biogeographical population which is one of the four populations recognized (Scott and Rose 1996).

Distribution throughout the annual cycle

The Marbled Teal has a fragmented distribution. The Western Mediterranean population breeds in Algeria, Italy, Morocco, Spain and Tunisia and winters in north and sub-Saharan West Africa. The other three populations are less clearly separated; the Eastern Mediterranean population occurs in Israel, Jordan, Syria and Turkey, wintering south to Egypt. The South western and South Asia populations occur in Afghanistan, Armenia, Azerbaijan, China, India, Iraq, Iran, Kazakhstan, Pakistan, Russia, Uzbekistan, Tajikistan, Turkmenistan and winter in Iran, Pakistan and north-west India (Scott and Rose 1996).
In the EU the species breeds in Spain and Italy, the EU birds belong to the West Mediterranean population. Birds from that subpopulation winter in the same north African countries as well as south of the Sahara in Senegal, Chad, Nigeria, Mali and Cameroon (Green 1993, Scott and Rose 1996).

The main breeding areas in Spain are in the marshes of the Guadalquivir, Alicante (El Hondo, Santa Pola and Clot of Galvany), Almeria (Spahr of Norias) and Valencia (Marjal del Moro, of Majar Xiresa Xieraco and Albufera). The species occasionally breed in other wetlands of Andalusia, Valencia, Castilla-La Mancha, Mallorca, Murcia and Fuerteventura. In Italy, the species has recently started to breed in Sicily where it is confined to 2 sites with a total area of 5 km^2. In North Africa Tunisia is hosting an important proportion of the breeding population. With changes (especially dam-building and urbanisation) in the last twenty years at the traditional northern sites, more birds are now nesting in the southern part of the country, where between 1,500 and 2,000 Marbled Teals are observed during the breeding season (Azafzaf and Smart *in litt. 2008*).

The currently very restricted range of this species in Europe has been found to correspond to areas with annual temperature sum between ca. 4,200 and 4,600 degree days above 5 ^oC, and the coldest month mean temperature ca. 10 ^oC with a marked seasonal moisture deficiency (Huntley *et al.* 2007). At present, such conditions and actual recorded

distribution locations are only found in a restricted area in Spain and Sicily, in a range smaller than 3,000 km^2.

The species is adapted to semi-nomadic movements reacting to high fluctuations in the space-time availability of natural wetland habitat in the Mediterranean. In Spain, after breeding, it frequently changes the wetlands it uses. The return from North Africa to Europe can occur at any time during the non-breeding season.
The main wintering areas of the Western Mediterranean populations are located in northern Africa, although in some years a major part of those breeding in the Iberian Peninsula remain to spend the winter in Spain, especially in wetlands of Andalusia, where several hundred individuals were counted (Diaz *et al.* 1996, Green 1996a).
Until recently Morocco hosted most of the wintering population of Marbled Teal (2-3,000 birds), followed by Algeria (350-400 birds) and Tunisia (200 birds) (Green 1996b). However, Tunisia has become more important in recent years, with large autumn pre-migration gatherings of up to 4,000 birds in September/October in the North (Oued Rmal and Oued El Khatf). The species is almost absent in North Tunisia in winter, but wintering flocks of up to 3,000 birds are observed from November to February in small (often spring-fed) wetlands (Smart and Azafzaf *in litt.* 2008).
Smaller number of birds winter south of the Sahara (Scott and Rose 1996).
Moulting flocks have been reported in Tunisia in the first half of July (Green 1993).

Habitat requirements

Dependent on shallow habitats rich in emergent and submerged vegetation (Green 1993, 1998a, 2000, Navarro and Robledano 1995), apparently preferring brackish, seasonal or semi-permanent wetlands (Green 2000). Fresh to saline wetlands are used, with a preference for brackish sites. More permanent wetlands seem to be favoured for breeding while newly flooded areas seem to be preferred outside the breeding season.
Nests can be found in variety of habitats both above water (e.g. in *Typha* stands) and on dry land (e.g. in clumps of *Arthrocnemum* or *Suaeda*).
It feeds mainly in the top 20 cm of surface layer (Green 1998b). Feeding takes place mainly nocturnally in autumn–winter, when flocks often fly from daytime roosts (with dense emergent vegetation) to more exposed, shallow feeding sites at dusk. The species is more day-active at other times of the year.
The diet includes invertebrates and plants. Except for ducklings, the species is less dependent on invertebrates and more on seeds than many north temperate ducks (Green and Sánchez 2003). Invertebrates found in the diet include: Chironomidae, Ceratopogonidae, Ephydridae, Coleoptera, Aracnida, Corixidae, Odonata, Plecoptera, Trichoptera, Ostracoda, Amphipoda, Isopoda and Aphidae. Seed recorded in the diet include: *Potamogeton pectinatus, Scirpus litoralis, Suaeda, Ruppia, Ranunculus,* Chenopodiaceae, Zannichelliaceae, Umbelliferae, Polygonaceae, Compositae, Graminaeae, Leguminosae and Cyperaceae (Green 2000, Green and Selva 2000, Green and Sánchez 2003).

Survival and productivity

The Marbled Teal appears to be adapted to maximize reproductive output when suitable breeding conditions are available in ephemeral wetlands. This adaptation is causing major

population fluctuations related to variation in rainfall (Green *et al.* 1999, Green 2000). Monogamous, pairing mainly March–April. Nests recorded between 13 April – 26 June. Broods recorded between 15 April – 12 September (average 20 June). It nests later than sympatric ducks, and breeds later in more northerly parts of range. Median hatching date is 20 June in Andalusia. Average clutch size 12-13 (range 9-20). Incubation, by females, is 25–27 days. Fledgling in 50–54 days. Average brood size at fledging 8.5 (Green 1998b). Brood amalgamation has often been observed, up to 32 ducklings having been recorded with one female (Green 1993).
There is no information about the survival rates of the different age classes.

Population size and trend

The world wintering population is estimated at 14,000–21,000 individuals and is considered declining (Wetlands International 2006). The West Mediterranean population is estimated at 3,000-5,000 individuals and is considered Fluctuating (Wetlands International 2008). Reported increases in the Western Mediterranean bio-geographical population during the 1990ies probably reflected improved observer coverage rather than genuine changes. This sub-population has suffered a long-term decline and widespread loss of habitat.
The EU population is estimated as 75-100 breeding pairs and declining due to a large decline in Spain, where the population declined from 30-200 pairs for the period 1994-2001 (BirdLife International 2004a) to the current 73-97 breeding pairs. In 2000 the species started breeding with one pair in West Sicily (Italy), increased to 3 pairs in the following years occupying a second area in SE Sicily since 2005 (Andreotti 2007).

Table 2 Population size and trend by country

Country	Breeding No. (pairs)	Quality	Year(s) of the estimate	Breeding population trend in the last 10 years	Quality	Maximum size of migrating or non breeding populations in the last 10 years	Quality	Year(s) of the estimate
Italy	2-3	Good	2007	Stable [1]	Good	0-1	Medium	2007
Spain	73-97	Good	2007	Decreasing	Good	250	Good	2006
Totals	**75-100**	**Good**	**2007**	**Decreasing**	**Good**			

1 - In Italy the species breeds since 2000; the trend refers therefore to the period 2000-2007.

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2. THREATS

General overview of threats

The main threat to this species is habitat degradation.
The Marbled Teal prefers superficial and seasonal wetlands, which are often subject to irregular hydrological regimes and inadequate water management.

Hunting is still considered an important threat. The species has a high risk to be mistaken for other duck species such as Common Teal *Anas crecca* or the juveniles of Red-crested Pochard *Netta rufina* which are both quarry species; illegal shooting remains a problem throughout the distribution area.

In Italy the limited availability of suitable breeding habitat is a very important limiting factor. In Spain the introduction of invasive species is an important threat affecting food availability and reproduction. In North Africa habitat loss is one of the most important threats.

In the list of critical threats the importance is evaluated especially for Spain where the most important breeding population in Europe is, but in other countries in Africa their importance may be different.

Under the current predictive models for climate change, the availability of suitable climatic conditions for the species in Europe are expected to increase and that would favour a range expansion. The limiting factor will continue to be the availability of suitable wetlands. Therefore, the most important management measures should be to protect and restore favourable conditions in those wetlands that are currently available and to restore additional sites in NE Spain, Portugal and Central Italy.

List of critical and important threats

Critical Threats

1- Habitat degradation
Many important wetlands have been severely degraded, reducing their value for Marbled Teal without being totally destroyed. Habitat degradation also causes episodes of mass mortality.

Due to the Marbled Teal´s characteristic late breeding time, the shortening of the hydrological cycle in the Guadalquivir Marshes makes it practically impossible for the species to breed successfully in Doñana National Park, (Saura *et al*. 2001). Here, the marshes dry out quickly in June and July (Green 2000) and as a result, the breeding pairs are concentrated in fishponds in the areas of 'Veta la Palma' and 'Brazo del Este'. In very dry years, the species virtually disappears from Doñana, where even the fishponds of Veta la Palma reach salinities which are very high for nesting Anatidae (Green 2000).

Around the wetlands of Andalusia, intensive agriculture is allowed, even in protected areas, often with no buffer to the wetlands. This results in drastic decline of water quality causing episodes of sudden waterfowl mortality probably caused by eutrophication and resulting toxicity (in particular high water concentration of agrochemicals and organic matter). Since 1997, dead Marbled Teals have been collected from various parts of Doñana, Brazo del Este and a number of closed basin lakes in Seville and Cadiz.

The Alicante population is also affected by the poor quality of water flowing into the reservoirs of El Hondo Natural Park (Grupo de Investigación del Agua 2002). This caused mass mortalities of hundreds of birds in 1997 and 1999 due to organophosphate poisoning, salmonella, botulism and other diseases, with 100 dead adult Marbled Teals collected in 1997 (Anon. 1998), and 103 adults and 33 chicks in 1999 (Green 2000) and again in 2006, 2007 and 2008. The sudden changes in water levels in reservoirs because of their use for irrigation during the breeding season limit reproductive success. The hyper-eutrophication is worsened by the hunting practice of throwing tonnes of food as lure in the water to attract ducks.

In Italy there is a shortage of suitable habitat for the Marbled Teal during the reproductive and post-reproductive periods. In areas with Mediterranean climate, marshes with wide expanses of water and vegetation are now much more localized because of the land reclamation which had taken place in most of the low-lying coastal areas. The lack of appropriate breeding habitat and its fragmentation is one of the main factors limiting the spread of the species in Italy, hampering the establishment of new pairs and the formation of a stable nucleus of reproduction.

Formerly the species was best known as a breeding species in natural freshwater wetlands in the North of Tunisia such as like Ichkeul and Kelbia, or in the South in wet years at sites like Sidi Mansour. With changes (especially dam-building and urbanisation) in the last twenty years at these classic sites, more birds are now nesting in smaller freshwater wetlands like the new reservoirs of Lebna, Oued El Khatf or Merguellil.

High Threats

1- Hunting

The Marbled Teal is considered a relatively tame duck that is easy to shoot, particularly in the breeding season (Phillips 1923, Green 1993). Furthermore, it is a relatively inconspicuous and unknown bird, and very few hunters are able to identify it. Although in winter the Marbled Teal is typically found on wetlands that support many more ducks of other species, in summer it is one of only a handful of wildfowl species occurring within its range. As a result, it is particularly vulnerable to shooting. Intense hunting pressure in the north of Africa and Tunisia was responsible for the decline of the species. In all countries where the West Mediterranean population breeds the species is protected but poor identification skills amongst hunters is leading to some losses which cannot be estimated at present. Illegal hunting is thought to be a continuing problem in every major range state, although

there is very little quantitative information. In Morocco and Tunisia, although the Marbled Teal is protected from hunting, intense hunting pressure and illegal hunting in winter affect the species. Hunting is still a problem in Spain, particularly in the El Hondo/Salinas de Santa Pola and in unprotected parts of the Marismas del Guadalquivir. Every year a number of birds are known to be killed in Spain.
The intensity of hunting in the Ebro Delta, where Marble Teals concentrate in autumn and where regularly some are shot, is hindering the expansion of the species in the nearby Albufera of Valencia.

2- Introduction of alien and invasive species
In the most important area for the species in Spain, the Guadalquivir marshes, the breeding success of the Marbled Teal has probably been adversely affected by the introduction of the Louisiana crayfish *Procambarus clarkii* which has had an immense impact on wetland communities (Gutierrez, et al. 1997, Raya 1999) and may have greatly reduced the food supply for Marbled Teal.
Fish introductions have occurred in various parts of the range. In Spain, the population density of the introduced Carps *Cyprinus carpio* and its tendency to reduce water clarity and uproot the aquatic vegetation is affecting a variety of species. High fish densities generally reduce the breeding success of dabbling ducks because of competition for food. Also invasive plant species like *Spartina densiflora* contribute to habitat degradation as it is an extremely aggressive species that is capable of out-competing native plants in their local ecosystems.

Medium Threats

1- Habitat loss
During the XX century, very large areas of wetlands of great importance for breeding and wintering Marbled Teal have been completely destroyed, or degraded to such an extent that they have lost their value for the species. This habitat loss has occurred across the species' range and has been probably the single major cause of decline in its world population and in its distribution (Green 1993).
The loss of habitat in Spain continues, for example, with the destruction of the Salinas of Guardias Viejas (Almeria) and the Laguna de los Tollos (Cadiz and Seville) in recent years, and in addition there are key sites at serious risk of losing their value for the species in coming years, for example Cañada de las Norias, Marjal del Pego-Oliva and Veta La Palma (which will become more saline when new dams are built in the Guadalquivir catchment and the river is dredged).
In addition, the Spanish population is affected outside of the breeding season by the rapid destruction of wetlands taking place in North Africa (Green *et al*. 2002).

Other important breeding sites that have been destroyed include the majority of Lake Fetzara in Algeria and Lac Iriki in Morocco.

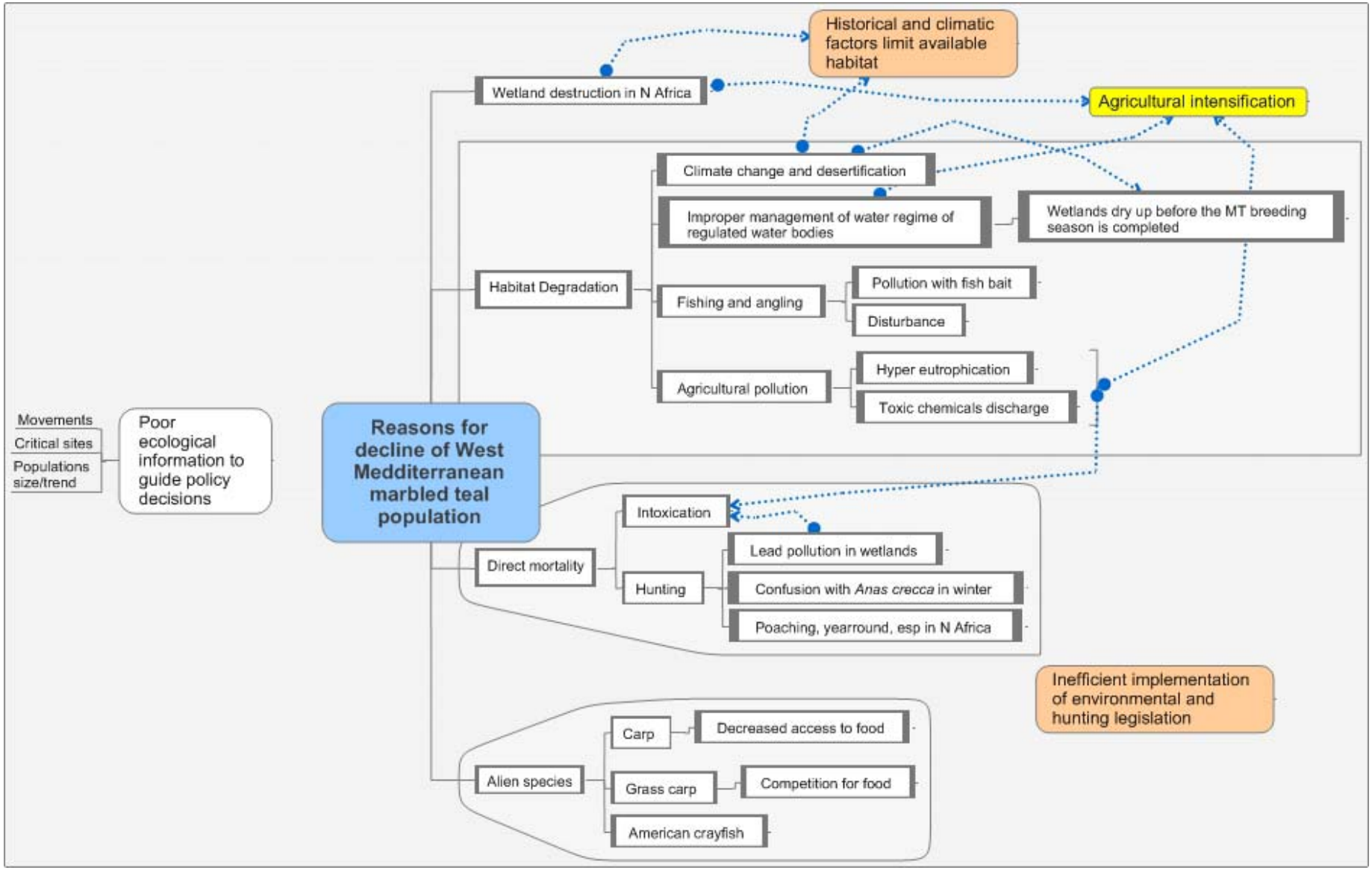
2- Lead poisoning
Marble Teals suffer from lead poisoning as a result of the high density of lead shot in the sediments of wetlands where hunting takes place (e.g. Levante wetlands in Spain) or has stopped only recently (Matthew *et al.* 2001, Svanberg *et al.* 2006). The exact number of affected birds is unknown.

Low Threats

1. Genetic pollution
The genetic difference between the biogeographical populations has not been studied. However, due to the small size of the population and in order to reduce any risk of genetic pollution it is important to track the movement of captive birds and avoid using birds of unclear origin for reintroduction/restocking programmes in accordance to the IUCN Guidelines for re-introductions (IUCN 1998). It is also important to improve the understanding of the genetic variability of the species.

2- Disturbance
Disturbance caused by human presence and tourism may have a negative impact on survival or breeding success at a number of sites. It is considered a major threat in Tunisia, but was not evaluated as such in the EU countries.

Problem tree



3. POLICIES AND LEGISLATION RELEVANT FOR MANAGEMENT

International conservation and legal status of the species

EU Birds Directive - Council Directive on the conservation of wild birds (79/409/EEC)

Category: Annex I

Aim: to protect wild birds and their habitats, e.g. through the designation of Special Protection Areas (SPA). The directive states that species listed in Annex I '*shall be subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution*' and that '*Member States shall classify in particular the most suitable territories in number and size as special protection areas for the conservation of these species, taking into account their protection requirements in the geographical sea and land area where this Directive applies'*.

Bern Convention - Convention on the Conservation of European Wildlife and Natural Habitats

Category: Appendix II

Aim: to maintain populations of wild flora and fauna with particular emphasis on endangered and vulnerable species, including migratory species. Each Contracting Party shall take appropriate and necessary legislative and administrative measures to ensure the special protection of the wild fauna species specified in Appendix II.

Bonn Convention - Convention on the Conservation of Migratory Species of Wild Animals

Category: Appendix II

Aim: to conserve terrestrial, marine and avian migratory species throughout their range. Appendix II refers to migratory species that have an unfavourable conservation status or would benefit significantly from international co-operation organised by tailored agreements. The Convention encourages the Range States to conclude global or regional Agreements for the conservation and management of individual species or, more often, of a group of species listed in Appendix II.

AEWA - African Eurasian Waterbirds Agreement

Category: Column A 1a 1b 1c

Aim: to take co-ordinated measures to maintain migratory waterbird species in a favourable conservation status, or to restore them to such a status. AEWA stimulates the development of international, as well as national, Single Species Action Plans.

Ramsar Convention - Convention on Wetlands of International Importance especially as Waterfowl Habitat

Aim: to stop the increasing destruction of wetland habitats by designating wetlands for inclusion on a list of "Wetlands of International

Importance". Promote the conservation and wise use of these wetlands and to compensate for loss of wetlands.

CBD - Convention on Biological Diversity

Aim: to maintain a sustainable diversity and spread of flora and fauna across the world. Each contracting party shall develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity.

Global status[1]	European status[2]	SPEC category[2]	EU Status [3]	EU Bird Directive Annex[4]	Bern Convention Annex[5]	Bonn Convention Annex[6]	AEWA[7]
VU	VU	SPEC 1	EN	Annex I	Annex II	Annex II	Column A 1a 1b 1c

[1] IUCN 2008. 2008 IUCN Red List of Threatened Species. .*Categories: EX = Extinct; EW = Extinct in the Wild; CR = Critically endangered, EN = Endangered; VU = Vulnerable; LR = Lower Risk, CD = conservation dependent, NT = near threatened, LC = least concern; DD = data deficient, NE = Not Evaluated.*

[2] *BirdLife International (2004a) Birds in Europe: population estimates, trends and conservation status. Second edition. Wageningen, The Netherlands: BirdLife International. (BirdLife Conservation Series No. 12). Categories: EX = Extinct; EW = Extinct in the Wild; CR = Critically endangered, EN = Endangered; VU = Vulnerable; LR = Lower Risk; CD = conservation dependent; NT = near threatened; LC = least concern; DD = data deficient; NE = Not Evaluated.*

[3] *BirdLife International (2004b) Birds in the European Union: a status assessment. Wageningen, The Netherlands: BirdLife International. Same categories as above*

[4] *The species shall be subjected to special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution.*

[5] *Give special attention to the protection of areas that are of importance (Article 4) and ensure the special protection of the species (Article 6).*

[6] *Animals for which agreements need to be made for the conservation and management of these species.*

[7] *African-Eurasian Migratory Waterbird Agreement. Listed in Column A of the action plan to the African-Eurasian Migratory Waterbird Agreement, Parties should: a) prohibit the taking of birds and eggs of those populations occurring in their territory; b) prohibit deliberate disturbance in so far as such disturbance would be significant for the conservation of the population concerned; c) prohibit the possession or utilization of, and trade in, birds or eggs, or any readily recognizable parts or derivatives of such birds and their eggs, d) cooperate with a view to developing and implementing international single species action plans; e) prepare and implement national single species action plans; and f) phase out the use of lead shot for hunting in wetlands.*

Recent conservation measures

The species is protected in all EU countries, Algeria and Tunisia. In Morocco the species is not among the quarry species. In Italy a Species Action Plan has been developed; as a result habitat restoration actions have taken place. In Tunisia a draft

Action plan is prepared but needs implementation. In Spain there is no specific plan but a working group is established. Actions addressing specific issues (i.e. invasive species, lead intoxication, water level management) have been carried out at sites important for the Marbled Teal in Andalusia.

The species is regularly monitored in Both Italy and Spain; in Tunisia and Libya the species is monitored in the frame of the IWC.

While the IBA network in the EU covers the entire population, the percentage of the population included in nationally protected areas is insufficient.

National policies and legislation

The species is among the "endangered" on the Spanish official list of threatened species. AEWA was signed by Spain in 1998 and ratified in 1999. A regional evaluation in Spain in 2002 (following the IUCN guidelines) considered the species to be Critically Endangered.

Italy ratified AEWA on 6th February 2006 (Law no. 66/06) and formally joined it on 1st September 2006 and the species is fully protected since 1992 (Law no. 157/92).

No separate National Wetland Conservation Strategies have been developed in both countries.

In Spain seven protected areas have management plans that all address the species requirements and are partially implemented and some of the threats remain unaddressed.

Prevention of damage to sites has often failed. Whereas Environmental Impact Assessment procedures necessary for many major projects have been effective in avoiding damage, for smaller projects not subject to EIA it has been more difficult to prevent damage. There are many damaging projects and consents for water exploitation that affect water level and water quality of the wetlands important for the species. Agriculture practices surrounding the wetlands are also harmful and unsustainable.

4. FRAMEWORK FOR ACTION

Goal

Improve the conservation status of the Western Mediterranean population of the Marbled Teal to favourable.

Objectives

1. In the short term (3 years), to maintain the current population, range size and area of occupancy of the species.

The current area of regular occupancy includes as a minimum the following most important wetlands: El Hondo, Guadalquivir marshes, Doñana National Park, Santa Pola salt-pans, the artificial wetland El Codo de la Esparraguera in Spain and the wetlands around Mazara del Vallo (Trapani District) and the marshes near Pachino (Syracuse District) in Sicily, Italy.

2. In the medium term (10 years), to down list the EU population to Vulnerable by bringing the EU breeding population to 250 pairs, therefore similar to the 1980ies population level.

3. In the long term (20 years), to promote the expansion of the breeding to other suitable breeding sites and the EU population to 1,000 mature individuals. This would result in the down listing the species to Near Threatened.

Results

1. Improved habitat quality and availability

1.1 National and international policies for protecting the species and its habitats are developed and implemented.
1.2 Improved protection and proper management of critical sites ensured.

2. Reduced direct mortality

2.1 Number of Marbled Teal shot significantly reduced.
2.2 Lead poison and other avoidable mortality causes removed.

3. Accurate and up-date information available to decision makers

3.1 Up-to-date population data always made available.
3.2 Threats and limiting factors clearly understood.

Actions

Result 1. To Improve habitat quality and availability				
Main actions	Action	Priority	Time scale	Organisations responsible
1.1 - National and international policies for protecting the species and its habitats are developed and implemented.	1.1.1. All countries hosting Marbled Teal populations (breeding or wintering) become contracting parties of AEWA	L	M	National Government
	1.1.2. Promote the development and implementation of national and regional action plans and recovery programmes	M	M	National Government, NGOs
	1.1.3. Promote the integrated management of wetlands and ensure that broad policies such as agriculture, transport, tourism, etc., do not have a negative impact on the Marbled Teal and its habitat	M	S	National Government
	1.1.4. Strictly control international trade of Marbled Teal specimens through CITES	L	M	National Government, CITES, International NGOs
	1.1.5. Ban the species introductions from captivity to avoid genetic and veterinary risk	L	M	National Governments, Veterinarian authorities
	1.1.6. Create new or restore breeding and wintering habitat for Marbled Teal	H	L	National Government, Site management authorities, NGOs
1.2 - Improved protection and proper management of critical sites ensured	1.2.1. Seek protected-area designation for all sites regularly holding Marbled Teal	M	Ongoing	National Government
	1.2.2. Prevent destruction or degradation of all sites regularly holding Marbled Teal	H/M	S	National governments, Site management authorities
	1.2.3. Ensure maximum benefit is obtained from	H	M	EU, RAMSAR, AEWA,

	international conventions in protecting sites for Marbled Teal			NGOs, national governments
	1.2.4. Manage water regime and disturbance in breeding sites to increase Marbled Teal breeding success and reduce mortality	H	S	Site management authorities
	1.2.5. Develop and implement management plans for fish populations at Marbled Teal breeding and feeding sites	M	M	Site management authorities

Result 2 : **To Reduce direct mortality of Marbled Teals**				
***Main actions*:**	*Action*	*Priority*	*Time scale*	*Organisations responsible*
2.1 - Number of Marbled Teal shot significantly reduced	2.1.1. Seek permanent hunting bans at all sites where the species is regularly recorded	M	M	NGOs, National governments
	2.1.2. Increase wardening at key sites and levy penalties to offenders	M	M	Site management authorities, nature protection agencies
	2.1.3. Where hunting bans cannot be achieved, use other methods to minimise the number of Marbled Teal shot (e.g. guarding)	M	L	Site management authorities, nature protection agencies
	2.1.4. Secure financial support for countries with less funds to aid the implementation of their hunting laws	H	L	International cooperation agencies, EU, AEWA, RAMSAR
	2.1.5. Increase awareness of the need to protect the Marbled Teal and its habitat in particular among hunters	H	S	
2.2 - Lead poison and other avoidable mortality causes removed	2.2.1. Phase out the use of lead shot at all key sites throughout the range	L	Ongoing	National Governments, AEWA
	2.2.2. Remove the lead shot from areas of high lead shot concentration	M	L	Site management authorities, national governments

Result 2 : **To Reduce direct mortality of Marbled Teals**				
***Main actions*:**	*Action*	*Priority*	*Time scale*	*Organisations responsible*
	2.2.3. Prevent mortality of Marbled Teal from other causes	L	L	Site management authorities

Result 3. Accurate and up-date information available to decision makers				
Main actions	*Action*	*Priority*	*Time scale*	*Organisations responsible*
3.1 Up-to-date populations data always made available	3.1.1 Conduct regular surveys at known breeding sites	H	Ongoing	Site management authorities, NGOs, National governments
	3.1.2 Extend the Wetlands International Waterfowl Census to cover all sites where the Marbled Teal is recorded	M	S	National IWC coordinators
	3.1.3 Conduct regular, simultaneous surveys of all important sites at a national level	H	Ongoing	National IWC coordinators, NGOs, National conservation agencies
	3.1.4 Undertake studies of the species' ecology and habitat requirements	M	M	Research institutions
	3.1.5 Promote better understanding of the movements of Marbled Teal by marking and monitoring individuals	L	S	Research institutions
3.2 - Threats and limiting factors clearly understood	3.2.1 Conduct surveys at possible breeding sites	L	M	NGOs, National conservation agencies
	3.2.2. Undertake applied studies of hydrology, pollution impacts, socio-economic needs, etc., at key sites	L	L	Research institutions
	3.2.3. Carry out genetic studies to characterize the different populations in the world	L	L	Research institutions
	3.2.4 Develop a genetic stock following the IUCN recommendations	L	M	Research institutions

P**riority**
- E = Essential
- H = High
- M = Medium
- L = Low

Time scales
- I = Immediate: completed within the next year
- S = Short: completed within the next 3 years
- M = Medium: completed within the next 5 years
- L = Long: completed within the next 10 years
- Ongoing: currently being implemented and should continue
- Completed: completed during preparation of the SSAP

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ANNEX 1

Threats importance at population/group of countries level

Threat score	Spain	Italy
1. Habitat degradation	critical	critical
1.1. Loss water quality (organophosphate and other chemical agrochemical and organic material)	high	medium
1.2. Reduction or alteration water levels	high	medium
1.3. Botulism mortality	high	low
2. Small distribution area	critical	critical
3. Habitat loss	medium	high
3.1. Destruction of wetlands	high	high
3.2. Destruction of reedbeds and other riparian vegetation	high	medium
3.3. Infrastructures (for agriculture, industry, tourist)	medium	medium
4. Hunting	high	high
5. Introduction of other species	high	high
5.1. Louisiana crayfish	high	low
5.2. Carps	high	low
6. Lead poisoning	medium	low
7. Disturbance	low	medium

ANNEX 2

Most important sites for the species and their status.

Country	International and national name	Area	Location		Population (breeding pairs)		Year	National Protected areas name	Type of National protected area	SPA Site Name and Code
			Lat	Long	Min	Max				
Spain	Codo de la Esparraguera (Wetland)	223.82 Ha.	XTUM (Huso 30) 207.530,067	YTUM (Huso 30) 4.089.025,399	2	3	2006	Reserva Natural Concertada Codo de la Esparraguera	Reserva Natural Decreto 417/90 Plan Rector de las Resevas Naturales de Las Lagunas de Cádiz	Complejo Endorréico de Esparraguera ES0000026
Spain	Salinas de Cerrillos (Salt marsh)	19,46 km^2	36º42'26'' N	2º40'7'' W	1	1	2006	Paraje Natural Punta Entinas Sabinar	Paraje Natural - Ley 2/1989 de 18 de julio.	Punta Entinas Sabinar - ES0000048
Spain	Brazo del Este	1,336 Ha.						Paraje Natural Brazo del Este	Paraje Natural mediante la Ley 2/1989, de 18 de julio	Brazo del Esta ES0000272
Spain	Veta La Palma/ Marismas de Isla Mayor (Artificial marsh)	11,027 Ha.	36º58'2'' N	6º13'22'' W	16	26	2006	Doñana National Park	National Park Ley 2/1989, de 18 de julio.	Doñana ES0000024

Spain	Laguna de Medina (Temporally lake)	121.33 Ha	36º37′6′′ N	6º2′55′′ W				Reserva Natural Laguna de Medina	Reserva Natural Declarado Reserva Natural por la Ley 2/1989 de 18 de julio	Laguna de Medina ES0000027
Spain	Clot de Galvany (Coast marsh)	366.31 Ha.			2	4	2006	Paraje Natural Municipal Clot de Galvany	Paraje Natural Municipal por Acuerdo del Consell de la Generalidad Valenciana de fecha 21 de enero de 2005	Isn't SPA site
Spain	P.N El Hondo (Wetland)	2,387 Ha.	38º12′ 55′′N	0º 42′ 9′′W	10	13	2006	Parque Natural de El Hondo	Parque Natural por la Generalidad Valenciana el 12 de diciembre de 1988	El Fondo d'Elx-Crevillent ES0000058
Spain	P.N Salinas de Santa Pola (Salt marhs)	2,574 Ha.	38º11′5′′ N	0º37′46′′ W	5	7	2006	Parque Natural Salinas de Santa Pola	Parque Natural de la Comunidad Valenciana desde 1994.	Salinas de Santa Pola ES0000120
Spain	Marjal del Moro	6.19 km^2			1	2	2006	Isn't protected	---	Marjal del Moros ES0000148

Spain	P.N. L'Albufera de Valencia (Coast marhs)	21,120 Ha.	39º19'54''	0º21'8'' W	1	2	2006	Parque Natural de la Albufera de Valencia	Parque Natural Decreto 89/1986, de 8 de julio.	L'Albufera ES0000023
Spain	Marjal de Pego-Oliva (Ricefield and reedbeds)	1,248 Ha.	38º52'21'' N	0º3'47'' W	0	1	2006	Parque Natural del Marjal de Pego-Oliva	Parque Natural declarado por el gobierno valenciano el 9 de enero de 1995	Marjal de Pego-Oliva ES0000147
Spain	P.N. Albufera de Mallorca	1,687 Ha.	39º47'25'' N	3º5'55'' E	0	1	2006	Parque Natural S'Albufera de Mallorca	Parque Natural, por Decreto de la CAIB del 28.1.88, publicado el 14.2.88	S'Albufera de Mallorca Es0000048
Spain	Salinas de San Pedro del Pinatar (Coast marhs)	21.4 km^2			0	0	2006	Parque Regional Salinas de San Pedro del Pinatar	Ley 4/92 de Ordenación y Protección del Territorio de la Región de Murcia	Mar Menor ES0000260
Italy	Mazara del Vallo	335 Ha.			1	2	2007	Reserva Natural Integrale Lago Preola	From 1991 declared protected area	ITA010006 Paludi di Capo Feto e Margi Spano'

Italy	Marshes in Southeast Sicily, Syracuse District				1	1	2007			ITA090029 Pantani della Sicilia Sud-Orientale, di Morghella, di Marzamemi, di Punta Pilieri e Vendicari

ANNEX 3

National legal status.

Country	Legal protection
Algeria	Decree no. 83-509. August 1983
Italy	Protected, Legge n. 157/92
Morocco	Not protected, but National Regulation bans hunting
Spain	Endangered - Catálogo Nacional de Especies Amenazadas
Tunisia	Fully protected

Status of national actions plans and working groups.

Country	Is there a national action plan for the species?	Is there a national {*Species*} project / working group?
Italy	Yes *Piano d'accione nazionale per l'Anatra marmorizzata (Marmaronetta angustirostris.* Year 2007.	No
Spain	No	Yes *Grupo de trabajo sobre la cerceta pardilla del Comité Nacional de Flora y Fauna.*
Tunisia	Draft Species Action Plan developed by AAO, but limited implementation due to lack of resources	

Recent and ongoing conservation actions

Country	Title of project/action	Coverage	Period	Organizations responsible
Spain	Control of invasive alien species1	All Andalusia Region	Started in 2005– ongoing	Junta de Andalucia (Regional government of Andalusia)

[1] Plan Andaluz para el control de especies exóticas invasoras

Spain	Studies on the effectiveness of grit to decrease the impact of lead shot in wetlands	Laguna de Medina and Puerto de Santa María (Cádiz)	Started in 2005 - ongoing	Doñana Biological Station CSIC and Junta de Andalucia (Regional government of Andalusia)
Spain	Monitoring network and evaluation of wetlands2	All Andalusia Region	Ongoing	Junta de Andalucia (Regional government of Andalusia)
Spain	Water regulation project in the Nature Reserve Brazo del Este (Seville)	Brazo del Este Natural Park	Started in August 2003 until now	Junta de Andalucia (Regional government of Andalusia)
Spain	Regulating water levels in La Cañada de las Norias (Almeria)	Almeria Province	Started in 2006 - ongoing	Junta de Andalucia (Regional government of Andalusia)
Spain	Control of overgrazing in Nature Reserve Brazo del Este, Dehesa de Abajo and Doñana National Park (Seville)	Doñana National Park	Started in 2004	Junta de Andalucia (Regional government of Andalusia)
Spain	Study on the influence of Azolla filiculioides on submerged macrophytes and its use in the diet of the aquatic species in Doñana National Park	Doñana National Park	Started in 2006	Seville University.
Italy	Habitat restoration/recreation – Two restoration plans have been recently made (2007-2008) and it is now necessary to fund and to carry them out.	38 ha of new marshes near Gela (Southern Sicily) and 125 ha near Catania (Eastern Sicily)	Started in 2007 - currently ongoing	MATTM (Italian Ministry for the Environment, Land and Sea) and ISPRA (Italian Institute for Environmental Protection and Research - former INFS), in co-operation with Natural Reserves "Oasi del Simeto" and "Biviere di Gela"

[2] Plan Andaluz de Humedales

Italy	Monitoring – An informal monitoring scheme is operating in Sicily on a voluntary basis, to detect breeding pairs.	Sicily	Ongoing	NGOs, birdwatchers and ISPRA
Tunisia	Mid Winter counts in main wetlands in Tunisia	Tunisia, nation wide	Ongoing	AAO (BirdLife in Tunisia)
Lybia	Mid Winter monitoring of coastal wetlands and oases	Libya	Started yearly in 2005	

Ongoing monitoring schemes for the species.

Country	Is there a national survey / monitoring programme?	Is there a monitoring programme in protected areas?
Italy	Yes	Yes
Spain	Yes. Annually	Yes, and also in wetlands that aren't include in SPA

Overview of the coverage of the species in networks of sites with legal protection status.

Country	Percentage of national population included in IBAs	Percentage of population included in Ramsar sites	Percentage of population included in SPAs[3]	Percentage of population included in protected areas under national law
Italy	all	0%	all	Less than half
Spain	all	50-90% (more than half)	all	More than half

[3] This is relevant only for European Union member states. Any other regional (legal) protection should be mentioned in next column.