

**First Range State Meeting for the Persian Leopard**

*Tbilisi, Georgia, 20 – 22 September 2022*

UNEP/CMS/PL-RS1/Doc.1/Rev.1

**5. Presentation of the**

**Overview Report on The Status and Conservation  
of the Persian Leopard across its Range States**

**Urs Breitenmoser**

**and of the**

**Draft Range-Wide Strategy for The Conservation  
of The Persian Leopard**

**Tabea Lanz**



# Overview Report

 **Convention on the Conservation of Migratory Species of Wild Animals** 

**First Range State Meeting for the Persian Leopard**  
*Tbilisi, Georgia, 20 – 22 September 2022*

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UNEP/CMS/PL-RS1/Inf.2/Rev.1

OVERVIEW REPORT ON THE STATUS AND CONSERVATION OF THE PERSIAN LEOPARD  
ACROSS ITS RANGE STATES

**Summary:** The overview report was prepared for the CMS Secretariat by a group of experts, led by the IUCN Cat Specialist Group co-chairs. This work was funded in the framework of the cooperation between the CMS Secretariat and the International Academy for Nature Conservation of the German Federal Agency for Nature Conservation (BIN INA) by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection. The views expressed herein are those of the authors and do not necessarily reflect official opinions of the involved institutions. A revision of the document was prepared to correctly refer to the authors of the document.

**Action requested:** Take note of the report.

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**The Persian Leopard**



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# Overview Report



Convention on the Conservation of Migratory Species of Wild Animals



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Tbilisi, Georgia, 20 – 22 September 2022

UNEP/CMS/PL-RS1/Inf.2/Rev.1

OVERVIEW REPORT ON THE STATUS AND CONSERVATION OF THE PERSIAN LEOPARD  
ACROSS ITS RANGE STATES

## TABLE OF CONTENTS

### 1. Summary of the status population trends, threats and conservation needs of the Persian Leopard across its range

- 1.1. Caucasus Region
- 1.2. Alborz-Kopet Dagh Region
- 1.3. Zagros Region
- 1.4. Eastern Range

### 2. Cross-border protection priorities, migration routes and limitations

### 3. Re-introduction efforts and current projects for the Persian Leopard

### 4. Existing Conservation Strategies and National Action Plans

### 5. References

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## CATnews Special Issue 15 Summer 2022

1. Range-wide cooperation for the conservation of the Persian leopard – an introduction by U. Breitenmoser, Ch. Breitenmoser-Würsten, E. Brouwer and T. Lanz .....	03
2. Biology, ecology and taxonomy of the Persian leopard by T. Rosen and D. Mengülluğlu .....	06
3. Mapping the distribution and habitat of Persian leopard across its historical range by B. Bleyhl, P. Gerngross, E. Askerov, M. S. Farhadinia, A. Ghoddousi, A. Heidelberg, I. Khorozyan, K. Manvelyan, D. Mengülluğlu, S. Ostrowski, T. Rosen, V. V. Rozhnov, M. Soofi, A. Yachmenikova and T. Kuemmerle .....	09
4. Distribution and status of the Persian leopard in the Caucasus Ecoregion by I. Khorozyan, E. Askerov, G. Beruchashvili, A. E. Kütükcü, B. Lortkipanidze, A. Malkhasyan, E. Moğanaki, M. Mousavi, A. Pkhitikov, S. Trepet, P. Weinberg, Y. Yarovenko and A. Heidelberg .....	19
5. Status of Persian leopards in northern Iran and Central Asia by M. S. Farhadinia, M. Soofi, T. Rosen, P. Moghadas, K. Hobeali, P. Behnoud, A. Amanov, T. Dieterich, H. Hojamuradov, N. Hudaikuliev, S. Karyeva, P. Kaczensky, S. Mengliev, A. Muhashov, Z. Numuhambetov, M. Pestov, A. Potaeva, V. Terentyev, F. Salmanpour, H. Tizrouyan, H. Alinezhad, B. Jafari, M. Ommatmohammadi, K. Rabie, A. Veyisov and J. D. C. Linnell .....	29
6. Distribution and status of the Persian leopard in its western range by A. Ghoddousi, H. Abolghasemi, M. Arianejad, G. G. Mozafari, L. Joolaee, M. Mousavi, D. Nayeri, N. R. Chahartaghi, H. Raza and P. Sepahvand .....	36
7. Distribution and status of the Persian leopard in the eastern part of its range by S. Ostrowski, M. Kabir, Z. Moheb, M. Gritsina, K. Karimov, M. S. H. Khan, S. Ud Din Baloch, N. Mohammad, M. A. Khan, J. Naseri, M. Fazi, R. Murzakhanov, N. Marmazinskaya, A. Normatov, A. Maskaev, M. N. Mirzoev and I. Kholmatov .....	42
8. Coexistence between leopards and local people - challenges and solutions by M. Soofi, I. Khorozyan and B. Ghasemi .....	50
9. Priority areas for transboundary conservation of Persian leopards in West Asia and the Caucasus by M. Farhadinia, I. Khorozyan, P. Orlinskiy, T. Rosen, B. Shahriari, H. Raza, B. Bleyhl, S. Karyeva, M. Pestov, M. Kabir, Z. Moheb, V. Terentiev and E. Askerov .....	57
10. A range-wide monitoring framework for the Persian leopard and its prey by A. Ghoddousi, B. Bleyhl, E. Askerov, A. Heidelberg, M. Kabir, B. Lortkipanidze, K. Manvelyan, D. Mengülluğlu, Z. Moheb, M. Mousavi, A. Pkhitikov, H. Raza, T. Rosen, V. V. Rozhnov, P. Weinberg, A. Yachmenikova and T. Kuemmerle .....	61
11. Experience of the leopard recovering through reintroduction in the Russian Caucasus by V. V. Rozhnov, A. A. Yachmenikova, N. A. Dronova, S. V. Naidenko, J. A. Hernandez-Blanco, M. D. Chistopolova, A. B. Pkhitikov, F. A. Tembotova, S. A. Trepet and I. E. Chestin .....	67
12. Ex situ conservation of the Persian leopard - the EAZA leopard EEP by J. D. Ferreira and A. Sliwa .....	72

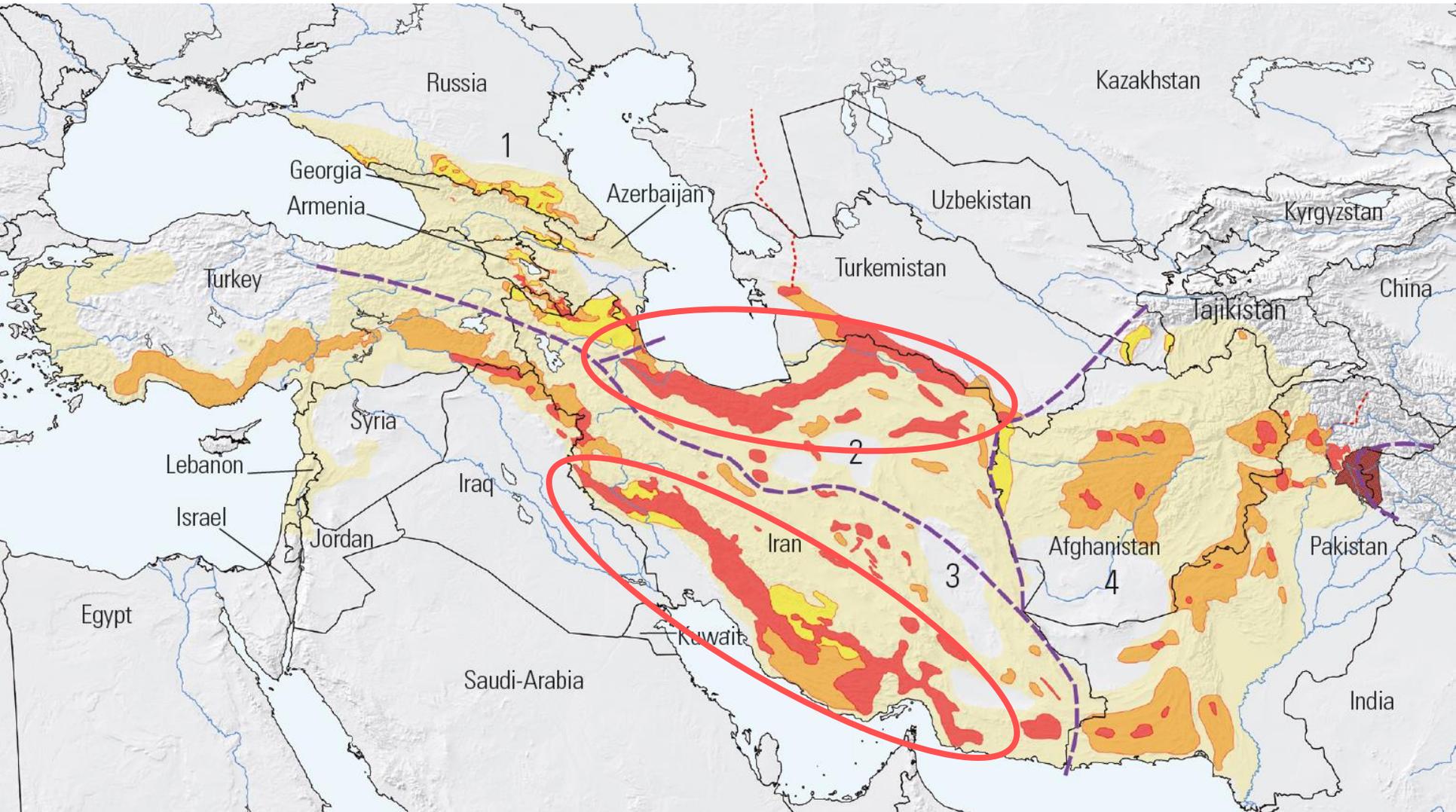
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# Distribution of the Persian leopard according to IUCN Red List distribution categories

Map courtesy to Peter Gerngross, based on Bleyhl et al. (2022), Farhadinia et al. (2022a), Ghoddousi et al. (2022a), Khorozyan et al. (2022), and Ostrowski et al. (2022).



Regions: 1 = Caucasus, 2 = Alborz-Kopet Dagh, 3 = Zagros, 4 = Eastern Range

**Table 1.1.** Number of records after 2000 of leopard occurrences per region/Range State according to the SCALP criteria: C1 = verified, C2 = confirmed, and C3 = unconfirmed observations.

<i>Region</i>	<i>Range State</i>	<i>C1</i>	<i>C2</i>	<i>C3<sup>1</sup></i>	<i>Total</i>
Caucasus	Armenia	116	177	13	306
	Azerbaijan	46	10	0	56
	Georgia	2	3	9	14
	Iranian Caucasus	57	16	67	140
	Russian Caucasus	5	16	13	34
	Turkish Caucasus	3	0	1	4
<b>Total Caucasus region</b>		<b>229</b>	<b>222</b>	<b>103</b>	<b>554</b>
Alborz-Kopet Dagh	Iran <sup>2</sup>	278	263	-	541
	Turkmenistan	38	0	-	38
	Uzbekistan <sup>3</sup>	0	0	0	0
	Kazakhstan	10	0	-	10
<b>Total Alborz-Kopet Dagh</b>		<b>326</b>	<b>263</b>	<b>-</b>	<b>589</b>
Zagros	Iran <sup>4</sup>	215	105	55	275
	Iraq <sup>5</sup>	29	2	33	64
	Turkey <sup>6</sup>	0	0	0	0
<b>Total Zagros range</b>		<b>244</b>	<b>107</b>	<b>88</b>	<b>339</b>
Eastern Range	Afghanistan	1	0	1	2
	Pakistan	127	3	0	130
	Tajikistan	0	0	0	0
	Uzbekistan <sup>7</sup>	0	0	0	0
<b>Total Eastern range</b>		<b>128</b>	<b>3</b>	<b>1</b>	<b>132</b>

NB: <sup>1</sup> C3 records were not considered for the Alborz-Kopet Dagh region, <sup>2</sup> N and NE, <sup>3</sup> W, <sup>4</sup> S and SW, <sup>5</sup> N, <sup>6</sup> SE, <sup>7</sup> E.



**Table 1.2.** Assumed leopard status and minimum numbers of leopards per country and region. Status = IUCN Red List categories for the regional assessment. EN = Endangered, CR = Critically Endangered, EX = Extinct.

<i>Region</i>	<i>RL</i>	<i>Range State</i>	<i>CMS</i>	<i>CAMI</i>	<i>BeCon</i>	<i>Minimum pop. size</i>	<i>Legaö protection</i>
Caucasus	CR	Armenia	Yes	No	Yes	3-9	1972
		Azerbaijan	No	No	Yes	6-17	1976
		Georgia	Yes	No	Yes	1	1982
		Iran	Yes	Yes	No	No estimate	1965
		Turkey	No	No	Yes	No estimate	2003
		Russia	Yes	Yes	No	10	1956
Alborz-Kopet Dagh	EN	Iran	Yes	Yes	No	288-355	1965
		Turkmenistan	Yes	Yes	No	60-80 <sup>3</sup>	1970
		Kazakhstan	Yes	Yes	No	0-5	2021
		Uzbekistan	Yes	Yes	No	No estimate	1983
Zagros	EN	Iran	Yes	Yes	No	200-320	1965
		Iraq	Yes	No	No	10	2010
		Turkey	No	No	Yes	No estimate	2003
Eastern Range		Afghanistan	Yes	Yes	No	No estimate	2008
	CR	Pakistan	Yes	Yes	No	No estimate	1974
	(EX)	Uzbekistan	Yes	Yes	No	-	1983
	EX	Tajikistan	Yes	Yes	No	-	2008



**Table 2.1.** Transboundary conservation: Percentage of country range in borderlands per Persian Leopard range country (Farhadina et al. 2022b).

<i>Range States</i>	<i>% of country range in borderlands</i>
Afghanistan	17.5
Armenia	100
Azerbaijan	100
Georgia	100
Iran	28.2
Iraq	100
Kazakhstan	100
Pakistan	74.8
Russia	100
Tajikistan	100
Turkey	100
Turkmenistan	91.1
Uzbekistan	100

In average, >85% of leopard range is in border areas!



# Transboundary conservation



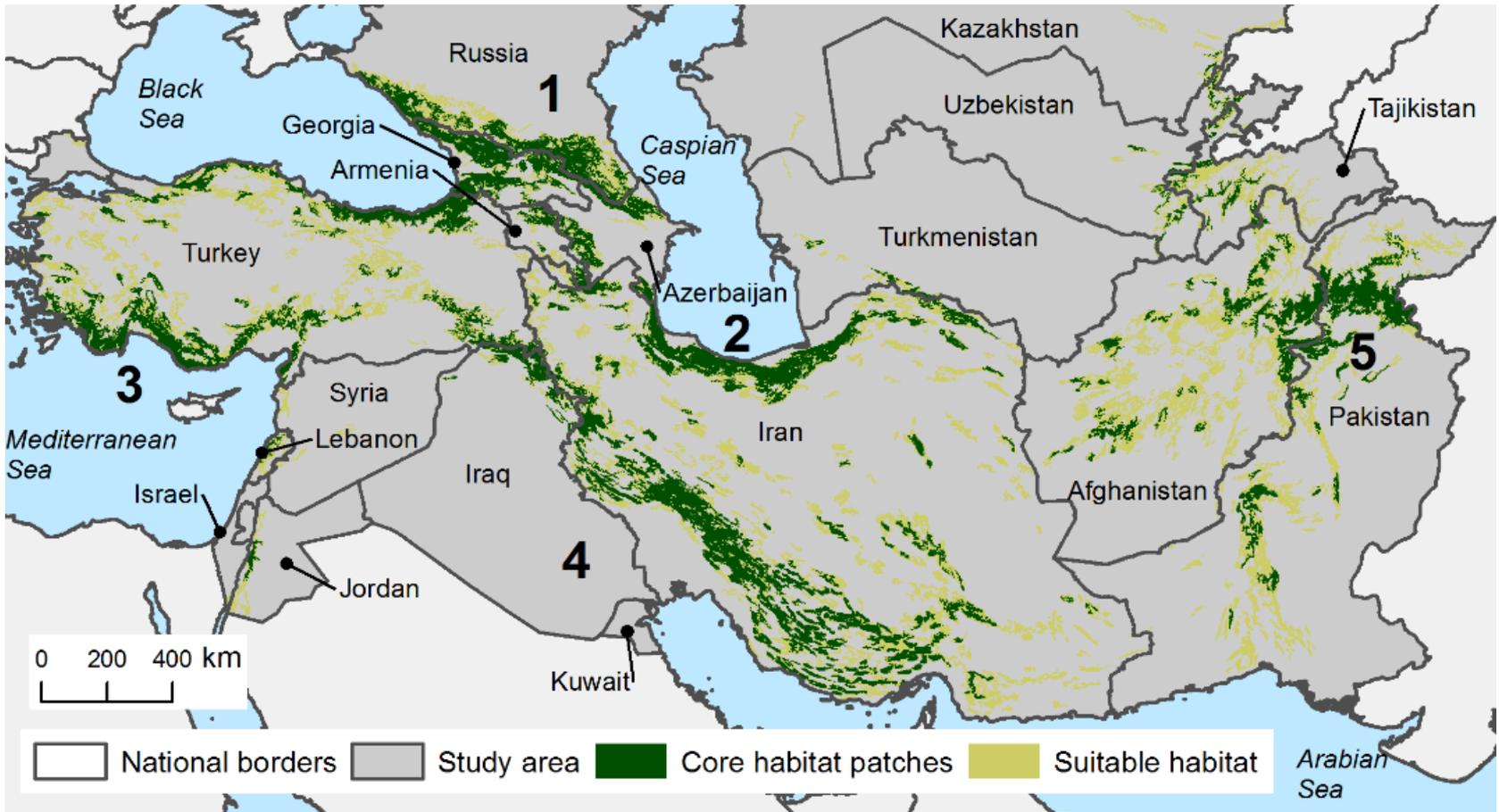
Figure 2.1. 10 key transboundary areas for Persian leopards:

- 1) the entire Iran-Afghanistan border,
- 2) Badkhyz,
- 3) Aral Paygambar,
- 4) Kopetdag,
- 5) south-western Ustyurt,
- 6) Babatag,
- 7) Zagros,
- 8) Lesser Caucasus,
- 9) Greater Caucasus,
- 10) Hindu Kush range

(Farhadinia et al. 2022b).



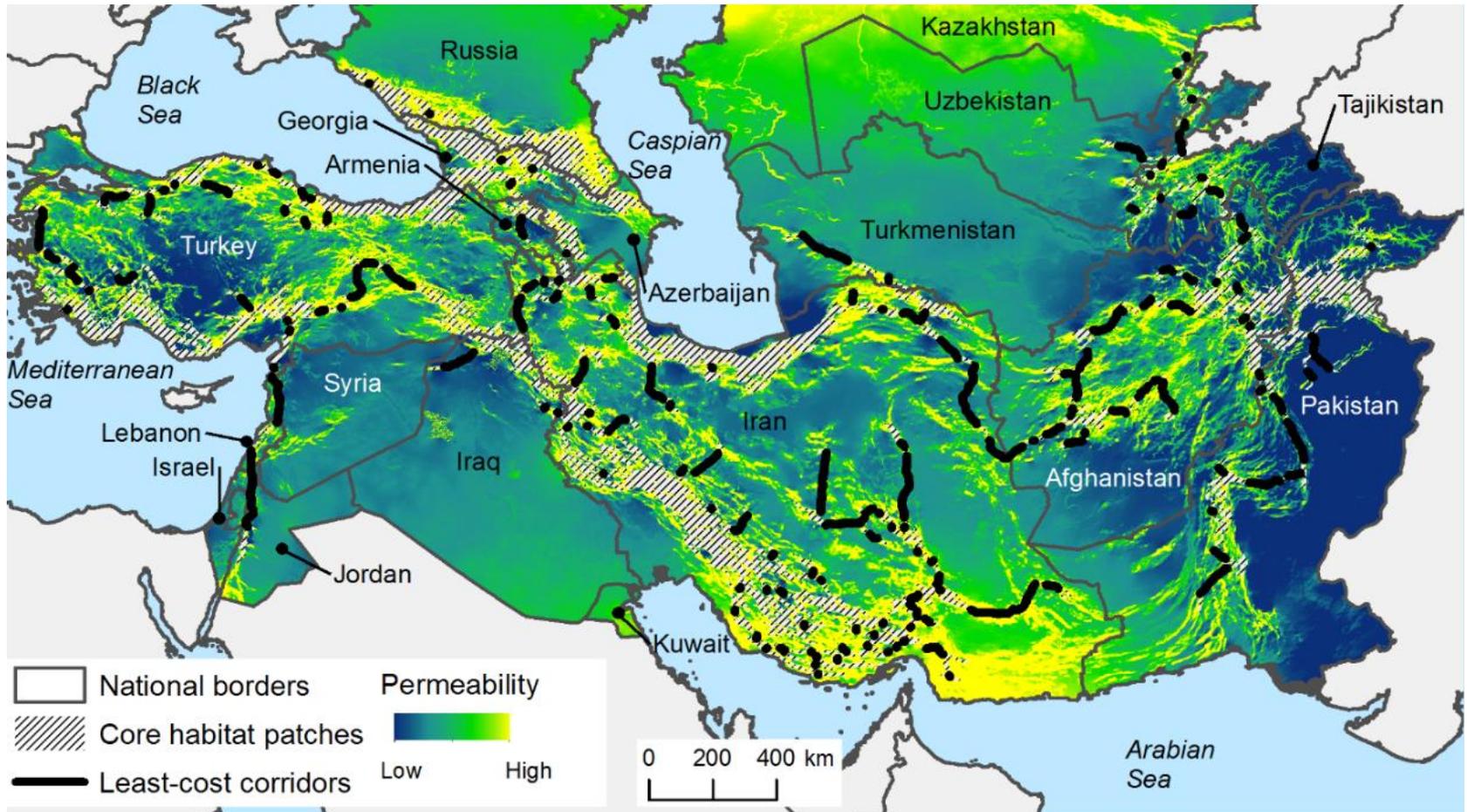
# Habitat model to inform spatial conservation concepts



(Bleyhl et al. 2022)

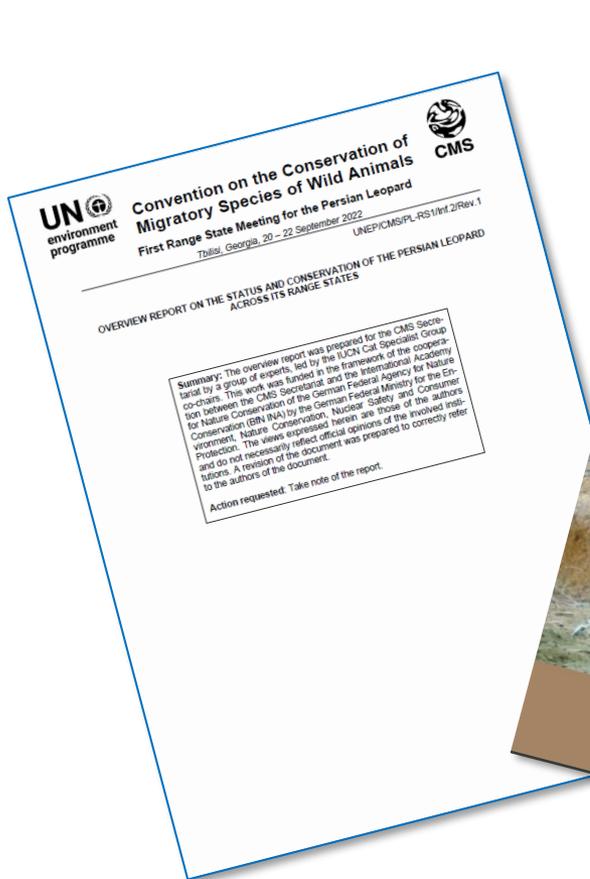


# Best predicted corridors between suitable habitat patches



(Bleyhl et al. 2022)





This knowledge base was considered in the range-wide Conservation Strategy and should also inform the development of National Action Plans



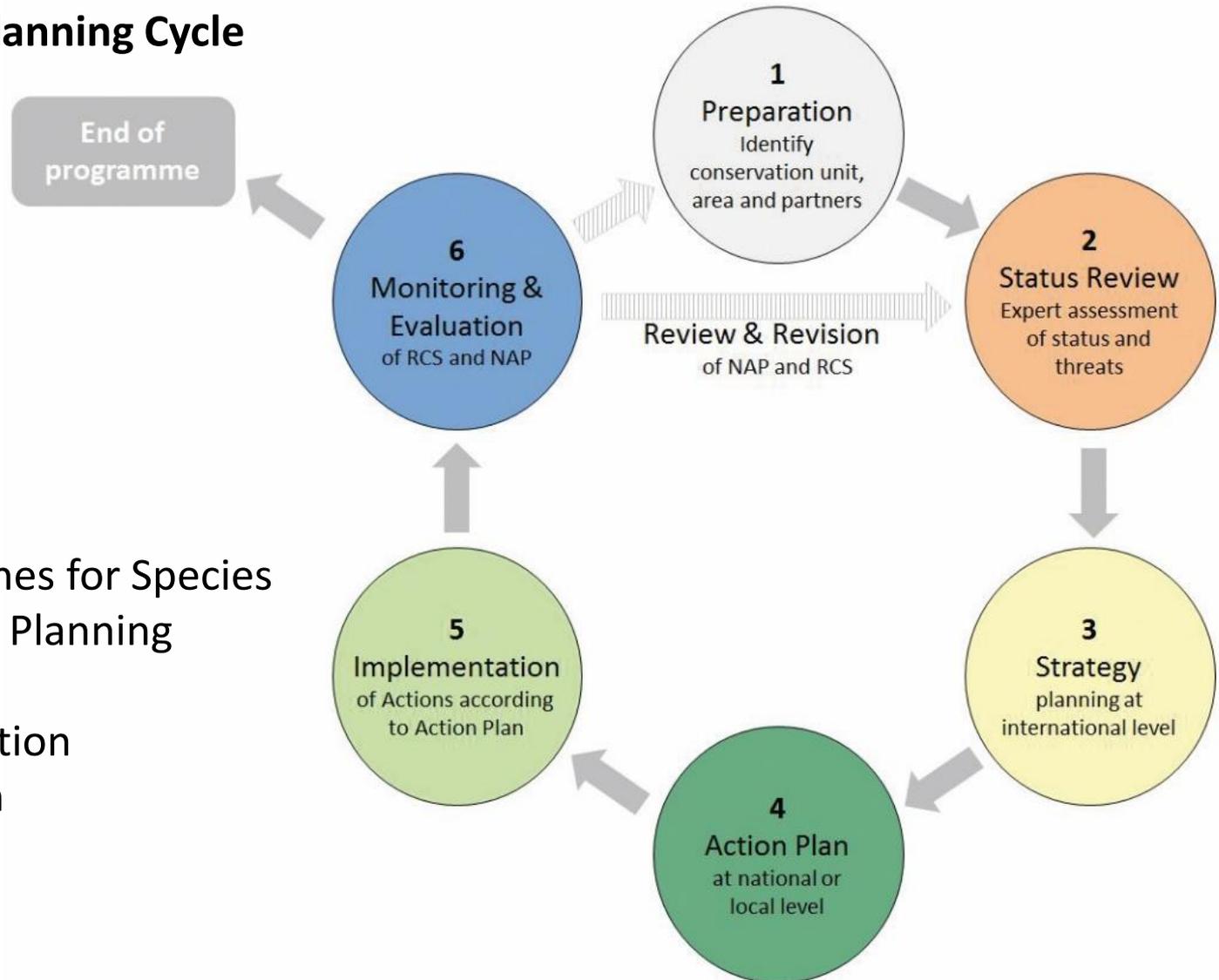


# Draft Range-Wide Strategy for The Conservation of The Persian Leopard



# Procedures for the development of the Conservation Strategy

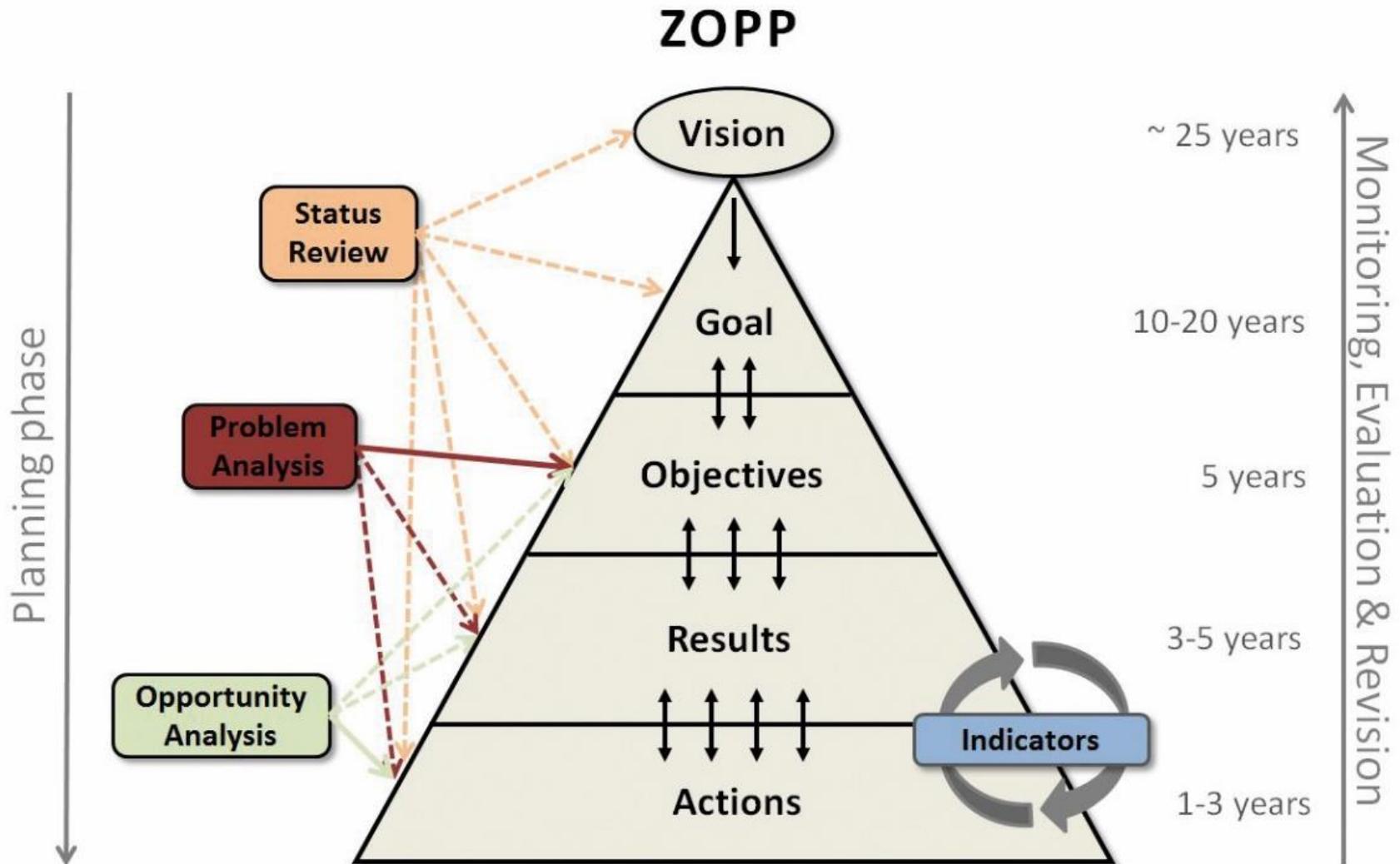
## Strategic Planning Cycle



- IUCN Guidelines for Species Conservation Planning
- Cat Conservation Compendium



# “Zielorientierte Projektplanung” goal-oriented project planning



# ZOPP

1. Development of a **Vision**, wishful perspective for the next 25-50 years, reflecting an optimistic view and ideal future scenario

2. Development of a **Goal**, a concrete, intention; a feasible realistic & measurable long-term aim (10-20 years)

3. Performing a **Threat Analysis** and creation of the **Problem Tree**, including (direct) Threats, Drivers and Constraints to understand which obstacles are preventing the achievement of the Goal and Vision

4. Development of **Objectives**, supporting the fulfillment of the Goal and directly addressing Threats and Drivers

5. Formulation of **Results**, concrete achievements or direct outcomes needed to reach every Objective. Results are the direct outcome of the implementation of a Logical Framework and should be SMART (Specific, Measurable, Achievable, Relevant and Time-bound)

6. Development of **Activities/Actions** to achieve each Result, including a Timeline, Actor, Indicator and a rough Budget. Implementation of Activities/Actions is the ultimate goal of the strategic planning process

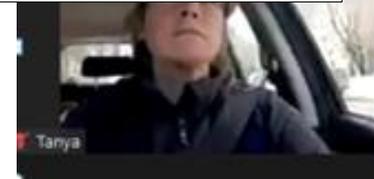


# Procedures for the development of the Conservation Strategy

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Aurel Heidelberg  
Arash Ghoddousi  
Peter Gerngross



# Vision

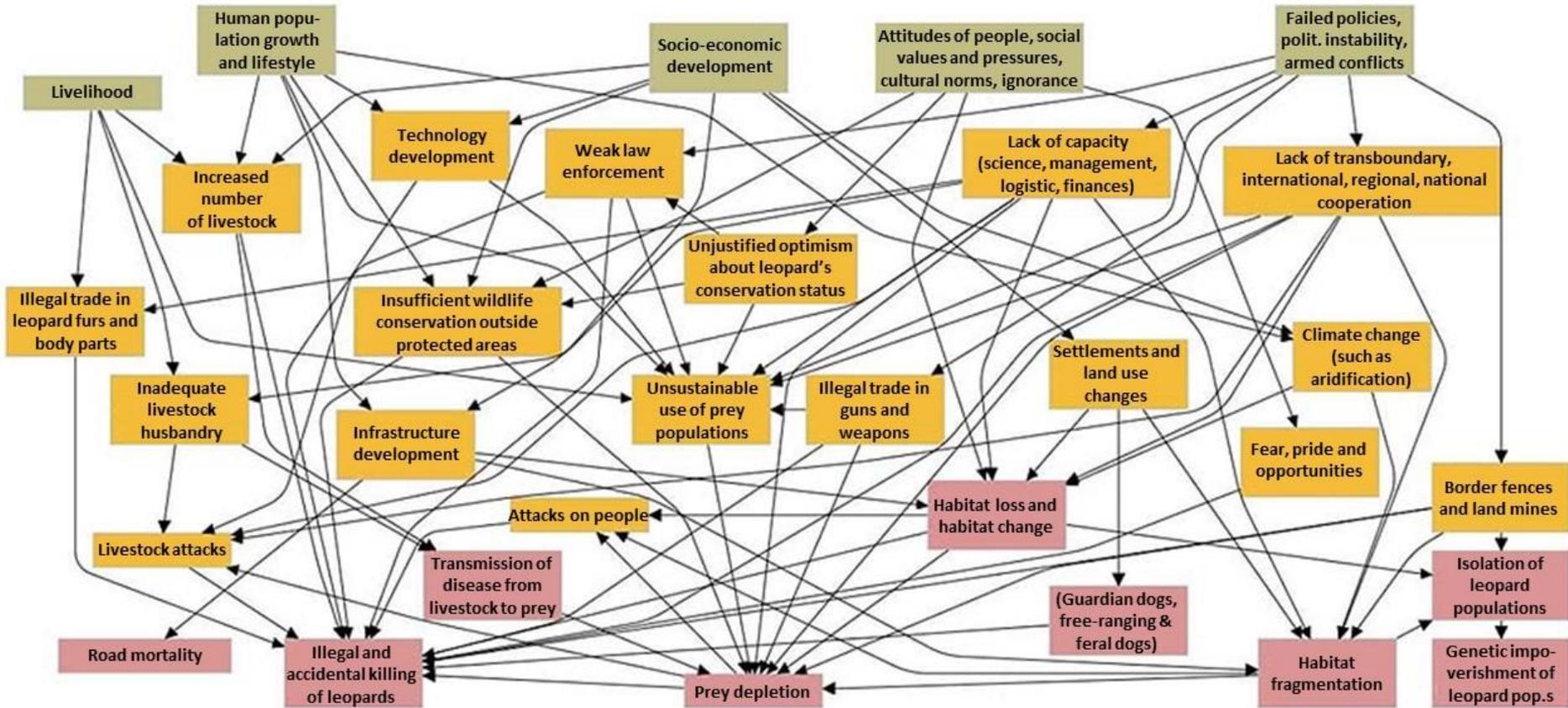
Viable populations of Persian Leopard range across transboundary landscapes in healthy ecosystems, coexisting with and valued by people.

# Goal

To ensure coordinated action for the conservation of the Persian Leopard, its key wild prey species and habitats across its historic range by strengthening coordination and cross-border cooperation, sustainable use of natural resources and coexistence with people.



# Threat analysis – Problem Tree



Green = Constraints, orange = Drivers, and red = Threats. For details and relative rankings see Table 3.1 and Appendix III.



## The Threat Ranking Table

Constraints (current and emerging) across the entire Persian Leopard range.

Constraints
Human population growth and lifestyle
Livelihoods
Attitudes: social values/pressures, cultural norms, ignorance (including negative feelings towards conservation)
Socio-economic development
Failed policies, political instability and armed conflicts (including priorities in governmental agenda)



## The Threat Ranking Table

Drivers (current and emerging) ranked across the entire Persian Leopard range. Drivers (D) were ranked according to their importance/severity (scores: 0 = non-existent, 1 = minor, 2 = medium, 3 = major) and the capacities available to address them (scores: 1 = poor, 2 = medium, 3 = good).

<i><b>Drivers</b></i>	<i><b>Importance/severity</b></i>	<i><b>Capacity</b></i>
Unsustainable use of prey populations (poaching/over-hunting)	2.7	2.4
Inadequate livestock husbandry	2.5	2.1
Increased livestock numbers	2.5	2.1
Insufficient wildlife conservation outside of PAs	2.5	1.3
Settlements and land use changes	2.4	1.2
Weak law enforcement	2.4	1.3
Infrastructure development	2.3	1.0
Climate change (droughts, lack of water etc.)	2.2	1.8
Illegal trade in guns and weapons	2.1	1.5
Lack of transboundary/regional/national cooperation	2.1	1.8
Border fences	2.0	1.3
Lack of capacities (including scientific knowledge, lack of experts) and support (logistics, funding, know-how)	1.9	1.8
Technology development (facilitates poaching)	1.6	1.3
Unjustified optimism about the leopard's conservation status	1.5	1.3
Illegal trade in fur and body parts	1.2	1.6



## The Threat Ranking Table

Threats (current and emerging) ranked across the entire Persian Leopard range. Threats were ranked according to their importance/severity (scores: 0 = non-existent, 1 = minor, 2 = medium, 3 = major) and the capacities available to address them (scores: 1 = poor, 2 = medium, 3 = good).

<i>Threats</i>	<i>Importance/severity</i>	<i>Capacity</i>
Transmission of diseases from livestock to leopard and its prey	2.5	1.7
Habitat fragmentation	2.4	1.3
Retaliatory killing (T) in response to livestock losses due to leopard attacks (D)	2.3	1.5
Habitat loss/change (including habitat modification)	2.2	1.3
Key wild prey depletion	2.2	2.2
Isolation of leopard populations	1.9	1.4
Genetic impoverishment of leopard populations	1.7	1.5
Feral dogs, free-ranging dogs and livestock guarding dogs	1.6	1.4
Illegal killing (T) out of fear, pride and opportunistic (D)	1.5	1.3
Retaliatory killing (T) in response to attacks on humans (D)	1.4	1.0
Road mortality/collisions	1.3	1.3



# Themes and Objectives

## 1. Conservation and sustainable management of leopard and key wild prey species

**Objective 1:** To increase the viability of the Persian Leopard and key wild prey populations across the range and ensure their recovery in priority areas.

**Objective 2:** To agree on and implement an effectual and sustainable wildlife management system within and outside PAs to assure the long-term existence of viable Persian Leopard and key wild prey populations in priority areas.

**Objective 3:** To perform initial surveys, where needed and implement a reliable monitoring system for Persian Leopard and key wild prey species within and outside PAs to guide conservation measures.

**Objective 4:** To establish and maintain an ex situ population of the Persian Leopard including institutions in all Range States, in order to secure a genetic backup and a source population for future in situ needs

Persian leopard with cubs © WWF, top right: bezor goats © WWF – A. Malkhasyan, bottom right: wild boars © WWF – A. Malkhasyan



# Themes and Objectives

## 2. Conservation of suitable habitats and connectivity

**Objective 5:** To establish and promote effectively managed networks of interconnected protected areas and corridors for the conservation of Persian Leopards in close cooperation with local land users.

**Objective 6:** To maintain or restore habitats for Persian Leopard and key wild prey between PAs and across their borders to assure connectivity between (sub) populations.



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# Themes and Objectives

## 3. Human dimensions

**Objective 7:** To mitigate human-Persian Leopard conflicts to allow long-term coexistence of local people and Persian Leopards.

**Objective 8:** To ensure long term support of local communities to Persian Leopard conservation by improving their conservation-friendly livelihood and involving them in Persian Leopard conservation.

**Objective 9:** To advance awareness, education and competence of all interest groups involved in or concerned by Persian Leopard conservation to increase their understanding and knowledge base for conservation.



Fenced coral used to protect sheep and goats in Iran © M. Soofi



Collars for protection of cattles, Iran  
© A. Ghoddousi & I. Khorozyan



# Themes and Objectives

## 4. Policy, legislation and transboundary conservation



**Objective 10:** To optimise existing policies including communication with local land users, adopt new laws as needed, and strengthen law enforcement (e.g. on poaching and illegal trade)

**Objective 11:** To strengthen international and transboundary cooperation for the conservation of the Persian Leopard and its key wild prey species.

**Objective 12:** To secure international support and funding for the implementation of conservation activities for the Persian Leopard and its key wild prey across their range.



Persian leopard in Kopet Dag State Nature Reserve along the Iran-Turkmenistan border (Photo Team Bars Turkmenistan)



# Objectives, Results and Activities

**Objective 1:** To increase the viability of the Persian Leopard and key wild prey populations across the range and ensure their recovery in priority areas.

**Result 1.1:** Priority areas including cross border habitats are identified, properly managed and protected to secure the existence of viable populations, safe movements and residence of Persian Leopard individuals by 2028 (see Result 5.1. & 5.2)

**Activity 1.1.1:** Review recent information and available data on habitat and Persian Leopard occurrence in the Range States and identify priority areas, research and conservation needs to secure viable Persian Leopard populations in these priority areas.

**Activity 1.1.2:** Organise workshops to develop best-practice management guides for priority areas, and disseminate to responsible authorities and local/regional stakeholders to ensure implementation and policy uptake (see Activity 1.1.4)

**Result 1.2 :** Viable and interconnected (sub) populations of Persian Leopard exist in priority areas of at least one region/ metapopulation by 2030 (see Result 5.3 & 11.3)

**Activity 1.2.1:** Promote standardised and methodologically advanced approaches to monitor Persian Leopard population viability and connectivity (cameratrapping, genetic analysis, disease screening etc.) based on the monitoring standards defined under Activity 3.3.1 & 3.3.2



# Draft Range-Wide Strategy for the Conservation of the Persian Leopard (2023-2032)

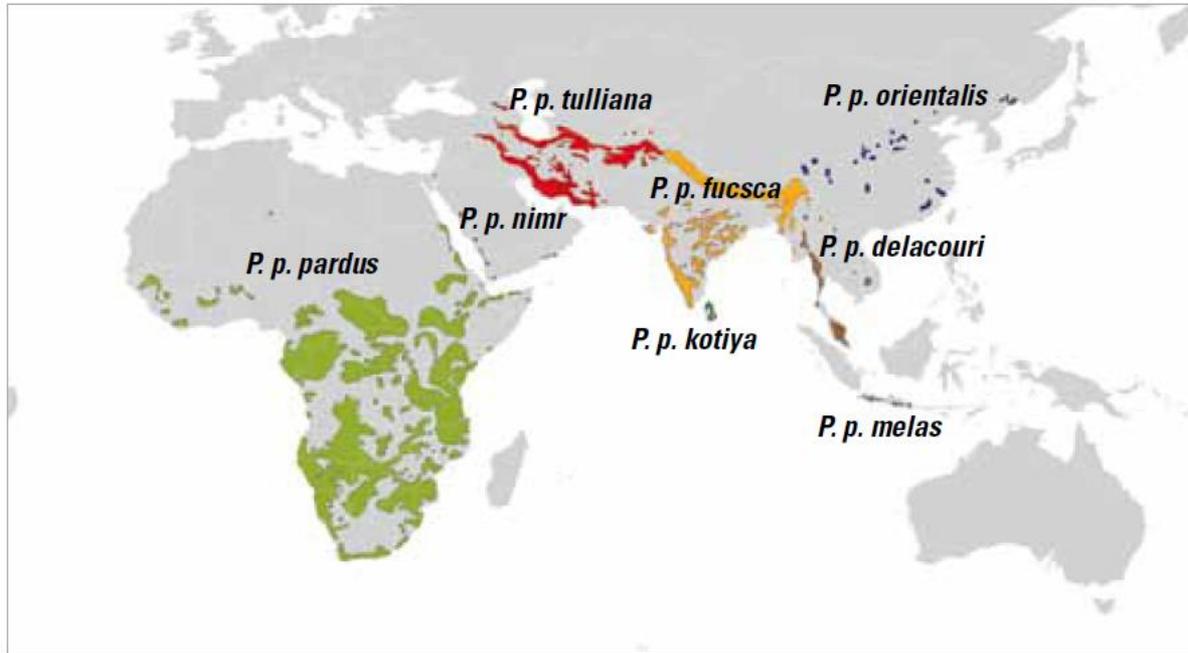
<i>Result</i>	<i>Activity</i>	<i>Actor</i>	<i>Indicator</i>	<i>Timeline</i>	<i>Budget</i>	<i>CAMI POW</i>	<i>Priority<sup>1</sup></i>
<b>Theme 1.</b> Conservation and sustainable management of the Persian Leopard and key wild prey species.							
<b>Objective 1.</b> To increase the viability of the Persian Leopard and key wild prey populations across the range and ensure their recovery in priority areas.							
<b>Result 1.1.</b> Priority areas including cross border habitats are identified, properly managed and protected to secure the existence of viable populations, safe movements and residence of Persian Leopard individuals by 2028 (see Result 5.1. & 5.2)	<b>Activity 1.1.1.</b> Review recent information and available data on habitat and Persian Leopard occurrence in the Range States and identify priority areas, research and conservation needs to secure viable Persian Leopard populations in these priority areas.	NGOs, research and GOs, invited experts and local/regional stakeholders	Report and map of priority Persian Leopard habitats is compiled	2025	10.000 USD per country	1.3, 19.2, 19.5	2.58
	<b>Activity 1.1.2.</b> Organise workshops to develop best-practice management guides for priority areas, and disseminate to responsible authorities and local/regional stakeholders to ensure implementation and policy uptake (see Activity 1.1.4)	NGOs, GOs, experts and local/regional stakeholders	Workshop performed, reports /road map developed, area-specific priority conservation measures identified, and relevant institutions are informed	2025	TBD		1.96
	<b>Activity 1.1.3.</b> Develop and enhance guidance on national and regional/cross-border protected areas for identifying new		Workshop took place, national and regional/cross border	2028	TBD by organisations		2.17





Subspecies	Morphology	Molecular	Biogeography	Certainty	Comments
<i>Panthera pardus pardus</i>	++	++	++		
<i>Panthera pardus delacouri</i>	+	-	+		Possibly in <i>orientalis</i>
<i>Panthera pardus fusca</i>	+	+	+		
<i>Panthera pardus japonensis</i>	+	+	0		Included in <i>orientalis</i>
<i>Panthera pardus kotiya</i>	+	+	++		Possibly in <i>fusca</i>
<i>Panthera pardus melas</i>	++	++	++		Distinct basal subspecies
<i>Panthera pardus nimr</i>	++	+	++		Possibly in <i>pardus</i>
<i>Panthera pardus orientalis</i>	++	++	+		Includes <i>japonensis</i>
<i>Panthera pardus tulliana</i>	++	+	+		Includes <i>ciscaucasica</i> , <i>saxicolor</i>





Distribution of tentative subspecies of leopard. Some of the borders between subspecies are speculative.



***Panthera pardus tulliana*** (Valenciennes, 1856; 1039), including *ciscaucasica*, *saxicolor*.

Type locality: Ninfi, village situé à huit lieues est de Smyrne [near Izmir, Turkey].

Holotype: MNHN-ZM-MO-1849-20 mounted skin (skull inside).

Distribution: Turkey, Caucasus, Turkmenistan, Uzbekistan, Iran, Iraq, Afghanistan and Pakistan.

Comment: This is the earliest name for leopards from South West Asia, and hence includes *saxicolor* and *ciscaucasica*. If *tulliana* proves to be distinct from other southwest Asian leopards, *ciscaucasica* is the earliest available name.



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