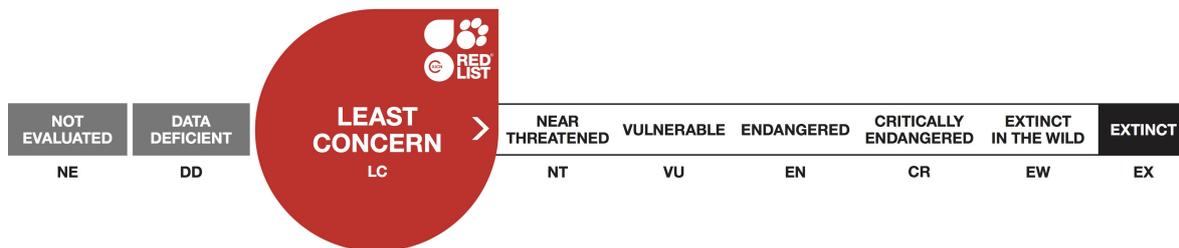


## *Leptailurus serval*, Serval

Assessment by: Thiel, C



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## Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Carnivora	Felidae

**Taxon Name:** *Leptailurus serval* (Schreber, 1776)

### Synonym(s):

- *Caracal serval*

### Regional Assessments:

- [Mediterranean](#)

### Common Name(s):

- English: Serval
- French: Chat-tigre

### Taxonomic Notes:

Taxonomy is currently under review by the IUCN SSC Cat Specialist Group. A recent molecular phylogeny reveals that the Serval is closely allied with the African Golden Cat *Caracal aurata* and *Caracal caracal* (Johnson *et al.* 2006), diverging from a common ancestor approximately 5.4 million years ago (O'Brien and Johnson 2007).

## Assessment Information

**Red List Category & Criteria:** Least Concern [ver 3.1](#)

**Year Published:** 2015

**Date Assessed:** April 20, 2014

### Justification:

Listed as Least Concern the Serval is relatively abundant and widespread. Within the last few years there are many new records of Servals implying an expanding and recolonizing of some areas (Herman *et al.* 2008, Bout 2010, Thorn *et al.* 2011, Hickisch and Aebischer 2013, Mugerwa 2013). There is no data confirming the new findings to be an enlargement of the Serval's distribution range or to be a shift of the range due to habitat loss and/or degradation, climate change or human impact, etc. However, habitat loss and degradation of wetlands is of concern, as is the level of skin trade in west Africa (Ray *et al.* 2005).

Servals are rare south of the Sahara in the Sahel region such as Senegal (Clement *et al.* 2007). A 2007 Mediterranean Mammal Assessment workshop classified Servals north of the Sahara as regionally Critically Endangered. The isolated population along the Mediterranean coast, where it is known to occur only in Morocco (Cuzin 2003), possibly in Algeria (K. de Smet pers. comm.), and has been reintroduced (from East African stock) in Tunisia (Hunter and Bowland 2013), is classified regionally as Critically Endangered under criterion C2a(i). There are fewer than 250 mature individuals; each subpopulation is smaller than 50 and completely isolated (from each other and from sub-Saharan

African populations). The status of these populations has not been reassessed and since 2003 there are have been no new confirmed records.

### **Previously Published Red List Assessments**

2008 – Least Concern (LC)

2002 – Least Concern (LC)

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

## **Geographic Range**

### **Range Description:**

The Serval occurs widely through sub-Saharan Africa, with the exception of tropical rainforest and the Saharan desert (Nowell and Jackson 1996). North of the Sahara, there are few records from Morocco (Cuzin 2003), possible records in Algeria (K. de Smet pers. comm.), and after they went extinct in Tunisia, Servals have been reintroduced using animals of East African stock into Feijda National Park (Hunter and Bowland 2013). Servals are rare south of the Sahara in the Sahel region such as Senegal (Clement *et al.* 2007). Gadsby (1991) proved the occurrence of Serval in Nigeria based on furs of this species being commonly traded on local markets. Trade evidence is used by Maisels *et al.* (2001) for occurrence in Cameroon and by Sayer and Green (1984) for occurrence in Benin.

Within the last years there are new records of Servals implying an expanding and recolonizing of some areas, such as central South Africa, Gabon, North West province of South Africa, eastern Central African Republic, south western Uganda and central Namibia (Herrmann *et al.* 2008, Bout 2010, Thorn *et al.* 2011, Hickisch and Aebischer 2013, Mugerwa 2013, C. Thiel pers. comm.).

### **Country Occurrence:**

**Native:** Angola (Angola); Benin; Botswana; Burkina Faso; Burundi; Cameroon; Central African Republic; Chad; Congo; Congo, The Democratic Republic of the; Côte d'Ivoire; Djibouti; Eritrea; Ethiopia; Gabon; Gambia; Ghana; Guinea; Guinea-Bissau; Kenya; Liberia; Malawi; Mali; Mozambique; Namibia; Niger; Nigeria; Rwanda; Senegal; Sierra Leone; Somalia; South Africa; Sudan; Swaziland; Tanzania, United Republic of; Togo; Uganda; Zambia; Zimbabwe

**Possibly extinct:** Algeria

**Reintroduced:** Tunisia

# Distribution Map



## *Leptailurus serval*

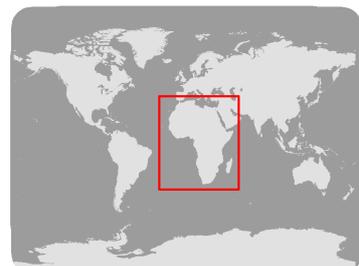
### Range

- Extant (resident)
- Extinct
- Introduced
- Reintroduced

Compiled by:  
IUCN (International Union for Conservation of Nature)

NE DD LC > NT VU EN CR EW EX

LEAST CONCERN



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.



## Population

Outside northern Africa, where it is considered to meet the Red List Criteria for Endangered (Cuzin 2003) and the Sahel, where it is rare (Clement *et al.* 2007), the Serval is commonly recorded from most major national parks and reserves. Their status outside reserves is uncertain, but they are inconspicuous and may be common in suitable habitat as they are tolerant of farming practices provided there is cover and food available (Bowland 1990, Thiel 2011). The minimum density of Servals in optimal habitat in Ngorongoro Crater was 0.42 animals/km<sup>2</sup> (Geertsema 1985) and 0.1 animals/km<sup>2</sup> in Luambe National Park in Zambia (Thiel 2011).

**Current Population Trend:** Stable

## Habitat and Ecology (see Appendix for additional information)

Sunquist and Sunquist (2002) stated, that the Serval has quite specific habitat requirements, so it may be locally restricted to smaller areas within its broad distribution range; it is not found in areas of rainforest or desert like habitats.

In sub-Saharan Africa, Servals are found in well-watered savanna long-grass environments and are particularly associated with reedbeds and other riparian vegetation types (Thiel 2011). Geertsema (1981) associated Servals with well-watered habitats like grass savannas along river reed beds and swamps, in brush and open woodlands and along the edge of forests. Van Aarde and Skinner (1986) showed significantly higher usage of riverine habitats than expected. Grimshaw *et al.* (1995) and Andama (2000) even reported Servals on high altitude moorlands and bamboo thickets. They also range up into alpine grasslands, up to 3,800 m on Mount Kilimanjaro (Nowell and Jackson 1996). Servals can penetrate dense forest along waterways and through grassy patches, but are absent from the rainforests of Central Africa, and from desert environments. In North Africa, they are found from semi-desert to cork oak forest on the Mediterranean coast (De Smet 1989, Cuzin 2003). Servals are able to tolerate agricultural areas provided cover is available (Geertsema 1985, Thiel 2011), and may also benefit from forest clearance and the resulting encroachment of savanna at the edges of the equatorial forest belt (Ray *et al.* 2005).

Serval specialize in preying on small mammals, in particular rodents, with birds of secondary importance, followed by reptiles and arthropods (Geertsema 1985, Bowland 1990, Thiel 2011). In Zambia Servals feed mainly on small mammals weighing in average *ca* 70 g and up to 1.5 kg, which mostly are nocturnal and have a preference for grassland, wetland or habitats associated with water; birds have an average weight of *ca* 250 g, in form of smaller birds (up to 200 g) or larger Galliformes (ground dwellers up to 4 kg) (Thiel 2011).

**Systems:** Terrestrial, Freshwater

## Use and Trade (see Appendix for additional information)

For uses, see under Threats.

## Threats (see Appendix for additional information)

The major threat to Serval is wetland habitat loss and degradation (Thiel 2011). Wetlands harbour

comparatively high rodent densities compared with other habitat types, and form the core areas of Serval home ranges. Of secondary importance is degradation of grasslands through annual burning followed by over-grazing by domestic livestock, leading to reduced abundance of small mammals (Nowell and Jackson 1996, Ray *et al.* 2005).

International legal commercial trade is generally declining (Nowell and Jackson 1996), although skins are still traded in large quantities in some countries, such as Senegal, Gambia and Benin (Burnham and Di Silvestre in Hunter and Bowland 2013), and exported to North Africa (K. de Smet and F. Cuzin pers. comm. 2007). Serval pelts seen in trade in Morocco could come from elsewhere, or could indicate the species continued existence in that country (Arce and Prunier 2006). In Zambia pelts are rarely used for traditional clothing, often it is used as substitute for Leopard skins (C. Thiel pers. comm.) Trade in West Africa appears to be primarily for ceremonial or medicinal purposes. For example, they are highly valued for traditional medicine in Nigeria, where, among markets surveyed in five south-west Nigerian towns in 1994, Servals were the second most commonly offered mammalian species (Sodeinde and Soewu 1999 in Hunter and Bowland 2013). Gadsby (1991) proved the occurrence of Serval in Nigeria based on furs of this species being commonly traded on local markets. Trade evidence is used by Maisels *et al.* (2001) for occurrence in Cameroon and by Sayer and Green (1984) for occurrence in Benin.

Although Serval very rarely prey upon livestock (and indeed may even be beneficial to crop farmers due to their predilection for rodents), in rural areas throughout Africa, they are sometimes persecuted for taking poultry and indiscriminate predator control methods practised by pastoralists frequently kill them (L. Hunter and J. Bowland pers. comms.).

Sometimes other predators, such as leopards, hyaenas or lions, kill young and even adult Serval (Thiel 2011).

## **Conservation Actions (see Appendix for additional information)**

The Serval is listed on CITES Appendix II. Hunting is prohibited in Algeria, Botswana, Congo, Kenya, Liberia, Morocco, Mozambique, Nigeria, Rwanda, South Africa (Cape province only), and Tunisia, and hunting regulations apply in Angola, Burkina Faso, Central African Republic, the Democratic Republic of the Congo, Ghana, Malawi, Senegal, Sierra Leone, Somalia, Tanzania, Togo and Zambia (Nowell and Jackson 1996).

Servals occur in a number of protected areas across their range, including: El Kala National Park (N.P.) (Algeria), Feidja N.P. (Tunisia), Ifrane N.P. (Morocco), Comoé N.P. (Côte d'Ivoire), WAPO complex (Burkina Faso, Benin, Niger, Togo), Zakouma N.P. (Chad), Simien and Bale Mountains National Parks (Ethiopia), Odzala N.P. (Congo Republic), Virunga N.P. (DR Congo), Queen Elizabeth N.P. and Bwindi Impenetrable National Park (Uganda), Aberdare Mountains N.P. (Kenya), Serengeti and Selous National Parks (Tanzania), Moremi G.R. and Chobe N.P. (Botswana), and Kruger N.P. and Ukhahlamba-Drakensberg Park (South Africa). Odzala N.P. in Congo Republic could be a key site for protecting serval as it is the only currently known protected population in the Gabon-Congolian savanna region, which are isolated from the Miombo woodlands south of the Congo River (P. Henschel pers. comm.).

As Geertsema (1985) and Bowland (1990) mentioned the key to Serval conservation is Wetland conservation. For these reasons it is crucial to investigate the Serval's habitat requirements and to create an updated action plan for this species (Thiel 2011). The Serval can be used as an umbrella

species for savanna biotopes; and as an indicator for the heavily endangered humid savanna biotope.

## Credits

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**Reviewer(s):** Nowell, K., Hunter, L., Hoffmann, M., Breitenmoser-Würsten, C., Lanz, T. & Breitenmoser, U.

**Contributor(s):** Henschel, P. & Sogbohossou, E.

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## Appendix

### Habitats

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

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.5. Forest - Subtropical/Tropical Dry	Resident	Suitable	-
2. Savanna -> 2.1. Savanna - Dry	Resident	Suitable	-
4. Grassland -> 4.5. Grassland - Subtropical/Tropical Dry	Resident	Suitable	-
4. Grassland -> 4.6. Grassland - Subtropical/Tropical Seasonally Wet/Flooded	Resident	Suitable	Yes
4. Grassland -> 4.7. Grassland - Subtropical/Tropical High Altitude	Resident	Suitable	-
5. Wetlands (inland) -> 5.1. Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	Resident	Suitable	Yes
5. Wetlands (inland) -> 5.3. Wetlands (inland) - Shrub Dominated Wetlands	Resident	Suitable	Yes

### Use and Trade

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

End Use	Local	National	International
Medicine - human & veterinary	Yes	Yes	No
Wearing apparel, accessories	Yes	Yes	Yes

### Threats

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

Threat	Timing	Scope	Severity	Impact Score
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.2. Small-holder farming	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.3. Agro-industry farming	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.1. Nomadic grazing	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		

2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.2. Small-holder grazing, ranching or farming	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.3. Agro-industry grazing, ranching or farming	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.4. Scale Unknown/Unrecorded	Past, unlikely to return	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.1. Intentional use (species is the target)	Ongoing	-	-	-
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.2. Unintentional effects (species is not the target)	Ongoing	-	-	-
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.3. Persecution/control	Ongoing	-	-	-
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
7. Natural system modifications -> 7.1. Fire & fire suppression -> 7.1.3. Trend Unknown/Unrecorded	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		
8. Invasive & other problematic species & genes -> 8.2. Problematic native species	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		

## Conservation Actions in Place

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

<b>Conservation Actions in Place</b>
In-Place Land/Water Protection and Management
Occur in at least one PA: Yes
In-Place Species Management
Successfully reintroduced or introduced benignly: Yes
Subject to ex-situ conservation: Yes
In-Place Education
Included in international legislation: Yes

<b>Conservation Actions in Place</b>
--------------------------------------

Subject to any international management/trade controls: Yes
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## Conservation Actions Needed

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

<b>Conservation Actions Needed</b>
------------------------------------

1. Land/water protection -> 1.1. Site/area protection
---

1. Land/water protection -> 1.2. Resource & habitat protection
--

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

## Research Needed

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

<b>Research Needed</b>
------------------------

1. Research -> 1.2. Population size, distribution & trends
--

1. Research -> 1.3. Life history & ecology
--

## Additional Data Fields

<b>Distribution</b>
---------------------

Upper elevation limit (m): 3800
---------------------------------

<b>Population</b>
-------------------

Continuing decline of mature individuals: Unknown
---

Extreme fluctuations: Unknown
-------------------------------

Population severely fragmented: No
------------------------------------

Continuing decline in subpopulations: Unknown
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Extreme fluctuations in subpopulations: Unknown
---

<b>Habitats and Ecology</b>
-----------------------------

Movement patterns: Not a Migrant
----------------------------------

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