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Threatened Mammals of the Mediterranean

IN CO-OPERATION WITH:

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THREATENED MAMMALS

OF

THE MEDITERRANEAN

prepared by Jane Thornback

International Union for Conservation of Nature and Natural Resources

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INTRODUCTION

The first and most important comment to be made about the mammal data contained in this report is that it is very, very preliminary, and can in no way be regarded as the definitive word on the subject. It is more an indicator of the lack of data on file, which in many cases reflects the lack of data in existence. This is the most important message of the report - how little we know about the status of mammals in the Mediterranean Basin. Of course there are exceptions, for instance the Corsican Red Deer and the Mediterranean Mouflon.

The data included in this report were based on the IUCN Red Data Book* and the Council of Europe's publication on threatened mammals**, with the premise that only the Mediterranean Sea and coastal areas are to be covered. These were complemented and updated by library research and correspondance with as many contacts in the region as could be found.

Of the 12 species listed, only one is unquestionably a full species, the distribution of which centers on the Mediterranean Basis and also is highly endangered with extinction - the Mediterranean Monk Seal (*Monachus monachus*). It numbers as few as 500-100 individuals and is highly sensitive to human disturbance. Its survival or extinction is largely dependent on

tne actions of the Mediterranean countries. They can choose to save it, or let it slide into the oblivion of extinction. The Pardel lynx *(Lynx pardina)* is also endangered and possibly a full species endemic to the region. However many authors consider it to be a subspecies of the lynx (*Lynx lynx*). Three other taxa are endangered - the Corsican Red Deer (*Cervus elaphus corsicanus)*, the Barbary Deer *(Cervus elaphus barbarus)* and the Mediterranean Mouflon *(Ovis ammon musimon)*. The full species of Red Deer *(Cervus elaphus)* is not threatened, although many of its subspecies are; similarly the Mouflon *(Ovis ammon)*, however the taxonomy of all the Palaearctic sheep is as yet undecided, which therefore clouds the status issue. Of the seven remaining taxa, data is so scant that

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*IUCN Red Data Book, Mammalia

** Smit, C.J. and Wijngaarden, A. van 1976. Threatened Mammals in Europe. Council of Europe Nature and Environment Series No. 10. Strasbourg

their status can only be described as 'Insufficiently Known' i.e. possibly threatened but too little data available to decide. With regard to the Wild Goat *(Capra aegagrus)*, it is even impossible to say whether any truly wild populations still exist. The Cretan goat is considered the closest to the truly wild state but some authors report that even this has bred with domestic and feral goats in the past.

The main threat facing all the mammals of this region is undoubtedly the increase in the human population, its expansion into previously remote and undisturbed areas and its increased impact on the environment - building, draining, ploughing, chopping, polluting, - and of particular relevance to this report - tourism.

However, despite the overwhelming threats, some countries have already taken action to conserve their animals. For example, the Corsican Red Deer *(Cervus elaphus corsicanus)* is the subject of a conservation project begun in 1979 after the completion of several years' field studies. The plan includes not only the sustained management of the population in Sardinia but also the reintroduction of the animal to Corsica where it became extinct at the beginning of the 1970s. The Monk Seal *(Monachus monachus)* is also the subject of an extensive conservation plan. An international conference to discuss its problems and plan a strategy of recovery was held in Rhodes, Greece in May 1978.

To conduct a programme for the conservation of mammals in the Mediterranean Basin, the following are needed:

1) A checklist of all the mammals that occur in the region should be compiled.

2) It must be determined what is already known about the status of each of these species.

3) Field studies should be undertaken to supply information that is not already known, and should indicate which species are truly threatened. This information could be published as National Red Data Books.

4) Conservation plans should then be drawn up for each threatened species, and should be given adequate financial support by both national and international organisations so as to ensure success. Undoubtedly the major component of any plan will be the establishment of national parks and protected areas. However, in the long term, the survival of species will depend on people's desire to have them around, and hence to appreciate their worth - be it scientific, aesthetic or economic and this can only depend on environmental education programmes.

Any information about species, or the names and addresses of contacts would be greatly appreciated and should be sent to:

Jane Thornback
Compiler IUCN Mammal Red Data Book
219(c) Huntingdon Road
Cambridge CB3 ODL
England

EUROPEAN OTTER

Lutra lutra lutra (Linnaeus, 1758)

Order CARNIVORA Family MUSTELIDAE

DISTRIBUTION

Mediterranean Area: Spain, France, Italy, Greece, Yugoslavia, probably Albania, Turkey, the Middle East as far as Israel, and in northwest Africa - Morocco, Algeria and Tunisia (1;4;5;6).

Outside the Mediterranean Area: Europe including the British Isles, Asia Minor, and medium latitudes of Siberia (1;5).

POPULATION Unknown.

HABITAT Aquatic: lakes, rivers, streams, marshes and sea shores. Optimal habitat is one which provides a good supply of easily caught fish and undisturbed cover for resting and breeding (2;3).

THREATS Habitat loss due to drainage of lakes and marshes, clearance of bankside vegetation, concentration of human settlements along river, lake and sea shores and pollution by industrial and agricultural wastes. Hunting for its fur. General human disturbance (4).

CONSERVATION MEASURES TAKEN The species as a whole is listed in Appendix 1 of the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora, trade in it or its products between acceding nations thus being subject to severe restriction, trade for primarily commercial purposes banned. Protected by law in Spain, France, Italy and Israel. Protective measures elsewhere unknown.

CONSERVATION MEASURES PROPOSED Legal protection where necessary. Protection of habitat by establishment of reserves.

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GENET

Genetta genetta Linnaeus, 1758

Order CARNIVORA Family VIVERRIDAE

DISTRIBUTION

Mediterranean Area: France, Spain, Majorca, Palestine and N. Africa from Morocco to Cyrenaica in Libya (3), and possibly Egypt (6). Other authors include Ibiza and Menorca (1;4;5;6).

Outside the Mediterranean Area: Africa, in savanna zones south of the Sahara (3).

POPULATION Unknown. Never occurs at high density, and is normally inconspicuous.

HABITAT Mainly rocky, wooded areas (1;2) with streams (1;4); ravine sides, mountain woods, steep river banks (4).

THREATS Persecuted as a pest of game birds and poultry (2). In France several hundred are killed each year (6). Their winter pelt, in particular, is highly esteemed (6).

CONSERVATION MEASURES TAKEN Fully protected in France but not on the Iberian peninsula (2). Legal status elsewhere unknown.

CONSERVATION MEASURES PROPOSED Much more information is needed on the status of this species. Smit and Wijngaarden state that protection is needed in Spain (2).

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COMMON or HARBOUR PORPOISE

Phocoena phocoena Linnaeus, 1758

Order CETACEA Family PHOCAENIDAE

DISTRIBUTION AND POPULATION

Mediterranean Area: Status uncertain. Believed to occur in the Mediterranean but data sporadic. Absent from French waters and only one stranding record (Gibraltar area pre-1914) in Spanish waters, though said to be common there. Reported to be uncommon on Moroccan coasts and in Italian waters. Reported from Greek waters but there is apparently no specific record (1).

Outside the Mediterranean Area: Arctic, North Atlantic Oceans and North Pacific. Also in Black and Azov Seas (which is believed to be a separate population from the Mediterranean) (3;4).

HABITAT Coastal zones, avoiding the open sea and frequently enters rivers (2).

THREATS As a coastal species it is exposed to pollution and disturbance (2).

CONSERVATION MEASURES TAKEN Listed in Appendix 2 of the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora, trade in it between acceding nations being therefore subject to regulation and monitoring of its effects. Reported to be protected by law in Italy, France and Turkey (2).

CONSERVATION MEASURES PROPOSED Legal protection and enforcement. Regulations on marine pollution.

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* Sea Mammal Research Unit
British Antarctic Survey
Madingley Road
Cambridge CB3 0ET
United Kingdom

COMMON RORQUAL

Balaenoptera physalus Linnaeus, 1758

Order CETACEA Family BALAENOPTERIDAE

DISTRIBUTION AND POPULATION

Mediterranean Area: Regarded by some authorities as the most common fin whale in the region. Reported more frequently in the western half than the eastern half and this probably indicates the real density of distribution but it may also reflect better reporting in the western half. In the 1920s the whaling station at Getares (near Gibraltar) caught fin whales throughout the year and it has been suggested that this area was a breeding ground in the winter months and a feeding ground in the summer months. Fin whales are reported to occur frequently in the Ligurian Sea off northern Italy, and recent strandings in this region are concentrated in September. It is uncertain whether fin whales in the Mediterranean belong partly or wholly to a separate stock from those in the North Atlantic, and also whether some or all of them migrate annually into or out of Mediterranean. Iodine values for oil from the animals taken at Getares suggested that they were separate from fin whales taken elsewhere in the North Atlantic (1).

Outside the Mediterranean Area: Reported from all the oceans of the world; does not however penetrate the warmer latitudes (4).

HABITAT As plankton feeding animals, fin whales tend to change their distribution in latitude and longitude in keeping with shifts in food supplies. (2;4).

THREATS The Mediterranean population is in some danger from pollution (2;4).

Heavy metal ions from waste dumped by industrial plant barges pollute the waters around Corsica. These waters are rich in euphausiids and fin whales following these become contaminated and either die or become debilitated and hence more susceptible to being struck by the increasingly large numbers of boats in the area (3;4). Reason for decline throughout its range was excessive whaling (4).

CONSERVATION MEASURES TAKEN The Mediterranean stock is listed in Appendix 1 of the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora, any trade in it or its products therefore being subject to strict regulation by ratifying nations and trade for primarily commerical purposes banned. Protected by the IWC (4). WWF-Italy has a project to census sightings and stranded animals.

CONSERVATION MEASURES PROPOSED Prevention of marine pollution. Full protection against whaling.

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WOLF

Canis lupus Linnaeus, 1758

Order CARNIVORA Family CANIDAE

DISTRIBUTION

Mediterranean Area: Spain, Italy, Yugoslavia, Greece (possibly Albania), Turkey, and the Middle East as far as the Sinai (1).

Outside the Mediterranean Area: Fennoscandia; across Russia to the Pacific and south to approximately 20°N latitude. Also North America south to northern Mexico (1;2;3).

POPULATION Total numbers unknown.

Spain: endangered (2).

Italy: endangered, about 100-150 (2;5).

Yugoslavia, Greece and Turkey: viable populations (2).

Jordan: much rarer than formerly (8).

Israel: over 200 and increasing (7).

No data located for Albania, Syria, Lebanon or Egypt (Sinai).

HABITAT Occurs in most northern latitude habitats - from forest to open plains (1;2;3).

THREATS Exterminated over large areas due to habitat loss to human settlement, agriculture, etc. Also persecuted because of stock depredations, and a generally unfounded fear of attacks on humans (2;3;4;6).

CONSERVATION MEASURES TAKEN Listed in Appendix 2 of the 1973 Convention on

International Trade in Endangered Species of Wild Fauna and Flora, trade in it between acceding nations being subject to regulation and monitoring of its effects. Totally protected in Italy (5) Israel (7), two Yugoslavian republics (6), and in Spain receives partial protection (6). In Italy the species has been the subject of a WWF research and conservation programme (5).

CONSERVATION MEASURES PROPOSED The Wolf Specialist Group of IUCN's Survival Service Commission, in Stockholm in September 1973, made recommendations for wolf conservation that include the following: 1) Full protection should be accorded to surviving populations that are endangered regionally, nationally, or internationally; 2) Each country should define areas suitable for the existence of wolves and enact suitable legislation to perpetuate the population or to facilitate reintroductions; 3) In wolf management programmes, the use of poisons, bounty systems and sport hunting using mechanised vehicles should be prohibited; 4) Consideration should be given to payment of compensation for damage caused by wolves; 5) Suitable wolf habitats should be restored, including the reintroduction of large herbivores; 6) Extensive economic development should be excluded from designated wolf conservation areas; 7) National legislation should be enacted to require the registration of each wolf killed. Additional recommendations were made on the need for conventional and adult education, scientific research and international co-operation in research and management (2).

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SPANISH LYNX

Felis pardina (Temminck, 1824)

Order CARNIVORA Family FELIDAE

DISTRIBUTION

Mediterranean Area: Spain, where it is now confined to isolated, mainly mountainous areas in central and southern regions (1;4;5).

Outside the Mediterranean Area: Portugal (3; 8).

POPULATION About 1000. In recent years has disappeared from large areas of Salamanca, Avila, Cáceres, Badajoz and Toledo; largest concentrations are approximately 600 in the Montes de Toledo area and about 300 in the Sierra Morena area (4).

HABITAT Thicket which is not too dense, eg has scattered rocks or trees.

THREATS Decline due to habitat loss, myxomatosis affecting its principal prey, the rabbit, and incidental killing in traps set for rabbits and other game, and during big and small game hunts (2;4;7). Major threat throughout the Iberian peninsula is now habitat destruction by large-scale reforestation, particularly with eucalyptus and pines (6).

CONSERVATION MEASURES TAKEN Listed in Appendix 2 of the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora, trade in it between acceding nations being therefore subject to regulation and monitoring of its effects. Protected by law in Spain and in 1968 the Spanish Government accepted 'ultimate responsibility' for the conservation of the species. Occurs

in the Doñana National Park and also in Las Batuencas National Hunting Reserve (5).

CONSERVATION MEASURES PROPOSED Stricter control of forest planting in lynx habitat and prohibition of traps, snares and poisons in lynx localities.

REMARKS The Pardel Lynx is regarded by some authorities as a subspecies of Felis lynx (3;8), and both are also sometimes separated at generic level under the name Lynx.

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MEDITERRANEAN MONK SEAL

Monachus monachus (Hermann, 1779)

Order PINNIPEDIA Family PHOCIDAE

DISTRIBUTION

Mediterranean Area: Mediterranean Sea, three centres of concentration i) Aegean Sea ii) north African coasts of Morocco, Algeria, Tunisia and Libya iii) the eastern Mediterranean along the coasts of south-central Turkey, Cyprus and Lebanon (2; 7).

Outside the Mediterranean Area: In the Atlantic off northwest Africa and in the Black Sea along Turkish and Bulgarian coasts (2; 7; 8).

POPULATION 500-1000 and steadily declining towards extinction (2; 6; 7). Greatest numbers occur in the eastern Aegean Sea (2; 7).

HABITAT Archipelagos, especially with small islands, often uninhabitable by man because of water shortage; and cliffbound mainland coastlines. Habitat therefore tends to be rocky coasts or cliffs enclosing small sand or pebble beaches for resting, and caves with entrances above or below water (2). Reports from classical to modern times suggest the seal once frequented sandy coastlines and islands and most authorities consider its present liking for caves the result of persecution and disturbance by man (1; 2).

THREATS Loss of undisturbed habitat. Human disturbance e.g. tourism, increased urbanisation of the coast, fishing (by nets, harpoons and the use of organochlorides) now prevails throughout much of the seal's range and leaves few undisturbed areas for the species to feed and breed. Scientists believe that

insufficient recruitment to the population rather than increased mortality is causing the continual decline in numbers. Disturbance forces the seals to abandon former habitats and is thought to be seriously reducing the reproductive rate through abortions and severance of the maternal bond. The effect of marine pollution is unknown but toxic chemicals may have a detrimental influence, and oil is known to enter caves. Increasing isolation of seal groups causes concern for the future (1; 2; 3; 7).

CONSERVATION MEASURES TAKEN The species is listed in Appendix 1 of the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora, any trade in it or its products therefore being subject to strict regulation by ratifying nations and trade for primarily commerical purposes banned. Also listed in Class A of the 1969 African Convention, which means it may only be hunted or collected in the national interest or for scientific purposes with the permission of the highest competent authority. Protected by law in Algeria, Yugoslavia, Italy, France, Spain and Portugal. Not protected by law in Mauritania, Morocco, Tunisia, Turkey or Greece. Legal status in other countries unknown (6). A protection area for the Monk seal has been established around the Isle of Montecristo, Italy (9), and the Banc d'Arguin National Park in Mauritania has been inaugurated. The WWF has launched a conservation project to conserve the species in the Mediterranean generally (4). A conference on its biology, ecology and conservation was held on Rhodes, Greece, in May 1978; the Proceedings were published in 1979 and provide a thorough account of the present knowledge of this seal (5).

CONSERVATION MEASURES PROPOSED Legal protection in all countries of its past and present distribution. Effective protection especially necessary in Algeria, Greece, Mauritania and Turkey, where major surviving stocks are located. Establishment of national programmes for monk seal conservation

suggested (7). Most important is the establishment of a network of reserves, which must be totally free of disturbance at all seasons, chiefly to guarantee reproduction (2; 7).

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BARBARY STAG or ATLAS DEER

Cervus elaphus barbarus (Bennett, 1833)

Order ARTIODACTYLA Family CERVIDAE

DISTRIBUTION

Mediterranean Area: Algerian and Tunisian border area from the coast to a little way inland (1;8;9;11;12;14).

Outside the Mediterranean Area: None.

POPULATION Almost certainly less than 1000, and possibly less than 500 (9;11;12;14).

HABITAT Cork-oak, pine, cedar and timber-oak forests (3;11).

THREATS Poaching (5;13;15).

CONSERVATION MEASURES TAKEN Included in Class A of the African Convention (1969) i.e. it may be hunted or collected only on the authorization of the highest competent authority, if required in the national interest or for scientific purposes. Legally protected against hunting and trade in both Algeria and Tunisia but there has been insufficient enforcement in the past (9;11). In 1966 several deer crossed over the border from Algeria to Tunisia because of severe persecution in Algeria. The Tunisian Forest Service, helped by the German-Tunisian Society, fenced a large area of forest at El Feidja, near Ghardimaou, and a number of deer were driven into it (8;15). In 1972 Meyer reported that hunting in the reserve was forbidden and a warden had been stationed in the

reserve (10). Since then deer numbers in the enclosures have increased (9). A small enclosure was also set up at Ain Bacouch near Tabarka (8). In Algeria, deer occur in the D.R.S. Parc de Seraida near Annaba (6;7), and in El Ouach (2,000 ha.) a fenced area in the Beni-Salah Forest (11).

CONSERVATION MEASURES PROPOSED Needs good protection against poaching and effective protection in reserves. Reintroduction into protected areas in Morocco is a possibility (16). Hunkeler has made some specific recommendations for improvements to the El Ouach enclosed area in Algeria (11).

REMARKS Corbet (1978) follows Flerov (1952) by including the Barbary Deer in the subspecies C. e. corsicanus along with the Red Deer of Sardinia and S. Spain (17;18).

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CORSICAN RED DEER

Cervus elaphus corsicanus (Erxleben, 1777)

Order ARTIODACTYLA Family CERVIDAE

DISTRIBUTION

Mediterranean Area: Southern Sardinia (Italian) (2;3;7). Became extinct in Corsica in 1969/70 (7;9).

Outside the Mediterranean Area: None.

POPULATION 1977/78 estimated total of less than 250 and probably stable in trend (5;7).

HABITAT Maquis, broadleaf and coniferous woodland and meadows, but now occurs mainly in mountainous areas (1;2).

THREATS Poaching and habitat loss (1;2;5;7).

CONSERVATION MEASURES TAKEN Partially protected by law in Sardinia, shooting in the hunting season is still permitted outside reserves (5). In the 1978/79 hunting season, penalties for deer poachers increased appreciably - to 4,000,000 lire (7). About two-thirds of the deer's Sardinian range occurs in State Forests where every hunting activity is strictly forbidden, or in private game reserves (7) and in these it receives permanent, though still insufficient, surveillance by forest guards and gamekeepers (7). Field studies have been undertaken in Sardinia and a conservation project was begun in 1979 (1;4;5;6;7). This will include reintroduction into Corsica, and contact between Corsican and Sardinian authorities has already occurred (7).

CONSERVATION MEASURES PROPOSED Enforcement of legal protection; full support to the conservation project already begun.

REMARKS Corbet (1978) follows Flerov (1952) by including the Red Deer of S. Spain and N.W. Africa in the subspecies C. e. corsicanus (8).

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MEDITERRANEAN MOUFLON

Ovis ammon musimon (Schreber, 1782)

Order ARTIODACTYLA Family BOVIDAE

DISTRIBUTION

Mediterranean Area: Corsica, Sardinia and Cyprus (1;2;3;4;5;6;7;11).

Outside the Mediterranean area: None

POPULATION

Corsica: about 300-400 and increasing (10).

Sardinia: in 1976 estimated at no more than 250-300 and probably less; declining (12).

Cyprus: estimated number throughout the 1970s has been about 200 and believed stable (1;2;3;13).

HABITAT Sub-climax Mediterranean scrub and grasslands, usually at high altitudes among rocks and scree; also coniferous and deciduous woodland fringes (4;8;9).

THREATS Decline caused by poaching; and this plus deterioration of habitat by stock grazing, burning of vegetation and opening up of formerly inaccessible mountain areas with new roads constitute the present threats (2;5;11).

CONSERVATION MEASURES TAKEN The Cyprus population of the mouflon (listed under the name of Ovis orientalis ophion) is included in Appendix 1 of the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora, trade in it or its products between acceding nations thus being subject to severe restriction, trade for primarily commercial purposes banned.

species as a whole is listed in Appendix 2 of the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora, trade in it between acceding nations being therefore subject to regulation and monitoring of its effects. Totally protected by law on all three islands and the Cyprus Government has accepted 'Ultimate Responsibility' for the survival of the Cyprian population. Reserves exist on Corsica and Cyprus to protect it, but there is none on Sardinia (1;12). The mouflon on Corsica was the subject of a detailed etho-ecological study in the 1960s (4), and on Cyprus its conservation is the subject of a conservation plan (13).

CONSERVATION MEASURES PROPOSED In Sardinia, needs better protection against poaching, plus the establishment of a reserve (preferably in the Gennargentu/ Supramonte area) (12). Introduction of hybrid mouflon and others of unknown origin must be avoided.

REMARKS There is much disagreement over the taxonomy of Mediterranean Mouflon - this data sheet follows Pfeffer (4) and Corbet (7). Alternative names are:- Ovis musimon for Corsica and Sardinia, and Ovis orientalis ophion for Cyprus. Nadler et al. (1973) based on cyteogenetic data have O. musimon musim for Sardinia and O. m. ophion for Cyprus (14).

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WILD GOAT

Capra aegagrus Erxleben, 1777

Order ARTIODACTYLA Family BOVIDAE

DISTRIBUTION

Mediterranean Area: Greece (on some Aegean Islands and western Crete - also introduced to Theodorou, Agii Pantes and Dias just off Crete) and Turkey (5;6). However even these populations are thought to have bred with domestic goats (6; 7), thus whether any true wild goats still exist is questionable.

Outside the Mediterranean Area: Mountains from Caucasus to Kopet Dag, W. Afghanistan, Baluchistan and Sind; isolates in Oman (3;5).

POPULATION Total number unknown. Crete and surrounding Islands: less than 1000 (2;6;8). Numbers and status elsewhere confused because of crossbreeding between wild and domestic goats.

HABITAT Maquis in mountainous areas (1;2).

THREATS Poaching and hybridization with domestic goats (2;4;6;8).

CONSERVATION MEASURES TAKEN Legally protected in Greece and Turkey, but Smit and Wijngaarden report excessive poaching due to difficulties of surveillance in isolated mountainous regions (2). Crete has a reserve of 3000 ha., and goats have been introduced to islands off Crete which thus serve as goat reserves (2;6). A study was conducted on Theodorou by N. Papageorgiou in 1973; he suggested various measures to improve the chances for the long-term

survival of the goat on the island (6). Possibly occurs in the Uludag National Park in Turkey (2).

CONSERVATION MEASURES PROPOSED Needs effective protection against poaching (2). Research is needed to study the extent of hybridization.

REMARKS Because of the difficulty of knowing whether any goat populations are true wild stock it is difficult to summarize distribution, status and conservation measures.

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CRESTED PORCUPINE

Hystrix cristata Linnaeus, 1758

Order RODENTIA Family HYSTRICIDAE

DISTRIBUTION

Mediterranean Area: North Africa (Morocco to Libya and probably Egypt), Sicily, Italy, Albania and N. Greece (5). Possibly southern Yugoslavia (1;2). The Italian population is believed to be a human introduction, possibly by the Romans (3;4;6). To the extent that the porcupine occurs in the Balkan peninsula, it is again thought to have been introduced, but at a much more recent date.

Outside the Mediterranean Area: Africa south of the Sahara, in steppe and savanna zones from Senegal in the west to Ethiopia and northern Tanzania (5).

POPULATION Unknown. Smit and Wijngaarden (1976) report its numbers seem to be decreasing in Europe and that it is already rare in many regions (3). No population data has been located for other countries.

HABITAT Open woodland and dry scrub (1).

THREATS Persecuted as an agricultural pest and in some areas hunted for its meat (1;3).

CONSERVATION MEASURES TAKEN Protected to some extent in Italy (3). No other protection measures known.

CONSERVATION MEASURES PROPOSED Smit and Wijngaarden state that total protection against any kind of persecution is needed for some time to come (3). They also

think that a study should be performed to determine the amount of damage porcupines actually do (3). More information is needed on its distribution and status within the Mediterranean basin.

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