Assessment of Wildlife and Protected Areas of Turkmenistan 2023

Ashgabat, December 2023

Authors and Acknowledgments

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Table of Contents:

Executive Summary

Turkmenistan is home to iconic and imperiled species and unique desert and mountain ecosystems that are increasingly under anthropogenic pressure compounded by climate change impacts that manifest themselves in the form of prolonged drought and other intense weather events. The pressure on wildlife and the ecosystems they inhabit make it even more compelling to support the existing protected area network by increasing the level of scientific knowledge about wildlife populations and their ecosystem and strengthening the capacity of management and protection systems. However, it is also necessary to create new protected areas and to conserve critical ecological corridors and strongholds of endangered species.

In this report we will discuss activities (monitoring and conservation) carried out throughout 2023 in different areas across Turkmenistan. While the project is primarily focused on monitoring and conservation of the Persian leopard, their prey, and sympatric carnivores, and — within the scope of the CEPF grant — on strengthening the management of Koytendag State Nature Reserve, we are opportunistically looking at supporting monitoring in other areas, including Kaplankyr State Nature Reserve.

The formulated recommendations for consideration by the Ministry of Environmental Protection are based on extensive observations, discussions with Ministry of Environmental Protection and protected area staff, and data from camera traps collected within the frame of this ongoing project and a set of previous projects stretching back to 2013.

General:

- ⇒ Develop, agree on, and approve “Model Regulations on Ecological Corridors, Buffer/Protected Zones, and OECMs” in accordance with the Law "On Protected Areas";
- ⇒ Grant permission to conduct scientific monitoring in the sections beyond the border fence of the Kopetdag, Badhyz, Kaplankyr, Sunt Hasardag and Koytendag reserves;
- ⇒ Integrate the use of SMART in the management of all protected areas;
- ⇒ Appoint a dedicated SMART Coordinator in the Ministry who will be designated to receive all SMART reports (for now from Koytendag and Balkan Department of Environment);
- ⇒ Establish Balkan range and Garabogazgol protected areas as per the justification documents and maps submitted;
- ⇒ Increase the territory of Karayalchi National Monument or designate it as Wildlife Sanctuary or Strict Nature Reserve;
- ⇒ Include the territory of Dushak Erekdag in the Kopetdag Strict Nature Reserve;
- ⇒ Engage with Turkmen border service and counterparts in Kazakhstan and Uzbekistan to make progress, including fence modifications, to restore ecological connectivity especially for Garabogazgol/Ustyurt and Kaplankyr; and
- ⇒ Support work with local communities on reducing human-wildlife conflict and raising awareness about the need for protection of leopards and other wildlife;
- ⇒ Build national scientific capacity (i.e. train new young mammologists, herpetologists, ornithologists, etc.)

Badhyz and Koytendag:

- ⇒ Start enforcing the full ban on livestock (cows, horses, donkeys, and sheep) inside the Strict Nature Reserves; and
- ⇒ Stop poaching, by:
- ⇒ increasing manpower and infrastructure; and
- ⇒ Raise awareness for the loss of biodiversity in one of the most precious and oldest protected areas in Turkmenistan.

Badhyz:

- ⇒ Remove feral horses;
- ⇒ Regulate the collection of pistachio; and
- ⇒ Ban cats at ranger stations in the reserve.

Western Kopetdag:

⇒ Provide protection status to the Tersakan valley and adjacent area where kulan were spotted and include it into the network of protected areas of the Kopetdag region; and

⇒ Establish a ranger outpost to safeguard the remaining kulan and wildlife populations in this area.

Kaplankyr:

⇒ Increase cooperation with Uzbekistan and Kazakhstan to establish the future "eco-corridor" on the Ustyurt plateau between the 3 countries; and

⇒ Consider discussing with Kazakhstan the possibility of translocation of saiga antelope from western Kazakhstan.

Koytendag:

For the success of the UNESCO World Heritage Site Nomination Dossier, the nomination dossier of the MEK should be brought into line with the recommendations of IUCN experts (2015) including recommendations on the integrity of the territory, protection, management, nomination boundaries, criteria, grazing monitoring, tourism, transnational cooperation, etc.) as follows:

⇒ Revise the territories of the nomination dossier of the Koytendag Mountain Ecosystem (MEK) in accordance with the recommendations of IUCN experts (2015) and agree on and approve these territories, including buffer zones;

⇒ Exclude Garlyk Wildlife Sanctuary from the dossier;

⇒ Include in the villages of Sayat and Hojeypil into the Hojeypil Sanctuary;

⇒ Expand the territory of the existing Hojeypil Reserve toward enhancing the representativeness to better protect the habitats of urial, lynx, wild boar, porcupine, wolf, and other animals, as well as to better regulate vandalism and degradation of the paleontological monument "Dinosaur Plateau", overgrazing of livestock, pollution from household waste, and mass unorganized tourism;

⇒ Create passage ("Bili-synyk") through the border fence inside the Koytendag Reserve to better facilitate the movement and resulting genetic diversity of wild animals -including exchange within ungulate populations (markhor, urial), and to preserve overall integrity and connectivity within the reserve;

⇒ Establish an ecological corridor "Airibaba" (Koytendag-Surkhan Reserve /Uzbekistan) with a main objective of conserving the movement and genetic diversity of populations of markhor, argali, and other species;

⇒ Formalize the amended boundaries of the reserve and sanctuaries (See Resolution of the Cabinet of Ministers on the change of territories) based on GIS coordinates and data obtained within the framework of projects (RSPB, CEPF / CLLC); and

⇒ Include Kaptarkhana Cave in the buffer zone.

On management of Koytendag:

⇒ Organize regular patrols on the "Dinosaur Plateau", especially on weekends and holidays.

⇒ Install a barrier at the foot of the "Dinosaur Plateau", a ranger station and establish control by law enforcement agencies.

⇒ Temporarily close the "Dinosaur Plateau" to tourists until management measures are put in place to better preserve public access to the dinosaur footprints such as upgrading parking, improving trails, and activating a surveillance and tourist awareness plan to inform people about their fragility and better control walking on or touching the tracks and trackways, as well as prohibiting graffiti and leaving garbage;

⇒ Appoint a site chiefs and appropriate inspectors throughout each reserve and sanctuary to increase responsibility and oversight;

⇒ Strictly control grazing in the Hojeypil and Hojagaravul Reserves R; and

⇒ Improve the pasture areas adjacent to the protected areas including drilling 3-4 wells in territories adjacent to the protected areas and promoting more sustainable and rotational use of pasture lands with local shepherds.

Introduction

Turkmenistan is home to iconic and imperiled species and unique desert and mountain ecosystems that are increasingly under anthropogenic pressure compounded by climate change impacts that manifest themselves in the form of prolonged drought and other intense weather events. The pressure on wildlife and the ecosystems they inhabit make it even more compelling to support the existing protected area network, by strengthening management and protection systems. However, it is also necessary to create new protected areas and to conserve critical ecological corridors and strongholds of endangered species. There is also a general lack of up-to-date scientific information on species status and ecology.

Currently only 4.4% of the territory of Turkmenistan is formally protected, with the existing protected areas network occupying 21,523.6 km^2. Target 3 under the CBD Global Biodiversity Framework, which calls to "*Ensure and enable that by 2030 at least 30 per cent of terrestrial [...] areas, […] are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures",* offers an opportunity to reach the goal by recognizing the conservation value and importance of areas managed by different stakeholders, including the role filled by border security authorities in protecting species and landscapes in border areas which can become de facto refugia as those areas are generally inaccessible to people.

In this report we will discuss activities (monitoring and conservation) carried out throughout 2023 in different areas across Turkmenistan. While the project is primarily focused on monitoring and conservation of the Persian leopard (*Panthera pardus tulliana*), their prey, and sympatric carnivores, and — within the scope of the CEPF grant — on strengthening the management of Koytendag State Nature Reserve, we are opportunistically looking at supporting monitoring in other areas, including Kaplankyr State Nature Reserve. Some of the information hereto builds on Kaczensky et al. 2019[1] and Welch & Stoev 2019[2].

Persian Leopard in Uly Balkan in 2023 © Team Bars Turkmenistan

[1] Kaczensky, P, Rustamov, E., Karryeva, S., Iankov, P., Hudaykuliev, N., Saparmyadov, J., Veyisov, A., Shestopal, A. A., Mengliev, S., Hojamyradov, H., Potaeva, A., Kurbanov, A., Amanov, A., Kekimov, G., Tagiyev, C., Rosen, T. & Linnell, J. D. C. 2019 Rapid assessments of wildlife in Turkmenistan 2018. NINA Report 1696. Norwegian Institute for Nature Research. Trondheim, August 2019

[2] Welch, G. & Stoev, P. (eds) 2019 A report of RSPB-supported scientific research at Koytendag State Nature Reserve, east Turkmenistan. Pensoft Publishers, Sofia.

Based on the activities carried out, we here offer recommendations to the Ministry of Environmental Protection for their uptake to strengthen protection measures and management of protected areas, as well fulfill the obligations under international conventions, specifically the Convention on the Conservation of Migratory Species of Wild Animals (CMS) and the Convention on Biological Diversity (CBD).

Most of the staff across the described protected areas (and patrolling future protected areas) have shown incredible commitment, enthusiasm, and resilience to do their work, including supporting monitoring and apprehending violators. Their commitment is even more important given the limited resources they have available and the sheer size of the challenges. We hope that this new series of reports can contribute to increased knowledge of the beauty, value and uniqueness of Turkmenistan's nature and wildlife, as well as catalyze action and resources to address the challenges.

Monitoring efforts of wild cats and other iconic wildlife of Turkmenistan

While the major focus of the project is the monitoring and conservation of wild cats and the ecosystems they inhabit, their conservation is dependent on abundant populations of wild prey, including the bezoar goat (*Capra aegagrus*), urial sheep (*Ovis vignei*), markhor (*Capra falconeri*), and goitered gazelle (*Gazella subgutturosa)*. The presence of leopards is potentially an indicator of presence of other large sympatric carnivores such as the wolf (*Canis lupus*), the Eurasian lynx (*Lynx lynx*), and striped hyena (*Hyena hyena*). A bear (*Ursus arctos*) has also been observed in the Kopetdag region of southwestern Turkmenistan. Finally, the Turkmen kulan (*Equus hemionus kulan*) was once an abundant species in Turkmenistan and is included in this report because its future is now dependent on urgent conservation actions.

Nury Hudaikuliev and Aknabat Potaeva setting a camera trap on Dushak Erekdag. © T. Rosen

The Cats

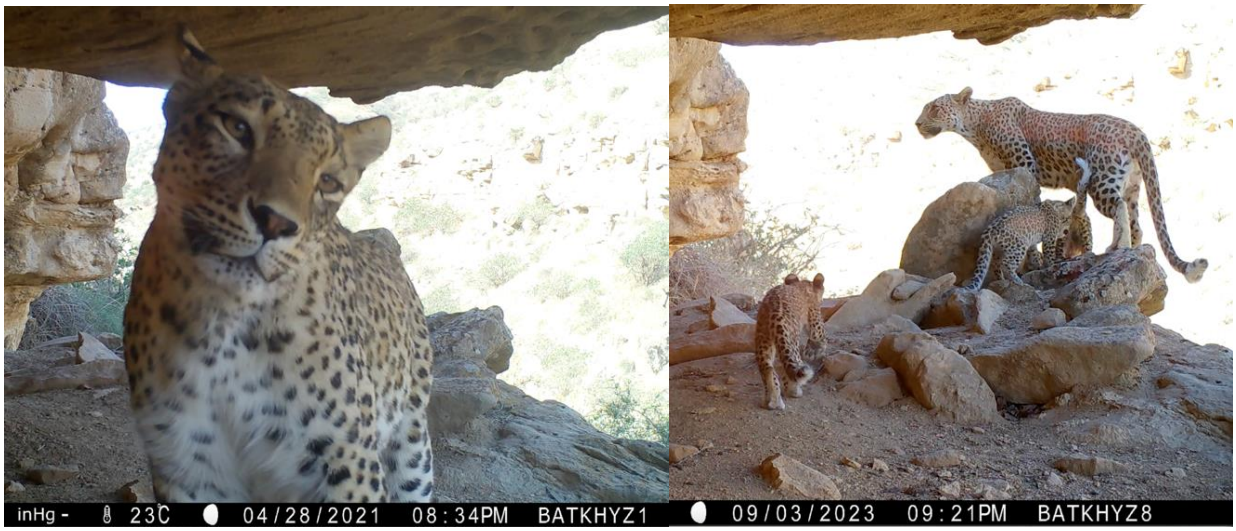
Turkmenistan is home to several species of wild cats. They include the Persian leopard (*Panthera pardus tulliana*), caracal (*Caracal caracal),* Asiatic wild cat (*Felis lybica*), Eurasian lynx (*Lynx lynx*), Jungle cat (*Felis chaus),* sand cat (*Felis margarita),* and Manul (*Otocolobus manul).*

Persian leopards, the largest of all leopard species and one of the most awe-inspiring cats, are found mostly in the border areas along the Kopetdag mountain range between Turkmenistan and Iran. In 2022 a leopard was observed in Meana Chacha Wildlife Sanctuary. There are also smaller populations in Badhyz State Nature Reserve on the border with Iran and Afghanistan, and the Sunt Hasardag Reserve on the border with Iran. A small breeding population was also confirmed in 2020 using camera-traps in the Uly Balkan range north of the Kopetdag and from local knowledge of local herders in the Kichi Balkan lying between the Uly Balkan and the Western Kopetdag. Furthermore, leopards have been observed along the Garabogazgol depression: in Kyzyl Gup, Arsary Baba on the edge of the Garabogazgol basin, and north of Sarygurum on the border with Kazakhstan.

Based on camera trapping in addition with support from the Whiskerbook.org online platform, which includes a web-based data management architecture and a computer vision pipeline for the detection and individual ID of various species of large cats, we have been able to identify individual leopards.

Camera trapping efforts in 2023 identified a minimum of **10 leopards** in the Kopetdag range. This result is based on 20 camera traps spread over 2,000 km^2 (with significant gaps between clusters of cameras) for a total of 34,560 camera trap nights. Of those, **5 individual leopards** have been recorded in Dushak Erekdag; **3** in Karayalchi, one of which was recorded close to 80 km away in Dushak Erekdag in 2019; **1** in Gury Howdan; and **1** close to Bajgiran. Leopards have also been observed on camera traps in previous years in Murzedag and Bakja. Areas beyond the border fence were not accessible, except for one near Bajgiran, and we therefore estimate that there is likely a higher number of leopards. One female leopard died in early 2023 in Dushak Erekdag, possibly because of disease related issues. From images it looks like canine distemper.

In Badhyz State Nature Reserve we have observed **8 leopards** based on 20 camera traps placed over 800 km^2 (with gaps between clusters) for a total of 10,800 camera trap nights. Areas beyond the border fence, considered important habitat, may be home to more leopards. However, given the limited prey base in Badhyz, due to poaching pressure and habitat degradation, the carrying capacity for leopards remains somewhat limited.



Umeda in 2021 pregnant with two kittens; and in 2023 with 3 kittens © Team Bars Turkmenistan

In September, a camera trap captured 190 videos of a female with 3 kittens. This was the third litter for the female called Umeda ("Hope"). She is likely around 7 years of age and known since 2019; additional identification with older images is still

in process. In both 2019 and 2021 she had 2 cubs. This brings the total to 7 cubs in 4 years. This year we had an extraordinary opportunity to witness over 3 days how Umeda tended her kittens, nursed them, played with them, and apparently left them overnight to go hunting. At this age it is normal for large cat mothers to relocate their young every few days.

Given that 2 leopards have been killed near Mary (a male and a female) possibly originating from the Western Kopetdag, plans are being made to set cameras to monitor the possible expansion of leopards in that area.

Male leopard killed near Mary during the winter of 2023.

On Uly Balkan we have observed a total of **5 leopards** from 10 cameras traps placed over 100 km2 for a total of 57,600 camera trap nights. There could be up to 7-10 animals in this area.

There are also reports of 2 leopards being killed sometime in 2022 halfway between Balkanabat and Turkmenbashy.

On Garabogazgol we placed 7 camera traps, but no leopards have been recorded yet. However, as mentioned above, two different leopards have been observed. We also found tracks and scat. One was close to the border with Kazakhstan and the other in Gyzyl gup where the leopard attacked livestock.

In 2024 we plan to set cameras in Kichi Balkan as well.

In Sunt Hasardag Reserve, the first leopard was camera trapped in 2019 and a female with 3 cubs was recorded in 2022 in Chandyr . New cameras will be placed this winter.

In summary, we are looking at a population that could potentially be up to 60-70 leopards in Turkmenistan. Human-wildlife conflict, retaliatory killing, the occasional demand for leopard trophies, the loss of prey base, and the border fence between Iran and Turkmenistan are some of the threats facing this population and certainly limiting its growth. Protected areas play an essential role in protecting the leopards, as do border areas and areas where local communities have accepted some degree of human-wildlife conflict and loss. Experience from these areas could be used as models for a more harmonious relationship between local herders and leopards.

Lynx. Lynx are routinely recorded on camera traps in Koytendag State Nature Reserve where 20 camera traps are currently deployed. A population estimate is not yet available, and lynx have not been observed in other parts of the country. The presence of lynx in this isolated mountain-top ecosystem in an otherwise desert environment represents both a scientifically and ecologically unique population as well as very vulnerable population because of its inevitable small size and high degree of isolation from other lynx populations.

Caracal. A caracal was observed on camera trap in Kaplankyr in 2020, and in 2021 in Soltandesh, Ahal, but not since nor in other areas of Turkmenistan.

Manul. They have been observed on camera traps in Kopetdag (Dushak Erekdag and Murzedag) in 2019, 2020, and 2022. On Uly Balkan they have been observed on camera trap in 2020, 2022, and 2023. Herders report observing them, and it is very likely that they are some of the most vulnerable cats to predation by dogs. There could be very few left in both the Kopetdag and Uly Balkan.

Wild cat and Jungle cat. They are both very often observed on camera traps and visually across Turkmenistan and in its protected areas. Jungle cats are found in Badhyz, the Kopetdag foothills, and Sunt Hasardag. Wild cats are everywhere, but some of the greatest threats they face is hybridization with domestic cats, and collisions with vehicles. They are also trapped by herders.

Sand cat. After a long hiatus, sand cats have been observed twice: in 2021 on the road between Ashgabat and Darvaza; and in 2022 in the Bereketli Karakum Nature Reserve. Predation by hunting (tazy) dogs might contribute to their rarity.

Wild Cat © Atamyrad Veyisov

The Ungulates

Bezoar goat. Bezoar goats inhabits the steep cliffs of the Kopetdag range and are regularly observed on camera traps and visually in Dushak and west towards Karayalchi. They are also found on the cliffs of Uly and Kichi Balkan. The species is however under tremendous poaching pressure across its known range with exceptions likely in the areas behind the border fence with Iran. There are also animals reported to have died because of tapeworm cysts (coeneurosis), which most likely are picked up in areas contaminated with dog feces.

We have not yet conducted an ungulate count, so currently do not have a reliable estimate.

Bezoar goat on Uly Balkan @TeamBarsTurkmenistan

Urial sheep. Urial inhabit the same areas and ranges as bezoar goats. They are also found along the chinks of Garabogazgol, in Badhyz, Sunt Hasardag, and in Koytendag. They are also under poaching pressure, and unlike bezoar goats that have escape routes on the cliffs, urial tend to have fewer options that make them more vulnerable to poaching. They are especially under threat on Garabogazgol, where they are easily killed when they approach the limited water holes.

Markhor. Makrhor are only found in Koytendag and lives within the confines of the Strict Nature Reserve. Like the bezoar goat, they can seek protection on the cliffs. This population is transboundary with Surkhan Reserve in Uzbekistan, where we have recently started work aimed at strengthening transboundary coordination in conservation and monitoring efforts under the umbrella of the CEPF project.

Goitered gazelle. The gazelle is found in the foothills of the Kopetdag range, Kaplankyr, Badhyz, Amu Darya Nature Reserve, Bereketli Karakum Strict Nature Reserve, the Mary and Lebap/Farap forest reserves, and the Hazar Strict Nature Reserve on Ogurjali island. It is present in the Kelif wildlife sanctuary in the foothills of the Koytendag range as well but has not been observed. 2 gazelles were also observed by Garabogazgol. This species is under extreme poaching pressure.

Kulan. Extinct in the wild in Badhyz, Kulan is only found in Kaplankyr to the north and west of Sarygamysh Lake in the “no-man’s-land” beyond the border fence (2 individuals were camera trapped in 2023); these individuals seem to be continuous with a larger population of an estimated 100-150 kulan on the Uzbek side. Some 10-15 individuals were documented in the Tersakan Valley west of Sunt Hasardag Nature Reserve and 6 in the Gury Howdan wildlife sanctuary. None of the isolated remnants are likely to be viable.

Urial on Garabogazgol © Team Bars Turkmenistan

The sympatric carnivores

Striped Hyena. Striped hyenas were observed on camera traps in Badhyz and Kopetdag (Gury Howdan, Bajgiran, Dushak, Karayalchi, Murzedag, Bakja and Western Kopetdag), as well as Sunt Hasardag. However, given the small number of observations it is difficult to make any estimate of population size. It remains a heavily persecuted species.

It has not been recorded on the Balkan ranges or Garabogazgol.

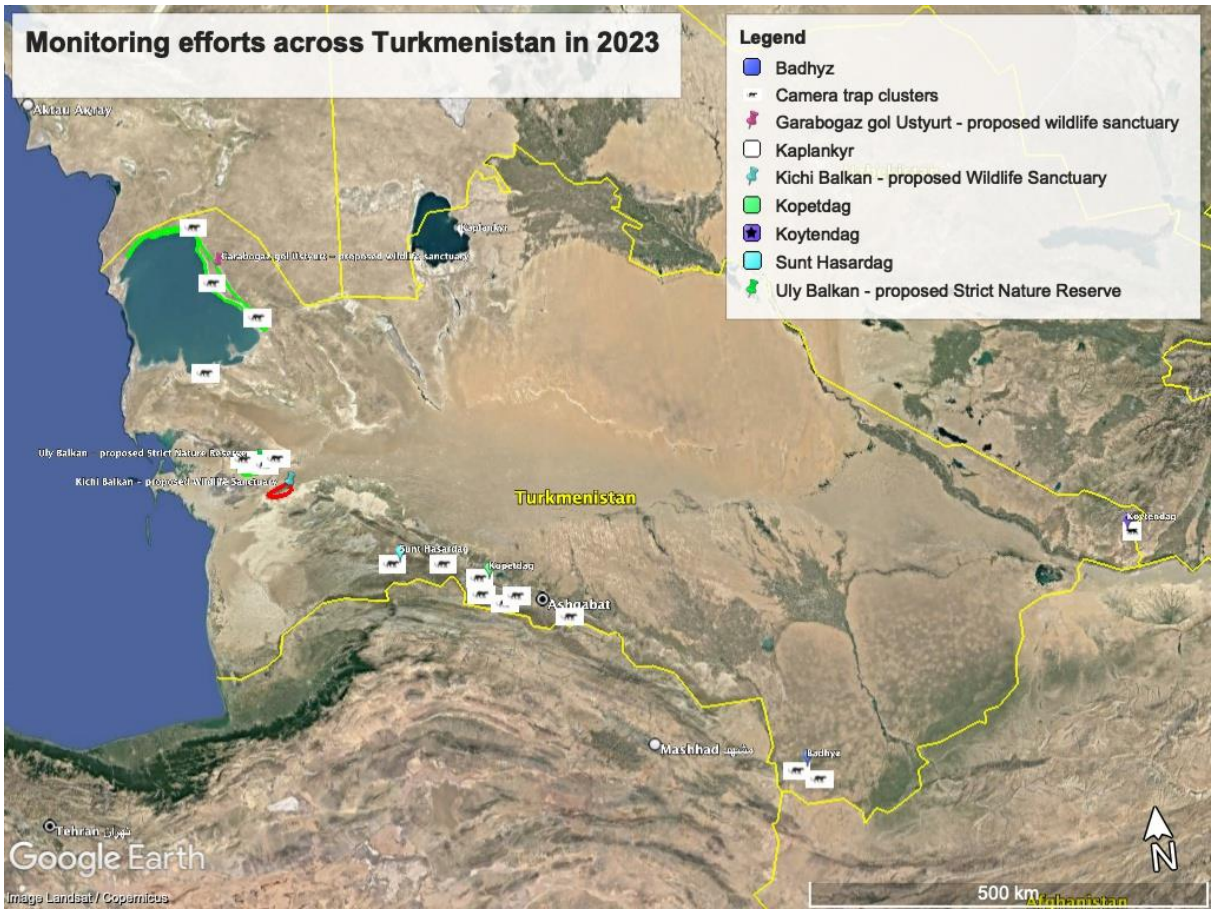

Striped Hyena in Dushak Erekdag © Team Bars Turkmenistan

Wolf. The wolf is widely observed across the protected areas and beyond, as it is one of the animals often implicated in depredation cases of livestock. And yet there is very little knowledge on its ecology and conservation status.

Other carnivores. Red fox *(Vulpes vulpes*), corsac fox (*Vulpes corsac*), and the golden jackal (*Canis aureus*) are some of the other carnivore species often observed and recorded on camera traps, with the jackal being especially common.

Other leopard prey

Wild boar and porcupine constitute very important prey for the leopard and are observed across the Kopetdag, Sunt Hasardag, Badhyz, and Balkan range. Hare is also very important for lynx and likely for leopard. Hare is under extreme poaching pressure across the country, and it has largely disappeared from the plateau of Uly Balkan.



Conservation Status of Protected Areas and beyond

Badhyz Reserve

Badhyz Nature Reserve was established in 1941 to protect the unique relict pistachio woodlands and Turkmen kulan population. In 1951, the original area of the Nature Reserve was reduced from 8,000 km^2 to 750 km^2. In 1962, and again in 1970, some adjacent areas were added to the west and south expanding the reserve to 877 km^2 . In 2014 the reserve was again enlarged to its current size of 1,404 km^2. Including the buffer zone, the three adjacent wildlife sanctuaries, and an ecological corridor, the protected part of the Badhyz ecosystem complex covers a total area of 2,893.5 km^2. There are five main landscape features in Badhyz: the 18 km long Gyzyljar canyon; the Badhyz plateau (grasslands); a 45 km long escarpment with chinks; the Yeroylanduz and Namakar depressions; and the Pistachio savannah of the Gezgadik hills.

Badhyz is in danger. There is extensive poaching, and the presence of livestock (hundreds of cows, sheep, and feral horses) is rapidly degrading habitat that is designated for wildlife. Furthermore, the reserve management allows local people to harvest most of pistachio from the forest, which is not only contrary to laws concerning strict nature reserves, but also limits opportunities for pistachio groves to regenerate naturally.

One of the feral horses inside Badhyz. © T. Rosen

There is supposedly a ranger enforcement unit that is not sufficiently active. We visited Badhyz from December 5th to 10th 2023 and did not see a ranger patrolling. Furthermore, the area around Kepele - where one of the ranger stations sits - is not only incredibly degraded but is also filled with trash including broken vodka bottles, plastic bottles, and bags. It is the duty of the rangers to ensure a clean reserve and plastic is one of the key threats to nesting birds that can choke on plastic and/or becoming entangled. Last but not the least, keeping outdoor domestic cats in the Reserve is a threat to endangered birds, reptiles, and wild cats especially because of possible cross breeding and disease transmission. Therefore, cats should be removed from the Reserve.

During our 5-day visit, we observed minimal wildlife activity.

On the positive side, the camera traps set up for monitoring have assisted the Reserve to record acts of poaching. Rangers have also been placing nails on the ground to stop poacher vehicles. However, poachers are responding by doing the same to hamper the movements of ranger vehicles.

Part of the Reserve is beyond the border fence and is not accessible. One of the advantages of the situation, if the rest of Badhyz is not secured, is that the wildlife there can still enjoy some relative safety.

Kopetdag Reserve and adjacent areas

The Kopetdag Nature Reserve, located in the central Kopetdag Range, covers 509.8 km^2 and was established in 1976. The Reserve is in the high mountain belt and the landscape is characterized by deep gorges with many springs. Elevations range from 700 to 2,800 metres. The cool climate on the high plateau results in meadow vegetation, even during the summer heat. The flora is extremely diverse, containing more than 40% of the total plant biodiversity of Turkmenistan. In addition, many relic, rare, and endemic plants can be found which are included in the Red Book of Turkmenistan and the IUCN Red List.

Ranger Azat in Gury Howdan helping set a camera trap © T. Rosen

Much of the Kopetdag Reserve sits beyond the border fence and is not accessible. As described above, that has its benefits such as increased protection if the protected areas are not secure enough, but mostly poses challenges. Border fences obstruct ecological connectivity which is critical for species such as urial and leopard for maintaining genetic diversity and resilience. To the west of the Reserve are Gury Howdan Wildlife Sanctuary (15 km2) and Meana Chacha (60 km2) and to the south Iran's Tandoureh National Park, home to one of the densest leopard populations (30).

The Kopetdag Reserve rangers are doing an important job in protecting the Reserve and Sanctuary. The results are visible with poachers being apprehended and poaching activity seemingly having declined in some places. This raises the question about what to do in those areas that are currently not protected and that are incredibly important. As evidenced by camera traps and observations, they are home to reproducing female leopards and key prey such as bezoar goat and urial.

One such area is Karayalchi designated as a natural monument. There we recorded a leopard in 2023 that was observed in 2019 almost 80 km away in Dushak Erekdag.

Persian leopard in Karayalchi. © Team Bars Turkmenistan

Balkan and Garabogazgol

In the 5-year National Forest Programme of Turkmenistan for the period 2021-2025 the establishment of a Nature Reserve in the Balkan range had already been under consideration. Uly Balkan is now proposed as a Strict Nature Reserve, while Kichi Balkan and Garabogazgol are proposed as Wildlife Sanctuaries. Based on the scientific research conducted to date, we have observed that these areas are of extraordinary beauty and importance for many species, including the Persian leopard, its key prey, and other wildlife species, flora, and ecological processes.

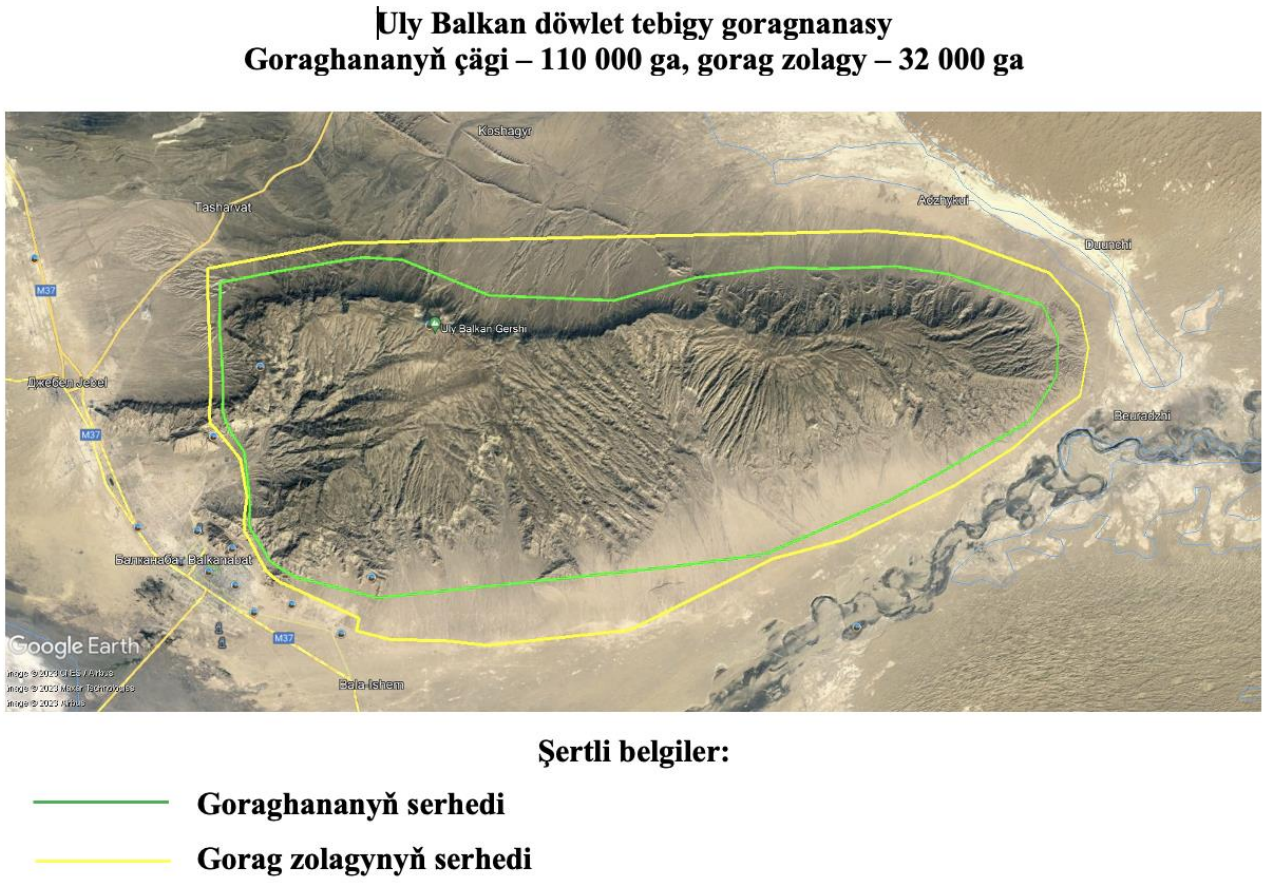
The proposed protected areas of Uly Balkan encompasses 1100 km^2 and the Kichi Balkan 250 km^2. The northern border of the Uly Balkan mountain massif is composed of limestone and sandstone. The northern slopes are steep, and the southern slopes are cut by gorges and numerous courses of dry streams (up to 40-50 m deep). The plateau-like hilly surface of the ridge is broken by gorges which run in all directions. The highest mountain peaks are Arlan (1,883 meters) and Chilgezat (1,408 meters). The desert areas (below 800 meters), semi-desert, and mountain-steppe landscapes are dominated by mountainous xerophytes and very rare open juniper forest. The site has an exceptionally dry and extreme continental climate. The hydrographic network is very poor and consists mainly of seasonal streams, small springs, and outflows of underground waters. There are many caves with depths up to several tens of meters. In the foothills there is a system of karst wells.

The proposed Garabogazgol Ustyurt encompasses 1900 km^2 of a globally unique ecosystem with rather distinctive community assemblages often consisting of both tropical and temperate species.

This area is an important ecological corridor for the Persian leopard and its dispersal to Kazakhstan. It is also home to more than 40 mammal species and 30 reptile species.

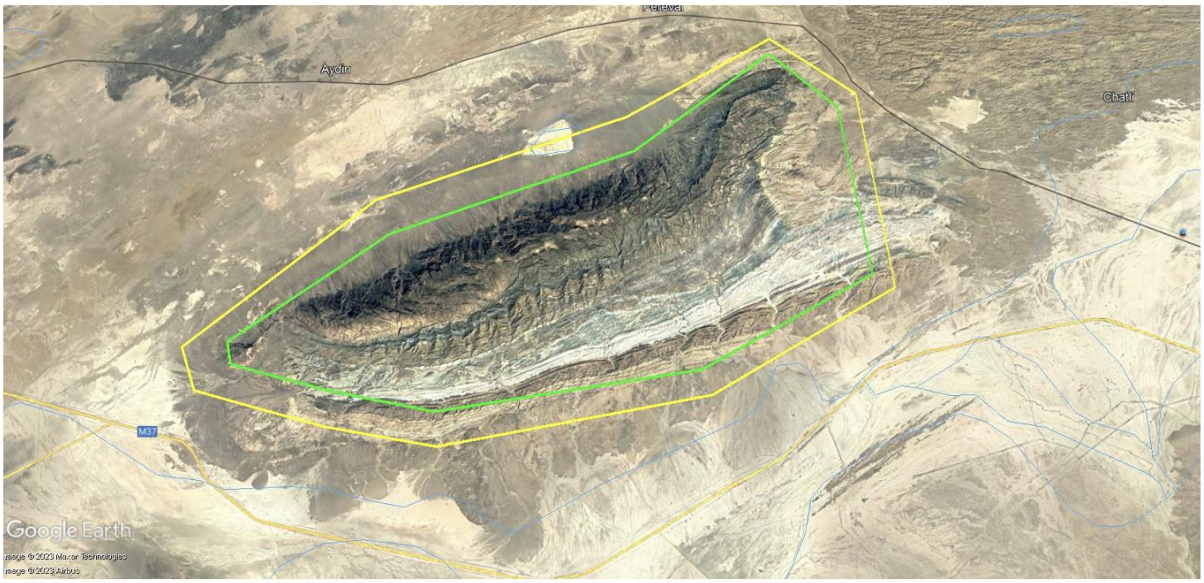
Both Balkan ranges and Garabogazgol are heavily impacted by poaching and habitat degradation especially due to overgrazing. This is compounded by the drought affecting the region and likely going to get worse because of climate change.

The regional Balkan Department of Environment has shown incredible determination and commitment tackling poaching and other violations. Despite being such a small unit (8 people), it is constantly on the move to apprehend violators. Camera traps have also been used as tools for identifying poachers, though several cameras have been stolen so far.



Proposed Uly Balkan Strict Nature Reserve

Kiçi Balkan döwlet tebigy çäkli goragnanasy
Çäkli goraghananyň çägi – 25 000 ga, gorag zolagy – 10 000 ga



Şertli belgiler:

Çäkli goraghananyň serhedi

Gorag zolagynyň serhedi

Proposed Kichi Balkan Wildlife Sanctuary

Ustýurt döwlet tebigy çäkli goragnanasy
Çäkli goraghananyň çägi – 190 000 ga, gorag zolagy – 100 000 ga

Şertli belgiler:

Çäkli goraghananyň serhedi

Gorag zolagynyň serhedi

Proposed Garabogazgol Ustyurt Wildlife Sanctuary

In both the Balkan ranges and Garabogazgol, ungulates are poached. Along Garabogazgol, all water sources bear signs of intense poaching activity.

We also learned from the Department that 2 leopards were killed in the previous year between Balkanabat and Turkmenbashy, underscoring the difficulty faced by leopards seeking to expand their range.

It is therefore necessary to designate the Balkan range and Garabogazgol as protected areas as a means to increase ranger presence to improve patrolling and restore the ecological processes in these areas.

The Team on Garabogazgol in October 2023.

SMART training. In November 2023, SMART expert Michiel Hötte traveled to Balkanabat to train the staff of the Balkan Department of Environment in the use of SMART. SMART will enable protection staff to collect data during patrols, process and analyze the patrol data, and prepare periodic patrol reports with patrol targets for the next period. We expect this will improve patrol quality. The process will inform decision-makers, show which patrol staff is performing well and provide evidence as to what extent overall protection quality is adequate and what is needed in order to further improve protection.

Moments from the SMART training in Balkanabat. © T. Rosen

The training was successful, rangers looked very motivated, and they will continue conducting patrols equipped with robust smartphones used for documenting movements and enforcement actions.

Sunt Hasardag and adjacent areas

The Sunt Hasardag Nature Reserve was established in 1979, initially covering 398 km^2. However, it was gradually reduced to its current size of 265 km^2 and is fragmented into three disjunct parts: the 134 km^2 Central part (covering the southern slopes of the Sunt Hasardag ridge), the 36 km^2 Aydere part (covering a gorge of the same name) and the 95 km^2 Chendyrsky part (covering the northern slope of the Palvan ridge). Sunt Hasardag is a very important area for leopards and urial. One or maybe two brown bears were also recorded here for the first time after many years. The first leopard was recorded here on camera trap in 2019. More cameras will be set up soon. Nearby in Tersakan Valley where there is a small kulan population of approximately 10-15 individuals.

Kulan. © Hojamurad Hojamuradov

Kaplankyr Reserve

The Kaplankyr Reserve was established in 1979 with an original size of 5,700 km^2 but was reduced to 2,828 km^2 in 1991. It remains the largest reserve in Turkmenistan and is flanked by two wildlife sanctuaries: Sarygamysh (2,120 km^2 established in 1980) and Shasenemsky (2,700 km^{2,} established in 1983).

The Reserve was recently designated as a UNESCO World Heritage Site together with the other protected areas that form the Cold Winter Deserts of Turan network as part of the process, it has received significant support (uniforms and equipment) and is currently the beneficiary of a UNDP-funded project which can greatly contribute to the management of the Reserve. Kulan have been observed beyond the border fence moving between Turkmenistan and Uzbekistan. Some goitered gazelle have been captured on camera traps and a single caracal on one occasion.

Koytendag Reserve

Koytendag State Nature Reserve and the four contiguous Wildlife Sanctuaries of Garlyk, Hojaburjybelent, Hojagaravul, and Hojeypil, covering 933.43 km^2, were established between 1986-1990. The objective is to protect and preserve the mountain ecosystem of the Koytendag region and maintain the ecological balance between the environment and increasing economic

activities. Of particular importance was the protection of rare species such as markhor, important habitats such as pistachio and juniper forests, and the impressive “Dinosaur Plateau” at Hojeypil.

The Reserve and Wildlife Sanctuaries extend from the hot, dry semi-desert plains of the Amu Darya to the snow- capped peaks of Airy-baba. Rising to 3,137 meters, this is the highest mountain in Turkmenistan. The Koytendag ridge (former Kugitang) is a continuation of the Gissar ridge -- itself the south-western end of the Pamir-Alay Mountain range – extending for over 800 km from the Pamirs to the Tien- Shan.

Shanyaz Mengliev and Serdar Choliev checking a camera trap © T. Rosen

Supported by two consecutive CEPF grants, the second jointly with Uzbekistan, we have sought to address six issues: weak management, human pressures, a missed opportunity with the World Heritage designation, economic development, transboundary cooperation, and civil society.

We have worked to build the capacity of Koytendag SNR personnel and improve monitoring systems along with looking at ecological issues, development threats, and cooperation with Uzbekistan.

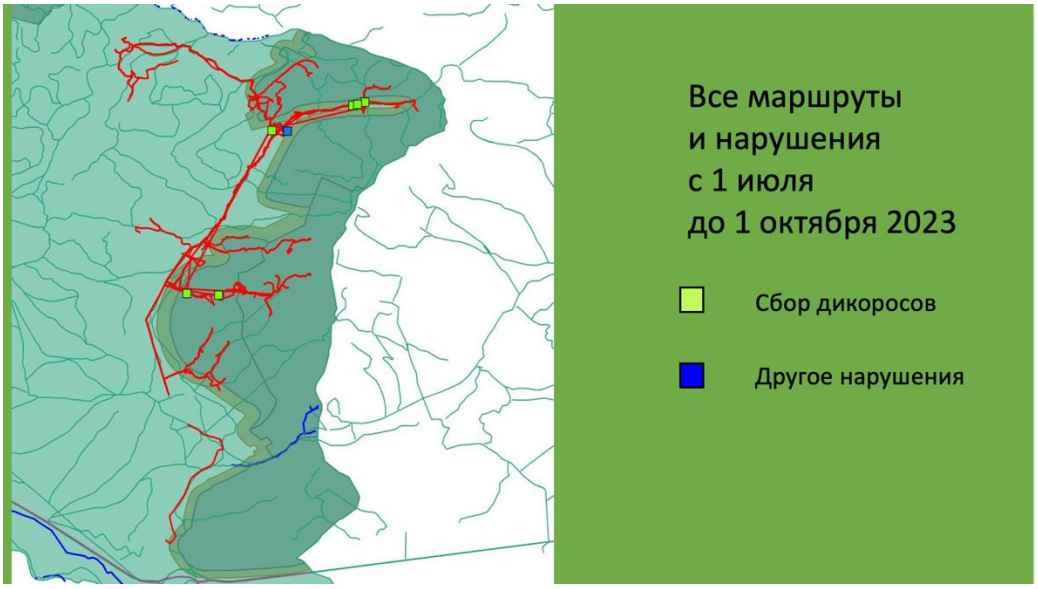
Lynx in Koytendag © Team Bars Turkmenistan

Markhor is generally less impacted by poaching as it stays within the confines of the Strict Nature Reserve and travels across the border to Uzbekistan where protection systems are similar. However, the urial population seems to be more impacted by poaching, as well as by displacement by livestock grazing intensively in the Wildlife Sanctuaries.

Domestic livestock - largely belonging to the Reserve itself - is still allowed to graze in the Reserve and this is very problematic. This degrades habitat that should be exclusively used by wildlife, creates human-wildlife conflict, and sends the wrong message to other livestock owners who see the Reserve management breaking the rules, which is disincentivizing any possibility to persuade them to reduce their impact on the Wildlife Sanctuaries.

One of the most visible outputs is the introduction of the Spatial Monitoring and Reporting Tool (SMART). Despite some early challenges related to the technology and telephones, Serdar Choliev, Deputy Director for Enforcement at Koytendag SNR, has been incredibly dedicated and successful in arranging collection of quality patrol data and producing excellent quarterly reports detailing efforts, wildlife observations, and violations.

However, more can be accomplished if additional resources such as fuel and vehicles are allocated to facilitate patrolling. Based on existing SMART reports the patrolling effort is still low.



Excerpt from SMART report

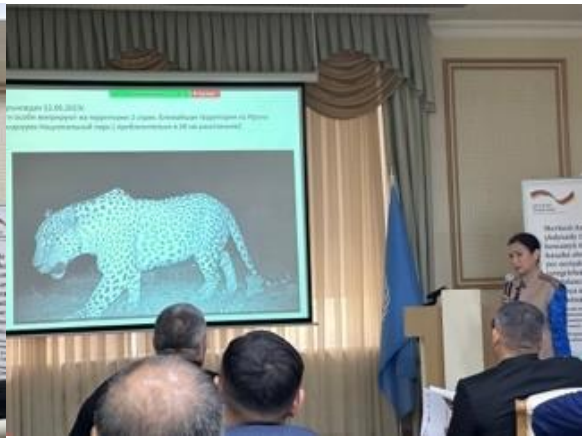
GIZ OSCE Regional Workshop on Conservation of Migratory Species in Central Asia: effects on transboundary cooperation in protected areas

In November, we co-organized a regional workshop in Ashgabat that brought together protected area representatives, border security official, and experts from Central Asia countries. Together with the Ministry of Environmental Protection of Turkmenistan, the Convention on Migratory Species (CMS), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Turkmenistan, United Nations in Turkmenistan, and the Organization for Security and Cooperation in Europe (OSCE), the workshop was a unique opportunity to discuss opportunities for collaboration with border authorities. Especially in the case of Turkmenistan, participants were able to consider the impact of the border fence with Kazakhstan and Uzbekistan, which is potentially hindering the movement of urial u, goitered gazelle, kulan, and to some extent the Persian leopard.

Participants discussed different options for creating openings in the border fence, as well as harnessing technology to ensure that border security goals are met. For example, aa Tajik border service colleague talked about the “virtual” fence they employ, while a Kazakh colleague underscored the importance of using AI-trained camera traps sending information in real time, such as the Sentinel camera traps produced by Conservation X Labs.

The role of border areas as “refugia” was also recognized and we highlighted the opportunity for those areas (for example along the border with Iran and Kazakhstan) to be recognized as other effective area-based conservation measures (OECMs) and help meet the goals under Target 3 of the CBD’s Global Biodiversity Framework. Finally, we underscored the role of border staff in helping support wildlife monitoring efforts by facilitating access to border areas, especially those beyond the border fence, to protected area staff, as well sharing information and footage of wildlife they might see during their routine patrols.

The output of the workshop Is a “communique”, which among other points calls on the five Central Asian countries to involve their border authorities in the transboundary conservation of natural ecosystems and migratory species.



Recommendations:

The formulated recommendations for consideration by the Ministry of Environmental Protection of Turkmenistan are based on extensive observations, discussions with Ministry of Environmental Protection and protected area staff, and data from camera traps.

General:

- ⇒ Develop, agree on, and approve “Model Regulations on Ecological Corridors, Buffer/Protected Zones, and OECMs” in accordance with the Law "On Protected Areas";
- ⇒ Grant permission to conduct scientific monitoring in the sections beyond the border fence of the Kopetdag, Badhyz, Kaplankyr, Sunt Hasardag and Koytendag reserves;
- ⇒ Integrate the use of SMART in the management of all protected areas;
- ⇒ Appoint a dedicated SMART Coordinator in the Ministry who will be designated to receive all SMART reports (for now from Koytendag and Balkan Department of Environment);
- ⇒ Establish Balkan range and Garabogazgol protected areas as per the justification documents and maps submitted;
- ⇒ Increase the territory of Karayalchi National Monument or designate it as Wildlife Sanctuary or Strict Nature Reserve;
- ⇒ Include the territory of Dushak Erekdag in the Kopetdag Strict Nature Reserve;
- ⇒ Engage with Turkmen border service and counterparts in Kazakhstan and Uzbekistan to make progress, including fence modifications, to restore ecological connectivity especially for Garabogazgol/Ustyurt and Kaplankyr; and
- ⇒ Support work with local communities on reducing human-wildlife conflict and raising awareness about the need for protection of leopards and other wildlife;
- ⇒ Build national scientific capacity (i.e. train new young mammologists, herpetologists, ornithologists, etc.)

Badhyz and Koytendag:

- ⇒ Start enforcing the full ban on livestock (cows, horses, donkeys, and sheep) inside the Strict Nature Reserves; and
- ⇒ Stop poaching, by:
- ⇒ increasing manpower and infrastructure; and
- ⇒ Raise awareness for the loss of biodiversity in one of the most precious and oldest protected areas in Turkmenistan.

Badhyz:

- ⇒ Remove feral horses;
- ⇒ Regulate the collection of pistachio; and
- ⇒ Ban cats at ranger stations in the reserve.

Western Kopetdag:

⇒ Provide protection status to the Tersakan valley and adjacent area where kulan were spotted and include it into the network of protected areas of the Kopetdag region; and
⇒ Establish a ranger outpost to safeguard the remaining kulan and wildlife populations in this area.

Kaplankyr:

⇒ Increase cooperation with Uzbekistan and Kazakhstan to establish the future "eco-corridor" on the Ustyurt plateau between the 3 countries; and
⇒ Consider discussing with Kazakhstan the possibility of translocation of saiga antelope from western Kazakhstan.

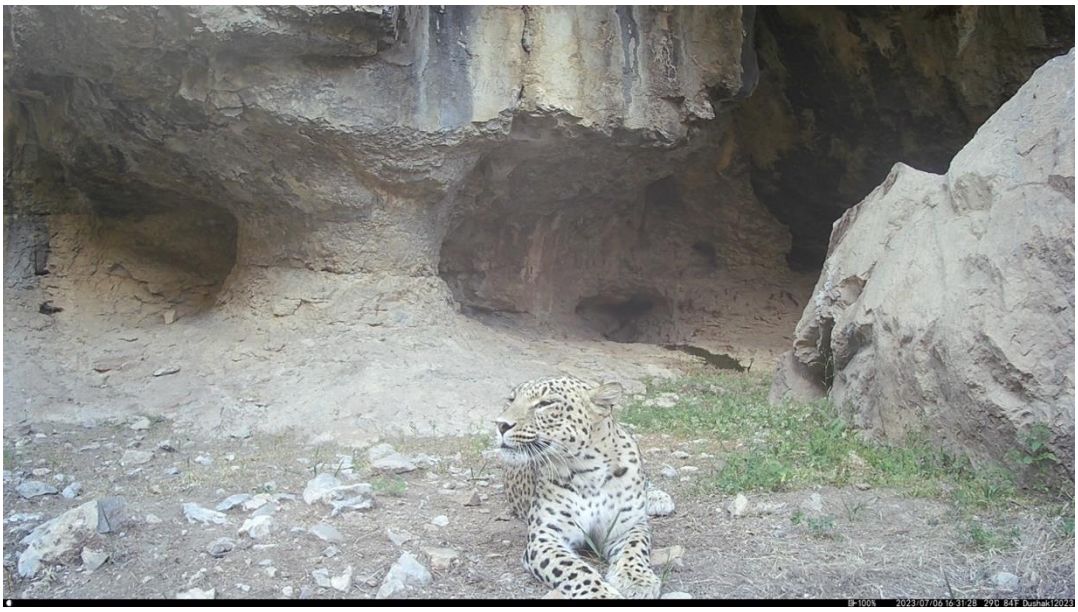
Koytendag:

For the success of the UNESCO World Heritage Site Nomination Dossier, the nomination dossier of the MEK should be brought into line with the recommendations of IUCN experts (2015) including recommendations on the integrity of the territory, protection, management, nomination boundaries, criteria, grazing monitoring, tourism, transnational cooperation, etc.) as follows:

⇒ Revise the territories of the nomination dossier of the Koytendag Mountain Ecosystem (MEK) in accordance with the recommendations of IUCN experts (2015) and agree on and approve these territories, including buffer zones;
⇒ Exclude Garlyk Wildlife Sanctuary from the dossier;
⇒ Include in the villages of Sayat and Hojeypil into the Hojeypil Sanctuary;
⇒ Expand the territory of the existing Hojeypil Reserve toward enhancing the representativeness to better protect the habitats of urial, lynx, wild boar, porcupine, wolf, and other animals, as well as to better regulate vandalism and degradation of the paleontological monument "Dinosaur Plateau", overgrazing of livestock, pollution from household waste, and mass unorganized tourism;
⇒ Create passage ("Bili-synyk") through the border fence inside the Koytendag Reserve to better facilitate the movement and resulting genetic diversity of wild animals -including exchange within ungulate populations (markhor, urial), and to preserve overall integrity and connectivity within the reserve;
⇒ Establish an ecological corridor "Airibaba" (Koytendag-Surkhan Reserve /Uzbekistan) with a main objective of conserving the movement and genetic diversity of populations of markhor, argali, and other species;
⇒ Formalize the amended boundaries of the reserve and sanctuaries (See Resolution of the Cabinet of Ministers on the change of territories) based on GIS coordinates and data obtained within the framework of projects (RSPB, CEPF / CLLC); and
⇒ Include Kaptarkhana Cave in the buffer zone.

On management of Koytendag:

⇒ Organize regular patrols on the "Dinosaur Plateau", especially on weekends and holidays.
⇒ Install a barrier at the foot of the "Dinosaur Plateau", a ranger station and establish control by law enforcement agencies.
⇒ Temporarily close the "Dinosaur Plateau" to tourists until management measures are put in place to better preserve public access to the dinosaur footprints such as upgrading parking, improving trails, and activating a surveillance and tourist awareness plan to inform people about their fragility and better control walking on or touching the tracks and trackways, as well as prohibiting graffiti and leaving garbage;
⇒ Appoint a site chiefs and appropriate inspectors throughout each reserve and sanctuary to increase responsibility and oversight;
⇒ Strictly control grazing in the Hojeypil and Hojagaravul Reserves R; and
⇒ Improve the pasture areas adjacent to the protected areas including drilling 3-4 wells in territories adjacent to the protected areas and promoting more sustainable and rotational use of pasture lands with local shepherds.



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