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Vulpes vulpes, Red Fox

Assessment by: Hoffmann, M. & Sillero-Zubiri, C.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Carnivora	Canidae

Taxon Name: Vulpes vulpes (Linnaeus, 1758)

Synonym(s):

• Canis vulpes Linnaeus, 1758

Regional Assessments:

- Europe
- <u>Mediterranean</u>

Common Name(s):

- English: Red Fox, Cross Fox, Silver Fox
- French: Renard roux
- Spanish: Zorro, Zorro Rojo

Taxonomic Notes:

A recent extensive global phylogeny of Red Foxes that included ~1,000 samples from across the species' range found that Red Foxes originated in the Middle East, then radiated out, and that Red Foxes in North America are genetically distinct and probably merit recognition as a distinct species (*Vulpes fulva*) (Statham *et al.* 2014).

Assessment Information

Red List Category & Criteria:	Least Concern <u>ver 3.1</u>		
Year Published:	2016		
Date Assessed:	March 1, 2016		

Justification:

The Red Fox has the widest geographical range of any member of the order Carnivora, being distributed widely across the entire northern hemisphere, and has been introduced elsewhere. Red Foxes are adaptable and opportunistic omnivores and are capable of successfully occupying urban areas. In many habitats, foxes appear to be closely associated with people, even thriving in intensive agricultural areas.

Previously Published Red List Assessments

2008 – Least Concern (LC) – http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T23062A9412884.en

2004 – Least Concern (LC)

1996 – Lower Risk/least concern (LR/lc)

Geographic Range

Range Description:

The Red Fox has the widest geographical range of any member of the order Carnivora (covering nearly 70 million km²) being distributed across the entire northern hemisphere from the Arctic Circle to southern North America, Europe, North Africa, the Asiatic steppes, India, and Japan. Not found in Iceland, the Arctic islands, or some parts of Siberia. Red Foxes are generally considered extinct in the Republic of Korea where there have been several mammal surveys in recent years (including the DMZ) that have not shown any evidence of foxes.

The European subspecies was introduced into the eastern United States (where they were relatively scarce and the Gray Fox *Urocyon cinereoargenteus* common) and Canada in the 17th century for fox hunting; however, there appears to be limited evidence for any meaningful mixing of introduced European foxes and those in North America (i.e., no Eurasian haplotypes found in foxes sampled; Statham *et al.* 2012). The species was also introduced to Australia in the 1800s, and to Tasmania in the late 1990s (although there is evidence that an eradication campaign for Red Foxes on Tasmania has proved effective; see Caley *et al.* 2015). Elsewhere introduced to the Falkland Islands (Malvinas) and to the Isle of Man (UK), although they never properly established on the Isle of Man (Reynolds and Short 2003) and may subsequently have disappeared.

Country Occurrence:

Native: Afghanistan; Albania; Algeria; Andorra; Armenia (Armenia); Austria; Azerbaijan; Bangladesh; Belgium; Bhutan; Bosnia and Herzegovina; Bulgaria; Canada; Croatia; Cyprus; Czech Republic; Denmark; Egypt; Estonia; Faroe Islands; Finland; France; Georgia; Germany; Gibraltar; Greece; Greenland; Holy See (Vatican City State); Hungary; Iceland; India; Iran, Islamic Republic of; Iraq; Ireland; Israel; Italy; Japan; Jordan; Kazakhstan; Korea, Democratic People's Republic of; Kuwait; Kyrgyzstan; Latvia; Lebanon; Libya; Liechtenstein; Lithuania; Luxembourg; Macedonia, the former Yugoslav Republic of; Malta; Monaco; Mongolia; Montenegro; Morocco; Myanmar; Nepal; Netherlands; Norway; Oman; Pakistan; Poland; Portugal; Qatar; Romania; Russian Federation; San Marino; Saudi Arabia; Serbia (Serbia); Slovakia; Slovenia; Spain; Sudan; Svalbard and Jan Mayen; Sweden; Switzerland; Syrian Arab Republic; Tajikistan; Tunisia; Turkey; Turkmenistan; United Arab Emirates; United Kingdom; United States (Georgia); Uzbekistan; Yemen

Possibly extinct: Korea, Republic of

Introduced: Australia (Tasmania); New Zealand

Distribution Map

Vulpes vulpes





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Population

Red Fox density is highly variable. In the United Kingdom, density varies between one fox/40 km² in Scotland and 1.17/km² in Wales, but can be as high as 30 foxes/km² in some urban areas where food is superabundant (Harris 1977, Macdonald and Newdick 1982, Harris and Rayner 1986). Social group density is one family per km² in farmland, but may vary between 0.2-5 families/km² in the suburbs (Macdonald 1981). Fox density in mountainous rural areas of Switzerland is three foxes/km² (Meia 1994). Murdoch (2009) recorded 0.17 foxes/km² in the grassland/semi desert steppe of Mongolia. In northern boreal forests and Arctic tundra, they occur at densities of 0.1 foxes/km², and in southern Ontario, Canada at 1 fox/km² (Voigt 1987). The average social group density in the Swiss mountains is 0.37 families/km² (Weber *et al.* 1999).

The pre-breeding British fox population has been estimated at ~240,000 individuals (Harris *et al.* 1995). Mean number of foxes killed per unit area by gamekeepers has increased steadily since the early 1960s in Britain, but it is not clear to what extent this reflects an increase in fox abundance. Although an increase in fox numbers following successful rabies control by vaccination was widely reported in Europe (e.g., fox bag in Germany has risen from 250,000 in 1982–1983 to 600,000 in 2000–2001), no direct measures of population density have been taken.

Current Population Trend: Stable

Habitat and Ecology (see Appendix for additional information)

Red Foxes have been recorded in habitats as diverse as tundra, desert (though not extreme deserts) and forest, as well as in city centres (including London, Paris, Stockholm, etc.). Natural habitat is dry, mixed landscape, with abundant "edge" of scrub and woodland. They are also abundant on moorlands, mountains (even above the treeline, known to cross alpine passes), sand dunes and farmland from sea level to 4,500 m. In the United Kingdom, they generally prefer mosaic patchworks of scrub, woodland and farmland. Red Foxes flourish particularly well in urban areas. They are most common in residential suburbs consisting of privately owned, low-density housing and are less common where industry, commerce or council rented housing predominates (Harris and Smith 1987). In many habitats, foxes appear to be closely associated with people, even thriving in intensive agricultural areas.

Systems: Terrestrial

Use and Trade

The number of foxes raised for fur (although much reduced since the 1900s) exceeds that of any other species, except possibly American Mink (*Neovison vison*) (Obbard 1987). Types farmed are particularly colour variants ("white", "silver" and "cross") that are rare in the wild. Worldwide trade in ranched Red Fox pelts (mainly "silver" pelts from Finland) was 700,000 in 1988–1989 (excluding internal consumption in the USSR). Active fur trade in Britain in 1970s was negligible.

Threats

Threats to this species are highly localized and include habitat degradation, loss, and fragmentation, and exploitation, and direct and indirect persecution. For example, a regional red list assessment in Mongolia (Clark and Munkhbat 2006) classified the species as Near Threatened mainly due to

overhunting, while in South Korea, Red Foxes have experienced declines due to habitat loss and poaching and is generally considered extinct (Yu *et al.* 2012). However, their general versatility and eclectic diet are likely to ensure their persistence despite changes in landscape and prey base. Culling may be able to reduce numbers well below carrying capacity in large regions (Heydon and Reynolds 2000), but no known situations exist where this currently threatens species persistence on any geographical scale. Red Foxes have caused considerable damage where they have been introduced; their impacts on Australian fauna has been particularly well documented; control takes place by setting baits impregnated with 1080 (sodium fluoroacetate).

Conservation Actions (see Appendix for additional information)

Legislation

Not listed in CITES Appendices at species level. However, the subspecies *griffithi*, *montana* and *pusilla* (*=leucopus*) are listed on CITES – Appendix III (India).

Widely regarded as a pest and unprotected. Most countries and/or states where trapping or hunting occurs have regulated closed versus open seasons and restrictions on methods of capture. In the European Union, Canada, and the Russian Federation, trapping methods are regulated under an agreement on international trapping standards between these countries, which was signed in 1997. Other countries are signatories to ISO/DIS 10990-5.2 animal (mammal) traps, which specifies standards for trap testing.

In Europe and North America, hunting traditions and/or legislation impose closed seasons on fox hunting. In the United Kingdom and a few other European countries, derogation from these provisions allows breeding season culling for pest-control purposes. Here, traditional hunting ethics encouraging restrained "use" may be at odds with harder hitting pest-control ambitions. This apparent conflict between different interest groups is particularly evident in the UK, where fox control patterns are highly regionally variable (Macdonald *et al.* 2003). In some regions, principal lowland areas where classical mounted hunting operates, limited economic analyses suggest that the principal motive for these communal fox hunts is as a sport – the number killed is small compared with the cost of the hunting. In these regions, most anthropogenic mortality is by individual farmers shooting foxes. The mounted communal hunts do exhibit restraint – hunting takes place for a limited season, and for a prescribed number of days per week. Elsewhere, in upland regions, communal hunting by foot with guns and dogs may make economic sense, depending on the number of lambs lost to foxes (data on this is poor), and also on the current value of lost lambs. This type of fox hunting may also be perceived as a sport by its participants.

Presence in protected areas

Present in most temperate-subarctic conservation areas.

Presence in captivity

In addition to fur farms, Red Foxes are widely kept in small wildlife parks and zoos, but there appears to be no systematic data on their breeding success. Being extremely shy they are often poor exhibits.

Credits

Assessor(s): Hoffmann, M. & Sillero-Zubiri, C.

Reviewer(s):Murdoch, J.D.Contributor(s):Macdonald, D., Reynolds, J. & Weber, J.Facilitators(s) and
Compiler(s):Thresher, S.

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External Resources

For Images and External Links to Additional Information, please see the Red List website.

Appendix

Habitats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.4. Forest - Temperate		Suitable	Yes
3. Shrubland -> 3.4. Shrubland - Temperate	Resident	Suitable	Yes
4. Grassland -> 4.1. Grassland - Tundra		Suitable	Yes
4. Grassland -> 4.2. Grassland - Subarctic	Resident	Suitable	Yes
4. Grassland -> 4.4. Grassland - Temperate		Suitable	Yes
5. Wetlands (inland) -> 5.3. Wetlands (inland) - Shrub Dominated Wetlands	Resident	Suitable	Yes
8. Desert -> 8.2. Desert - Temperate	Resident	Suitable	Yes
14. Artificial/Terrestrial -> 14.1. Artificial/Terrestrial - Arable Land	Resident	Suitable	Yes
14. Artificial/Terrestrial -> 14.2. Artificial/Terrestrial - Pastureland	Resident	Suitable	Yes
14. Artificial/Terrestrial -> 14.3. Artificial/Terrestrial - Plantations	Resident	Marginal	-
14. Artificial/Terrestrial -> 14.4. Artificial/Terrestrial - Rural Gardens	Resident	Suitable	Yes
14. Artificial/Terrestrial -> 14.5. Artificial/Terrestrial - Urban Areas	Resident	Suitable	No

Conservation Actions in Place

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions in Place		
In-Place Research, Monitoring and Planning		
Action Recovery plan: No		
Systematic monitoring scheme: No		
In-Place Land/Water Protection and Management		
Conservation sites identified: No		
Occur in at least one PA: Yes		
Area based regional management plan: No		
Invasive species control or prevention: Not Applicable		
In-Place Species Management		
Successfully reintroduced or introduced beningly: No		
Subject to ex-situ conservation: Yes		

Conservation Actions in Place

In-Place Education

Subject to recent education and awareness programmes: No

Included in international legislation: Yes

Subject to any international management/trade controls: No

Conservation Actions Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions Needed

2. Land/water management -> 2.1. Site/area management

3. Species management -> 3.1. Species management -> 3.1.1. Harvest management

3. Species management -> 3.1. Species management -> 3.1.2. Trade management

Research Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Research Needed

3. Monitoring -> 3.1. Population trends

3. Monitoring -> 3.2. Harvest level trends

Additional Data Fields

Distribution

Estimated extent of occurrence (EOO) (km²): >20,000

Lower elevation limit (m): 0

Upper elevation limit (m): 4500

Population

Population severely fragmented: No

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