

# The Status and Distribution of Reptiles and Amphibians of the Mediterranean Basin

Compiled by Neil Cox, Janice Chanson and Simon Stuart



IUCN Red List of Threatened Species™ - Mediterranean Regional Assessment No. 2

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IUCN Species Programme

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Turkey, will be available on the 2006 update of the IUCN Red List website ([www.iucnredlist.org](http://www.iucnredlist.org)).

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# 1. Background

## 1.1 The Mediterranean context

The Mediterranean basin is characterized by its climate, where cool wet winters alternate with long hot dry summers. In some parts of the region (coasts of Libya and Egypt) annual rainfall can be as low as 50mm per year, whereas in the well-watered regions, such as the Adriatic coast of the Balkan countries, rainfall is over 1,000mm. While much scientific work has been done to characterize the nature and extent of the Mediterranean ecosystem, this publication takes a pragmatic and relatively loose definition of the Mediterranean basin, combining a geographic focus on states (as recognised by the UN) with a pragmatic cut off point to the north and west in Europe and Turkey, and in the Sahara desert to the south.

The Mediterranean-rim countries hold around 400 million people, and 135 million of them live on the Mediterranean coast. A steady historical and continuing migration towards coastal areas, and specifically in the south and east of the Mediterranean, is causing pressure on the coastal environment and, more importantly, on its biodiversity. The Blue Plan estimates that the population of the northern-rim nations will grow by around 4 million between 2000 and 2025; the population of the southern- and eastern-rim nations will grow by around 98 million over the same period. Mediterranean countries are also an international travel destination for nearly 200 million visitors per year, the majority of whom visit the coastal zone. It is therefore not surprising that species inhabiting coastal sand dune systems are especially vulnerable in consequence, although a series of conservation measures have been put in place and in some countries (e.g. in France, Portugal and Spain) around 30% of the linear coastline is under some form of protection. According to the Blue Plan, between 1985 and 1995 the area of coastal protection in the region tripled to around 1,200,000 hectares.

For many countries, water resources are a key issue, except perhaps in the more water-rich Balkans. For example, of the 12 southern and eastern Mediterranean countries, the Blue Plan estimates that eight now annually use more than 50% of their renewable water resources; two of them (the Palestinian Territories and Libya) are already using more than their renewable water resources. By the year 2025 the Blue Plan estimates that 10 of the 12 countries may be consuming more than 50% of their renewable water resources, with eight of them using

more than 100%. Some 70% of Mediterranean water is used for agriculture. Many wetlands have been lost through drainage and diversion (e.g. 65% in Greece, 28% in Tunisia) with implications for amphibian and aquatic reptile populations.

Low rainfall combined with unsustainable farming practices has also led to desertification and land degradation in many areas, with for example 30% of Greece being declared “threatened” and 60% of Portugal facing a moderate risk of desertification. In semi-arid areas, many years of unsustainable farming techniques have led to erosion, salinization and land degradation. Forests have always played, and still play, an important role in the daily life of the Mediterranean peoples. Although Mediterranean forests provide low direct economic returns on wood products in comparison to the Northern European forests, they play a crucial role in maintaining key ecosystem components for securing human welfare and life in the region. Previously, exploitation of the natural landscape was long, slow and relatively sustainable. In the past decades, that balance between nature and humankind has been lost. The forests are now fragile and under threat. Agricultural intensification, fires, over-grazing, and climate change are some of the major threats to Mediterranean forests and have helped lead to forest loss and degradation in many countries in recent decades. Having said that, it is also recognised that the natural cycle of forest, fire and regeneration leads to transition habitats that can be of significant biodiversity value.

With almost 5,000 islands and islets the Mediterranean comprises one of the largest groups of islands in the world. There are some 4,000 islands of less than 10km<sup>2</sup> in area in the Mediterranean, and 162 islands that are at least 10km<sup>2</sup>. The nine Mediterranean islands of over 1,000km<sup>2</sup> account for 83% of the total island area. The islands are of high value to global biodiversity due to their wealth of species, relatively high levels of endemism, long history of isolation, and tolerance of many kinds of disruptions, as well as their role as a natural laboratory for evolutionary studies.

## 1.2 Reptile and amphibian diversity and endemism

The Mediterranean basin has been designated as a Biodiversity Hotspot (Myers *et al.*, 2000) since it has very high levels of plant endemism (more than 10,000 species



**Table 1. Diversity and endemism in non-marine reptile and amphibian orders and families within the Mediterranean basin**

Order	Family	Number of species	Number of endemic species
<b>Reptiles</b>			
Testudines (turtles and tortoises)	Bataguridae [=Geoemydidae]	3	2 (67%)
Testudines	Emydidae	2	0 (0%)
Testudines	Testudinidae	5	4 (80%)
Testudines	Trionychidae	2	0 (0%)
<i>Total – Turtles and Tortoises</i>		12	6 (50%)
Sauria (lizards)	Agamidae	23	3 (13%)
Sauria	Anguidae	4	2 (50%)
Sauria	Chamaeleonidae	2	0 (0%)
Sauria	Eublepharidae	1	0 (0%)
Sauria	Gekkonidae	47	19 (40%)
Sauria	Lacertidae	112	73 (65%)
Sauria	Scincidae	39	26 (67%)
Sauria	Varanidae	2	0 (0%)
<i>Total – Lizards</i>		238	123 (52%)
Ophidia (snakes)	Atractaspididae	2	1 (50%)
Ophidia	Boidae	2	0 (0%)
Ophidia	Colubridae	67	23 (34%)
Ophidia	Elapidae	3	0 (0%)
Ophidia	Leptotyphlopidae	4	0 (0%)
Ophidia	Typhlopidae	4	1 (25%)
Ophidia	Viperidae	25	12 (48%)
<i>Total – Snakes</i>		107	37 (35%)
Amphisbaenia (amphisbaenians)	Amphisbaenidae	4	3 (75%)
Amphisbaenia	Trogonophiidae	1	1 (100%)
<i>Total – Amphisbaenians</i>		5	4 (80%)
Crocodylia (crocodilians)	Crocodylidae	1	0 (0%)
<i>Total – Crocodilians</i>		1	0 (0%)
<b>Total – Reptiles</b>		<b>355</b>	<b>170 (48%)</b>
<b>Amphibians</b>			
Anura (frogs and toads)	Bombinatoridae	3	1 (33%)
Anura	Bufo	10	3 (30%)
Anura	Discoglossidae	12	11 (92%)
Anura	Hylidae	5	3 (60%)
Anura	Pelobatidae	4	2 (50%)
Anura	Pelodytidae	2	2 (100%)
Anura	Pipidae	1	0 (0%)
Anura	Ranidae	27	15 (56%)
<i>Total – Frogs and Toads</i>		64	37 (58%)
Caudata (newts and salamanders)	Plethodontidae	7	7 (100%)
Caudata	Proteidae	1	1 (100%)
Caudata	Salamandridae	34	23 (68%)
<i>Total – Newts and Salamanders</i>		42	31 (74%)
<b>Total – Amphibians</b>		<b>106</b>	<b>68 (64%)</b>

endemic) with a concomitant high level of threat (the mammal and bird faunas are largely derived from the Eurasian and African biogeographic zones and therefore exhibit relatively low levels of endemism). For the purposes of this study of reptiles and amphibians in the Mediterranean basin, we have defined the region politically, rather than biogeographically (see section 2.2 below). Within the region of study, there are 355 species of reptile (excluding the marine turtles which we have not covered here), of which 170 (48%) are endemic, and 106 species of amphibian, of which 68 (64%) are endemic. Further details are given in Table 1.

### 1.2.1 Reptile diversity and endemism

Five orders of reptiles occur in the Mediterranean basin: Amphisbaenidae (amphisbaenians); Crocodylia (crocodilians); Ophidia (snakes); Sauria (lizards); and Testudines (turtles and tortoises). However, the great majority of the species are snakes (30%) and lizards (67%). The largest reptile families in the region are the Colubridae (colubrid snakes – 67 species), the Viperidae (vipers and relatives – 25 species), the Gekkonidae (geckoes – 47 species), the Lacertidae (wall lizards and relatives – 112 species), and the Scincidae (skinks – 39 species). Some important evolutionary radiations in the region include the lizard genera *Lacerta* (20 species, 14 endemic), *Podarcis* (largely confined to the region – 18 species, 16 endemic), and *Chalcides* (also largely confined to the region – 21 species, 19 endemic). Almost half of the reptiles of the Mediterranean basin are endemic to the region, but endemism is especially high in the amphisbaenians, the tortoises, and the two lizard families Lacertidae and Scincidae. Table 1 provides more detail.



Lanza's Alpine Salamander *Salamandra lanzai* is restricted to a small area on the border of France and Italy. It is currently categorised by IUCN as Vulnerable. Photograph © Franco Andreone.

### 1.2.2 Amphibian diversity and endemism

Amphibian diversity in the Mediterranean basin is much lower than reptile diversity, this being largely a reflection

of the extent to which arid and semi-arid habitats predominate in large parts of the region. However, at 64%, amphibian endemism is very high. One family, the Discoglossidae (painted frogs and midwife toads), is almost endemic to the region, and two of the three species of Pelodytidae (parsley frogs) are endemic. All four members of the Pelobatidae (Eurasian spadefoots) occur in the region, two of them being endemic. Among the newts and salamanders, 54% of the world's Salamandridae species occur in the region, with five endemic genera (*Chioglossa*, *Euproctus*, *Lyciasalamandra*, *Pleurodeles* and *Salamandrina*). The region is also noteworthy for its seven endemic cave salamander species in the lungless salamander family Plethodontidae. Until the recent discovery of a species in Korea (Min *et al.*, 2005), these were thought to be the only Old World members of a family that has around 350 species in the Americas. The single Old World member of the Proteidae, *Proteus anguinus*, is endemic to the region; the other five members of the family occur in eastern North America.

### 1.3 Conservation status

The conservation status of plants and animals is one of the most widely used indicators for assessing the condition of ecosystems and their biodiversity. It also provides an important tool in priority-setting exercises for species conservation. At the global level the best source of information on the conservation status of plants and animals is the *IUCN Red List of Threatened Species* (IUCN, 2004). The Red List provides taxonomic, conservation status, and distribution information on taxa that have been evaluated using the *IUCN Red List Categories and Criteria: Version 3.1* (IUCN, 2001) ([www.redlist.org/info/categories\\_criteria2001.html](http://www.redlist.org/info/categories_criteria2001.html)). This system is designed to determine the relative risk of extinction, with the main purpose of cataloguing and highlighting those taxa that are facing a higher risk of global extinction (i.e., those listed as Critically Endangered, Endangered and Vulnerable).

In this study, all the reptile and amphibian species have been evaluated for their global conservation status according to the IUCN system, and the results of this assessment are presented in this report. In some cases, species that are not threatened globally have marginal populations in the region that are extremely threatened, and these species are discussed here.

IUCN has already assessed the conservation status of all of the world's amphibian species (IUCN, CI and NatureServe, 2004; Stuart *et al.*, 2004). Globally, 32.5% of amphibian species are at risk of extinction. However, IUCN is still in an early stage of assessing reptiles, with only 499 assessed out of more than 8,000 known species

by 2004 (Baillie *et al.*, 2004). This assessment of all species in the Mediterranean basin is therefore adding significantly to the number of reptile species evaluated according to the IUCN criteria.

## 1.4 Objectives of the assessment

This assessment of reptiles and amphibians in the Mediterranean basin has two main objectives:

- To assist in regional conservation planning by assessing the status and distribution of all species occurring within the region; and
- To develop a network of regional experts to support future assessments and the updating of the information on these species within the context of the IUCN Global Reptile Assessment and the IUCN Global Amphibian Assessment.

The assessment provides two main direct outputs:

- A report on the status of the reptiles and amphibians of the Mediterranean basin, including a Red List assessment of all the species, an identification of the main threats for each species, and a spatial representation of the centres of diversity and threats;

- A database that provides a baseline for monitoring the status of Mediterranean reptiles and amphibians.

IUCN will ensure the wide circulation of this document to relevant decision makers, non-governmental organizations and scientists to assist in mobilizing conservation action on the ground.



The European Leaf-toed Gecko *Euleptes europaea* is endemic to the Mediterranean Basin, where it is largely found on islands such as Corsica, Sardinia and La Galite. It is currently categorised by IUCN as Near Threatened. Photograph of an adult on the island of Corsica © Lars Bergendorf.

# 2. Assessment methodology

## 2.1 Global versus regional assessment

This was an assessment of the global status of all reptile and amphibian species occurring in the Mediterranean basin. Due to lack of time and funds, assessment of the regional status of non-endemic species could not be undertaken. Global assessments of reptile species not endemic to the Mediterranean basin will remain provisional, until the species is assessed across its entire range through the ongoing IUCN Global Reptile Assessment. In the case of tortoises and freshwater turtles, only populations in the Mediterranean basin were assessed fully while data on populations and status outside the region are still being compiled and, as a result, the tortoise and turtle assessments also remain provisional.

## 2.2 Definition of the Mediterranean basin for the assessment

The Mediterranean basin was defined politically to include the following countries: Albania, Algeria, Andorra, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Egypt, France, Greece, Israel / Palestine, Italy, Jordan, Lebanon, Libyan Arab Jamahiriya, FYR Macedonia, Malta, Monaco, Morocco, Portugal (including Madeira), San Marino, Serbia and Montenegro, Slovenia, Spain (including the Canary Islands) Switzerland, Syrian Arab Republic, Tunisia, Turkey and Western Sahara. We did not include the northeastern part of Turkey in this study, where the fauna shows affinities with the Caucasus, rather than with the Mediterranean basin.

## 2.3 Preliminary assessments

With the exception of the turtles, preliminary assessments of the status of all the reptile species (including draft distribution maps) were prepared by Neil Cox of the IUCN/SSC-CI/CABS Biodiversity Assessment Unit, using existing literature and data sources. Peter Paul van Dijk of CI's Center for Applied Biodiversity Science prepared preliminary assessments of the tortoises and freshwater turtles. The preliminary assessments for the amphibians were from the IUCN Global Amphibian Assessment (IUCN, CI and NatureServe, 2004). The status of each species was assessed according to the *2001 IUCN Red List Categories and Criteria: Version 3.1*. All the data collected, including information on distribution, conservation measures,

threats, utilization, habitats and ecology were entered into the IUCN/SSC Species Information Service Data Entry Module (SIS DEM).

## 2.4 Review workshop

Expert herpetologists for the Mediterranean basin were invited to attend a five-day regional review workshop held at the IUCN Centre for Mediterranean Cooperation in Malaga in December 2004. The preliminary assessments (SIS DEM species summary reports with distribution maps) were distributed to all the participants before the workshop to allow them to review the data presented and prepare any changes to the data. The participants and workshop facilitators (from the IUCN/SSC-CI/CABS Biodiversity Assessment Unit) evaluated the preliminary assessments to check they complied with the guidelines for applying the IUCN Red List Categories and Criteria and included the most up-to-date, comprehensive information.

## 2.5 Post-workshop follow-up

Following the review workshop, the data were edited, and outstanding questions were resolved through communications with the workshop participants. Because it was not possible to cover Egypt effectively during the workshop, Sherif Baha El Din visited the Biodiversity Assessment Unit in July 2005 to review the data for all these species. The draft assessments were also made available on an FTP site to allow the participating scientists to make any final edits and corrections. The resulting assessments therefore provide the best available scientific consensus concerning the status of these species, and are fully supported in the database with relevant literature and references. Annual updates to the conservation status will be made as and when new information becomes available.

The conservation assessments in this report for reptile species endemic to Turkey are currently provisional, as it is intended that these assessments will be reviewed in more detail at a second regional workshop to be held in Turkey in the latter part of 2006.

Assessments for tortoises and freshwater turtles have not yet been subject to final review and confirmation by the pertinent Red List Authority (the IUCN Tortoise and Freshwater Turtle Specialist Group), and these evaluations must also be considered provisional at the time this report went to press.

# 3. Results for reptiles

## 3.1 Conservation status

A full list of the reptile species (excluding marine turtles) in the Mediterranean basin, and their global IUCN Red List status is given in Appendix 1. The number of species in the different IUCN Red List Categories is shown in Table 2 and Figure 1. To summarise, 13% of Mediterranean reptile species are globally threatened, with 3.7% Critically Endangered, 6.2% Endangered and 3.1% Vulnerable. A total of 71% (252 species) are assessed as Least Concern and 19 (5.4%) species were considered to be Data Deficient. One species is listed as Extinct, the giant lizard from La Palma in the Canary Islands, *Gallotia anaritae*.

**Table 2. Summary of the global Red List status for all the non-marine reptiles of the Mediterranean basin**

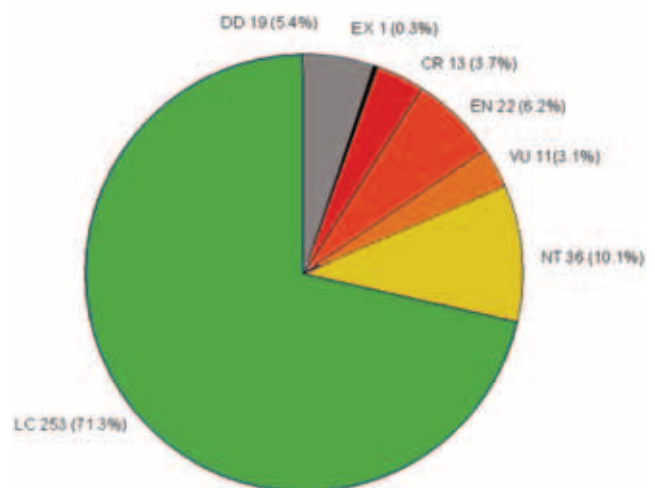
IUCN Red List categories	No. species
Extinct (EX)	1
Extinct in the Wild (EW)	0
Threatened categories	
Critically Endangered (CR)	13
Endangered (EN)	22
Vulnerable (VU)	11
Near Threatened (NT)	36
Least Concern (LC)	253
Data Deficient (DD)	19
Total number of reptiles assessed	355

The conservation status varies between the reptile orders. No threatened species occur in the region among the amphisbeanians or the crocodylians. Snakes have a relatively low level of threat, with only six species (5.6%) being threatened. Among the lizards, the percentage of threatened species is higher – 15.5% (37 species). Three species of non-marine turtle (25%) are threatened. Within these orders, it appears that certain groups are more vulnerable to threats. For example, five of the seven species of the lizard genus *Iberolacerta*, centred on Spain, are globally threatened. Three species of giant lizard from the Canary Islands in the genus *Gallotia* are Critically Endangered (in addition to the one already Extinct), and two of the five tortoise species (genus *Testudo*) are also Critically Endangered. Among the wall lizard genus *Podarcis*, there is a tendency for species

endemic to small islands to be at elevated risk, and three such species are threatened.

Several reptile species only marginally occur in the Mediterranean basin. Many of these species may be considered to be Least Concern globally, but their Mediterranean populations are sometimes very threatened. Examples include the Nile crocodile *Crocodylus niloticus*, several species of snake including *Gongylophis colubrinus*, *Dasypletis scabra*, *Lamprophis fuliginosus*, *Lycophidion capense* (possibly extinct in the Mediterranean basin), *Platycephalus elegantissimus*, *Psammophis punctulatus*, *Psammophis rukwae*, *Naja baje*, *Leptotyphlops nursii* (possibly extinct in the Mediterranean basin), *Bitis arietans*, *Cerastes gasperettii*, *Echis leucogaster*, a number of lizards such as *Chamaeleo africanus*, *Hemidactylus sinaitus*, *Pristurus flavipunctatus*, *Stenodactylus doriae*, *Tarentola ephippiata*, *Ophisops elbaensis*, *Pseudereimias mucronata*, and the African softshell turtle *Trionyx triunguis*. The sand boa *Eryx jaculus* occurs widely in the Mediterranean basin, where it is generally in decline, although it is Least Concern globally.

**Figure 1. Summary of conservation status for all non-marine reptiles of the Mediterranean basin**



Categories are abbreviated as: EX- Extinct; EW-Extinct in the Wild; CR-Critically Endangered; EN-Endangered; VU-Vulnerable; NT-Near Threatened; LC-Least Concern; DD-Data Deficient.

## 3.2 Patterns of species richness

### 3.2.1 Species richness of reptiles

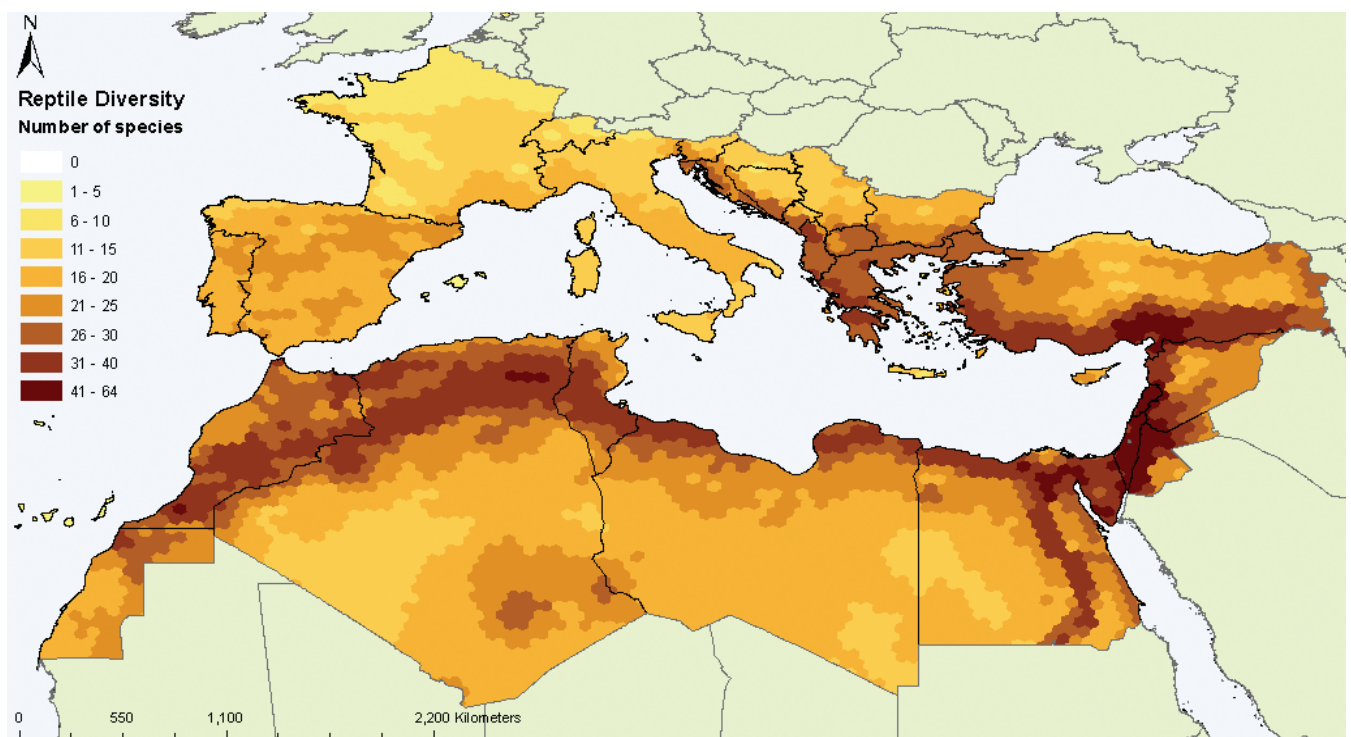
Information on the species richness of reptiles within orders and families has already been given in section 1.2.1 and Table 1. The geographic distribution of reptile species richness in the Mediterranean basin is presented in Figure 2. Diversity is highest in the eastern part of the region, notably in southern Turkey, Lebanon, southwestern Syria, Israel / Palestine, Jordan and parts of northern Egypt. In the western Mediterranean, diversity is much higher in North Africa than in western Europe, with a peak of concentration in northeastern Algeria. In North Africa, diversity appears to be highest in the mountainous area, in semi-arid regions along the northern margins of the Sahara, and in the Nile Valley. The Sahara itself is relatively species poor, although there are concentrations of species in mountainous areas, such as the Hoggar in southern Algeria. In Europe, species diversity is much higher in the Balkans than elsewhere. North of the Mediterranean basin in Europe, the diversity of reptiles is very low. In Turkey, diversity appears to be higher in the south, but this should be treated with caution, because the species occurring only in the northeastern part of the country were excluded from this analysis, and are not mapped in Figure 2. There are 28 reptile species known from northeastern Turkey, that do not occur in the Mediterranean part. These species are listed in Appendix 2.



The Aran Rock Lizard *Iberolacerta aranica* is endemic to a small area in the Pyrenees Mountains of France and Spain. It is currently categorised by IUCN as Critically Endangered. Photograph of an adult in the Aran Valley of Spain © Lars Bergendorf.

The species richness of reptiles in the countries of the Mediterranean basin is given in Table 3. As expected, higher species totals occur in countries on the eastern and southern sides of the basin. Countries larger in area will inevitably tend to have more species, so small countries with large numbers, such as Israel / Palestine and Lebanon, indicate high diversity. The relatively high number of species for Spain is a sum of the different faunas on the Spanish mainland, the Balearic Islands, the Canary Islands, and the Spanish territories of Ceuta and Melilla in North Africa.

Figure 2. Species richness of reptiles in the Mediterranean basin



**Table 3. The number of non-marine reptiles in the countries of the Mediterranean basin**

Country	Native	Possibly Present	Extinct	Reintroduced	Introduced	Vagrant
Albania	34	1	0	0	0	0
Algeria	99	3	1	0	0	0
Andorra	5	0	0	0	0	0
Bosnia and Herzegovina	29	1	0	0	0	0
Bulgaria	31	1	0	0	0	0
Croatia	35	1	0	0	0	0
Cyprus	21	2	0	0	1	0
Egypt	99	1	0	0	2	0
France	36	1	0	0	3	0
FYR Macedonia	29	0	0	0	0	0
Greece	55	3	0	0	4	1
Israel / Palestine	80	1	2	0	1	0
Italy	44	1	0	0	4	0
Jordan	84	1	1	0	0	0
Lebanon	47	4	0	0	0	0
Libyan Arab Jamahiriya	58	9	0	0	0	0
Malta	8	0	0	0	1	0
Monaco	2	1	0	0	0	0
Morocco	90	5	1	0	0	0
Portugal	29	0	0	0	2	0
Serbia and Montenegro	37	0	0	0	0	0
Slovenia	25	0	0	0	0	0
Spain	68	0	2	1	8	0
Switzerland	14	1	0	0	3	0
Syrian Arab Republic	80	10	0	0	0	0
Tunisia	62	0	0	0	0	0
Turkey*	94	1	0	0	1	0
Western Sahara	47	5	0	0	1	0

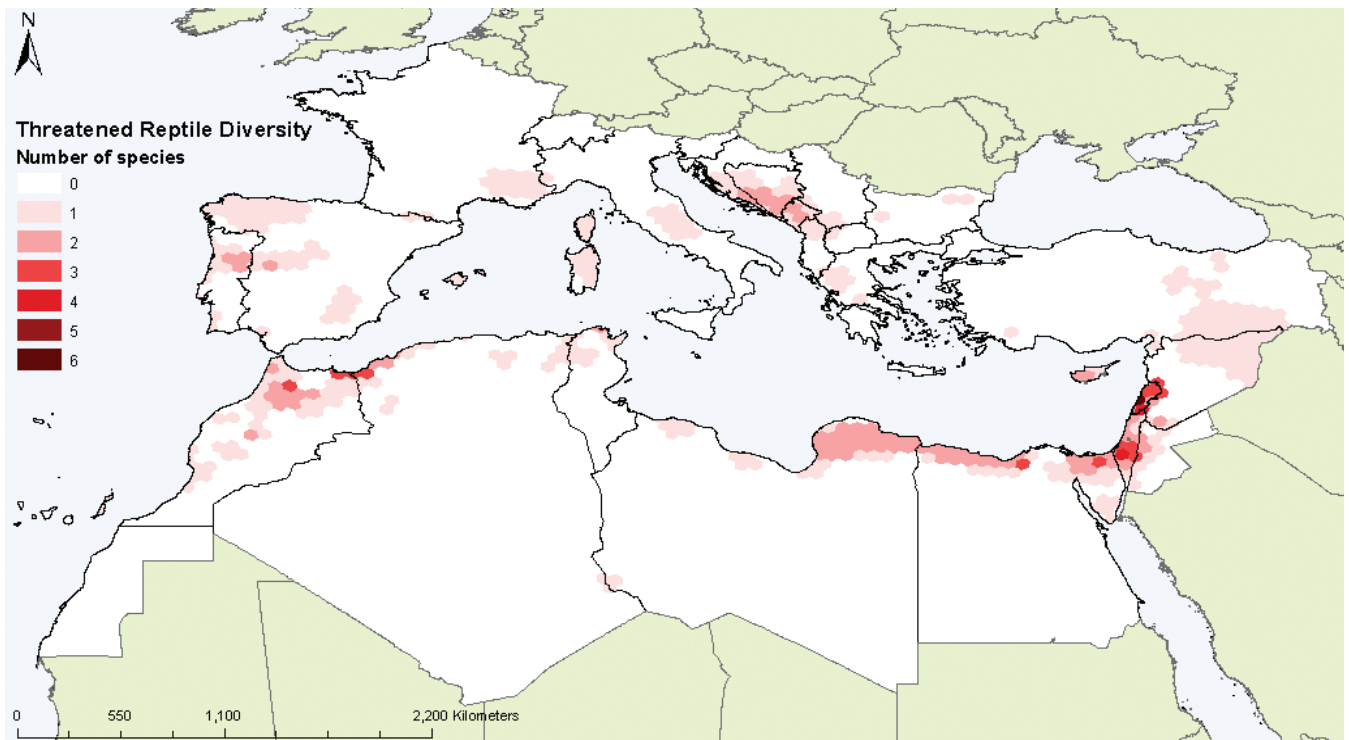
\* Note that the total number of reptile species in Turkey is higher than is shown here. An additional 28 species are known from this country that are not within the Mediterranean basin (see Appendix 2), making a total of 124 for the country.

### 3.2.2 Species richness of threatened reptiles

Although the percentage of threatened reptile species is not particularly high in the Mediterranean basin, there are a few concentrations of species at risk (see Figure 3). The most notable is in Lebanon and Israel / Palestine,

extending to the northern part of Sinai in northeastern Egypt. Species of particular concern in this region include *Testudo weneri*, *Cyrtopdion amictopholis*, *Acanthodactylus beershebensis*, *Lacerta fraasii*, *L. kulzeri* and *Montivipera bornmuelleri*. Another lesser concentration of threatened species occurs in northern Morocco and

Figure 3. Species richness of threatened reptiles in the Mediterranean basin



northeastern Algeria. The thirteen Critically Endangered species (see Appendix 1) are widely scattered through the region, with five species in Spain (three of these in the Canary Islands), three in Egypt, two in Israel / Palestine and in Libya, and one each in Algeria, France, Italy, Morocco and Tunisia (note that some Critically Endangered species occur in more than one country). The numbers of species in each Red List Category in each country are given in Appendix 3.

### 3.3 Major threats to reptiles

The major threats to each species were coded using the IUCN Major Threats Authority File. The full compilation of the number of species affected by each type of threat is given in Appendix 4. A summary of the relative importance of the different threatening processes is shown in Figure 4. Habitat loss and degradation have by far the largest impact on both threatened and non-threatened species, currently affecting 38 of the 46 threatened species, and almost 200 reptile species overall. Over-harvesting has the next largest impact, currently affecting 81 species, 14 of them threatened. Human disturbance, pollution and invasive alien species are also significant threats for some species. Many species, mainly

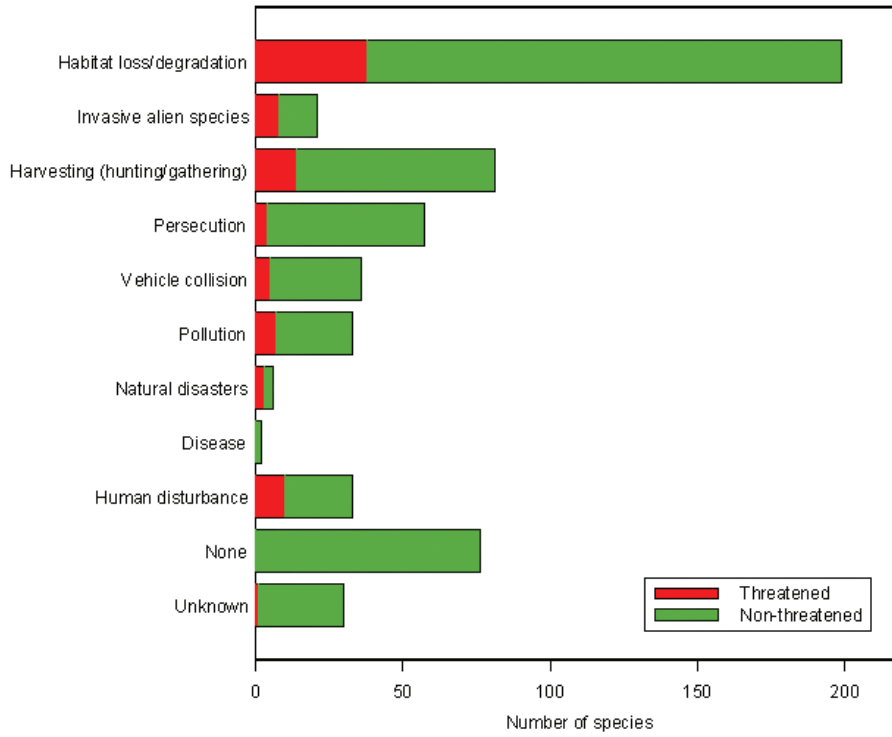
snakes, are persecuted, but only a few of them are threatened. Likewise, vehicle collision impacts several snake and turtle species, but not normally at levels that cause them to qualify as globally threatened species. Invasive alien species impact a small number of reptile species, but a relatively high proportion of these are threatened.



Hermann's Tortoise *Testudo hermanni* is patchily distributed over much of the northern Mediterranean Basin. It is provisionally categorised by IUCN as Near Threatened. Photograph of an animal in Greece © Lars Bergendorf.



Figure 4. The present major threats to reptile species in the Mediterranean basin



# 4. Results for amphibians

## 4.1 Conservation status

A full list of the amphibian species in the Mediterranean basin, and their global IUCN Red List status, is given in Appendix 5. The number of species in the different IUCN Red List Categories is shown in Table 4, and in Figure 5. To summarise, 25.5% of the Mediterranean amphibian species are threatened, with 0.9% Critically Endangered, 12.1% Endangered and 12.1% Vulnerable. The overall threatened status of amphibians is much higher than that for reptiles (13%) in the Mediterranean basin, although the percentage of Critically Endangered amphibians is less than that for reptiles (3.7%). Just one amphibian species is Critically Endangered, *Lyciasalamandra billae*, compared with 13 reptile species. So although amphibians as a class are almost twice as threatened as reptiles, the number of species on the brink of extinction is much higher among reptiles. The percentage of threatened amphibian species in the Mediterranean basin is less than the global average of 32.5% (Stuart *et al.*, 2004). A total of 57.5% (61 species) of amphibians are assessed as Least Concern, and no species are Data Deficient (compared with 5.4% of reptiles). One species is listed as Extinct, the painted frog from Israel / Palestine, *Discoglossus nigriventris*.

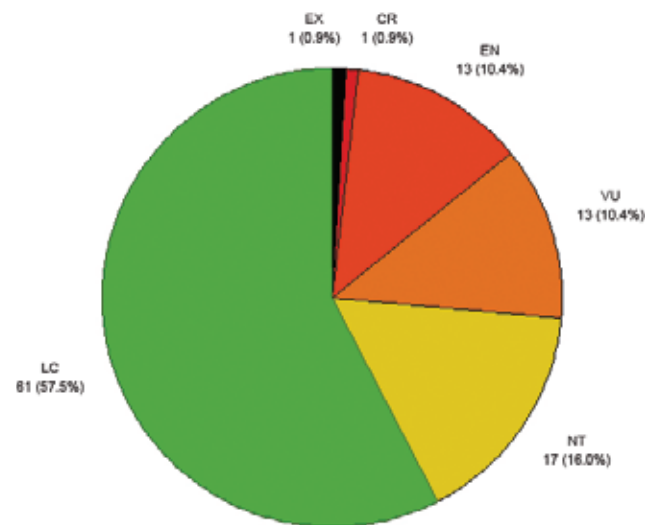
**Table 4. Summary of the global Red List status for all the amphibians of the Mediterranean basin**

IUCN Red List categories	No. species
Extinct (EX)	1
Extinct in the Wild (EW)	0
Threatened categories	
Critically Endangered (CR)	1
Endangered (EN)	13
Vulnerable (VU)	13
Near Threatened (NT)	17
Least Concern (LC)	61
Data Deficient (DD)	0
Total number of amphibians assessed	106

The level of threat varies greatly between the amphibian orders. Frogs and toads have a relatively low level of threat, with nine species (14.1%) being threatened. Among the salamanders and newts, the percentage of threatened species is higher – 42.9% (18 species). Interestingly, none of the 11 newt species of the

genus *Triturus* are globally threatened, but all but one of the remaining salamander genera contain threatened species. Among the frogs and toads, six of the nine threatened species are from the genus of true frogs, *Rana*. Two of the remaining threatened frogs are midwife toads (*Alytes*) from the family Discoglossidae, and there is reason to believe that the threat level in this genus might increase (see section 4.3).

**Figure 5. Summary of conservation status for all amphibians of the Mediterranean basin**



The categories are abbreviated as: EX- Extinct; EW- Extinct in the Wild; CR-Critically Endangered; EN- Endangered; VU-Vulnerable; NT-Near Threatened; LC- Least Concern; DD-Data Deficient.



The Mallorcan Midwife Toad *Alytes muletensis* is restricted to the Sierra Tramuntana of northern Mallorca, in the Balearic Islands. It is currently categorised by IUCN as Vulnerable. Photograph of a male carrying eggs © Brett Lewis.

## 4.2 Patterns of species richness

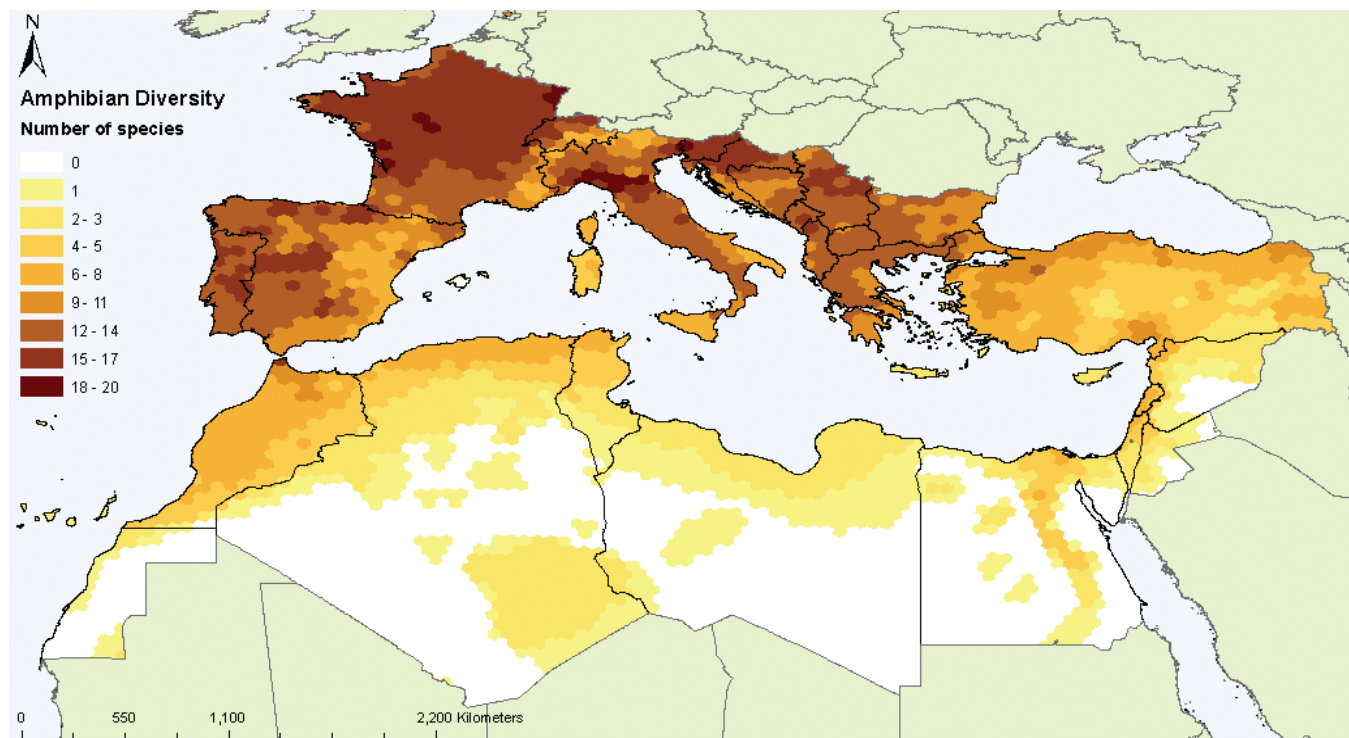
### 4.2.1 Species richness of amphibians

Information on the species richness of amphibians within orders and families has already been given in section 1.2.2 and Table 1. The geographic distribution of amphibian species richness in the Mediterranean basin is presented in Figure 6. Diversity is highest in Europe, especially in areas of higher rainfall, notably in northern Italy, France, western and northern Spain, Portugal, Slovenia and Croatia. Diversity is much lower in the eastern and southern parts of the region. This pattern is completely different from that of reptiles (Figure 2). Amphibians clearly avoid arid areas, and are absent from most of the Sahara. In Turkey, unlike with reptiles (Figure 2), all species of amphibians have distribution maps (see CD-ROM), including those species occurring only in the northeastern part of the country. There are four amphibian species known from northeastern Turkey, but not from the Mediterranean part. These species are listed in Appendix 6.



The Algerian Ribbed Newt *Pleurodeles nebulosus* is restricted to northern Algeria and western Tunisia. It is currently categorised by IUCN as Vulnerable. Photograph © Henk Wallays.

Figure 6. Species richness of amphibians in the Mediterranean basin



The species richness of amphibians in the countries of the Mediterranean basin is given in Table 5. As expected, higher species totals occur in the European countries of

the western Mediterranean, especially France, Italy and Spain. Slovenia, Croatia and Switzerland have relatively diverse amphibian faunas, given their small sizes.

**Table 5. The number of amphibians in the countries of the Mediterranean basin**

Country	Native	Possibly Present	Extinct	Reintroduced	Introduced	Vagrant
Albania	15	1	0	0	0	0
Algeria	12	1	0	0	0	0
Andorra	4	0	0	0	0	0
Bosnia and Herzegovina	18	0	0	0	0	0
Bulgaria	17	0	0	0	0	0
Croatia	20	0	0	0	0	0
Cyprus	3	0	0	0	0	0
Egypt	9	0	0	0	0	0
France	35	0	0	0	4	0
FYR Macedonia	14	0	0	0	0	0
Greece	22	0	0	0	1	0
Israel / Palestine	6	0	1	0	0	0
Italy	37	0	0	0	3	0
Jordan	4	0	1	0	0	0
Lebanon	7	0	0	0	0	0
Libyan Arab Jamahiriya	4	0	0	0	0	0
Malta	2	0	0	0	0	0
Monaco	2	0	0	0	0	0
Morocco	12	0	0	0	0	0
Portugal	19	0	0	0	3	0
San Marino	4	1	0	0	0	0
Serbia and Montenegro	21	2	0	0	0	0
Slovenia	20	1	0	0	0	0
Spain	33	1	0	3	11	0
Switzerland	18	0	3	0	2	0
Syrian Arab Republic	7	0	0	0	0	0
Tunisia	7	1	0	0	0	0
Turkey*	21	2	0	0	0	0
Western Sahara	5	1	0	0	0	0

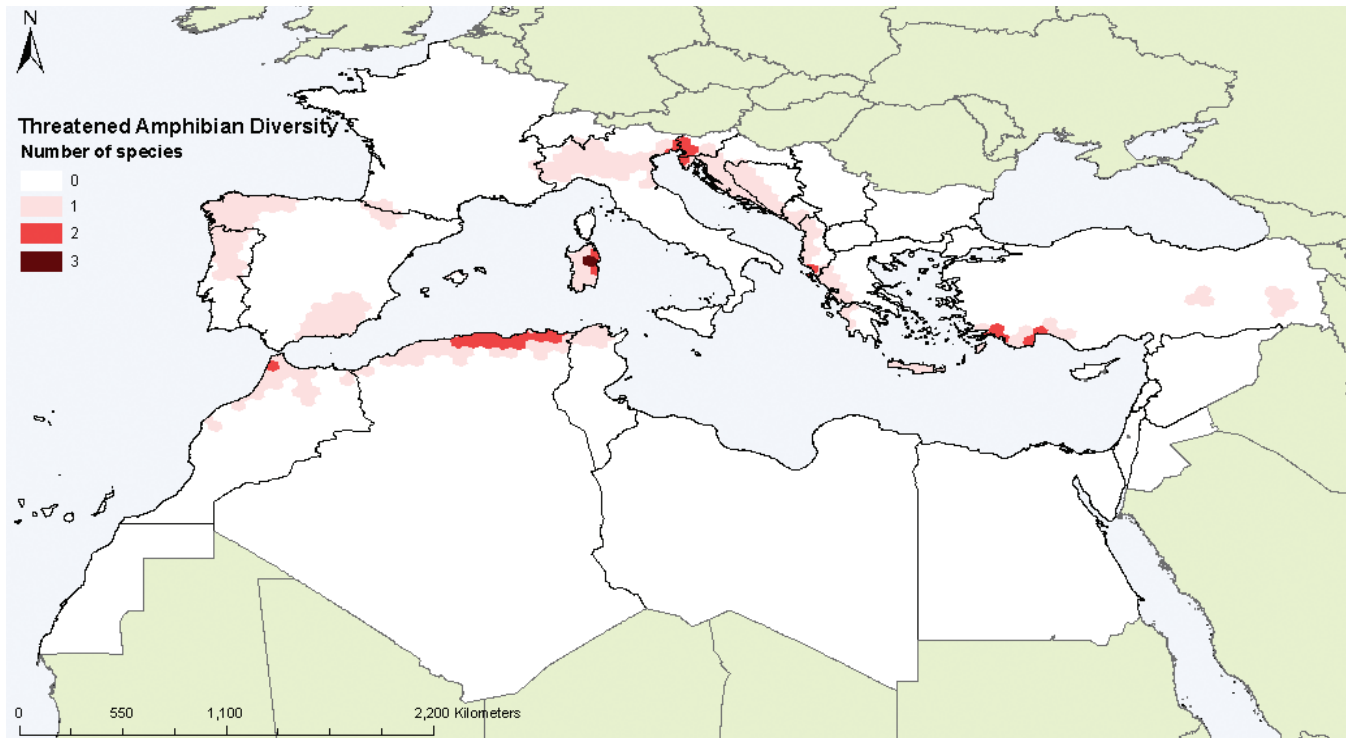
\*Note that the total number of amphibian species in Turkey is higher than is shown here. An additional four species are known from the non-Mediterranean part of this country (see Appendix 6), making a total of 27.

#### 4.2.2 Species richness of threatened amphibians

Although the percentage of threatened amphibian species is high in the Mediterranean basin, there are only a very few places with concentrations of species at risk (see Figure 7). The most notable is Sardinia, but even here a maximum of only three threatened species occur in the

same area. Otherwise, the main places where more than one threatened species occurs together are in northern Algeria, western Slovenia, and southwestern Turkey (the only Critically Endangered species in the region occurring in the last area). The numbers of species in each Red List Category in each country are given in Appendix 7.

Figure 7. Species richness of threatened amphibians in the Mediterranean basin



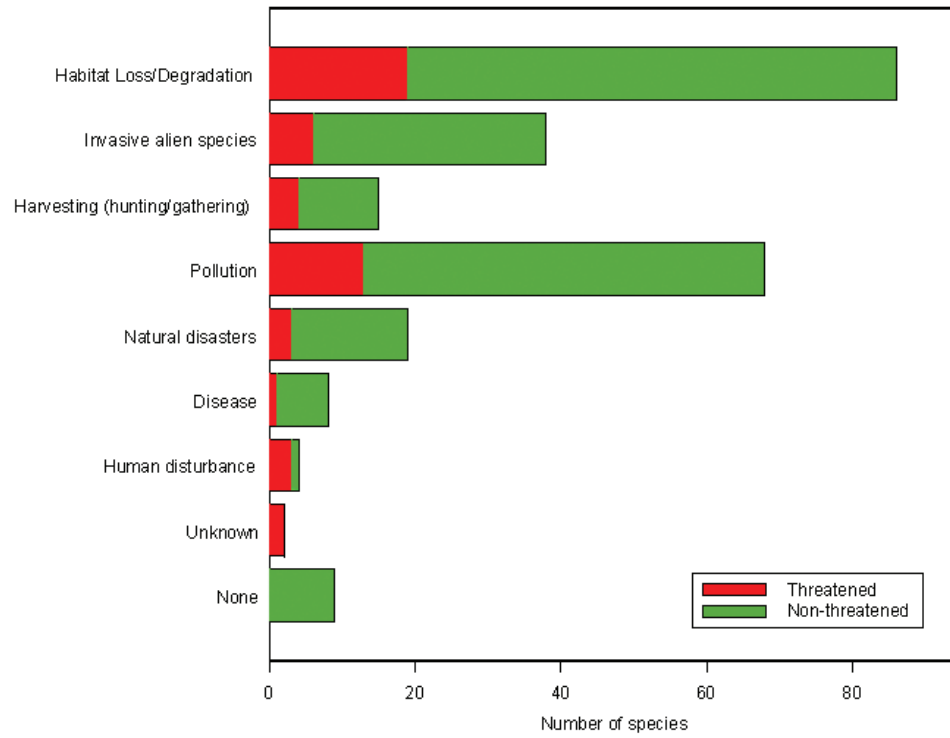
The Pyrenean Frog *Rana pyrenaica* is restricted to the western central Pyrenees Mountains of France and Spain. It is currently categorised by IUCN as Endangered. Photograph of an adult from the Foret d'Iraty, France © Lars Bergendorf.

### 4.3 Major threats to amphibians

The threats to each species were coded using the IUCN Major Threats Authority File. The full compilation of the number of species affected by each type of threat is given in Appendix 8. A summary of the relative importance of the different threatening processes is shown in Figure 8. Habitat loss and degradation have the

largest impact on both threatened and non-threatened species, currently affecting 19 of the 27 threatened species, and 86 amphibian species overall. However, pollution also has a major impact, and it currently affects 67 species, 13 of them threatened. Invasive alien species have the next largest impact, currently affecting 38 species, six of them threatened. Over-harvesting, natural disasters, human disturbance and disease are also significant for some species. Unlike reptiles, persecution and vehicle collision have very little impact. There is a risk that the disease chytridiomycosis could become a more serious threat to amphibians in the Mediterranean basin in the future. This disease has been implicated in catastrophic amphibian declines in many parts of the world (Daszak *et al.*, 2003), and was first recorded in the Mediterranean basin in Spain in 1997. It has since been implicated in declines of the Mediterranean populations of the midwife toad *Alytes obstetricans* (Bosch *et al.*, 2001) and the fire salamander *Salamandra salamandra*. If this fungal disease starts to become as pathogenic to Mediterranean amphibians as it has done to species elsewhere in the world, then it could rapidly become a much more serious threat. The other species of midwife toad (i.e., *Alytes cisternasii*, *A. dickhilleni*, *A. maurus* and *A. muletensis*) may be susceptible to the disease. If this is the case, species infected with the disease, especially those with small ranges, could quickly move into a higher threat category.

Figure 8. The present major threats to amphibian species in the Mediterranean basin



# 5. Conclusions

## 5.1 Methodology – lessons learned

The data set, a summary of which is presented here, is part of a wider Mediterranean assessment that is assessing other taxa such as freshwater fish and mammals. However these data can be viewed independently and represent an essential resource for anyone involved in conservation and environmental planning throughout the region. It is hoped that by presenting this data set, both regional and international research will be stimulated to provide new data and to improve on the quality of that already provided. It is also hoped that, with time, the spatial resolution of the data will be improved. Geographic bias in sampling intensity has been identified as a problem in representing a true regional picture of species distributions and threatened status. For example, the lack of data for Syria is apparent. As these sampling biases become apparent, such as through this study, it is hoped that researchers will be encouraged to focus their efforts on these lesser known regions and work towards eliminating this current bias in sampling.

## 5.2 Conservation priorities

The patterns of distribution and threat for reptiles and amphibians are very different from each other in the Mediterranean basin, and as a result, the conservation priorities vary accordingly. Island species are often in need of more urgent conservation attention. Although amphibians (especially salamanders) have a high tendency to be threatened, and reptiles much less so, there are many more reptile species on the edge of extinction in the region than amphibians. The main threats also vary greatly between reptiles and amphibians, although habitat loss is the most serious problem for both groups. The challenge now is to ensure that the information collated and presented here, and stored in the SIS database, is made readily available to policy makers and planners in a format that can easily be integrated into the development planning process.

## 5.3 Application of project outputs

The outputs from this project can be applied at the regional scale by organizations such as IUCN to prioritize sites for inclusion in regional research programmes and for identification of internationally important sites for biodiversity. All the amphibian and Mediterranean endemic reptile species assessed in this project, excluding species that are endemic to Turkey, will be submitted for inclusion in the next update of the



The Desert Horned Viper *Cerastes cerastes* ranges eastwards through North Africa to southwestern Israel. It is provisionally categorised by IUCN as Least Concern. Photograph of hornless phase © Wolfgang Böhme.

IUCN global Red List ([www.iucnredlist.org](http://www.iucnredlist.org)). Global Assessments for the non-endemic reptile species will be submitted for inclusion in the IUCN global Red List following the completion of the ongoing IUCN Global Reptile Assessment.

## 5.4 Future work

If the biodiversity data sets collated by the assessment are to be effectively integrated within the environmental or development planning process then:

- the data that have been collated will need to be kept up-to-date through ongoing collaboration with the network of Mediterranean herpetological experts, who have provided their valuable time and expertise for this project;
- established links between regional decision makers and policy makers on the one hand, and IUCN and its partners on the other, must be maintained and strengthened and the data sets must be made available to these people and/or organizations; and
- a “best practice methodology” for the process of integrating biodiversity information within the development/environmental planning process needs to be developed. This methodology should aim to both provide the information in a “user-friendly” format for all stakeholders and to provide guidelines as to when and where the information should be made available.

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# Appendix 1. CD ROM contents and instructions

The CD ROM accompanying this publication includes:

## **Species List and Summaries (Reptiles and Amphibians)**

A report presenting all information collated for each of the amphibians reviewed at this assessment including distribution, and information collected for 162 fully assessed Mediterranean endemic reptiles submitted to the 2006 IUCN Red List of Threatened Species.<sup>1</sup>

## **Species Distribution Shape Files (Reptiles and Amphibians)**

Distribution shape files for all amphibian species assessed, and the 162 fully assessed Mediterranean endemic reptiles submitted to the 2006 IUCN Red List of Threatened Species\*. For use with GIS software.

## **Information Service Data Entry Module (SIS DEM)**

The SIS DEM holds all information collated during this assessment. If you have Access 97 or 2003 you will not be able to use this database. A suitable update will shortly be available on request from IUCN. Follow the instructions in the “SIS – Instructions for DEM”. It will automatically install the database at C:\Program Files\SIS, do not move the database from this location.

## **Instruction for the SIS DEM (PDF)**

Instruction manual explaining how to install and use the SIS DEM.

## **The Status and Distribution of Reptiles and Amphibians of the Mediterranean Basin**

A copy of this report in PDF format (English, French and Spanish Versions).

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<sup>1</sup> The remaining 193 reptile species reviewed at the workshop have only been partially assessed at the global level. These data remain in draft format and will be made available on completion of a global conservation status assessment for the species.

# Appendix 2. Non-marine reptiles of the Mediterranean basin

Order	Family	Genus	Species	IUCN Red List Category	IUCN Red List Criteria	Endemic to the Mediterranean (Yes/No)
Testudines	Bataguridae [=Geoemydidae]	<i>Mauremys</i>	<i>caspica</i>	Least Concern (LC)		N
Testudines	Bataguridae [=Geoemydidae]	<i>Mauremys</i>	<i>leprosa</i>	Least Concern (LC)		Y
Testudines	Bataguridae [=Geoemydidae]	<i>Mauremys</i>	<i>rivulata</i>	Least Concern (LC)		Y
Testudines	Emyidae	<i>Emys</i>	<i>orbicularis</i>	Near Threatened (NT)		N
Testudines	Emyidae	<i>Trachemys</i>	<i>scripta</i>	Least Concern (LC)		N
Testudines	Testudinidae	<i>Testudo</i>	<i>graeca</i>	Least Concern (LC)		N
Testudines	Testudinidae	<i>Testudo</i>	<i>bermanni</i>	Near Threatened (NT)		Y
Testudines	Testudinidae	<i>Testudo</i>	<i>kleinmanni</i>	Critically Endangered (CR)	A2acd+A3cd+A4acd	Y
Testudines	Testudinidae	<i>Testudo</i>	<i>marginata</i>	Least Concern (LC)		Y
Testudines	Testudinidae	<i>Testudo</i>	<i>wernerii</i>	Critically Endangered (CR)	A3bcde+A4abcde	Y
Testudines	Trionychidae	<i>Rafetus</i>	<i>euphraticus</i>	Endangered (EN)	A3c	N
Testudines	Trionychidae	<i>Trionyx</i>	<i>triunguis</i>	Least Concern (LC)		N
Amphisbaenia	Amphisbaenidae	<i>Blanus</i>	<i>cinerens</i>	Least Concern (LC)		Y
Amphisbaenia	Amphisbaenidae	<i>Blanus</i>	<i>mettetalii</i>	Least Concern (LC)		Y
Amphisbaenia	Amphisbaenidae	<i>Blanus</i>	<i>strauchi</i>	Least Concern (LC)		N
Amphisbaenia	Amphisbaenidae	<i>Blanus</i>	<i>tingitanus</i>	Least Concern (LC)		Y
Amphisbaenia	Trogonophiidae	<i>Trogonophis</i>	<i>wiegmanni</i>	Least Concern (LC)		Y
Sauria	Agamidae	<i>Agama</i>	<i>agama</i>	Least Concern (LC)		N
Sauria	Agamidae	<i>Agama</i>	<i>bartmanni</i>	Data Deficient (DD)		N
Sauria	Agamidae	<i>Agama</i>	<i>impalearis</i>	Least Concern (LC)		N
Sauria	Agamidae	<i>Agama</i>	<i>spinosa</i>	Least Concern (LC)		N
Sauria	Agamidae	<i>Laudakia</i>	<i>stellio</i>	Least Concern (LC)		N
Sauria	Agamidae	<i>Phrynocephalus</i>	<i>arabicus</i>	Least Concern (LC)		N
Sauria	Agamidae	<i>Phrynocephalus</i>	<i>maculatus</i>	Least Concern (LC)		N
Sauria	Agamidae	<i>Pseudotrapelus</i>	<i>sinaitus</i>	Least Concern (LC)		N
Sauria	Agamidae	<i>Trapelus</i>	<i>flavimaculatus</i>	Least Concern (LC)		N
Sauria	Agamidae	<i>Trapelus</i>	<i>mutabilis</i>	Least Concern (LC)		N
Sauria	Agamidae	<i>Trapelus</i>	<i>pallidus</i>	Least Concern (LC)		N
Sauria	Agamidae	<i>Trapelus</i>	<i>persicus</i>	Least Concern (LC)		N
Sauria	Agamidae	<i>Trapelus</i>	<i>ruderatus</i>	Least Concern (LC)		N
Sauria	Agamidae	<i>Trapelus</i>	<i>savignii</i>	Vulnerable (VU)	A2abcd	Y
Sauria	Agamidae	<i>Trapelus</i>	<i>tournevillei</i>	Least Concern (LC)		Y
Sauria	Agamidae	<i>Uromastix</i>	<i>acanthinura</i>	Near Threatened (NT)		N
Sauria	Agamidae	<i>Uromastix</i>	<i>aegyptia</i>	Near Threatened (NT)		N

Order	Family	Genus	Species	IUCN Red List Category	IUCN Red List Criteria	Endemic to the Mediterranean (Yes/No)
Sauria	Agamidae	<i>Uromastix</i>	<i>alfredschmidti</i>	Near Threatened (NT)		Y
Sauria	Agamidae	<i>Uromastix</i>	<i>dispar</i>	Near Threatened (NT)		N
Sauria	Agamidae	<i>Uromastix</i>	<i>flavifasciata</i>	Least Concern (LC)		N
Sauria	Agamidae	<i>Uromastix</i>	<i>geyri</i>	Near Threatened (NT)		N
Sauria	Agamidae	<i>Uromastix</i>	<i>ocellata</i>	Near Threatened (NT)		N
Sauria	Agamidae	<i>Uromastix</i>	<i>ornata</i>	Near Threatened (NT)		N
Sauria	Anguidae	<i>Anguis</i>	<i>cephalonica</i>	Near Threatened (NT)		Y
Sauria	Anguidae	<i>Anguis</i>	<i>fragilis</i>	Least Concern (LC)		N
Sauria	Anguidae	<i>Hyalosaurus</i>	<i>koellikeri</i>	Least Concern (LC)		Y
Sauria	Anguidae	<i>Pseudopus</i>	<i>apodus</i>	Least Concern (LC)		N
Sauria	Chamaeleonidae	<i>Chamaeleo</i>	<i>africanus</i>	Least Concern (LC)		N
Sauria	Chamaeleonidae	<i>Chamaeleo</i>	<i>chamaeleon</i>	Least Concern (LC)		N
Sauria	Eublepharidae	<i>Eublepharis</i>	<i>angramainyu</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Asaccus</i>	<i>elisae</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Bunopus</i>	<i>tuberculatus</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Cyrtopodion</i>	<i>amictopholis</i>	Endangered (EN)	B1ab(iii)	Y
Sauria	Gekkonidae	<i>Cyrtopodion</i>	<i>heterocercus</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Cyrtopodion</i>	<i>kotschyi</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Cyrtopodion</i>	<i>scabrum</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Euleptes</i>	<i>europaea</i>	Near Threatened (NT)		Y
Sauria	Gekkonidae	<i>Hemidactylus</i>	<i>flaviviridis</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Hemidactylus</i>	<i>fondaii</i>	Least Concern (LC)		Y
Sauria	Gekkonidae	<i>Hemidactylus</i>	<i>indiae</i>	Least Concern (LC)		Y
Sauria	Gekkonidae	<i>Hemidactylus</i>	<i>robustus</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Hemidactylus</i>	<i>sinaitus</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Hemidactylus</i>	<i>turcicus</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Pristurus</i>	<i>flavipunctatus</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Pristurus</i>	<i>rupestris</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Ptyodactylus</i>	<i>guttatus</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Ptyodactylus</i>	<i>basselquistii</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Ptyodactylus</i>	<i>oudrii</i>	Least Concern (LC)		Y
Sauria	Gekkonidae	<i>Ptyodactylus</i>	<i>puisenci</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Ptyodactylus</i>	<i>ragazzii</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Quedenfeldtia</i>	<i>moerens</i>	Least Concern (LC)		Y
Sauria	Gekkonidae	<i>Quedenfeldtia</i>	<i>trachyblepharus</i>	Near Threatened (NT)		Y
Sauria	Gekkonidae	<i>Saurodactylus</i>	<i>brusseti</i>	Least Concern (LC)		Y
Sauria	Gekkonidae	<i>Saurodactylus</i>	<i>fasciatus</i>	Vulnerable (VU)	B1ab(iii)	Y
Sauria	Gekkonidae	<i>Saurodactylus</i>	<i>mauritanicus</i>	Least Concern (LC)		Y
Sauria	Gekkonidae	<i>Stenodactylus</i>	<i>doriae</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Stenodactylus</i>	<i>grandiceps</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Stenodactylus</i>	<i>petrii</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Stenodactylus</i>	<i>sthenodactylus</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Tarentola</i>	<i>angustimentalis</i>	Least Concern (LC)		Y

Order	Family	Genus	Species	IUCN Red List Category	IUCN Red List Criteria	Endemic to the Mediterranean (Yes/No)
Sauria	Gekkonidae	<i>Tarentola</i>	<i>annularis</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Tarentola</i>	<i>boehmei</i>	Least Concern (LC)		Y
Sauria	Gekkonidae	<i>Tarentola</i>	<i>boettgeri</i>	Least Concern (LC)		Y
Sauria	Gekkonidae	<i>Tarentola</i>	<i>chazaliae</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Tarentola</i>	<i>delalandii</i>	Least Concern (LC)		Y
Sauria	Gekkonidae	<i>Tarentola</i>	<i>deserti</i>	Least Concern (LC)		Y
Sauria	Gekkonidae	<i>Tarentola</i>	<i>ephippiata</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Tarentola</i>	<i>gomerensis</i>	Least Concern (LC)		Y
Sauria	Gekkonidae	<i>Tarentola</i>	<i>mauritanica</i>	Least Concern (LC)		Y
Sauria	Gekkonidae	<i>Tarentola</i>	<i>mindiae</i>	Least Concern (LC)		Y
Sauria	Gekkonidae	<i>Tarentola</i>	<i>neglecta</i>	Least Concern (LC)		Y
Sauria	Gekkonidae	<i>Tropicolotes</i>	<i>algericus</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Tropicolotes</i>	<i>bisbaricus</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Tropicolotes</i>	<i>nattereri</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Tropicolotes</i>	<i>nubicus</i>	Data Deficient (DD)		N
Sauria	Gekkonidae	<i>Tropicolotes</i>	<i>steudneri</i>	Least Concern (LC)		N
Sauria	Gekkonidae	<i>Tropicolotes</i>	<i>tripolitanus</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>abmaddisii</i>	Endangered (EN)	B1b(i,ii,iii)c(iv)	N
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>aureus</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>bedriagai</i>	Near Threatened (NT)		Y
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>beershebensis</i>	Critically Endangered (CR)	A2c; B2ab(iii)	Y
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>blanci</i>	Endangered (EN)	B1ab(iii)	Y
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>boskianus</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>busacki</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>dumerilii</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>erythrurus</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>grandis</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>lineomaculatus</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>longipes</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>maculatus</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>mechriguensis</i>	Critically Endangered (CR)	B2ab(iii,v)	Y
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>opheodurus</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>orientalis</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>pardalis</i>	Vulnerable (VU)	A2c; B1ab(i,ii,iii)	Y
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>robustus</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>savignyi</i>	Near Threatened (NT)		Y
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>schmidti</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>schreiberi</i>	Endangered (EN)	A2c; B1ab(i,ii,iii,iv)+2ab(i,ii,iii,iv)	Y
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>scutellatus</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>spinicauda</i>	Critically Endangered (CR)	B2ab(iii)	Y
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>tagbitensis</i>	Data Deficient (DD)		Y
Sauria	Lacertidae	<i>Acantbodactylus</i>	<i>tristrami</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Algyroides</i>	<i>fitzingeri</i>	Least Concern (LC)		Y

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Sauria	Lacertidae	<i>Algyroides</i>	<i>marchi</i>	Endangered (EN)	B1ab(iii,iv)+2ab(iii,iv)	Y
Sauria	Lacertidae	<i>Algyroides</i>	<i>moreoticus</i>	Near Threatened (NT)		Y
Sauria	Lacertidae	<i>Algyroides</i>	<i>nigropunctatus</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Archaeolacerta</i>	<i>bedriagae</i>	Vulnerable (VU)	B1ab(iii)	Y
Sauria	Lacertidae	<i>Darevskia</i>	<i>praticola</i>	Near Threatened (NT)		N
Sauria	Lacertidae	<i>Darevskia</i>	<i>rudis</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Darevskia</i>	<i>valentini</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Gallotia</i>	<i>atlantica</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Gallotia</i>	<i>aurariae</i>	Extinct (EX)		Y
Sauria	Lacertidae	<i>Gallotia</i>	<i>bravoana</i>	Critically Endangered (CR)	D	Y
Sauria	Lacertidae	<i>Gallotia</i>	<i>caesaris</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Gallotia</i>	<i>galloti</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Gallotia</i>	<i>intermedia</i>	Critically Endangered (CR)	B1ab(v)+2ab(v)	Y
Sauria	Lacertidae	<i>Gallotia</i>	<i>simonyi</i>	Critically Endangered (CR)	B1ab(v)+2ab(v)	Y
Sauria	Lacertidae	<i>Gallotia</i>	<i>steblini</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Iberolacerta</i>	<i>aranica</i>	Critically Endangered (CR)	B1ab(iii)	Y
Sauria	Lacertidae	<i>Iberolacerta</i>	<i>aurelioi</i>	Endangered (EN)	B1ab(iii)+2ab(iii)	Y
Sauria	Lacertidae	<i>Iberolacerta</i>	<i>bonnali</i>	Near Threatened (NT)		Y
Sauria	Lacertidae	<i>Iberolacerta</i>	<i>cyreni</i>	Endangered (EN)	B1ab(iii)	Y
Sauria	Lacertidae	<i>Iberolacerta</i>	<i>horvathi</i>	Near Threatened (NT)		N
Sauria	Lacertidae	<i>Iberolacerta</i>	<i>martinezricai</i>	Critically Endangered (CR)	B2ab(v); C2a(ii)	Y
Sauria	Lacertidae	<i>Iberolacerta</i>	<i>monticola</i>	Vulnerable (VU)	B1ab(iii)	Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>agilis</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Lacerta</i>	<i>anatolica</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>andreae</i>	Near Threatened (NT)		Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>bilineata</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Lacerta</i>	<i>cappadocica</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Lacerta</i>	<i>cyanisparsa</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>danfordi</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>dugesii</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>fraasii</i>	Endangered (EN)	B1ab(iii)	Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>graeca</i>	Near Threatened (NT)		Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>kulzeri</i>	Endangered (EN)	B2ab(iii)	Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>laevis</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>media</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Lacerta</i>	<i>mosorensis</i>	Vulnerable (VU)	B2ab(iii)	Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>oertzeni</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>oxycephala</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>pamphylica</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>schreiberi</i>	Near Threatened (NT)		Y
Sauria	Lacertidae	<i>Lacerta</i>	<i>trilineata</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Lacerta</i>	<i>viridis</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Latastia</i>	<i>longicaudata</i>	Least Concern (LC)		N

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Sauria	Lacertidae	<i>Mesalina</i>	<i>babaeldini</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Mesalina</i>	<i>brevirostris</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Mesalina</i>	<i>guttulata</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Mesalina</i>	<i>martini</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Mesalina</i>	<i>olivieri</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Mesalina</i>	<i>pasteuri</i>	Data Deficient (DD)		N
Sauria	Lacertidae	<i>Mesalina</i>	<i>rubropunctata</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Mesalina</i>	<i>simonii</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Ophisops</i>	<i>elbaensis</i>	Data Deficient (DD)		N
Sauria	Lacertidae	<i>Ophisops</i>	<i>elegans</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Ophisops</i>	<i>occidentalis</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Parvilacerta</i>	<i>parva</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Philobortus</i>	<i>intermedius</i>	Data Deficient (DD)		N
Sauria	Lacertidae	<i>Philobortus</i>	<i>zollii</i>	Critically Endangered (CR)	B1ab(iii)	Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>bocagei</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>carbonelli</i>	Endangered (EN)	B1ab(i,ii,iii,iv,v)	Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>erhardii</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>fulfolensis</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>gaigeae</i>	Vulnerable (VU)	D2	Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>hispanica</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>lilfordi</i>	Endangered (EN)	B1ab(ii)+2ab(iii)	Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>melisellensis</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>milensis</i>	Near Threatened (NT)		Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>muralis</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Podarcis</i>	<i>peloponnesiaca</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>pityusensis</i>	Near Threatened (NT)		Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>raffonei</i>	Critically Endangered (CR)	B1ab(v)+2ab(v)	Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>sicula</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>taurica</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Podarcis</i>	<i>tiliguerta</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>vaucheri</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Podarcis</i>	<i>wagleriana</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Psammodromus</i>	<i>algirus</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Psammodromus</i>	<i>blanci</i>	Near Threatened (NT)		Y
Sauria	Lacertidae	<i>Psammodromus</i>	<i>hispanicus</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Psammodromus</i>	<i>microdactylus</i>	Endangered (EN)	B1ab(iii,v)	Y
Sauria	Lacertidae	<i>Pseuderemias</i>	<i>mucronata</i>	Data Deficient (DD)		N
Sauria	Lacertidae	<i>Teira</i>	<i>perspicillata</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Timon</i>	<i>lepidus</i>	Near Threatened (NT)		Y
Sauria	Lacertidae	<i>Timon</i>	<i>pater</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Timon</i>	<i>princeps</i>	Least Concern (LC)		N
Sauria	Lacertidae	<i>Timon</i>	<i>tangitanus</i>	Least Concern (LC)		Y
Sauria	Lacertidae	<i>Zootoca</i>	<i>vivipara</i>	Least Concern (LC)		N

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Sauria	Scincidae	<i>Ablepharus</i>	<i>budaki</i>	Least Concern (LC)		Y
Sauria	Scincidae	<i>Ablepharus</i>	<i>chernovi</i>	Least Concern (LC)		N
Sauria	Scincidae	<i>Ablepharus</i>	<i>kitabelii</i>	Least Concern (LC)		N
Sauria	Scincidae	<i>Ablepharus</i>	<i>rueppellii</i>	Least Concern (LC)		Y
Sauria	Scincidae	<i>Chalcides</i>	<i>bedriagai</i>	Near Threatened (NT)		Y
Sauria	Scincidae	<i>Chalcides</i>	<i>chalcides</i>	Least Concern (LC)		Y
Sauria	Scincidae	<i>Chalcides</i>	<i>colosii</i>	Least Concern (LC)		Y
Sauria	Scincidae	<i>Chalcides</i>	<i>ebneri</i>	Critically Endangered (CR)	B1ab(iii)	Y
Sauria	Scincidae	<i>Chalcides</i>	<i>guentheri</i>	Vulnerable (VU)	B1ab(iii)	Y
Sauria	Scincidae	<i>Chalcides</i>	<i>lanzai</i>	Near Threatened (NT)		Y
Sauria	Scincidae	<i>Chalcides</i>	<i>manneli</i>	Vulnerable (VU)	B1ab(iii)	Y
Sauria	Scincidae	<i>Chalcides</i>	<i>mauritanicus</i>	Endangered (EN)	B1ab(iii)	Y
Sauria	Scincidae	<i>Chalcides</i>	<i>mertensi</i>	Least Concern (LC)		Y
Sauria	Scincidae	<i>Chalcides</i>	<i>minutus</i>	Vulnerable (VU)		Y
Sauria	Scincidae	<i>Chalcides</i>	<i>mionecton</i>	Least Concern (LC)		Y
Sauria	Scincidae	<i>Chalcides</i>	<i>montanus</i>	Near Threatened (NT)		Y
Sauria	Scincidae	<i>Chalcides</i>	<i>ocellatus</i>	Least Concern (LC)		N
Sauria	Scincidae	<i>Chalcides</i>	<i>parallelus</i>	Endangered (EN)	B1b(iii)	Y
Sauria	Scincidae	<i>Chalcides</i>	<i>polylepis</i>	Least Concern (LC)		Y
Sauria	Scincidae	<i>Chalcides</i>	<i>pseudostriatus</i>	Near Threatened (NT)		Y
Sauria	Scincidae	<i>Chalcides</i>	<i>ragazzii</i>	Least Concern (LC)		N
Sauria	Scincidae	<i>Chalcides</i>	<i>sexlineatus</i>	Least Concern (LC)		Y
Sauria	Scincidae	<i>Chalcides</i>	<i>simonyi</i>	Endangered (EN)	B1ab(iii)	Y
Sauria	Scincidae	<i>Chalcides</i>	<i>striatus</i>	Least Concern (LC)		Y
Sauria	Scincidae	<i>Chalcides</i>	<i>viridanus</i>	Least Concern (LC)		Y
Sauria	Scincidae	<i>Euprepis</i>	<i>auratus</i>	Least Concern (LC)		N
Sauria	Scincidae	<i>Eumeces</i>	<i>algeriensis</i>	Least Concern (LC)		Y
Sauria	Scincidae	<i>Eumeces</i>	<i>schneideri</i>	Least Concern (LC)		N
Sauria	Scincidae	<i>Ophiomorus</i>	<i>latastii</i>	Data Deficient (DD)		Y
Sauria	Scincidae	<i>Ophiomorus</i>	<i>punctatissimus</i>	Least Concern (LC)		Y
Sauria	Scincidae	<i>Scincopus</i>	<i>fasciatus</i>	Data Deficient (DD)		N
Sauria	Scincidae	<i>Scincus</i>	<i>albifasciatus</i>	Least Concern (LC)		N
Sauria	Scincidae	<i>Scincus</i>	<i>scincus</i>	Least Concern (LC)		N
Sauria	Scincidae	<i>Spbenops</i>	<i>boulengeri</i>	Least Concern (LC)		N
Sauria	Scincidae	<i>Spbenops</i>	<i>delislei</i>	Least Concern (LC)		N
Sauria	Scincidae	<i>Spbenops</i>	<i>sepsoides</i>	Least Concern (LC)		Y
Sauria	Scincidae	<i>Spbenops</i>	<i>spbenopsiformis</i>	Least Concern (LC)		N
Sauria	Scincidae	<i>Trachylepis</i>	<i>quinquetaeniata</i>	Least Concern (LC)		N
Sauria	Scincidae	<i>Trachylepis</i>	<i>vittata</i>	Least Concern (LC)		Y
Sauria	Varanidae	<i>Varanus</i>	<i>griseus</i>	Least Concern (LC)		N
Sauria	Varanidae	<i>Varanus</i>	<i>niloticus</i>	Least Concern (LC)		N
Ophidia	Atractaspididae	<i>Atractaspis</i>	<i>engaddensis</i>	Least Concern (LC)		N
Ophidia	Atractaspididae	<i>Micrelaps</i>	<i>muelleri</i>	Least Concern (LC)		Y

Order	Family	Genus	Species	IUCN Red List Category	IUCN Red List Criteria	Endemic to the Mediterranean (Yes/No)
Ophidia	Boidae	<i>Eryx</i>	<i>jaculus</i>	Least Concern (LC)		N
Ophidia	Boidae	<i>Gongylophis</i>	<i>colubrinus</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Coronella</i>	<i>austriaca</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Coronella</i>	<i>gironдика</i>	Least Concern (LC)		Y
Ophidia	Colubridae	<i>Dasypeltis</i>	<i>scabra</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Dolichophis</i>	<i>caspius</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Dolichophis</i>	<i>jugularis</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Dolichophis</i>	<i>schmidti</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Eirenis</i>	<i>aurolineatus</i>	Least Concern (LC)		Y
Ophidia	Colubridae	<i>Eirenis</i>	<i>barani</i>	Least Concern (LC)		Y
Ophidia	Colubridae	<i>Eirenis</i>	<i>coronella</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Eirenis</i>	<i>coronelloides</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Eirenis</i>	<i>decemlineata</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Eirenis</i>	<i>eiselti</i>	Least Concern (LC)		Y
Ophidia	Colubridae	<i>Eirenis</i>	<i>bakkeriensis</i>	Data Deficient (DD)		N
Ophidia	Colubridae	<i>Eirenis</i>	<i>levantinus</i>	Least Concern (LC)		Y
Ophidia	Colubridae	<i>Eirenis</i>	<i>lineomaculatus</i>	Least Concern (LC)		Y
Ophidia	Colubridae	<i>Eirenis</i>	<i>modestus</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Eirenis</i>	<i>persicus</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Eirenis</i>	<i>punctatolineatus</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Eirenis</i>	<i>rothii</i>	Least Concern (LC)		Y
Ophidia	Colubridae	<i>Eirenis</i>	<i>thospitis</i>	Data Deficient (DD)		Y
Ophidia	Colubridae	<i>Elaphe</i>	<i>quatuorlineata</i>	Near Threatened (NT)		Y
Ophidia	Colubridae	<i>Elaphe</i>	<i>sauromates</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Hemorrhois</i>	<i>algirus</i>	Least Concern (LC)		Y
Ophidia	Colubridae	<i>Hemorrhois</i>	<i>hippocrepis</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Hemorrhois</i>	<i>nummifer</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Hemorrhois</i>	<i>ravergieri</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Hierophis</i>	<i>cypriensis</i>	Endangered (EN)	B1ab(iii)	Y
Ophidia	Colubridae	<i>Hierophis</i>	<i>gemonensis</i>	Least Concern (LC)		Y
Ophidia	Colubridae	<i>Hierophis</i>	<i>viridiflavus</i>	Least Concern (LC)		Y
Ophidia	Colubridae	<i>Lamprophis</i>	<i>fuliginosus</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Lycophidion</i>	<i>capense</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Lytorhynchus</i>	<i>diadema</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Macroprotodon</i>	<i>abubakeri</i>	Data Deficient (DD)		Y
Ophidia	Colubridae	<i>Macroprotodon</i>	<i>brevis</i>	Near Threatened (NT)		Y
Ophidia	Colubridae	<i>Macroprotodon</i>	<i>cucullatus</i>	Least Concern (LC)		Y
Ophidia	Colubridae	<i>Malpolon</i>	<i>moilensis</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Malpolon</i>	<i>monspessulanus</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Natrix</i>	<i>maura</i>	Least Concern (LC)		Y
Ophidia	Colubridae	<i>Natrix</i>	<i>natrix</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Natrix</i>	<i>tessellata</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Platyceps</i>	<i>collaris</i>	Least Concern (LC)		Y



Order	Family	Genus	Species	IUCN Red List Category	IUCN Red List Criteria	Endemic to the Mediterranean (Yes/No)
Ophidia	Colubridae	<i>Platyceps</i>	<i>elegantissimus</i>	Data Deficient (DD)		N
Ophidia	Colubridae	<i>Platyceps</i>	<i>florulentus</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Platyceps</i>	<i>najadum</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Platyceps</i>	<i>rhodorachis</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Platyceps</i>	<i>rogersi</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Platyceps</i>	<i>saharicus</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Platyceps</i>	<i>sinai</i>	Data Deficient (DD)		Y
Ophidia	Colubridae	<i>Platyceps</i>	<i>ventromaculatus</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Psammophis</i>	<i>aegyptius</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Psammophis</i>	<i>punctulatus</i>	Data Deficient (DD)		N
Ophidia	Colubridae	<i>Psammophis</i>	<i>rukwaie</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Psammophis</i>	<i>schoekari</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Psammophis</i>	<i>sibilans</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Rhinechis</i>	<i>scalaris</i>	Least Concern (LC)		Y
Ophidia	Colubridae	<i>Rhynchocalamus</i>	<i>melanocephalus</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Spalerosophis</i>	<i>diadema</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Spalerosophis</i>	<i>dolichospilus</i>	Data Deficient (DD)		Y
Ophidia	Colubridae	<i>Telescopus</i>	<i>dbara</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Telescopus</i>	<i>fallax</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Telescopus</i>	<i>guidimakaensis</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Telescopus</i>	<i>hoogstraali</i>	Endangered (EN)	B1ab(iii)	Y
Ophidia	Colubridae	<i>Telescopus</i>	<i>nigriceps</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Zamenis</i>	<i>bobenackeri</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Zamenis</i>	<i>lineatus</i>	Data Deficient (DD)		Y
Ophidia	Colubridae	<i>Zamenis</i>	<i>longissima</i>	Least Concern (LC)		N
Ophidia	Colubridae	<i>Zamenis</i>	<i>situla</i>	Least Concern (LC)		N
Ophidia	Elapidae	<i>Naja</i>	<i>baje</i>	Least Concern (LC)		N
Ophidia	Elapidae	<i>Naja</i>	<i>nubiae</i>	Least Concern (LC)		N
Ophidia	Elapidae	<i>Walterinnesia</i>	<i>aegyptia</i>	Least Concern (LC)		N
Ophidia	Leptotyphlopidae	<i>Leptotyphlops</i>	<i>algeriensis</i>	Data Deficient (DD)		N
Ophidia	Leptotyphlopidae	<i>Leptotyphlops</i>	<i>cairi</i>	Least Concern (LC)		N
Ophidia	Leptotyphlopidae	<i>Leptotyphlops</i>	<i>macrorhynchus</i>	Least Concern (LC)		N
Ophidia	Leptotyphlopidae	<i>Leptotyphlops</i>	<i>nursii</i>	Least Concern (LC)		N
Ophidia	Typhlopidae	<i>Ramphotyphlops</i>	<i>braminus</i>	Least Concern (LC)		N
Ophidia	Typhlopidae	<i>Rhinotyphlops</i>	<i>episcopus</i>	Data Deficient (DD)		N
Ophidia	Typhlopidae	<i>Rhinotyphlops</i>	<i>simonii</i>	Least Concern (LC)		Y
Ophidia	Typhlopidae	<i>Typhlops</i>	<i>vermicularis</i>	Least Concern (LC)		N
Ophidia	Viperidae	<i>Bitis</i>	<i>arietans</i>	Least Concern (LC)		N
Ophidia	Viperidae	<i>Cerastes</i>	<i>cerastes</i>	Least Concern (LC)		N
Ophidia	Viperidae	<i>Cerastes</i>	<i>gasperettii</i>	Least Concern (LC)		N
Ophidia	Viperidae	<i>Cerastes</i>	<i>vipera</i>	Least Concern (LC)		N
Ophidia	Viperidae	<i>Daboia</i>	<i>deserti</i>	Near Threatened (NT)		Y
Ophidia	Viperidae	<i>Daboia</i>	<i>mauritanica</i>	Near Threatened (NT)		Y

Order	Family	Genus	Species	IUCN Red List Category	IUCN Red List Criteria	Endemic to the Mediterranean (Yes/No)
Ophidia	Viperidae	<i>Daboia</i>	<i>palaestinae</i>	Least Concern (LC)		Y
Ophidia	Viperidae	<i>Echis</i>	<i>coloratus</i>	Least Concern (LC)		N
Ophidia	Viperidae	<i>Echis</i>	<i>leucogaster</i>	Least Concern (LC)		N
Ophidia	Viperidae	<i>Echis</i>	<i>pyramidum</i>	Least Concern (LC)		N
Ophidia	Viperidae	<i>Macrovipera</i>	<i>lebetina</i>	Least Concern (LC)		N
Ophidia	Viperidae	<i>Macrovipera</i>	<i>schweizeri</i>	Endangered (EN)	B1ab(iii,v)	Y
Ophidia	Viperidae	<i>Montivipera</i>	<i>albizona</i>	Endangered (EN)	B1ab(v)	Y
Ophidia	Viperidae	<i>Montivipera</i>	<i>bornmuelleri</i>	Endangered (EN)	B1ab(iii)	Y
Ophidia	Viperidae	<i>Montivipera</i>	<i>xantbina</i>	Least Concern (LC)		Y
Ophidia	Viperidae	<i>Pseudocerastes</i>	<i>fieldi</i>	Least Concern (LC)		N
Ophidia	Viperidae	<i>Vipera</i>	<i>ammodytes</i>	Least Concern (LC)		N
Ophidia	Viperidae	<i>Vipera</i>	<i>anatolica</i>	Endangered (EN)	B1ab(v)+2ab(v)	Y
Ophidia	Viperidae	<i>Vipera</i>	<i>aspis</i>	Least Concern (LC)		N
Ophidia	Viperidae	<i>Vipera</i>	<i>barani</i>	Near Threatened (NT)		Y
Ophidia	Viperidae	<i>Vipera</i>	<i>berus</i>	Least Concern (LC)		N
Ophidia	Viperidae	<i>Vipera</i>	<i>latastei</i>	Near Threatened (NT)		Y
Ophidia	Viperidae	<i>Vipera</i>	<i>monticola</i>	Near Threatened (NT)		Y
Ophidia	Viperidae	<i>Vipera</i>	<i>seoanei</i>	Least Concern (LC)		Y
Ophidia	Viperidae	<i>Vipera</i>	<i>ursinii</i>	Vulnerable (VU)	B2ab(iii)	N
Crocodylia	Crocodylidae	<i>Crocodylus</i>	<i>niloticus</i>	Least Concern (LC)		N

NB. The Red List Assessments for tortoises and freshwater turtles have not yet been finalized by the pertinent Red List Authority and must be considered as provisional assessments. Assessments for reptile species endemic to Turkey are also provisional, and it is intended that they will be reviewed in more detail during the latter part of 2006.

# Appendix 3. Reptiles that occur in northeastern Turkey, but not in the Mediterranean basin

Order	Family	Genus	Species
Sauria	Agamidae	<i>Laudakia</i>	<i>caucasia</i>
Sauria	Agamidae	<i>Phrynocephalus</i>	<i>helioscopus</i>
Sauria	Gekkonidae	<i>Cyrtodactylus</i>	<i>basogluhi</i>
Sauria	Lacertidae	<i>Darevskia</i>	<i>armeniaca</i>
Sauria	Lacertidae	<i>Darevskia</i>	<i>bendimabiensis</i>
Sauria	Lacertidae	<i>Darevskia</i>	<i>clarkorum</i>
Sauria	Lacertidae	<i>Darevskia</i>	<i>derjugini</i>
Sauria	Lacertidae	<i>Darevskia</i>	<i>mixta</i>
Sauria	Lacertidae	<i>Darevskia</i>	<i>parvula</i>
Sauria	Lacertidae	<i>Darevskia</i>	<i>raddei</i>
Sauria	Lacertidae	<i>Darevskia</i>	<i>sapphirina</i>
Sauria	Lacertidae	<i>Darevskia</i>	<i>unisexnalis</i>
Sauria	Lacertidae	<i>Darevskia</i>	<i>uzzeffi</i>
Sauria	Lacertidae	<i>Eremias</i>	<i>arguta</i>
Sauria	Lacertidae	<i>Eremias</i>	<i>pleskei</i>
Sauria	Lacertidae	<i>Eremias</i>	<i>strauchi</i>
Sauria	Lacertidae	<i>Eremias</i>	<i>suphani</i>
Sauria	Lacertidae	<i>Lacerta</i>	<i>dryada</i>
Sauria	Lacertidae	<i>Lacerta</i>	<i>strigata</i>
Sauria	Scincidae	<i>Ablepharus</i>	<i>bivittatus</i>
Ophidia	Colubridae	<i>Natrix</i>	<i>megaloccephala</i>
Ophidia	Viperidae	<i>Vipera</i>	<i>darevskii</i>
Ophidia	Viperidae	<i>Vipera</i>	<i>erivanensis</i>
Ophidia	Viperidae	<i>Vipera</i>	<i>kaznakovi</i>
Ophidia	Viperidae	<i>Vipera</i>	<i>pontica</i>
Ophidia	Viperidae	<i>Vipera</i>	<i>raddei</i>
Ophidia	Viperidae	<i>Vipera</i>	<i>transcaucasiana</i>
Ophidia	Viperidae	<i>Vipera</i>	<i>wagneri</i>

# Appendix 4. Conservation status of non-marine reptiles in Mediterranean basin countries

Country	Extinct (EX)	Critically Endangered (CR)	Endangered (EN)	Vulnerable (VU)	Near Threatened (NT)	Least Concern (LC)	Data Deficient (DD)
Albania	0	0	0	1	3	30	0
Algeria	0	1	3	1	12	76	6
Andorra	0	0	1	0	0	4	0
Bosnia and Herzegovina	0	0	0	2	3	24	0
Bulgaria	0	0	0	0	3	28	0
Croatia	0	0	0	2	4	29	0
Cyprus	0	0	2	0	1	19	0
Egypt	0	3	1	2	4	85	6
France	0	1	1	2	5	30	0
FYR Macedonia	0	0	0	1	2	26	0
Greece	0	0	1	2	9	47	0
Israel / Palestine	0	2	2	2	2	70	3
Italy	0	1	0	2	6	38	1
Jordan	0	0	3	1	1	76	3
Lebanon	0	0	5	1	0	41	0
Libyan Arab Jamahiriya	0	2	0	1	3	51	1
Malta	0	0	0	0	0	9	0
Monaco	0	0	0	0	0	2	0
Morocco	0	1	3	3	12	67	4
Portugal	0	0	1	1	6	23	0
Serbia and Montenegro	0	0	0	2	4	31	0
Slovenia	0	0	0	0	3	22	0
Spain	0	6	7	2	11	51	1
Switzerland	0	0	0	0	1	16	0
Syrian Arab Republic	0	0	4	1	1	73	1
Tunisia	0	1	1	0	7	50	3
Turkey	0	0	4	0	4	84	3
Western Sahara	0	0	0	0	3	42	3

NB. These totals include introduced and reintroduced species, but not Regionally Extinct or Vagrant species.

# Appendix 5. Major threats to reptiles in the Mediterranean basin

Major threat	All species			Threatened species		
	Past	Present	Future	Past	Present	Future
1. Habitat loss/degradation (human induced)	181	199	206	37	38	38
1.1 Agriculture	147	155	159	25	25	25
1.1.1 Crops	84	102	103	11	14	14
1.1.1.2 Smallholder farming	16	15	15	3	3	3
1.1.1.3 Agro-industry farming	71	93	94	9	13	13
1.1.2 Wood plantations	8	8	8	1	1	1
1.1.2.1 Small-scale	1	0	0	0	0	0
1.1.2.2 Large-scale	8	8	8	1	1	1
1.1.3 Non-timber plantations	2	3	3	1	1	1
1.1.3.1 Small-scale	0	1	1	0	0	0
1.1.3.2 Large-scale	2	2	2	1	1	1
1.1.4 Livestock	80	82	86	17	17	17
1.1.4.1 Nomadic	61	63	67	10	11	11
1.1.4.2 Smallholder	17	19	19	7	8	8
1.1.4.3 Agro-industry	8	10	10	2	3	3
1.1.5 Abandonment	1	4	4	1	1	1
1.2 Land management of non-agricultural areas	1	1	1	0	0	0
1.2.1 Abandonment	1	1	1	0	0	0
1.2.2 Change of management regime	1	1	1	0	0	0
1.3 Extraction	42	63	71	12	12	14
1.3.1 Mining	2	31	36	1	5	7
1.3.3 Wood	33	34	37	7	7	7
1.3.3.1 Small-scale subsistence	25	26	29	4	4	4
1.3.3.2 Selective logging	10	10	10	2	2	2
1.3.3.3 Clear-cutting	2	2	2	1	1	1
1.3.4 Non-woody vegetation collection	3	3	3	2	2	2
1.3.6 Groundwater extraction	2	3	3	1	1	1
1.3.7 Other	2	2	2	1	1	1
1.4 Infrastructure development	65	95	102	23	27	29
1.4.1 Industry	6	7	7	3	4	4
1.4.2 Human settlement	42	54	56	11	13	13
1.4.3 Tourism/recreation	29	56	63	11	17	21
1.4.4 Transport – land/air	5	9	12	2	4	6
1.4.5 Transport – water	0	1	1	0	1	1

Major threat	All species			Threatened species		
	Past	Present	Future	Past	Present	Future
1.4.6 Dams	3	5	9	2	2	4
1.4.7 Telecommunications	0	1	1	0	1	1
1.4.9 Other	5	5	5	4	4	4
1.5 Invasive alien species (directly impacting habitat)	1	1	1	0	0	0
1.7 Fires	21	21	21	2	2	2
1.8 Other causes	1	2	2	0	0	0
2. Invasive alien species (directly affecting the species)	17	20	21	7	8	8
2.1 Competitors	2	5	5	1	2	2
2.2 Predators	15	15	16	6	7	7
2.3 Hybridizers	0	1	1	0	0	0
2.4 Pathogens/parasites	0	1	1	0	0	0
3. Harvesting (hunting/gathering)	85	81	84	15	14	15
3.1 Food	17	10	11	2	0	0
3.1.1 Subsistence use/local trade	17	10	11	2	0	0
3.1.2 Sub-national/national trade	2	0	1	0	0	0
3.2 Medicine	17	18	18	0	0	0
3.2.1 Subsistence use/local trade	9	9	9	0	0	0
3.2.2 Sub-national/national trade	10	11	11	0	0	0
3.2.3 Regional/international trade	3	3	3	0	0	0
3.4 Materials	3	3	3	0	0	0
3.4.1 Subsistence use/local trade	1	1	1	0	0	0
3.4.2 Sub-national/national trade	3	3	3	0	0	0
3.4.3 Regional/international trade	2	1	1	0	0	0
3.5 Cultural/scientific/leisure activities	73	70	71	14	14	15
3.5.1 Subsistence use/local trade	8	7	6	0	0	0
3.5.2 Sub-national/national trade	27	24	23	7	7	7
3.5.3 Regional/international trade	69	65	67	14	14	15
4. Accidental mortality	40	41	41	6	7	7
4.1 Bycatch	6	5	5	1	1	1
4.1.1 Fisheries-related	4	4	4	1	1	1
4.1.1.2 Netting	1	1	1	0	0	0
4.1.1.3 Entanglement	2	2	2	0	0	0
4.1.2 Terrestrial	3	2	2	1	1	1
4.1.2.3 Poisoning	3	2	2	1	1	1
4.2 Collision	33	36	36	4	5	5
4.2.2 Vehicle collision	33	36	36	4	5	5
5. Persecution	58	57	57	4	4	4
5.1 Pest control	3	2	2	0	0	0
5.2 Other	55	55	55	4	4	4
6. Pollution (affecting habitat and/or species)	26	33	40	3	7	12
6.1 Atmospheric pollution	1	7	14	1	5	10
6.1.1 Global warming/oceanic warming	1	7	14	1	5	10
6.2 Land pollution	19	19	19	1	1	1
6.2.1 Agricultural	15	15	15	0	0	0

Major threat	All species			Threatened species		
	Past	Present	Future	Past	Present	Future
6.2.2 Domestic	3	3	3	1	1	1
6.3 Water pollution	6	7	7	1	1	1
6.3.1 Agricultural	2	3	3	0	0	0
6.3.2 Domestic	3	3	3	0	0	0
6.3.3 Commercial/industrial	2	2	2	0	0	0
6.3.5 Thermal pollution	1	1	1	1	1	1
6.3.6 Oil slicks	1	1	1	0	0	0
6.3.8 Sewage	1	1	1	0	0	0
7. Natural disasters	6	6	6	2	3	3
7.1 Drought	3	3	3	1	1	1
7.2 Storms/flooding	1	0	0	0	0	0
7.4 Wildfire	1	1	1	0	0	0
7.5 Volcanoes	1	0	0	1	0	0
7.6 Avalanches/landslides	0	1	1	0	1	1
7.7 Other	0	1	1	0	1	1
8. Changes in native species dynamics	7	11	13	3	4	5
8.1 Competitors	4	4	4	2	2	2
8.2 Predators	3	7	8	1	2	2
8.3 Prey/food base	0	0	1	0	0	1
8.4 Hybridizers	2	2	2	0	0	0
8.5 Pathogens/parasites	1	1	1	0	0	0
9. Intrinsic factors	36	36	36	22	22	22
9.1 Limited dispersal	15	15	15	10	10	10
9.2 Poor recruitment/reproduction/regeneration	11	11	11	7	7	7
9.3 High juvenile mortality	5	5	5	1	1	1
9.4 Inbreeding	3	3	3	3	3	3
9.5 Low densities	3	6	6	0	2	2
9.7 Slow growth rates	9	9	9	6	6	6
9.9 Restricted range	25	26	26	17	18	18
9.10 Other	1	1	1	0	0	0
10. Human disturbance	18	33	31	9	10	9
10.1 Recreation/tourism	12	26	25	7	9	9
10.3 War/civil unrest	3	1	0	2	1	0
10.4 Transport	3	18	18	1	2	2
10.5 Fire	2	2	2	0	0	0
12. Unknown	34	30	31	1	1	1
13. None	80	76	71	0	0	0

# Appendix 6. Amphibians of the Mediterranean basin

Order	Family	Genus	Species	IUCN Red List Category	IUCN Red List Criteria	Endemic to the Mediterranean (Yes/No)
Anura	Bombinatoridae	<i>Bombina</i>	<i>bombina</i>	Least Concern (LC)		N
Anura	Bombinatoridae	<i>Bombina</i>	<i>pachypus</i>	Least Concern (LC)		Y
Anura	Bombinatoridae	<i>Bombina</i>	<i>variegata</i>	Least Concern (LC)		N
Anura	Bufonidae	<i>Bufo</i>	<i>brongersmai</i>	Near Threatened (NT)		Y
Anura	Bufonidae	<i>Bufo</i>	<i>bufo</i>	Least Concern (LC)		N
Anura	Bufonidae	<i>Bufo</i>	<i>calamita</i>	Least Concern (LC)		N
Anura	Bufonidae	<i>Bufo</i>	<i>dodsoni</i>	Least Concern (LC)		N
Anura	Bufonidae	<i>Bufo</i>	<i>kassasii</i>	Least Concern (LC)		Y
Anura	Bufonidae	<i>Bufo</i>	<i>mauritanicus</i>	Least Concern (LC)		Y
Anura	Bufonidae	<i>Bufo</i>	<i>pentoni</i>	Least Concern (LC)		N
Anura	Bufonidae	<i>Bufo</i>	<i>regularis</i>	Least Concern (LC)		N
Anura	Bufonidae	<i>Bufo</i>	<i>viridis</i>	Least Concern (LC)		N
Anura	Bufonidae	<i>Bufo</i>	<i>xeros</i>	Least Concern (LC)		N
Anura	Discoglossidae	<i>Alytes</i>	<i>cisternasii</i>	Near Threatened (NT)		Y
Anura	Discoglossidae	<i>Alytes</i>	<i>dickbilleni</i>	Vulnerable (VU)	B2ab(iii,iv)	Y
Anura	Discoglossidae	<i>Alytes</i>	<i>maurus</i>	Near Threatened (NT)		Y
Anura	Discoglossidae	<i>Alytes</i>	<i>muletensis</i>	Vulnerable (VU)	D2	Y
Anura	Discoglossidae	<i>Alytes</i>	<i>obstetricans</i>	Least Concern (LC)		N
Anura	Discoglossidae	<i>Discoglossus</i>	<i>galganoi</i>	Least Concern (LC)		Y
Anura	Discoglossidae	<i>Discoglossus</i>	<i>jeanneae</i>	Near Threatened (NT)		Y
Anura	Discoglossidae	<i>Discoglossus</i>	<i>montalentii</i>	Near Threatened (NT)		Y
Anura	Discoglossidae	<i>Discoglossus</i>	<i>nigriventer</i>	Extinct (EX)		Y
Anura	Discoglossidae	<i>Discoglossus</i>	<i>pictus</i>	Least Concern (LC)		Y
Anura	Discoglossidae	<i>Discoglossus</i>	<i>sardus</i>	Least Concern (LC)		Y
Anura	Discoglossidae	<i>Discoglossus</i>	<i>scovazzi</i>	Least Concern (LC)		Y
Anura	Hylidae	<i>Hyla</i>	<i>arborea</i>	Least Concern (LC)		N
Anura	Hylidae	<i>Hyla</i>	<i>intermedia</i>	Least Concern (LC)		Y
Anura	Hylidae	<i>Hyla</i>	<i>meridionalis</i>	Least Concern (LC)		Y
Anura	Hylidae	<i>Hyla</i>	<i>sarda</i>	Least Concern (LC)		Y
Anura	Hylidae	<i>Hyla</i>	<i>savignyi</i>	Least Concern (LC)		N
Anura	Pelobatidae	<i>Pelobates</i>	<i>cultripes</i>	Near Threatened (NT)		Y
Anura	Pelobatidae	<i>Pelobates</i>	<i>fuscus</i>	Least Concern (LC)		N
Anura	Pelobatidae	<i>Pelobates</i>	<i>syriacus</i>	Least Concern (LC)		N
Anura	Pelobatidae	<i>Pelobates</i>	<i>varaldi</i>	Endangered (EN)	B2ab(iii)	Y
Anura	Pelodytidae	<i>Pelodytes</i>	<i>ibericus</i>	Least Concern (LC)		Y
Anura	Pelodytidae	<i>Pelodytes</i>	<i>punctatus</i>	Least Concern (LC)		Y



Order	Family	Genus	Species	IUCN Red List Category	IUCN Red List Criteria	Endemic to the Mediterranean (Yes/No)
Anura	Pipidae	<i>Xenopus</i>	<i>laevis</i>	Least Concern (LC)		N
Anura	Ranidae	<i>Hoplobatrachus</i>	<i>occipitalis</i>	Least Concern (LC)		N
Anura	Ranidae	<i>Ptychadena</i>	<i>mascareniensis</i>	Least Concern (LC)		N
Anura	Ranidae	<i>Ptychadena</i>	<i>schillukorum</i>	Least Concern (LC)		N
Anura	Ranidae	<i>Rana</i>	<i>arvalis</i>	Least Concern (LC)		N
Anura	Ranidae	<i>Rana</i>	<i>bedriagae</i>	Least Concern (LC)		Y
Anura	Ranidae	<i>Rana</i>	<i>bergeri</i>	Least Concern (LC)		Y
Anura	Ranidae	<i>Rana</i>	<i>catesbeiana</i>	Least Concern (LC)		N
Anura	Ranidae	<i>Rana</i>	<i>cerigensis</i>	Endangered (EN)	B1ab(iii)+2ab(iii)	Y
Anura	Ranidae	<i>Rana</i>	<i>cretensis</i>	Endangered (EN)	B1ab(iii)+2ab(iii)	Y
Anura	Ranidae	<i>Rana</i>	<i>dalmatina</i>	Least Concern (LC)		N
Anura	Ranidae	<i>Rana</i>	<i>epeirotica</i>	Vulnerable (VU)	B1ab(iii)	Y
Anura	Ranidae	<i>Rana</i>	<i>esculenta</i>	Least Concern (LC)		N
Anura	Ranidae	<i>Rana</i>	<i>graeca</i>	Least Concern (LC)		Y
Anura	Ranidae	<i>Rana</i>	<i>grafi</i>	Near Threatened (NT)		Y
Anura	Ranidae	<i>Rana</i>	<i>hispanica</i>	Least Concern (LC)		Y
Anura	Ranidae	<i>Rana</i>	<i>iberica</i>	Near Threatened (NT)		Y
Anura	Ranidae	<i>Rana</i>	<i>italica</i>	Least Concern (LC)		Y
Anura	Ranidae	<i>Rana</i>	<i>kurtmuelleri</i>	Least Concern (LC)		Y
Anura	Ranidae	<i>Rana</i>	<i>latastei</i>	Vulnerable (VU)	B2ab(iii)	Y
Anura	Ranidae	<i>Rana</i>	<i>lessonae</i>	Least Concern (LC)		N
Anura	Ranidae	<i>Rana</i>	<i>macrocnemis</i>	Least Concern (LC)		N
Anura	Ranidae	<i>Rana</i>	<i>perezzi</i>	Least Concern (LC)		Y
Anura	Ranidae	<i>Rana</i>	<i>pyrenaica</i>	Endangered (EN)	B1ab(ii,iii,iv)	Y
Anura	Ranidae	<i>Rana</i>	<i>ridibunda</i>	Least Concern (LC)		N
Anura	Ranidae	<i>Rana</i>	<i>sabarica</i>	Least Concern (LC)		N
Anura	Ranidae	<i>Rana</i>	<i>sbqiperica</i>	Endangered (EN)	B1ab(iii)	Y
Anura	Ranidae	<i>Rana</i>	<i>temporaria</i>	Least Concern (LC)		N
Caudata	Plethodontidae	<i>Speleomantes</i>	<i>ambrosii</i>	Near Threatened (NT)		Y
Caudata	Plethodontidae	<i>Speleomantes</i>	<i>flavus</i>	Vulnerable (VU)	D2	Y
Caudata	Plethodontidae	<i>Speleomantes</i>	<i>genei</i>	Vulnerable (VU)	B1ab(iii)	Y
Caudata	Plethodontidae	<i>Speleomantes</i>	<i>imperialis</i>	Near Threatened (NT)		Y
Caudata	Plethodontidae	<i>Speleomantes</i>	<i>italicus</i>	Near Threatened (NT)		Y
Caudata	Plethodontidae	<i>Speleomantes</i>	<i>strinatii</i>	Near Threatened (NT)		Y
Caudata	Plethodontidae	<i>Speleomantes</i>	<i>supramontis</i>	Endangered (EN)	B1ab(iii,v)	Y
Caudata	Proteidae	<i>Proteus</i>	<i>anguinus</i>	Vulnerable (VU)	B2ab(ii,iii,v)	Y
Caudata	Salamandridae	<i>Chioglossa</i>	<i>lusitanica</i>	Vulnerable (VU)	B2ab(ii,iii,iv)	Y
Caudata	Salamandridae	<i>Euproctus</i>	<i>asper</i>	Near Threatened (NT)		Y
Caudata	Salamandridae	<i>Euproctus</i>	<i>montanus</i>	Least Concern (LC)		Y
Caudata	Salamandridae	<i>Euproctus</i>	<i>platycephalus</i>	Endangered (EN)	B2ab(iii,iv)	Y
Caudata	Salamandridae	<i>Lyciasalamandra</i>	<i>antalyana</i>	Endangered (EN)	B1ab(iii)	Y
Caudata	Salamandridae	<i>Lyciasalamandra</i>	<i>atifi</i>	Endangered (EN)	B1ab(iii)	Y
Caudata	Salamandridae	<i>Lyciasalamandra</i>	<i>billae</i>	Critically Endangered (CR)	B1ab(iii,iv,v)+2ab(iii,iv,v)	Y

Order	Family	Genus	Species	IUCN Red List Category	IUCN Red List Criteria	Endemic to the Mediterranean (Yes/No)
Caudata	Salamandridae	<i>Lyciasalamandra</i>	<i>fazilae</i>	Endangered (EN)	B1ab(iii)	Y
Caudata	Salamandridae	<i>Lyciasalamandra</i>	<i>flavimembris</i>	Endangered (EN)	B1ab(iii)	Y
Caudata	Salamandridae	<i>Lyciasalamandra</i>	<i>helverseni</i>	Vulnerable (VU)	D2	Y
Caudata	Salamandridae	<i>Lyciasalamandra</i>	<i>luschani</i>	Endangered (EN)	B1ab(iii)	Y
Caudata	Salamandridae	<i>Neurergus</i>	<i>strauchii</i>	Vulnerable (VU)	B1ab(iii)	Y
Caudata	Salamandridae	<i>Pleurodeles</i>	<i>nebulosus</i>	Vulnerable (VU)	B2ab(iii)	Y
Caudata	Salamandridae	<i>Pleurodeles</i>	<i>poireti</i>	Endangered (EN)	B1ab(ii)+2ab(iii)	Y
Caudata	Salamandridae	<i>Pleurodeles</i>	<i>wahl</i>	Near Threatened (NT)		Y
Caudata	Salamandridae	<i>Salamandra</i>	<i>algira</i>	Vulnerable (VU)	B1ab(iii)+2ab(iii)	Y
Caudata	Salamandridae	<i>Salamandra</i>	<i>atra</i>	Least Concern (LC)		N
Caudata	Salamandridae	<i>Salamandra</i>	<i>corsica</i>	Least Concern (LC)		Y
Caudata	Salamandridae	<i>Salamandra</i>	<i>infraimmaculata</i>	Near Threatened (NT)		N
Caudata	Salamandridae	<i>Salamandra</i>	<i>lanzai</i>	Vulnerable (VU)	D2	Y
Caudata	Salamandridae	<i>Salamandra</i>	<i>salamandra</i>	Least Concern (LC)		N
Caudata	Salamandridae	<i>Salamandrina</i>	<i>terdigitata</i>	Least Concern (LC)		Y
Caudata	Salamandridae	<i>Triturus</i>	<i>alpestris</i>	Least Concern (LC)		N
Caudata	Salamandridae	<i>Triturus</i>	<i>boscai</i>	Least Concern (LC)		Y
Caudata	Salamandridae	<i>Triturus</i>	<i>carnifex</i>	Least Concern (LC)		N
Caudata	Salamandridae	<i>Triturus</i>	<i>cristatus</i>	Least Concern (LC)		N
Caudata	Salamandridae	<i>Triturus</i>	<i>dobrogicus</i>	Near Threatened (NT)		N
Caudata	Salamandridae	<i>Triturus</i>	<i>helveticus</i>	Least Concern (LC)		N
Caudata	Salamandridae	<i>Triturus</i>	<i>italicus</i>	Least Concern (LC)		Y
Caudata	Salamandridae	<i>Triturus</i>	<i>karelinii</i>	Least Concern (LC)		N
Caudata	Salamandridae	<i>Triturus</i>	<i>marmoratus</i>	Least Concern (LC)		Y
Caudata	Salamandridae	<i>Triturus</i>	<i>pygmaeus</i>	Near Threatened (NT)		Y
Caudata	Salamandridae	<i>Triturus</i>	<i>vittatus</i>	Least Concern (LC)		N
Caudata	Salamandridae	<i>Triturus</i>	<i>vulgaris</i>	Least Concern (LC)		N

## Appendix 7. Amphibians that occur in northeastern Turkey, but not in the Mediterranean basin

Order	Family	Genus	Species
Anura	Bufo	<i>Bufo</i>	<i>verrucosissimus</i>
Anura	Pelodytidae	<i>Pelodytes</i>	<i>caucasicus</i>
Caudata	Salamandridae	<i>Metertensiella</i>	<i>caucasica</i>
Caudata	Salamandridae	<i>Neurergus</i>	<i>crocatus</i>

# Appendix 8. Example species summary and distribution map

The species summary gives all the information collated (for each species) during this assessment including a distribution map. You can download all the summaries and distribution maps from the enclosed CD.

**Archaeolacerta bedriagae**

**Taxonomic Authority:** (Camerano, 1885)

**Synonyms:**

**Order:** Sauria

**Notes on taxonomy:** This species is traditionally included in the genus *Lacerta*, but it is not closely related to *Lacerta sensu stricto* (Arnold 1989; Fu 1998, 2000, Harris et al. 1998, Carranza et al. 2004). As it is the type species of *Archaeolacerta*, this genus is available for it (following Arribas (1998), Mayer and Arribas (2003) and Crochet and Dubois (2004)).

**Region:** 1

**Common Names:**

Bedriaga's Rock Lizard	English
Tyrrhenische Gebirgseidechse	German
Lucertola di Bedriaga	Italian
Lezard de Bedriaga	French

**Family:** Lacertidae

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**General Information**

**Biome**  Terrestrial  Freshwater  Marine

**Geographic Range of species:** This species occurs in montane areas on the island of Corsica (France) and on most of the mountain groups of Sardinia (Italy). On these two large islands it occurs mainly from 550 to 2,550 m asl, but there are some coastal populations, including in northern Sardinia and western and southern Corsica. It occurs on several smaller islands, including Foloca Island (France), and the Maddalena Archipelago and the Isola Rossa di Trinita' d'Agulito (Italy). On smaller islands it occurs down to sea-level.

**Habitat and Ecology Information:** This species is generally found in both rocky areas and in open woodland and scrubland. It often occurs in semi-shaded areas close to streams. The females lay three to six eggs.

**Conservation Measures:** Populations in Sardinia may be more sensitive to the threats and populations should be strictly protected. This species is listed on Annex III of the Bern Convention and is protected by national legislation in both countries. It occurs in several protected areas.

**Threats:** Populations in the lowlands of Corsica are vulnerable because of the genetic isolation of many populations. Populations on both islands are threatened by the development of the tourist industry. It might be in competition with *Podarcis* species, and has perhaps been pushed to higher elevations in some places.

**Species population information:** This species can be common at higher altitudes.

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**Country Distribution**

	Native - Presence Confirmed	Native - Presence Possible	Extinct	Reintroduced	Introduced	Vagrant
France	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Italy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**FAO Marine Habitats**

	Native - Presence Confirmed	Native - Presence Possible	Extinct	Reintroduced	Introduced
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**Major Lakes**

**Major Rivers**

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<b>Upper Level Habitat Preferences</b>	Score	<b>Lower Level Habitat Preferences</b>	Score
1.4 Forest - Temperate	1		
3.4 Shrubland - Temperate	1		
3.8 Shrubland - Mediterranean-type Shrubby Vegetation	1		
5.1 Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	2		
6 Rocky areas (eg. inland cliffs, mountain peaks)	1		
11.2 Artificial/Terrestrial - Pastureland	1		
11.4 Artificial/Terrestrial - Rural Gardens	1		

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<b>Major threats</b>				<b>Conservation Measures</b>			
Code	Description of threat	Past	Present/Future	Code	Conservation measures	In place	Needed
1	Habitat Loss/Degradation (human induced)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	Policy-based actions	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.1	Agriculture	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.2	Legislation	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.1.4	Livestock	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.2.1	Development	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.1.4.2	Small-holder	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.2.1.1	International level	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.1.4.3	Agro-industry	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.2.1.2	National level	<input checked="" type="checkbox"/>	<input type="checkbox"/>

1.4	Infrastructure development	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.2.2	Implementation	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.4.3	Tourism/recreation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.2.2.1	International level	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.7	Fires	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.2.2.2	National level	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	Changes in native species dynamics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	Research actions	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8.1	Competitors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3.2	Population numbers and range	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9	Intrinsic factors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3.3	Biology and Ecology	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9.4	Inbreeding	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3.4	Habitat status	<input type="checkbox"/>	<input checked="" type="checkbox"/>
					3.5	Threats	<input type="checkbox"/>	<input checked="" type="checkbox"/>
					3.8	Conservation measures	<input type="checkbox"/>	<input checked="" type="checkbox"/>
					3.9	Trends/Monitoring	<input type="checkbox"/>	<input checked="" type="checkbox"/>
					4	Habitat and site-based actions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
					4.1	Maintenance/Conservation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
					4.4	Protected areas	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
					4.4.2	Establishment	<input checked="" type="checkbox"/>	<input type="checkbox"/>
					4.4.3	Management	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

#### Utilisation of Species

Purpose/Type of Use	Subsistence	National	International	Other purpose:
Primary forms removed from the wild	100%	>75%	51-75%	26-50% <25% <i>Other forms removed from the wild:</i>
Source of specimens in commercial trade	100%	>75%	51-75%	26-50% <25% <i>Other source of specimens:</i>

Trend in wild offtake/harvest in relation to total wild population numbers over last five years:

Trend in offtake/harvest produced through domestication/cultivation over last five years:

CITES:

#### Red Listing

Red List Assessment: Vulnerable (VU)  Possibly Extinct

Red List Criteria: B1ab(iii)

Rationale for the Red List Assessment: Listed as Vulnerable because its Extent of Occurrence is less than 20,000 km<sup>2</sup>, its distribution is severely fragmented, and there is continuing decline in the extent and quality of its forest habitat.

Current Population Trend: Decreasing

Date of Assessment: 12/17/2004

Assessor(s): Claudia Corti, Marc Cheylan

Notes on Red listing:

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***Archaeolacerta bedriagae***

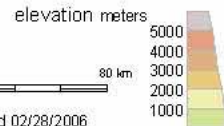
total range area = 9,192 km<sup>2</sup>

range type

-  Native Extant
-  Native Possibly Present
-  Introduced
-  Native Reintroduced
-  Possibly Extinct
-  Extinct



-  national boundaries
-  subnational boundaries
-  lakes, rivers, canals
-  salt pans, intermittent rivers



0 80 km  
map created 02/28/2006



# Appendix 9. Conservation status of amphibians in Mediterranean basin countries

Country	Extinct (EX)	Critically Endangered (CR)	Endangered (EN)	Vulnerable (VU)	Near Threatened (NT)	Least Concern (LC)	Data Deficient (DD)
Albania	0	0	1	1	0	13	0
Algeria	0	0	1	2	1	8	0
Andorra	0	0	0	0	1	3	0
Bosnia and Herzegovina	0	0	0	1	1	16	0
Bulgaria	0	0	0	0	1	16	0
Croatia	0	0	0	2	1	17	0
Cyprus	0	0	0	0	0	3	0
Egypt	0	0	0	0	0	9	0
France	0	0	1	2	5	31	0
FYR Macedonia	0	0	0	0	0	14	0
Greece	0	0	3	2	0	18	0
Israel / Palestine	1	0	0	0	1	5	0
Italy	0	0	2	6	4	28	0
Jordan	0	0	0	0	0	4	0
Lebanon	0	0	0	0	1	6	0
Libyan Arab Jamahiriya	0	0	0	0	0	4	0
Malta	0	0	0	0	0	2	0
Monaco	0	0	0	0	0	2	0
Morocco	0	0	1	1	3	7	0
Portugal	0	0	0	2	5	15	0
San Marino	0	0	0	0	0	4	0
Serbia and Montenegro	0	0	1	0	1	19	0
Slovenia	0	0	0	2	0	18	0
Spain	0	0	1	5	9	32	0
Switzerland	0	0	0	1	0	19	0
Syrian Arab Republic	0	0	0	0	1	6	0
Tunisia	0	0	0	1	0	6	0
Turkey	0	1	5	1	1	13	0
Western Sahara	0	0	0	0	1	4	0

NB. These totals include introduced and reintroduced species, but not Regionally Extinct or Vagrant species

# Appendix 10. Major threats to amphibians in the Mediterranean basin

Major threat	All species			Threatened species		
	Past	Present	Future	Past	Present	Future
1. Habitat loss/degradation (human induced)	84	86	93	18	19	26
1.1 Agriculture	71	72	72	14	14	14
1.1.1 Crops	56	57	57	11	11	11
1.1.1.1 Shifting agriculture	3	3	3	0	0	0
1.1.1.2 Smallholder farming	14	14	14	4	4	4
1.1.1.3 Agro-industry farming	56	58	58	8	8	8
1.1.2 Wood plantations	5	5	5	0	0	0
1.1.2.1 Small-scale	4	4	4	0	0	0
1.1.2.2 Large-scale	2	2	2	0	0	0
1.1.4 Livestock	48	49	49	9	9	9
1.1.4.1 Nomadic	5	5	5	0	0	0
1.1.4.2 Smallholder	10	10	10	5	5	5
1.1.4.3 Agro-industry	40	41	41	7	7	7
1.1.5 Abandonment	5	5	5	1	1	1
1.3 Extraction	29	34	35	10	11	12
1.3.1 Mining	1	4	4	0	2	2
1.3.3 Wood	19	20	20	5	6	6
1.3.3.1 Small-scale subsistence	4	4	4	3	3	3
1.3.3.2 Selective logging	10	12	12	5	6	6
1.3.3.3 Clear-cutting	12	12	12	1	1	1
1.3.6 Groundwater extraction	11	13	14	6	7	8
1.3.7 Other	5	6	6	3	3	3
1.3.8 Unknown	1	1	1	1	1	1
1.4 Infrastructure development	61	64	66	10	11	12
1.4.1 Industry	24	26	26	3	3	3
1.4.2 Human settlement	56	58	59	10	10	10
1.4.3 Tourism/recreation	21	26	26	6	8	8
1.4.4 Transport – land/air	2	2	2	1	1	1
1.4.6 Dams	3	5	6	1	1	2
1.7 Fires	2	2	8	1	1	7
2. Invasive alien species (directly affecting the species)	33	38	39	5	6	6
2.1 Competitors	2	4	6	0	1	1
2.2 Predators	31	34	35	5	5	5
2.3 Hybridizers	0	2	3	0	1	1
2.4 Pathogens/parasites	3	4	4	0	0	0
3. Harvesting (hunting/gathering)	14	15	20	3	4	9



Major threat	All species			Threatened species		
	Past	Present	Future	Past	Present	Future
3.1 Food	6	6	6	2	2	2
3.1.1 Subsistence use/local trade	2	2	2	1	1	1
3.1.2 Sub-national/national trade	3	3	3	1	1	1
3.1.3 Regional/international trade	3	3	3	1	1	1
3.2 Medicine	1	1	1	0	0	0
3.2.1 Subsistence use/local trade	1	1	1	0	0	0
3.2.2 Sub-national/national trade	1	1	1	0	0	0
3.5 Cultural/scientific/leisure activities	7	8	13	1	2	7
3.5.1 Subsistence use/local trade	1	1	1	0	0	0
3.5.2 Sub-national/national trade	4	4	9	0	0	5
3.5.3 Regional/international trade	7	8	13	1	2	7
4. Accidental mortality	4	4	4	0	0	0
4.2 Collision	4	4	4	0	0	0
4.2.2 Vehicle collision	4	4	4	0	0	0
6. Pollution (affecting habitat and/or species)	66	67	68	13	13	13
6.1 Atmospheric pollution	4	7	7	0	0	0
6.1.1 Global warming/oceanic warming	2	5	5	0	0	0
6.1.2 Acid precipitation	2	2	2	0	0	0
6.2 Land pollution	1	1	2	0	0	0
6.2.1 Agricultural	1	1	2	0	0	0
6.3 Water pollution	65	66	66	13	13	13
6.3.1 Agricultural	61	63	63	12	12	12
6.3.2 Domestic	26	27	27	5	5	5
6.3.3 Commercial/Industrial	24	24	24	4	4	4
6.3.4 Other non-agricultural	4	4	4	2	2	2
6.3.7 Sediment	1	1	1	0	0	0
6.3.11 Other	1	1	1	0	0	0
7. Natural disasters	14	19	19	3	3	3
7.1 Drought	14	19	19	3	3	3
8. Changes in native species dynamics	4	7	9	1	1	2
8.1 Competitors	1	1	1	0	0	0
8.2 Predators		1	1	0	0	0
8.5 Pathogens/parasites	3	6	8	1	1	2
9. Intrinsic factors	30	30	30	16	16	16
9.1 Limited dispersal	1	1	1	0	0	0
9.2 Poor recruitment/reproduction/regeneration	10	10	10	4	4	4
9.3 High juvenile mortality	3	3	3	0	0	0
9.5 Low densities	2	2	2	0	0	0
9.7 Slow growth rates	4	4	4	2	2	2
9.8 Population fluctuations	1	1	1	0	0	0
9.9 Restricted range	21	21	21	16	16	16
10. Human disturbance	2	4	4	1	3	3
10.1 Recreation/tourism	2	4	4	1	3	3
12. Unknown	2	2	2	2	2	2
13. None	9	9	9	0	0	0

# **IUCN Red List of Threatened Species™ – Mediterranean Regional Assessments**

Titles in the Mediterranean Regional Assessments series:

1. *The Status and Distribution of Freshwater Fish Endemic to the Mediterranean Basin.* Compiled by Kevin G. Smith and William R.T. Darwall, 2006.
2. *The Status and Distribution of Reptiles and Amphibians of the Mediterranean Basin.* Compiled by Neil Cox, Janice Chanson and Simon Stuart, 2006.

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Rue Mauverney 28  
1196 Gland  
Switzerland

Tel +41 22 999 0000  
Fax +41 22 999 0002  
[mail@iucn.org](mailto:mail@iucn.org)

[www.iucn.org](http://www.iucn.org)

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