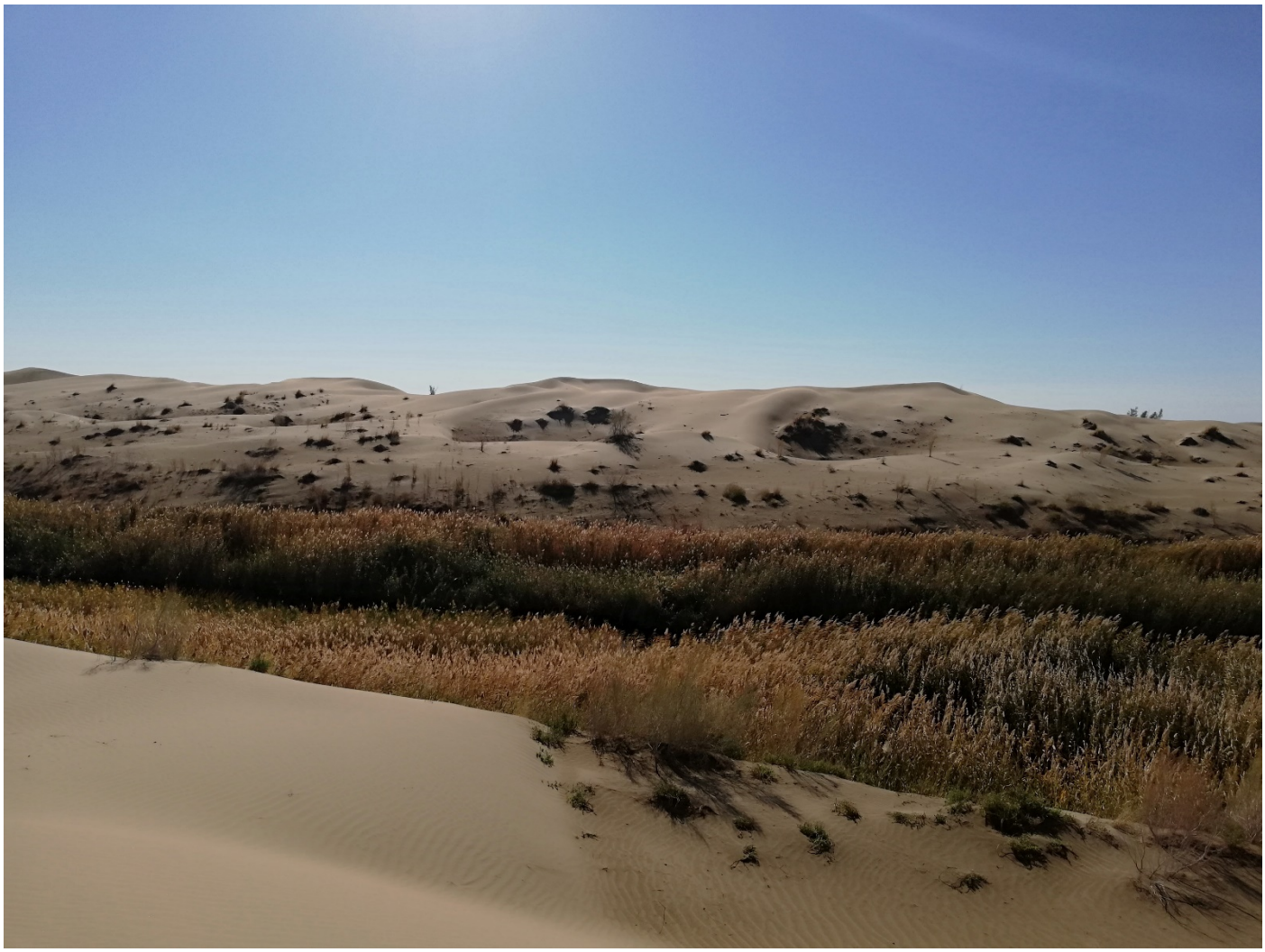
ASIA / PACIFIC

COLD WINTER DESERTS OF TURAN

KAZAKHSTAN, TURKMENISTAN, UZBEKSITAN



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WORLD HERITAGE NOMINATION – IUCN TECHNICAL EVALUATION

COLD WINTER DESERTS OF TURAN (KAZAKHSTAN, TURKMENISTAN, UZBEKSITAN) – ID N° 1693

IUCN RECOMMENDATION TO WORLD HERITAGE COMMITTEE: To inscribe the Altyn-Emel East; Altyn Emel Central; Altyn-Emel West; Bereketli Garagum; Gaplankyr; Repetek; Yeradzhi; Saigachy; Saigachy-Beleuli; Southern Ustyurt (nominated component parts 1, 2, 3, 7, 8, 9, 10, 11, 12 and 15) as Cold Winter Deserts of Turan under natural criteria (ix) and (x), excluding Barsakelmes Island; Kaskakulan; Delta; Saigachy-Duana and Saigachy-Zhideyli (nominated component parts 4, 5, 6, 13 and 14)

Key paragraphs of Operational Guidelines:
Paragraph 77: Nominated property includes component parts that meet World Heritage criteria (but also component parts that do not).
Paragraph 78: Nominated property includes component parts that meet integrity requirements (but also component parts that do not). Nominated property meets protection and management requirements.

1. DOCUMENTATION

a) Date nomination received by IUCN: February 2022

b) Additional information officially requested from and provided by the States Parties: Following the session of the IUCN World Heritage Panel, a progress report was sent to the States Parties on 26 January 2023. This letter advised on the status of the evaluation process and requested supplementary information on the boundaries of all the nominated component parts in relation to the current extent of natural waterbodies and the location and extent of water resource management infrastructures; the boundaries of the Barsakelmes cluster in relation to the former area of the Aral Sea; confirmation of the connectivity status regarding the movement, migration and dispersal of wide-ranging wildlife that are related to the integrity of the nominated property, and measures to remove barriers to migration; updates regarding the transnational coordination strategy and legal protection status of all nominated component parts. The supplementary information was provided by the States Parties on 28 February 2023.

c) Additional literature consulted: IUCN's evaluation consulted a wide array of relevant reference material for the biology, ecology, protection and management as well as the comparative values of the nominated property, including: Altyn Dala Conservation Initiative (n.d.): Large landscape-scale steppe grassland conservation in Kazakhstan, RSPB website https://www.rspb.org.uk/our-work/conservation/projects/altyn-dala/, sSee also: https://altyndala.org/; Anon (2015). Guidelines for Addressing the Impact of Linear Infrastructure on Large Migratory Mammals in Central Asia, CMS https://www.cms.int/sites/default/files/publication/cms-cami_pub_linear-infrastructure_wcs_e.pdf; Anon (2018). Improving sustainability of the PA system in desert ecosystems through promotion of biodiversity-compatible livelihoods in and around PAs, Final Project Report, UN Development Programme in Kazakhstan https://info.undp.org/docs/pdc/Documents/KAZ/PIMS%204855_Final_Progress_Report_DP.doc; Anon (2020). Protecting the Goitered Gazelle in Central Asia, IUCN Save Our Species, 30 Sep, 2020 https://iucnsos.org/protecting-the-goitered-gazelle-in-central-asia/; Harris, G. et al. (2009). Global decline in aggregated migrations of large terrestrial mammals, Endangered Species Research, Vol. 7,: 55–76. https://abcg.org/files/documents/1b57ed70-76f2-4e3b-8cc8-c5164b0dd0db.pdf; Lethier, H. (2020). World Heritage thematic study for Central Asia. Priority sites for World Heritage nomination under criteria (ix) and (x). Gland, Switzerland and Belgrade, Serbia: IUCN and IUCN ECARO; Kaczensky, P. (2011). First assessment of the suitability of the Altyn Dala and Altyn Emel region of Kazakhstan for Przewalski's horse re-introduction, Research Institute of Wildlife Ecology, https://www.researchgate.net/publication/285356457_Kaczensky_2011_First_assessment_of_the_suitability_of_the_Altyn_Dala_and_Altyn_Emel_region_of_Kazakhstan_for_Przewalski's_horse_re-introduction; Kaczensky, P. et al. (2020). Reintroduction of kulan into the central steppe of Kazakhstan: Field Report for 2018-2019, Norwegian Institute for Nature Research. See also: https://www.nina.no/english/Fields-of-research/Projects/KulanSteppe; Miskovic (2022). Protecting Snow Leopard and Goitered Gazelle, Iconic Species of Central Asia, Central Asian Mammals Initiative, [Milica Miskovic, IUCN Regional Office for Eastern Europe and Central Asia (ECARO)] 21 April 2022. https://www.cms.int/cami/en/news/protecting-snow-leopard-and-goitered-gazelle-iconic-species-central-asia; UNEP Global Environmental Alert System (GEAS) (2014). The future of the Aral Sea lies in transboundary co–operation. https://na.unep.net/geas/getuneppagewitharticleidscript.php?article_id=108; Yergaliyeva, A. (2020). Kazakhstan Finalizes Plan to Restore Native Turanian Tigers In Ile-Balkhash Region, Nation, Nov 6,

https://wildfact.com/forum/topic-caspian-tiger-reintroduction-project;

d) Consultations: 8 external reviewers consulted by IUCN. The field evaluators were able to meet with the Kazakhstan National Commission for UNESCO, UNESCO Kazakhstan Office, IFSA (International Fund for Saving the Aral Sea), Forestry Department of Kazakhstan, Protected areas staff from Altyn-Emel National Park and Barsakelmes State Nature Reserve, Local administrations, public councils (local people), NGOs (Kazakhstan); Environment Protection Service of the Ministry of Agriculture and Environmental Protection of Turkmenistan (MAEPT), Protected area staff of Bereketli Garagum State Nature Reserve, Repetek State Nature Reserve and Yeradzhi Nature Sanctuary, Gaplangyr State Nature Reserve, Sarygamysh Nature Sanctuary and Shasenem Nature Sanctuary (Turkmenistan); Uzbek National State Committee of the Republic of Uzbekistan on Ecology and Environmental Protection, Karakalpakstan State Committee of the Republic of Uzbekistan on Ecology and Environmental Protection, Saigachy and Southern Ustyurt National Park Advisory Commissions, Protected areas staff from Saigachy and Southern Ustyurt National Park, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Karakalpakstan Branch of National Academy of Sciences, Uzbek National Academy of Sciences, Uzbek State Committee on Forestry (Uzbekistan).

e) Field Visit: Oliver Avramoski (Turkmenistan), 25 Oct – 1 Nov 2022; Rolf Hogan (Kazakhstan), 9-18 Nov 2022; Matthew Emslie-Smith (Uzbekistan), 14-22 Nov 2022.

f) Date of IUCN approval of this report: April 2023

2. SUMMARY OF NATURAL VALUES

The nomination of the Cold Winter Deserts of Turan seeks to represent an outstanding example of ongoing ecological and biological processes of evolution and development of terrestrial ecosystems in extreme climate conditions of the Turan deserts, characterized by cold winters with low precipitation, and by hot and very dry summers. The nominated property includes representative examples of most of the ecological-physiographic vegetation types in the Turan deserts: sagebrush and perennial saltwort vegetation in clay and stony deserts; psammophytic vegetation i.e. desert grasses, saxaul shrubs and woodland in sandy deserts; and salt vegetation on solonchak soils. Taken together, the nominated component parts include examples of the full range of morphological, physiological and behavioural adaptation strategies to Turan deserts.

The on-going ecological and biological processes in the evolution and development of the nominated desert ecosystems are demonstrated by the diversity of desert communities, and the adaptation strategies of the species that comprise them to the extreme climatic conditions. These communities correspond with the different soil types and microclimatic and environmental conditions, with multiple subtypes occurring within and across components to encompass the broad range of desert types across Central Asia. The nominated property therefore contains the full range of morphological, physiological and behavioural adaptation strategies of the regional Central Asian desert systems, and their ongoing ecological processes.

The nominated component parts are important to the migration of ungulate species including Saiga (*Saiga tatarica*; CR), Kulan (*Equus hemionus kulan*; NT) and Goitered Gazelle (*Gazella subgutturosa*; VU) within the region, as one of the 'adaptive behaviours' showcasing adaptation and development of ongoing ecological processes representing an attribute of the proposed Outstanding Universal Value. However, historical population decline of these ungulate species has occurred across the region, and significant barriers to migration between the countries exist through the border fencing, causing disruption to migratory routes.

The nominated property includes diversity hotspots for plant genera that are representative of the specific desert assemblages across the entire region. It hosts threatened mammals such as the above-mentioned Kulan (*Equus hemionus kulan;* NT), Goitered Gazelle (*Gazella subgutturosa;* VU), Urial (*Ovis vignei arkal;* VU), and Saiga (*Saiga tatarica;* CR) as well as other desert-adapted mammal species of special conservation interest. The nominated component parts of the property also serve as important areas for breeding and migration of birds, with 15 Near-Threatened (NT), ten Vulnerable (VU), five Endangered (EN) and two Critically Endangered (CR) bird species documented.

A number of nominated component parts are located in the Aral Sea area. The changes that occurred to the Aral Sea are widely recognised as an environmental and socio-economic disaster, with impacts also to the surrounding areas through soil contamination and salination and regional climatic changes. The nomination presents the primary succession occurring on the former seabed as an example of how plants, and in turn, animals are able to colonize hostile land areas as well as ongoing adaptation and development of the ecosystem under new environmental conditions in the Barsakelmes component parts 4, 5 and 6, which are located in the former Aral Sea, as well as the component parts 13 and 14 of the Northern Ustyurt cluster, which sits adjacent to the Sea.

Table 1: Description of nominated component parts

State Party	Name of the cluster	Name of nominated component part (number of nominated component part)	IUCN Protected Area category	Area of nominated component parts of the property (ha)	Area of the buffer zone (ha)
Kazakhstan	Altyn-Emel	Altyn-Emel East (01)	Cat II*	13,019	255,684
		Altyn-Emel Central (02)	Cat II*	5,644	
		Altyn-Emel West (03)	Cat II*	33,306	
	Barsakelmes	Barsakelmes Island (04)	Cat Ia	50,884	19,639
		Kaskakulan (05)	Cat Ia	109,942	26,670
		Delta (06)	Cat Ia	2,300	5,851
Turkmenistan		Bereketli Garagum (07)	Cat Ia & IV	87,400	30,745
		Gaplangyr (08)	Cat Ia & IV	926,203	22,950
	East Garagum	Repetek (09)	Cat Ia	34,600	47,324
		Yeradzhi (10)	Cat IV	30,000	n/a
Uzbekistan	Northern Ustyurt	Saigachy (11)	Cat Ib	575,335	219,800
		Saigachy- Beleuli (12)	Cat Ib	21,765	
		Saigachy- Duana (13)	Cat Ib	23,454	
		Saigachy- Zhideyli (14)	Cat Ib	7,746	
		Southern Ustyurt (15)	Cat II	1,447,143	n/a
			Total	**3,368,741**	**628,663**

*Strictly protected area of the National Park (equivalent to IUCN Category Ia).

A brief description of the country component parts and clusters that make up the present nomination is as follows:

Kazakhstan

The Altyn Emel cluster is located in the Ili intermountain depression and is representative of the deserts of the mountain depressions and piedmonts in the most eastern part of Western Central Asia, including foothill steppified deserts found nowhere else in the nominated property. The nominated component parts comprising the cluster (Altyn-Emel East (component part 1), Altyn-Emel Central (component part 2) and Altyn-Emel West (component part 3)) contain a diverse complex of different vegetation types of rocky desert. Given the altitudinal variation of the nominated areas, the cluster includes a great diversity ecological conditions and habitats, giving rise to species that are not present elsewhere in the nominated property (e.g. Snow Leopard (*Panthera uncia*, VU)) or in as many numbers (e.g. Kulan, *Equus hemionus ssp. kulan*, EN).

The Barsakelmes cluster (component parts 4-6) corresponds to the Barsakelmes State Nature Reserve and comprises the main vegetation types of the Northern Turanian deserts, including sagebrush communities of Artemisia and saltwort vegetation. Black Saxaul (*Haloxylon ammodendron*), *Nanophyton erinaceum*, and *Caragana grandiflora* associations as well as a *Halocnemum strobilaceum* formation on solonchak soils also occur. The nominated Barsakelmes cluster is put forward as representation of primary succession on the former Aral seabed with former islands (Barsakelmes Island (component part 4) and Kaskakulan (component part 5)) acting as points of origin for species dispersal with annual saltwort vegetation forming the pioneer stage, followed by

psammophytic plant communities. The Delta component (component part 6) was a recent addition to the Strict Nature Reserve following the construction of a dam to increase the water level in the North/Small Aral Sea and became a wetland used by waterfowl.

Turkmenistan

Bereketli Garagum (component part 7) is in the Central (low-lying) Karakum desert, 240 km north from the capital of Ashgabat and comprises ridged sandy and salt flat complexes, intracontinental saltmarsh desert, and clay desert with classical aeolian landforms. The habitat types are typical of sand desert soils: sands covered with vegetation, mobile sands, and takyr-like soils and edges of takyrs. White Saxaul shrubland is the most characteristic vegetation type of Turan and is accompanied by different psammophytic (sand adapted) and ephemeral vegetation. The nominated component part hosts all species of Turanian origin in the genus *Psammophilus* and many plants endemic to the Karakum desert. The Houbara Bustard (*Chlamydotis undulata*; VU) also nests in this nominated component part.

The Gaplangyr (component part 8) occupies the north-western part of the Gaplangyr plateau, in the north-western part of Turkmenistan. The nominated component part is a transitional area between the northern and southern deserts and at the boundary of the ranges of many animal species, including amphibians and reptiles. It combines stony and clay desert dominated by *psammophytes* with various ephemeral herbs with patches of takyrs, scattered across the plateau and between the sand ridges, as well as solonchaks in depressions, where mineralised groundwater is close to the surface. There are 213 bird species recorded in this nominated component part, including 58 nesting species, such as the Egyptian Vulture (*Neophron percnopterus*, EN), Saker Falcon (*Falco cherrug,* EN), and Asian Houbara (*Chlamydotis macqueenii*, VU). Populations of globally threatened mammals include the Saiga (*Saiga tatarica*; CR), Urial (*Ovis vignei*, VU) and Goitered Gazelle (*Gazella subgutturosa*; VU).

The Repetek (component part 9) and Yeradzhi (component part 10) nominated component parts form the East Garagum cluster. Repetek lies in the Eastern Karakum desert, the southern subzone of the Karakum desert, 70 km southwest of Turkmenabad, whereas Yeradzhi is located 70 km northwest of Repetek, and 90 km from Turkmenabad. Both nominated component parts include the most representative examples of sandy deserts, including ridges, hillocks and mobile sand dunes. The components include exemplary stands of the Black Saxaul (*Haloxylon ammodendron*). The globally threatened species include the Marbled Polecat (*Vormela peregusna*; VU), Striped Hyena (*Hyaena hyaena*; NT) and Goitered Gazelle (*Gazella subgutturosa*; VU).

Uzbekistan

The Northern Ustyurt cluster (component parts 11, 12, 13 and 14) is comprises largely of the Kassarma elevation, although areas overlap with the northern Ustyurt depression to the west and the “chinks” (rocky desert cliffs) leading down to the Aral Sea to the east. The area is characterised by transitional vegetation between the northern (Sagebrush-Saltwort) and southern (Ephemeral-Sagebrush) deserts, including *Hypsophytes*, *Halophytes*, *Psammophytes*, and fragments of tugai vegetation (see also p. 161). The Saigachy and Saigachy-Beleuli (component parts 11 and 12) serve as the most significant area for the breeding of Saiga across the Uzbek area of the Ustyurt plateau and are hotspots for annual cross-border migrations of Saiga (*Saiga tatarica*, CR) in the country. The cluster is also home to desert bird species characteristic of northern clay deserts, accompanied by species typical of wetland ecosystems given its location along the north-south migratory route associated with its immediate vicinity with the Aral Sea and, further to the south, the Sudochye lakes system.

Southern Ustyurt (nominated component part 15) borders Kazakhstan to the west and Turkmenistan (and the Gaplankyr component part 8) to the south. The northern boundary runs along the north of Assake-Audan depression, and the eastern border passes along the conditional line from the Shorzha Depression through Lake Sarykamysh. The nominated component part is dominated by gypsum deserts forming various combinations with clay, sandy, gravelly and solonchak deserts, including also rocky chinks such as the Gaplankyr chink. The faunal complex of the Southern Ustyurt nominated component part 15 is diverse and includes 30 species of fish, one species of amphibians, 20 species of reptiles, about 252 species of birds and 63 species of mammals. The nominated component part is the only place in the country where transboundary groups of Kulan (*Equus hemionus ssp. kulan*; EN) and Urial (*Ovis vignei*, VU) have been preserved, given its location bordering protected areas in Kazakhstan and Turkmenistan, and also represents the globally northern distribution limit of the Honey Badger (*Mellivora capensis*, LC) as well as a large number of karstic caves and sinkholes providing habitat for bats, and serving as shelter and water source for other species including Wildcat. Lake Sarykamysh, which is protected between this component part and the nominated Gaplankyr component part (component part 8) in Turkmenistan provides a vital site for migratory birds such as the White-headed Duck (*Oxyura leucocephala*; EN) and the nominated component part is also documented as a breeding site for other bird species such as Egyptian Vulture (*Neophron percnopterus*, EN).

3. COMPARISONS WITH OTHER AREAS

The property is nominated under criteria (ix) and (x). The nomination justifies criterion (ix) on the basis of the nominated property as an outstanding example of evolution and adaptation of terrestrial ecosystems to extreme climate conditions and of the development of survival strategies of plants and animals as ongoing ecological and biological processes. The Global Comparative Analysis presented in the nomination dossier correctly highlights the absence of comparable ecosystems from Central Asia on the World Heritage List. The analysis compares the nominated area with existing World Heritage properties, and Tentative List sites, within the Biogeographical Provinces of North and Central Eurasia, highlighting that out of the sites in the region, only Uvs Nuur Basin World Heritage property (Mongolia) contains desert ecosystems. However, the ecosystems within that property are under different topographic and biogeographic conditions than the nominated property, containing conifer, deciduous and floodplain forests as well as diverse wetlands and marshlands, freshwater and saltwater systems. The analysis does not outline the relative importance of the ecological processes within the nominated areas in comparison to other cold winter desert areas elsewhere, such as the Americas. However, as the basis of this nomination in filling the gap in the World Heritage List of Central Asian deserts, this is justifiable. One of the key attributes comprising the proposed OUV of the property, as nominated under criterion (ix), is the presence of large-scale mammal migration. The nominating States Parties do not present any comparison of the scale and intactness of the migratory systems in relation to other similar systems within the region, or elsewhere. The historical population decline of many of the ungulate species in the nominated property, as well as the known presence of larger populations of these ungulate species (e.g. Betpak Dala Saiga population) undermines the global significance of the migration processes within and across the nominated property. However, notwithstanding the above considerations, the nominated property carries significant potential as node points for the dispersal of these species across wider areas in the region. The transboundary arrangement of the nominated property, encompassing the full range of Cold Winter Desert habitats in Central Asia, therefore carries significance in this context as a factor in improving connectivity and restoring disrupted migratory routes across the entire region. Furthermore, the temperate deserts are the only biome worldwide without a single property on the World Heritage List. Saxaul woodland demonstrates the ability of desert ecosystems for ongoing carbon sequestration and storage.

The nomination under criterion (x) is based on the nominated property as a diversity hotspot for desert-adapted species, including those of conservation concern. These include plant genera of different families such as *Artemisia*, *Calligonum*, *Salsola*, *Zygophyllum* or *Limonium* including a high share of Turanian endemics. The nominated property is also the habitat of a number of globally threatened mammals such as Kulan (*Equus hemionus ssp. kulan*, EN), Goitered Gazelle (*Gazella subgutturosa*, VU), Urial (*Ovis vignei*, VU), and Saiga (*Saiga tatarica*, CR), alongside several other desert-adapted mammal species of special conservation interest. As noted above, the populations of ungulate species within the areas of the nominated components have undergone historical decline. However, in many instances, these populations are increasing and the value of the nominated property to the conservation of these populations is significant, as these represent the last remaining populations of these species within this part of their historical range. The nomination also notes that the nominated component parts together make up a series of significant stop over points for an important bird migratory route between Eurasia and Africa. This is indeed significant as the nominated component parts between Uzbekistan and Turkmenistan, in particular, either encompass (e.g. Lake Sarykamysh) or adjoin important wetlands which are vital for the migration routes given the scarcity of water sources in the region. Whilst other properties on the World Heritage List may represent specific points along migratory routes (e.g. Wadden Sea, Banc d'Arguin National Park), the serial arrangement of the nominated property ensures that important migratory grounds are included within the property, and is therefore significant in this regard.

IUCN, in collaboration with UNEP-WCMC, has undertaken supplementary comparative analysis with regards to criteria (ix) and (x), based on spatial analyses and literature review. The biodiversity that characterizes the nominated property appears to be of global significance based on the spatial analyses and literature review carried out in this report, both with regards to criteria (ix) and (x). Regarding criterion (ix), WCMC found that the nominated property presents unique ecological features and ecosystems well adapted to desert environments, including typical vegetation types of the Turanian deserts. It is part of the critically endangered Central Asian Deserts priority ecoregion which is not currently represented on the World Heritage List. It is also found in two terrestrial and two freshwater ecoregions which are not yet represented on the World Heritage List. Regarding criterion (x), the nominated property hosts diverse species of flora and fauna which have adapted to the extreme climatic conditions. The species diversity, particularly of mammal, bird and reptile species, is high in comparison to other World Heritage properties found in the same Palearctic Deserts and Xeric Shrublands biorealm. It also shows high rates of endemism for the Turanian region, and hosts globally threatened species, such as the Saiga Antelope and Kulan, which are characteristic ungulates of the region. The nominated property overlaps with two Important Bird Areas and two Key Biodiversity Areas, none of which are yet represented on the World Heritage List.

Most of the nominated areas have also been identified as gaps in both the 2005 and 2020 Central Asia Thematic Studies, and several nominated component parts have been identified as priority conservation sites within the region. However, the areas of the Aralkum

Desert, previously the Aral Sea, were not considered a part of the terrestrial realm that was the focus of these reviews, given their previous status as parts of a lacustrine ecosystem alongside the numerous impacts associated with the desiccation of the Sea.

The nominated property covers in total around 3.4 million hectares, and is therefore large in comparison to other comparable desert properties on the World Heritage List. Although the nominated property is not contiguous, some of the individual components (e.g. Southern Ustyurt component part 15 of around 1.5 million ha) are large in themselves and can therefore encompass a high degree of intactness for the specific desert subtypes for which they are nominated. There is one important exception for those nominated component parts located in the former Aral Sea area, which cannot be considered to be intact on the basis of the degraded ecosystems contained therein.

In conclusion, the representation of the most intact areas of the distinct desert systems of the Central Asian region, including the ongoing ecological processes and the species which comprise them, within the nominated property, with the exception of those nominated component parts located in the former area of the Aral Sea, is a current gap on the World Heritage List, which would be filled with the inscription of the nominated property. Given the scale of the nominated property and the representation of the major desert types of the broader region, it is considered that the nominated property is of major global significance in comparison to other areas.

4. INTEGRITY, PROTECTION AND MANAGEMENT

4.1. Protection

In terms of legal protection, the component parts of the nominated property are comprised of protected areas of various IUCN categories (see Table 1), owned by the nominating States Parties, and each with relevant legal protection under the respective legal frameworks within their countries. Regulatory compliance is ensured by the relevant authorities across the three nominating States Parties. Whilst many of the nominated component parts are very remote, and far from any communities, the protected areas comprising the nominated component parts have mechanisms in place for engaging and consulting communities on issues relating to regulations, management planning and activities associated with management.

Kazakhstan
The Altyn Emel cluster is located in the Altyn-Emel National Park (IUCN Category II), and the nominated component parts 1, 2 and 3 correspond to the strictly protected areas of the national park, connected by a buffer zone. The nominated component parts 4, 5 and 6 of the Barsakelmes cluster likewise correspond to the strictly protected areas of the Barsakelmes State Nature Reserve, each also with buffer zones. As each of the nominated component parts in Kazakhstan are within larger protected areas (Altyn-Emel National Park and the Barsakelmes State Nature Reserve), an additional layer of protection is afforded for each of the components beyond the boundaries of the respective buffer zones.

Turkmenistan
The Bereketli Garagum nominated component part (component part 7) is covered by Bereketli Garagum State Nature Reserve with its Sanctuary Minara. The nominated component part of Gaplangyr (component part 8) is composed of three protected areas, namely the Gaplangyr SNR (IUCN Category Ia;), the Sarykamysh Nature Sanctuary (IUCN Category IV), and the Shasenem Nature Sanctuary (IUCN Category IV), with partial protection provided by a buffer zone limited to the south western area outside the nominated component part. There is some concern regarding the IUCN Category IV Protected Areas in Turkmenistan (Sarykamysh and the Shasenem nature sanctuaries) due to the expiration of their protective status in 2024, and therefore the legal status of both nature sanctuaries should be upgraded to ensure permanent protection. Based on the supplementary information provided, IUCN notes that the respective process has been launched in this regard through a letter from Gaplangyr State Nature Reserve to the Ministry of Agriculture and Environmental Protection of Turkmenistan. The East Garagum cluster is composed of Repetek (nominated component part 9) and Yeradzhi (nominated component part 10), which correspond with the Repetek State Nature Reserve and the Yeradzhi Sanctuary.

Uzbekistan
In the Northern Ustyurt cluster (nominated component parts 11-14), the nominated component parts are protected within the boundaries of the Saigachy complex (landscape) reserve, which is managed as a wilderness area (IUCN Category Ib). The cluster is arranged as four nominated component parts which represent integrated ecosystems (large landscape units) that form intact natural complexes, including the connections between them. As noted above and further below, the impacts of the drying of the Aral Sea to the nominated areas of Saigachy-Duana (nominated component part 13) and Saigachy-Zhideyli (nominated component part 14) are of significant concern.

The Southern Ustyurt component part corresponds with the newly created Southern Ustyurt National Park. Whilst the nominated component part does not benefit from a buffer zone, as Uzbek legislation does not provide for buffer zones for National Parks, the remote location of the nominated component part provides a high degree of protection from activities within the local vicinity of the nominated component part.

Whilst all nominated component parts meet protection requirements, which is also facilitated by the remote location of the nominated component parts affording them with a high degree of protection from direct development pressures, there are component parts of the nominated property that have suffered from the impacts of the drying of the Aral Sea, which caused widespread desiccation and salinization as well as a

dramatic loss of plants, fish and invertebrate fauna (see also sections 3, 4.2, 4.3 and 4.5).

IUCN considers that the protection status of the nominated property meets the requirements of the *Operational Guidelines* in the all of the nominated components.

4.2 Boundaries

The nominated property comprises fifteen component parts (arranged in 4 clusters and 3 single component parts, see Table 1) covering a total of 3,368,741 hectares (ha), with a total buffer zone area of 628,663 ha, located across the extensive region between the Caspian Sea and the Turkestan high mountains system.

Kazakhstan
The Altyn-Emel cluster (nominated component parts 1-3) includes three nominated component parts (Altyn-Emel East (component part 1), Central (component part 2 and West (component part 3)) that correspond to the strictly protected areas of the Altyn Emel National Park. The Barsakelmes cluster covers 163,126 ha in total and includes the Barsakelmes Island (component part 4); Kaskakulan (component part 5) and Delta (component part 6) nominated component parts, which correspond to the strictly protected areas of the Barsakelmes State Nature Reserve. The Barsakelmes Island nominated component part (component part 4) includes the former territory of the Barsakelmes island (16,975 ha) expanded through the addition of the former seabed of the Aral Sea. The Kaskakulan nominated component part has an area of 109,942 ha and also covers areas previously in the Aral Sea. The Delta component (component part 6) was a recent addition to the State Nature Reserve and occupies the wetlands of the avandelta of the Syrdarya river that formed following the construction of the Kokaral dam.

Turkmenistan
The Bereketli Garagum nominated component part (component part 7) has an area of 87,400 ha in the Central (Low-lying) Karakum desert, 240 km north from the capital of Ashgabat and comprises ridged sandy and takyr complexes, intracontinental solonchak desert, and clay desert with classical aeolian landforms. The Gaplangyr nominated component part (component part 8) occupies 926,203 ha of the north-western part of the Gaplangyr plateau, in the transitional area between the northern and southern deserts in north-western Turkmenistan. The East Garagum cluster is formed of the nominated component parts of Repetek (component part 9) and Yeradzhi (component part 10). Repetek covers 34,600ha of the Eastern Karakum desert, the southern subzone of the Karakum desert, 70 km southwest of Turkmenabad, whereas Yeradzhi is at 30,000 ha in total and is located 70 km northwest of Repetek, and 90 km from Turkmenabad. The boundaries of two component parts in Turkmenistan (Gaplangyr and Repetek; nominated component parts 8 and 9) do arguably not follow the ecological processes or landscape features present in the area. Therefore, the State Party of Turkmenistan could be encouraged to consider developing a proposal to modify the boundaries of these nominated component parts to align with the natural features of the landscape.

Uzbekistan
The Northern Ustyurt cluster (nominated component parts 11-14) corresponds with the Saigachy Wilderness Complex. The cluster is formed of four separate components which correspond with the boundaries of the complex and are managed as a wilderness area (IUCN Protected Area Category Ib). The cluster has an area of 628,300 ha, with an additional 219,800 ha of buffer zone occupying the most northerly part of the Uzbek Ustyurt plateau. The cluster is comprised largely of the Kassarma elevation, although areas to the east overlap with the northern Ustyurt depression to the west and the chinks leading down to the Aral Sea to the east.

The Southern Ustyurt nominated component part (component part 15) is comprised of the newly created Southern Ustyurt National Park. With an area of 1,447,143ha, the component borders Kazakhstan to the west and Turkmenistan (and the Gaplankyr nominated component part (component part 8)) to the south. The northern boundary runs along the northern boundary of Assake-Audan depression, and the eastern border passes along the conditional line from the Shorzha Depression through Lake Sarykamysh. The nominated component part does not have a formal buffer zone identified due to the lack of national legislation to formally identify buffer zones for national parks. Noting the gas developments in the vicinity (in particular Chakhpakhty gas station), the State Party of Uzbekistan should be encouraged to develop a buffer zone for this component part.

The field evaluation mission found that the boundaries of the nominated serial property encompass intact examples of each of the ecological-physiographic vegetation types as well as the main desert zones of Central Asia within legally protected areas with a high degree of integrity due to their location and remote location. However, as noted above, the nominated component parts in the Barsakelmes cluster, and the Saigachy Duana and Saigachy- Zhideyli components of the Northern Utsyurt cluster cannot be recommended for inscription as part of the nominated property given their location in areas formerly of the Aral Sea and the high degree of ecosystem degradation that has occurred in these specific areas. Whilst the succession in the period since the onset of the drying of the Aral Sea has resulted in the establishment of species which would, in theory, be part of a climactic community, the absence of other key species which used to be present prior to the drying of the Sea (e.g. ungulates species) demonstrates the lack of integrity which persists in these areas marked by the widespread desiccation, salinization and contamination along with a dramatic loss of plants, fish and invertebrate fauna. These impacts have led to the former Aral Sea ecosystem to have collapsed according to the IUCN Red List of

Ecosystems. The nominated component parts located in areas formerly of the Aral Sea cannot therefore be considered to be of Outstanding Universal Value in relation to integrity requirements and their biodiversity values. For this reason, that nominated component parts in the Barsakelmes cluster, and the Saigachy Duana and Saigachy-Zhideyli component parts of the Northern Ustyurt cluster cannot be recommended for inscription as part of the nominated property

IUCN considers that the boundaries of the Altyn-Emel East; Altyn Emel Central; Altyn-Emel West; Bereketli Garagum; Gaplankyr; Repetek; Yeradzhi; Saigachy; Saigachy-Beleuli; Southern Ustyurt (nominated component parts 1, 2, 3, 7, 8, 9, 10, 11, 12 and 15) and buffer zones meet the requirements of the *Operational Guidelines*. However, the Barsakelmes Island; Kaskakulan; Delta; Saigachy-Duana and Saigachy-Zhideyli (nominated component parts 4, 5, 6, 13 and 14) do not meet the requirements of the *Operational Guidelines*.

4.3 Management

As the nominated property includes component parts across three countries, each with their own distinct legal protection regimes and corresponding management systems, the management is varied across the nominated property. However, each of the nominated component parts benefit from well-defined management plans and governance frameworks for the nominated component parts as well as committed staff with increasing technical capacities in essential areas of expertise (e.g. environmental monitoring). Improvements to the protection and management capacity for certain nominated component parts will be necessary for the effective conservation of the nominated property's values in the long term, and are discussed below in more detail.

Kazakhstan
The Altyn-Emel National Park is managed according to the Altyn-Emel Management Plan, and the General Plan for the Development of Infrastructure, including long-term objectives for integrated sustainable management of the national park and the surrounding area, ensuring the preservation of ecosystems, biological and landscape diversity, their limited and scientifically-based use for the purposes of environmental education, research, tourism, recreational and limited economic purposes.

In the Barsakelmes State Nature Reserve, there is also a Management Plan in place, which sets out annual Action Plans approved by the Scientific and Technical Council of the reserve. The management goal is to preserve typical, rare and unique natural ecosystems with all their nominated component parts.

Both Protected Areas encompassing the nominated component parts are also designated as UNESCO Biosphere Reserves and have established Public Committees. These Committees are functioning well according to both local community representatives and Protected Area staff consulted during the mission. The Committees allow for consultation on Protected Area management planning and activities as well as for local communities to raise issues of concern.

Turkmenistan
The priority conservation objectives within the nominated component parts in Turkmenistan are addressed through implementation of annual work plans aimed at patrolling and enforcing laws, monitoring components of the environment as well as key species of flora and fauna, raising awareness and education, strengthening the capacity of the reserve staff and preparing scientific reports.

Plans for the nominated component parts have been developed in consultation with key stakeholders. The structure and content of the Management Plans is in line with the internationally established standards or best practice and include the basic information to guide the Protected Area authorities in managing the proposed component parts. In all three management plans for the nominated component parts there is a separate programme on governance to ensure the participation of border land users and the public in the environmental activities of the reserves.

Capacity constraints have been noted in the nominated component parts of Turkmenistan. In particular, there is a need for training and additional human resources for legal enforcement, research and monitoring of component parts, as well as essential equipment for functioning management activities.

Uzbekistan
Management plans set out the relevant programs in order to conserve the values of the nominated component parts in Uzbekistan. These are well defined, and appear to be implemented by the relevant staff according to the system outlined. Capacity constraints have limited the implementation of the items related to scientific monitoring in the nominated component parts 11, 12, 13 and 14, as the reserve does not currently employ a scientific department. It is considered that there is a requirement for capacity building and training for the effective management in this regard, as well as to augment the capacity for other essential management requirements such as patrolling (especially should the ungulate populations increase within the nominated property, as envisaged).

For the Southern Ustyurt nominated component part, as the national park which forms this component was only established in 2020, the management plan is the first such plan, and therefore capacity development is a priority in order to establish the systems and activities required for the conservation of the national park. Whilst capacity constraints in terms of equipment (i.e. vehicles, cameras etc.) were noted by members of staff for the NP during the evaluation mission, it was considered that the staff are equipped to function in their intended operations and fulfil the necessary tasks for the conservation of the nominated component part, noting also that the management plan is tailored for capacity building, given the recent establishment of the national park.

There is a well-defined governance structure for the nominated component parts in Uzbekistan, including opportunity for local communities to engage in the management of the nominated component parts. The nominated component parts are managed by the State Committee for Ecology, in addition to local forestry administrations and a fishing cooperative in the case of the Southern Ustyurt nominated component part. The State Committee for Ecology are responsible for the regulatory and legal protection of the Protected Area at the national and local administrative levels. Each component also has an advisory committee consisting of representatives of land users, non-governmental non-profit organizations and citizens.

In the joint Memorandum of Understanding (MoU), signed on 10 January 2022 by the nominating States Parties, there is a commitment to establish effective transnational management and protection mechanism according to the *Operational Guidelines* and objectives set out by the *World Heritage Convention*. To coordinate transboundary management, the State Parties have agreed to establish a regional Joint Steering Committee (JSC) consisting of representatives of the authorities responsible for the protection and management of the nominated property, should the nominated property be inscribed on the World Heritage List (see Section 5.1c, below). This Committee will be responsible for the international coordination of the work undertaken on the nominated property and will coordinate the management of the site across scales (from site level to international) through the structures put in place in its operation.

There are a number of current and future projects that support management of the nominated component parts. Monitoring and patrolling (using the Spatial Monitoring and Reporting Tool (SMART)) has been introduced in a number of nominated component parts, in addition to staff training and equipment provision, through initiatives such as the Central Asian Desert Initiative (jointly implemented between the University of Greifswald; Michael Succow Foundation and the German Federal Ministry of Economic Cooperation and Development), alongside additional transboundary knowledge sharing and training initiatives between staff of the nominated component parts. Further similar projects that will support management are set to begin in the near future, which should be encouraged by the Committee.

Overall, the nominated component parts have adequate management plans in place to meet the requirements in conserving the values for which the property is nominated. There are limited concerns for some nominated component parts in terms of the capacity to implement the plans. Therefore, the States Parties should ensure continued capacity development relative to the threats, size of the areas and future development and management objectives, in particular related to any future tourism development.

IUCN considers the management of the nominated property meets the requirements of the *Operational Guidelines*.

4.4 Community

Given the remote location of the nominated component parts, there are reportedly no local communities within the nominated property, with very few communities within its vicinity. These local communities are afforded the right to information, consultation and consent as well as engagement in decision-making processes through mechanisms established as integral parts of the governance and management planning structure of the nominated component parts. As the nominated component parts are exclusively owned by the respective nominating States Parties, there are no tenure rights within the nominated area, although grazing of livestock and other forms of natural resource use are reportedly permitted within some nominated component parts in certain periods (especially during times of drought), which supports livelihoods and benefit-sharing in times of necessity for surrounding communities through appropriate regulation and management.

4.5 Threats

A major concern with regards to previous impacts of past development for the protection of the nominated property is the drying of the Aral Sea. This is relevant for nominated component parts in the Barsakelmes cluster and Saigachy-Duana and Saigachy Zhideyli nominated component parts, which are located within the former area of the Aral Sea. The decrease in area of the Aral Sea by around 75% is considered to be a major environmental disaster and led to significant impacts throughout the region, including within the above-mentioned nominated component parts. These include soil contamination through winds spreading large amounts of dust from the dry bottom of the former lake containing sea salt, pesticides and other chemicals, including within nominated component parts of the property in the Barsakelmes cluster and the Saigachy-Duana and Saigachy-Zhideyli nominated component parts.

Whilst some areas of the nominated property were previously developed mostly for livestock production, land use intensity was low and therefore the residual impacts are not considered to be of significant concern. However, recent linear infrastructure development poses a threat to a number of the nominated component parts, most notably the Repetek component (nominated component part 9), where the M37 highway and the Turkmenabad-Ashgabat-Bereket-Turkmenbashy railway bisect the nominated component part, with significant implications for the connectivity between the two resulting sections of the nominated component part, in particular for large mammal migration. There is also a network of dirt tracks crossing the nominated component parts in Uzbekistan which remain from previous and no longer active development of the region. These roads have

been shown to have minor impacts on the flora of the nominated component parts. Given the sparse distribution and limited use within the nominated component parts, this is not considered a major threat to the natural values of the nominated component parts. A 15 km long canal is located within the Yeradzhi nominated component part, which has resulted in a complex of lakes that have partly submerged the relict black saxaul woodland, although mostly outside of the nominated component parts.

Poaching represents one of the main threats to the nominated component parts, in particular towards ungulate species that represent key attributes for which the property is nominated (e.g. Saiga, Goitered Gazelle). Poaching has caused the historical decline of populations of almost all ungulate species throughout these nominated component parts, which have still not recovered to historical levels, and continues to the present day. Patrolling efforts are undertaken by the respective management authorities across the components. However, capacity is relatively limited and although rangers are being trained in SMART patrolling methods, equipment is also lacking in instances where poachers are observed and caught.

Border fences adjoin the nominated component parts where they are located at national borders. This is the case along the northern boundary of the Northern Ustyurt cluster (nominated component parts 11-14) which sits at the border of Kazakhstan and Uzbekistan; and the southern and western boundaries of the Southern Usyturt nominated component part (component part 15) which sit along the borders of Uzbekistan with Turkmenistan and Kazakhstan, respectively. These fences, which vary in composition, but all of which are significant barriers, prevent natural migration and movement of large terrestrial mammals, notably the ungulate populations that represent an important element of the potential OUV of the property. Mitigation measures are in place in some locations. There is a 15 km gap in the fence adjoining the northern Ustyurt cluster and another 11 km gap is due to be opened shortly in a location thought to be a key migration corridor for saiga, but there are no gaps in the fence adjoining the Southern Ustyurt component. Recommendations have been developed, and appear to be supported in principle by the nominating States Parties, to further increase connectivity by removing further fences in key locations and altering existing structures to facilitate greater movement of large mammals between nominated component parts. It is therefore recommended that the States Parties endeavour to promote the recovery of ungulate populations, where relevant, and promote the connectivity between nominated component parts to restore the integrity of these migratory processes.

Grazing by livestock within the nominated property, although not permitted, occurs occasionally in a number of nominated component parts. Moreover, overgrazing by livestock in the areas outside the nominated property affects the availability of food for species which are nominated as attributes of the proposed OUV (ungulates) and unattended livestock are known to occasionally wander into the nominated component parts, in particular in the nominated component parts in Turkmenistan. Other forms of natural resource use, including collecting of deadwood of saxaul trees and medicinal plants (e.g., *Ferula spp*.) was also reported in all nominated components in Turkmenistan.

There are plans for tourism development for across the nominated component parts, however they cannot be considered a significant threat at present as there is currently very limited if no tourism across most of the nominated component parts. Given the remote location of the nominated component parts, mass tourism is not feasible and therefore the proposals are mostly centred around a low-visitor, high-value model. There are currently small accommodation (yurt camps) existing or approved for construction in various locations across the nominated component parts (e.g. within the recreational zone of the Southern Ustyurt nominated component part).

Based on the field visits undertaken by the field evaluation mission to all nominated component parts, the overall threat level is considered low, with the exception of those associated with the desiccation of the Aral Sea and the subsequent collapse of the ecosystem. This is due to the limited presence of these threats across the nominated property of considerable size (i.e. grazing activities are limited to certain areas or occur only occasionally) or because the threats are associated with past development, from which the natural ecosystems have already undergone a high degree of recovery. Mitigation measures in place to address the other threats (such as the anti-poaching patrols and improvements to border fence infrastructure) and the relevant planning instruments (impact assessment legislation and procedures) to ensure future tourism-related developments do not become significant threats in the future will also ensure that current and future threats are appropriately addressed.

In summary, IUCN considers that the nominated property meets protection and management requirements, and that integrity requirements of the *Operational Guidelines* are met in Altyn-Emel East; Altyn Emel Central; Altyn-Emel West; Bereketli Garagum; Gaplankyr; Repetek; Yeradzhi; Saigachy; Saigachy-Beleuli; Southern Ustyurt (nominated component parts 1, 2, 3, 7, 8, 9, 10, 11, 12 and 15), but not in Barsakelmes Island; Kaskakulan; Delta; Saigachy-Duana and Saigachy-Zhideyli (nominated component parts 4, 5, 6, 13 and 14).

5. ADDITIONAL COMMENTS

5.1 Consideration in relation to serial properties

a) What is the justification for the serial approach?

The serial approach for the nominated property is justified by the representation of the different subtypes of desert within corresponding nominated component parts, which together include examples of the full

range of morphological, physiological and behavioural adaptation strategies to Turan deserts. Across the nominated component parts, examples of most of the ecological-physiographic vegetation types in the Turan deserts are represented, including sagebrush and perennial saltwort vegetation in clay and stony deserts; psammophytic vegetation, saxaul shrubs and woodland in sandy deserts; salt vegetation on solonchak soils.

The 15 nominated component parts, in four clusters and three single components, are protected areas with well-organized management structures and have been nominated as the most intact examples of each the ecological-physiographic vegetation types as well as the main desert zones of Central Asia.

The nomination presents the Barsakelmes cluster and the Saigachy-Duana and Saigachy-Zhideyli nominated component parts as examples of how primary succession on virgin land represents the development of desert ecosystems (namely in the formation of the Aralkum desert ecosystems). However, as discussed above, these systems cannot be considered intact, given their listing on the IUCN Red List of Ecosystems as 'collapsed'. Therefore, their inclusion within the nominated property cannot be justified under the serial approach, as these areas do not fulfil the integrity requirements to be considered of OUV.

b) Are the separate component parts of the nominated property functionally linked in relation to the requirements of the Operational Guidelines?

The components of the nominated property are located across several thousand kilometres, stretching from nominated component parts in Turkmenistan and Uzbekistan, to the Altyn Emel National Park close to the Kazakh-China border thousands of kilometres from the nearest other nominated component parts. The distance between the Altyn Emel cluster and the remaining nominated component parts which are relatively close to each other is particularly stark. Despite the issue of poor connectivity between Altyn Emel and the remaining nominated component parts, given the distance between them, the inclusion of the Altyn Emel cluster within the nominated property is justified as the only example of foothill steppified deserts (semi-desert) in the property, including distinct altitudinal variation in species and habitats within the cluster, and therefore completes the range of desert types emblematic of the cold winter deserts of Central Asia.

Within Kazakhstan, the individual nominated component parts of the Altyn-Emel National Park cluster are functionally linked by a buffer zone, or reserved lands that allow for the movement of animals through natural habitat. For the Delta component of the Barsakelmes cluster, there is minimal functional linkages with the other clusters in the State Nature Reserve. The site is a wetland and part of the Small Aral Sea and there are minimal linkages with the other two nominated desert component parts within the State Nature Reserve.

There seems to be a functional ecological connectivity between nominated component parts 9 and 10. The Management Plan for East Garagum components proposes to establish new Protected Areas between the two nominated component parts to maintain or strengthen ecological connectivity. Nominated component part 8 in Turkmenistan is contiguous with nominated component part 15 in Uzbekistan, but the ecological connectivity between them has been impaired by the wire fence running along the state border. The Management Plan for nominated component part 8 notes that the government needs to ratify the Bonn Convention on Migratory Species of Wild Animals (CMS), to provide a legal basis for opening up ecological corridors along the state border with Uzbekistan and to allow for "natural migrations of ungulates".

The Southern Ustyurt nominated component part (component part 15) is also contiguous with the Gaplankyr nominated component part (component part 8) component in Turkmenistan, and therefore can be considered to be linked in this regard. However border fences which span almost the entire border between the three nominating States Parties remain a barrier to the migration of large mammals that are proposed as attributes conveying OUV. There has been progress in promoting better connectivity through the opening of sections of the border fence between Uzbekistan and Kazkahstan, with one more opening proposed in the near future. Furthermore, Uzbekistan is an active member of the CMS (and host of the 14th meeting of the Conference of the Parties in October 2023), however there is still much to be achieved in promoting transboundary cooperation to facilitate greater migration of species across the borders of the countries.

The transboundary arrangement of the nominated property should promote the further recovery of migratory ungulate species, alongside existing regional conservation initiatives, and the States Parties should be encouraged to continue efforts to improve connectivity between nominated component parts, including through the potential further extension of the nominated property, in particular the existing and proposed protected areas in the Southern Ustyurt area of Kazakhstan and by continued efforts in understanding transboundary migration patterns.

c) Is there an effective overall management framework for all the component parts of the nominated property?

A Steering Committee to oversee the transboundary element of the management of the nominated property will be established, if inscribed. A Memorandum of Understanding has been signed by the respective States Parties to promote common approaches to monitoring, promoting World Heritage status and supporting staff capacity and training as well as coordinating approaches to enhancing connectivity between the clusters and the wider landscape. The mechanism for coordination is set out in the nomination with the relevant national governmental agencies of each State Party serving as focal points on

the regional committee, drawing upon the relevant information, resources and expertise within their given country and nominated component parts. However, no budget has been allocated by the governments for the Steering Committee. It is therefore recommended, should the property be inscribed, that the States Parties establish the Steering Committee immediately, including the sufficient allocation of budget for its operation.

6. APPLICATION OF CRITERIA

The **Cold Winter Deserts of Turan (Kazakhstan, Turkmenistan, Uzbekistan)** has been nominated under natural criteria (ix) and (x).

Criterion (ix): Ecosystems/communities and ecological/biological processes

The nominated property includes five component parts, which are impossible to meet any integrity requirement as they are located within areas heavily affected by the drying of the Aral Sea: Barsakelmes Island; Kaskakulan; Delta; Saigachy-Duana and Saigachy-Zhideyli. Given their previous status as parts of a lacustrine ecosystem alongside the numerous impacts associated with the desiccation of the Sea, the area covered by the nominated component parts of the former Aral Sea cannot be considered intact. The ecosystem is considered to have 'collapsed', according to the IUCN Red List of Ecosystems.

In contrast, the remaining ten nominated component parts include ecosystems representing an intact and outstanding example of the evolution and adaptation of terrestrial ecosystems to extreme climate conditions and of the development of survival strategies of plants and animals as ongoing ecological and biological processes, with the exception of those located in the area formerly covered by the Aral Sea. The nominated property hosts a diversity of desert communities, comprised of species that have developed adaptation strategies for survival in the extreme climatic conditions of the deserts of Central Asia. These include unique ecological features and ecosystems well adapted to desert environments, including typical vegetation types of the Turanian deserts, which correspond with the different soil types and microclimatic and environmental conditions, with multiple desert subtypes occurring within and across nominated component parts to encompass the broad range of desert types across Central Asia. The nominated property therefore contains the full range of morphological, physiological and behavioural adaptation strategies of the regional Central Asian desert systems, and their ongoing ecological processes. Communities include saxaul woodland, sagebrush, saltwort, psammophytic and solonchak deserts, each displaying taxonomic diversification and morphological convergence of plants, and together constitute part of the critically endangered Central Asian Deserts priority ecoregion which is not currently represented on the World Heritage List. Animals throughout the nominated property display a range of morphological, physiological and behavioural adaptations to survive, including seasonal migrations of large mammals.

IUCN considers that the nominated property meets this criterion in the nominated component parts of Altyn-Emel East; Altyn Emel Central; Altyn-Emel West; Bereketli Garagum; Gaplankyr; Repetek; Yeradzhi; Saigachy; Saigachy-Beleuli; Southern Ustyurt (nominated component parts 1, 2, 3, 7, 8, 9, 10, 11, 12, and 15), but not in Barsakelmes Island; Kaskakulan; Delta; Saigachy-Duana and Saigachy-Zhideyli (nominated component parts 4, 5, 6, 13 and 14).

Criterion (x): Biodiversity and threatened species

As noted above, IUCN considers that the complete loss of integrity of the nominated component parts of Barsakelmes Island; Kaskakulan; Delta; Saigachy-Duana and Saigachy-Zhideyli precludes them as intact habitat, given the changes that occurred to the Aral Sea that are widely recognised as an environmental disaster, with impacts also to the surrounding areas through soil contamination and salinization and regional climatic changes.

The nominated property is important for the conservation of desert species of Central Asia. The species diversity, particularly of mammal, bird and reptile, is high in comparison to other World Heritage properties found in the same Palearctic Deserts and Xeric Shrublands biorealm. It also shows high rates of endemism for the Turanian region, hosts many globally threatened species, and overlaps with two Important Bird Areas and two Key Biodiversity Areas, none of which are yet represented on the World Heritage List. The nominated property contains diversity hotspots for plant genera that are representative of the specific desert assemblages across the entire region, including the diversity hotspots of *Chenopodiaceae* alongside *Artemisia, Calligonum, Salsola, Zygophyllum* and *Limonium* families. The Cold Winter Deserts of Turan are also the habitat of globally threatened mammals such as Kulan (*Equus hemionus kulan*, EN), Goitered Gazelle (*Gazella subgutturosa*, VU), Saiga (*Saiga tatarica*, CR) and Urial (*Ovis vignei arkal*, VU) and also host numerous breeding birds, and contain important resting places of migrating bird species as well as other desert adapted species, including herpetofauna and insects.

IUCN considers that the nominated property meets this criterion in Altyn-Emel East; Altyn Emel Central; Altyn-Emel West; Bereketli Garagum; Gaplankyr; Repetek; Yeradzhi; Saigachy; Saigachy-Beleuli; Southern Ustyurt (nominated component parts 1, 2, 3, 7, 8, 9, 10, 11, 12, and 15), but not in Barsakelmes Island; Kaskakulan; Delta; Saigachy-Duana and Saigachy-Zhideyli (nominated component parts 4, 5, 6, 13 and 14).

7. RECOMMENDATIONS

IUCN recommends that the World Heritage Committee adopts the following draft decision:

The World Heritage Committee,

1. Having examined Documents WHC/23/45.COM/8B and WHC/23/45.COM/INF.8B2,

2. Inscribes the **Cold Winter Deserts of Turan, Kazakhstan, Turkmenistan, Uzbekistan,** comprising the following component parts: Altyn-Emel East, Altyn Emel Central, Altyn-Emel West, Bereketli Garagum, Gaplankyr, Repetek, Yeradzhi, Saigachy, Saigachy-Beleuli and Southern Ustyurt, on the World Heritage List on the basis of **criteria (ix)** and **(x)**;

3. Adopts the following Statement of Outstanding Universal Value:

Brief synthesis

The Cold Winter Deserts of Turan is a transnational serial property shared by Kazakhstan, Turkmenistan, and Uzbekistan. The property comprises ten component parts distributed across arid areas of Central Asia's temperate zone between the Caspian Sea and the Turanian high mountains system. The property is subject to extreme climatic conditions with minimal levels of precipitation, very cold winters and hot summers. In spite of these extreme conditions, the property boasts an exceptionally diverse flora and fauna that has adapted to the harsh conditions. The property also represents a considerable diversity of desert ecosystems, their evolution, functions and natural dynamics, covering Turan Deserts from the mountain depressions and piedmonts of Altyn-Emel to the gypsum deserts of Southern Ustyurt, spanning a distance of more than 1,500 kilometres from East to West. Each of the component parts has its own specifics, and at the same time, they complement each other in terms of biodiversity, desert types, and ongoing ecological processes. The property holds a vast area of 3,174,415 hectares, with buffer zones adding up to a total of 320,819 hectares.

Criterion (ix)

The serial property represents the cold winter deserts as an outstanding example of the development of terrestrial ecosystems in extreme climate conditions and of the evolution of survival and adaptation strategies of plants and animals as ongoing ecological and biological processes. The ten component parts include diverse geomorphological desert types, which are reflected by different ecosystems. It is representative of most of the ecological-physiographic vegetation types in the Turan deserts: sagebrush and perennial saltwort vegetation; psammophytic vegetation, i.e. desert grasses; saxaul shrubs and woodland. Taxonomic diversification and morphological convergence of plants are significant ongoing biological processes. Saxaul woodland demonstrates the ability of desert ecosystems for ongoing carbon sequestration and storage. Morphological, physiological and behavioural adaptations ensure survival of animal life as a fundamental ongoing process within the cold winter deserts of Turan. The component parts are important to the migration of migratory birds and ungulate species and serve as node points for migratory species and their dispersal across wider areas in the region.

Criterion (x)

The serial property hosts very specific and diverse flora and fauna, adapted to the extreme climatic conditions of the Cold Winter Deserts of Turan. The species diversity is high, including diversity hotspots of Chenopodiaceae *and plant genera of different families such as* Artemisia*,* Calligonum*,* Salsola*,* Zygophyllum *or* Limonium*, including a high share of endemic species. The property hosts numerous breeding birds, and important resting places of migrating bird species, as well as desert-adapted herpetofauna and insects. The Cold Winter Deserts of Turan are the habitat of globally threatened mammals, such as Goitered Gazelle, Saiga and Urial. Further important species that occur in component parts of the property include Kulan, Snow Leopard, Marbled Polecat and Striped Hyena as well as Asian Houbara, Great Bustard, Saker Falcon, White-headed Duck and Egyptian Vulture.*

Integrity

The property's ten component parts are representative of the Turanian cold winter deserts. They include the most intact examples of desert ecosystems within legally protected areas. The serial property covers a total of 3,174,415 hectares, with some component parts benefitting from buffer zones with a combined area of 320,819 hectares. The ecosystems fulfil their ecological functions, and host the characteristic plant and animal diversity of cold winter deserts.

Most of the ten component parts are very remote and far from settlements. However, historical population decline of ungulate species has occurred across the region due to poaching, and significant barriers to migration exist through the border fencing, causing disruption to migratory routes. Further threats to the property include linear infrastructure, such as tracks, roads, railways and canals, affecting connectivity as well as continued poaching and grazing by livestock. Overgrazing by livestock in the areas outside the property can also cause threats to ungulates as it affects their food source availability. The overall threat level is low at the time of inscription but these threats will require close attention, including through monitoring and mitigation action.

Protection and management requirements

All ten component parts of the property are publicly owned and protected by the relevant national legislation of Kazakhstan, Turkmenistan and Uzbekistan and managed on the basis of specific management plans by state administrations under the responsibility of the relevant ministries. It will be

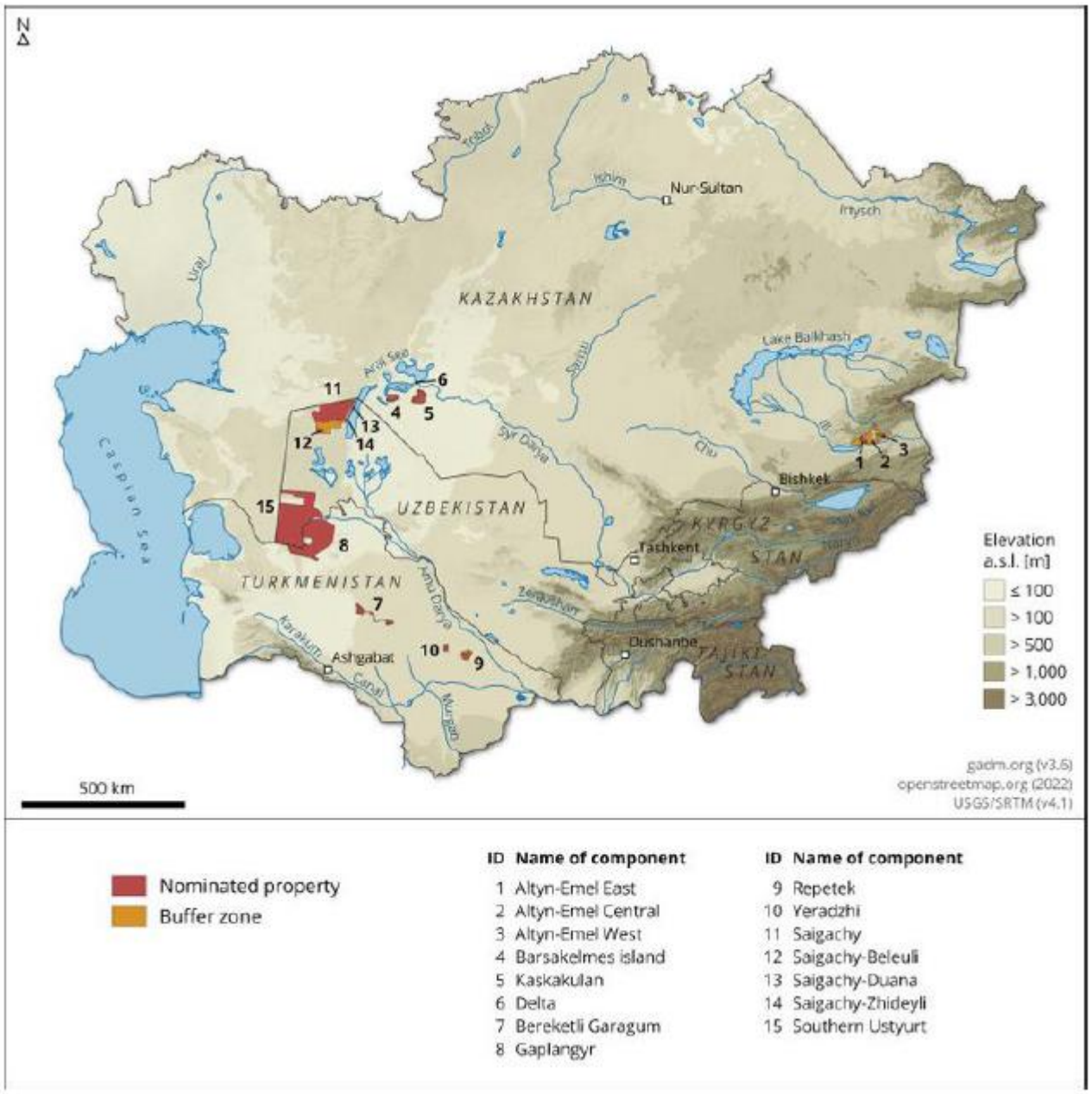
essential for each component part of the property to maintain the strict protection regime in the long term. The three component parts of the Altyn Emel cluster in Kazakhstan are encompassed by the Altyn-Emel National Park. The component parts in Turkmenistan are fully covered by Nature Sanctuaries and State Nature Reserves. In Uzbekistan, the Southern Ustyurt component part corresponds with the Southern Ustyurt National Park whilst the component parts of Saigachy and Saigachy-Beleuli are covered by the Saigachy complex (landscape) reserve, which is managed as a wilderness area.

The priority management objective for all ten component parts is to ensure the ecosystem integrity of desert landscapes, including their biological diversity of plants and animals. Each of the component parts benefit from well-defined governance frameworks and management plans as well as staff with growing technical capacities in essential areas of expertise. There are various projects in support of the management of the component parts, including on monitoring and patrolling which will need to be continued along with continued capacity development in relation to the threats, size of the areas and future management objectives, including sustainable tourism not exceeding the carrying capacity and affecting the fragile desert ecosystem.

The transnational management will be ensured by a Joint Steering Committee with responsible representatives of all three States Parties on the basis of a Memorandum of Understanding, signed on 10 January 2022. The Memorandum commits the States Parties of the property to effective transnational management and protection mechanisms, according to the Operational Guidelines*. The joint management is to be implemented and coordinated through the Joint Steering Committee, including through exchanges on the individual and national management plans, by staff exchange, joint public awareness campaigns and environmental education. It is important that the Joint Steering Committee also coordinates approaches to enhancing connectivity between the component parts and the wider landscape and that sufficient budget is allocated by the governments.*

4. Requests the States Parties to ensure the protection and management of the Outstanding Universal Value is guaranteed in the long term, including by:
   a) Increasing the connectivity between the component parts of the property and with the wider ecosystem, including by removing and mitigating barriers to large mammal migration,
   b) Ensuring the legal protection of each component part and each buffer zone is maintained in the long term,
   c) Allocating sufficient funding to the Joint Steering Committee, strengthening the transnational and transboundary management of the property, including through regular exchange and capacity-building and research and monitoring across the ten component parts of the property, including on transboundary migration patterns.

Map 1: Nominated property and buffer zones



ID	Name of component
1	Altyn-Emel East
2	Altyn-Emel Central
3	Altyn-Emel West
4	Barsakelmes island
5	Kaskakulan
6	Delta
7	Bereketli Garagum
8	Gaplangyr

ID	Name of component
9	Repetek
10	Yeradzhi
11	Saigachy
12	Saigachy-Beleuli
13	Saigachy-Duana
14	Saigachy-Zhideyli
15	Southern Ustyurt