

ASIA / PACIFIC

WESTERN TIEN-SHAN

KAZAKHSTAN, KYRGYZSTAN, UZBEKISTAN



Aksu-Jabagly State Nature Reserve, Kazakstan - © IUCN Elena Osipova

WORLD HERITAGE NOMINATION – IUCN TECHNICAL EVALUATION

WESTERN TIEN-SHAN (KAZAKHSTAN, KYRGYZSTAN, UZBEKISTAN) – ID 1490

IUCN RECOMMENDATION TO WORLD HERITAGE COMMITTEE: To defer the nomination under natural criteria.

Key paragraphs of Operational Guidelines:

Paragraph 77: Nominated property has potential to meet World Heritage criteria.

Paragraph 78: Nominated property does not meet integrity and protection and management requirements.

Background note: This property has not previously been nominated, however the Committee's attention is drawn to Decision 37 COM 8B.10 on the inscription of Xinjiang Tianshan, China which *inter alia* requested the State Party of China to "initiate collaboration with neighbouring countries to explore the potential for a transnational serial nomination". IUCN notes the willingness of the State Parties of Kazakhstan, Kyrgyzstan and Uzbekistan, as expressed in letter of 12 June 2013, to work collaboratively with China on transboundary aspects of the Tianshan Mountain Range which straddles all four countries. Please note that the Tianshan has different spellings in different countries.

1. DOCUMENTATION

a) Date nomination received by IUCN: 16 March 2015

b) Additional information officially requested from and provided by the States Parties: On 16 December 2015, following the IUCN World Heritage Panel, a progress report was sent to the States Parties noting that the nomination as configured had a wide range of deficiencies and did not appear to meet the requirements of the Operational Guidelines. Specifically, concerns related to the natural criteria not being demonstrably met across all components; inadequate justification of the serial approach; questions regarding integrity, protection and management across all components; and the lack of evidence of an effective overall protection and management system across the serial property. IUCN highlighted the significant work needed to revise the nomination and offered to work with the States Parties to better understand the comparative values of the nomination at the scale of the Tien-Shan Range; to determine the most appropriate configuration; and to develop a fully integrated and effective management system for the entire property. Subsequently a skype call was convened to discuss the report, but due to technical issues, only representatives of Kazakhstan were able to join that call. Information in response to IUCN's progress report was received on 26 February 2016 and is discussed below.

c) Additional literature consulted: Various sources including: Dingwall, P., Weighell, T. and Badman, T., 2005, Geological World Heritage: *A global framework, A contribution to the global theme study of World Heritage Natural sites*, IUCN, 51p. Orlovskaya, E. R., 1966, *Pervyy Paleontologicheskij zapovednik*. V sb. Trudy zapovednika Aksu-Dzhabagly. Vyp. 7. Wells, R. T., *Earth's geological history, A contextual framework for assessment of World Heritage fossil site nominations*, IUCN Working Paper 1, 43p. BirdLife International (2015a) *Important Bird Areas factsheet:*

Aksu-Dzhabagly State Nature Reserve. Downloaded from <http://www.birdlife.org>, accessed in October 2015. BirdLife International (2015b) *Important Bird Areas factsheet: Kenshektau Mountains*. Downloaded from <http://www.birdlife.org>, accessed in October 2015. BirdLife International (2015c) *Important Bird Areas factsheet: Bashkizylsay Unit of the Chatkal Mountains Biosphere Reserve*. Downloaded from <http://www.birdlife.org>, accessed in October 2015. Critical Ecosystem Partnership Fund (CEPF) 2015. *Biodiversity hotspots: Mountains of Central Asia*. Downloaded from <http://www.cepf.net/resources/hotspots>, accessed in October 2015. Dzhangaliev, A.D., Salova, T.N. and Turekhanova, P.M. 2003. *The wild fruit and nut plants of Kazakhstan*. Farrington, J. D. 2005. *A Report on Protected Areas, Biodiversity, and Conservation in the Kyrgyzstan Tian Shan with Brief Notes on the Kyrgyzstan Pamir-Alai and the Tian Shan Mountains of Kazakhstan, Uzbekistan, and China*. Bishkek: U.S. Fulbright Program, Environmental Studies Section. Footitt, R.G. & Alder, P.H. (2009). *Insect Biodiversity: Science and Society*. Wiley-Blackwell. Taft, J.B., Phillippe, L.R., Dietrich, C.H. and Robertson, K.R. 2011. *Grassland composition, structure and diversity patterns along major environmental gradients in the Central Tien Shan*. *Plant Ecology*, 212(8): 1349–1361. Wagner, V. 2009. *Eurosiberian meadows at their southern edge: patterns and phytogeography in the NW Tien Shan*. *Journal of Vegetation Science*, 20(2): 199–208. WWF (2006) *WildFinder: Online database of species distributions*. Downloaded from www.worldwildlife.org/WildFinder, ver. Jan-06, accessed in October 2015. WWF (2015) *List of ecoregions*. Downloaded from http://wwf.panda.org/about_our_earth/ecoregions/ecoregion_list/, accessed in October 2015.

d) Consultations: 7 desk reviews received. The mission was only able to meet separately with representatives of the three nominating State Parties as no joint discussions were deemed feasible by the State Parties, regarding the transnational property as a

whole. In Kyrgyzstan the mission met with the National Commission for UNESCO, State Agency of Environment Protection and Forestry, staff of Padysha-Ata State Nature Reserve and the Sary-Chelek State Biosphere Nature Reserve; as well as the local community in Sary-Chelek. In Kazakhstan meetings were held with the staff of Aksu-Jabagly and Karatau State Nature Reserves; Sairam-Ugam State National Nature Park; and representatives of the Akimat regional authority. In Uzbekistan the mission met with the State Committee on Nature Protection; State Biocontrol Inspection authority; State Museum of Geology; UNESCO Tashkent office; the National Commission for UNESCO; staff of Chatkal State Biosphere Nature Reserve; and representatives of the Tashkent regional municipality.

e) Field Visit: Kyung Sik Woo and Elena Osipova, 12-23 August 2015

f) Date of IUCN approval of this report: April 2016

2. SUMMARY OF NATURAL VALUES

The nominated property, Western Tien-Shan (WTS) is a transnational serial nomination, lying within the Republics of Kazakhstan, Kyrgyzstan and Uzbekistan. IUCN recalls its 2013 evaluation of the Xinjiang Tianshan nomination from China, a property which was subsequently inscribed onto the World Heritage List under natural criteria (vii) and (x). The WTS, like Xinjiang Tianshan, also lies within Central Asia's Tianshan Mountain system, one of the seven largest mountain ranges in the world. The range is aligned almost east-west, with a total length of 2,500km and

extends from the eastern Xingxingxia Gobi in Hami, Xinjiang to the western Kyzylkum Desert in Uzbekistan, encompassing the four countries of China, Kazakhstan, Uzbekistan and Kyrgyzstan. Together with the Altai Mountains in the north, the Kunlun Mountains in the south and the Pamir in the west, the Tianshan makes up the mountainous backbone of Central Asia. It is the largest mountain chain in the world's temperate arid region, and is also the largest isolated east-west stretching mountain range globally. Trans-meridionally, it can be divided into the eastern Tianshan Mountains in China and the western Tianshan Mountains in Kazakhstan, Uzbekistan and Kyrgyzstan.

The nomination dossier indicates the property consists of 13 component parts drawn from seven protected areas. The seven protected areas include in Kazakhstan: Karatau State Nature Reserve (SNR); Aksu-Jabagly SNR - 3 components; and Sairam-Ugam State National Nature Park (SNNP) - 3 components; in Kyrgyzstan Sary-Chelek State Biosphere Nature Reserve (SBNR); Besh-Aral SNR - 2 components; and Padysha-Ata SNR; and finally in Uzbekistan the Chatkal SBNR - 2 components. The component parts of the transnational serial nomination and their areas are detailed in Table 1. Only some areas have designated buffer zones. IUCN notes that the configuration of this serial nomination is complex and in some areas confusing. There are some discrepancies in the reported number of components regarding the configuration of areas for Kazakhstan, in particular the Irsu-Daubabin component of the Sairam-Ugam SNNP which appears is mapped as two different areas with the protected area.

State Party	Protected Area	Component	Nominated Area (ha)	Buffer Zone (ha)
Kazakhstan	Karatau SNR		34,300	17,490
	Aksu-Jabagly SNR	Aksu-Jabagly SNR - main part	131,704	25,800
		Aksu-Jabagly SNR - Karabastau paleontological area	100	
		Aksu-Jabagly SNR - Aulie paleontological area	130	
	Sairam-Ugam SNNP	Sairam-Ugam SNNP - Boraldaitau area	26,971	4,900
		Sairam-Ugam SNNP - Irsu-Daubabin area	45,509	8,200
		Sairam-Ugam SNNP - Sairam-Ugam area	76,573	13,900
Sub total		315,287	70,290	
Kyrgyzstan	Sary-Chelek SBNR		23,868	18,080
	Besh-Aral SNR	Besh-Aral SNR - main part	112,018	
		Besh-Aral SNR - Shandalash area	25,270	
	Padysha-Ata SNR		16,010.6	14,545.8
Sub total		177,166.6	32,625.8	
Uzbekistan	Chatkal SBNR	Chatkal SBNR - Maidantal area	24,706	
		Chatkal SBNR - Bashkizilsay area	11,018	
Sub total		35,724		
Total			528,177.6	102,915.8

Table 1 Configuration of the Western Tien-Shan nominated property

The region experiences a distinct continental climate with cold, snowy winters contrasting with hot, dry summers. The climatic conditions are further modified by the mountainous terrain which creates microclimates and pronounced vertical zonality in the climate and ecology. The WTS across its various

components ranges in altitude from 700 to 4,503 m above sea level.

Even though the proposed property is nominated as the 'Western Tien-Shan', geographically implying the western part of the Tianshan mountain range, the nominated areas encompass two parts of totally

different geological origin, namely the Tianshan Mountains and the Karatau Mountains. The property has a very complex geological structure as it is situated at the junction of two structural and formational zones: North Tian-shan and Karatau-Naryn. The modern Tianshan Mountains are considered to be of relatively younger age compared to the Karatau Mountains and the clear geological distinctions between the two regions has provided different landforms and ecological characteristics.

Geologically the Tian-shan Mountains are composed of Proterozoic crystalline gneisses and sedimentary rocks of Paleozoic origin (Silurian, Devonian and Carboniferous periods). An especially thick Carboniferous limestone sequence contains numerous shallow marine invertebrate fossils for each period (and some vertebrates for some later periods). The Karatau Mountains include Paleozoic carbonaceous sedimentary rocks and Mesozoic to Cenozoic sand and shale deposits at the foot of hills. In the two smaller paleontologically focused component parts of the nominated property the shale contains numerous Jurassic plant and animal fossils. More than 60 species of plants, 100 species of insects and molluscs, crustaceans, turtles and fishes have been reported from past excavations. The dossier does not provide a complete list of fossils excavated from the nominated property in Aksu-Jabagly SNR or the findings of paleontological research undertaken over the past decade. Despite the reports from past excavations, IUCN's field mission noted limited fossil interest evident in the field. The mission was informed that all the excavated fossils are stored in a museum in St. Petersburg. It was thus not possible to confirm the fossil values in these components, either on-site or within stored collections. In the majority of the component parts of the property, there is limited comparable geological conservation interest, and these components are not presented as relevant to the consideration of criterion (viii).

In terms of species and ecosystems, the WTS includes a wide variety of landscapes which, in turn, support an exceptionally rich biodiversity including numerous endemic species. The region is characterized by a high diversity of plant communities in different species assemblages, including a combination of different types of coniferous and deciduous forests, some in combination with wild fruit tree species. A number of critically endangered plant species also occur in the property, such as Knorringiana Hawthorn (*Crataegus knorringiana*) and Karatau Honeysuckle (*Lonicera karataviensis*). Very high plant species endemism is particularly characteristic for Karatau SNR (61 endemic genera of angiosperms).

The Western Tien-Shan region is one of 12 global centres of origin for nut, fruit, and many cultivated plants of importance to agrobiodiversity (38 important agricultural crops). Over 20% of the world's cereals, vegetable and spice plants, and 90% of the major temperate-zone fruit crops are found in this region. The wild fruit and nut forests of Western Tien-Shan are considered to be an important genetic resource for the development of future strains of pest and disease

resistant domestic fruit and nut species. Many domesticated plant species, particularly fruit and nut plants are reported for the nominated property. Several are listed on national level Red Lists and some on the IUCN Red List, a number of which are considered globally threatened: Siverse's Apple (*Malus sieversii*, VU), Nedzvetsky's Apple (*Malus niedzwetzkyana*, EN) and Wild Apricot (*Armeniaca vulgaris*, EN). Other listed species include Pistachio (*Pistacia vera*, NT), Wild Grape (*Vitisvinifera*, LC), Hawthorn (*Crataegus pontica*, LC), Walnut (*Juglans regia*, NT), Plum (*Prunus sogdiana*, NE) and Regel's Pear (*Purus regelii*, NE). The walnut-fruit forests of the region are considered to be the largest forest of this type in the world. Of particular interest is the Siverse's Apple tree which of all wild apple species is considered the progenitor of today's variety of apples.

The vertebrate biodiversity found in the region of Western Tien Shan includes 61 species of mammals, 316 species of birds, 17 species of reptiles, 3 species of amphibians and more than 20 fish species, and almost all of these species are reported as occurring in the area of the nominated property. This region is also internationally important because of a number of globally threatened faunal species. These include several bird species mentioned in the nomination file, including Eastern Imperial Eagle (*Aquila heliaca*, VU), Great Bustard (*Otis tarda*, VU), Pale-backed Pigeon (*Columba eversmanni*, VU), Saker Falcon (*Falco cherrug*, EN) and Egyptian Vulture (*Neophron percnopterus*, EN). Threatened mammals include Dhole (*Cuon alpinus*, EN), Menzbier's Marmot (*Marmota menzbieri*, VU), Snow Leopard (*Panthera uncia*, EN) and the European Marbled Polecat (*Vormela peregusna*, VU).

IUCN notes that for many of the specific attributes outlined above it is difficult to assess with certainty that they occur within the component parts of the nominated property. The nomination appears to have been constructed with separate technical input from each nominating State Party and while the dossier presents extensive information on each of the components, consolidated information for the entire property is lacking. For example figures for species numbers are given separately for each component and it is not always clear how much overlap there is and thus what the total species figures would be for the entire nominated property. Information provided in response to IUCN's requests provides some additional breakdown of endemic and threatened species for the component parts, however, the species numbers are not consistent with information held by UNEP-WCMC and it is still not clear what overlap exists between the species complements for each component. There are many gaps in biodiversity data in this region.

3. COMPARISONS WITH OTHER AREAS

The WTS is nominated in relation to criteria (viii) and (x). At the outset this choice of criteria appears, at least in part, to be driven by an inappropriate interpretation of complementarity with the Xinjiang Tianshan property, inscribed in the eastern part of the

range in China. The nomination file indicates that “given that the East Tien-Shan site was nominated by criteria vii and ix, it seems reasonable to nominate Western Tien-Shan by criteria viii and x”. This does not represent an approach that is rooted in the actual values of the nominated area, which do include values that could be relevant under other natural criteria, and in general the justification for both criteria (viii) and (x) seems weak as currently presented. Despite the high similarity in both flora and fauna with Xinjiang Tianshan, the nomination does not reflect in any depth on how the values of WTS compare and contrast with those of the site in China nor how the serial configuration collectively corresponds to any of the natural criteria. While stating that all components “are the most representative for this geographical unit in every country”, the nomination dossier does not elaborate in any detail as to how each contributes to the property’s potential Outstanding Universal Value, or how they have been selected. In supplementary information the States Parties have indicated a reconsideration of the criteria under which they wish to nominate the property namely criteria (vii), (ix) and (x). The States Parties have also indicated a willingness to adjust the design and boundaries of the nominated property. IUCN welcomes this review. The below evaluation drawing upon the field mission and other inputs has considered criteria (viii) and (x) and the site boundaries as originally nominated, and provides a basis to further consider with the States Parties a revised approach to a nomination.

The nomination dossier includes a limited and somewhat superficial comparative analysis which for criterion (viii) compares the WTS to 15 other World Heritage Sites inscribed for their fossil values. This analysis concludes that the Dorset and East Devon Coast (UK) presents the closest comparison as it also protects Jurassic period fossils. It concludes by noting the complementarity of the WTS (the two small components within Aksu-Jabagly SNR in Kazakhstan which protect paleontological sites) to the UK site arguing that WTS contains a greater diversity of insect fossils endemic to the property and a different assemblage of fossilized vertebrate species. The nomination notes that compared with the WTS there is “no other place in the world with such a rich and interesting burial of Mesozoic insects”. The two components certainly are known internationally for their significant insect fossils, which is an exceptional example. However IUCN notes that this would be a narrow basis for considering the application of criterion (viii) and that the values for which the Dorset and East Devon Coast are inscribed embrace a wider range of values across the Mesozoic, including a significant record of insects that are subject to ongoing research, but also the significant range of marine vertebrate and other marine fossil sites, across a much larger window of time than the nominated property, and with much greater diversity and international contributions to geoscience.

The nomination’s comparative analysis did not analyse the site in terms of IUCN’s ten point framework for the assessment of fossil site nominations, but in the view of IUCN such an analysis would not show a strong

case for inscription under criterion (viii), and further notes the fundamental point that the application of criterion (viii) only relates to a small number of the component parts of the series, with the large majority of the nomination not providing any clear set of reasons to justify application of this criterion. Therefore, despite the abundant fossil record of the two of the nominated components, IUCN concludes that the WTS does not make a case for meeting criterion (viii). In the most recent information from the States Parties, it is implied that a revised proposal would not include a nomination in relation to criterion (viii).

Concerning criterion (x) the nomination’s comparative analysis looks at eight other sites in the region it describes as the Central Asian Highlands. Comparisons are made with several other mountain systems including Xinjiang Tianshan (China), Tajik National Park (Tajikistan), Golden Mountains of Altai (Russia) and Uvs Nuur Basin (Russia/Mongolia). It concludes that many of the values of the WTS are similar yet distinctive and so complement other sites, for example in providing additional habitat for some globally threatened species with wide habitat ranges such as Snow Leopard. The analysis emphasizes the importance of the WTS as a centre of origin for cultivated plants. The strongest comparisons (despite the differences in selected criteria) are logically made with Xinjiang Tianshan in China, concluding on a number of similarities but drawing several valid distinctions between these properties which are in the same Pamir-Tien-Shan Highlands biogeographic province. More analysis is however needed to appreciate the degree of complementarity with Xinjiang Tianshan in areas such as species richness; degree of endemism; and habitat needs for shared threatened species including issues of range connectivity. Supplementary analysis by the nominating States Parties has considered a number of other protected areas in this region (three additional areas in Kazakhstan and one in Uzbekistan). A table giving simplified comparisons was made across ecosystems, biodiversity (endemic and threatened species), overlap with biodiversity prioritising systems and ‘picturesqueness’ of the landscapes. Additional analysis was provided on integrity and protection and management aspects. This additional analysis provides some further insights however is a preliminary and superficial assessment related to the State Parties’ stated intentions to improve the justification of Outstanding Universal Value, reconfigure the site boundaries and proposed criteria in the short term (March-April 2016).

Additional assessment with the support of UNEP-WCMC indicates the potential of this region (but not necessarily the current selection of component parts) to demonstrate globally significant biodiversity values. This is a view consistent with IUCN’s 2013 evaluation of Xinjiang Tianshan which advocated a transnational serial approach along the extent of the Tianshan Mountain range. The nominated property is situated in three ecoregions, two of which are not yet represented on the World Heritage List: Alai-Western Tian Shan Steppe and Gissaro-Alai Open Woodlands.

Furthermore WTS belongs to the biodiversity hotspot Mountains of Central Asia; the terrestrial priority ecoregion Middle Asian Montane Woodlands; and the Steppe and Mountains of Middle Asia Centre for Plant Diversity, all of which are represented by only two existing sites on the List: Tajik National Park (Tajikistan) and Xinjiang Tianshan (China). WCMC conclude that the WTS region could constitute one of the most species rich sites in the Pamir-Tien-Shan Highlands province. It has been estimated that close to half of the species recorded within the region are endemic to Middle Asia. WTS hosts some globally threatened species and is also renowned for its Wild Sheep, with important populations of the Near Threatened Argali Sheep. The nominated property also overlaps with three Important Bird Areas (IBAs): Aksu- Dzhabagly State Nature Reserve, Kenshektau Mountains and the Bashkizylsay Unit of the Chatkal Mountains Biosphere Reserve.

Central Asia has been flagged as one of two major areas of the world where only a few World Heritage sites exist and as a priority for nomination. The Chatkalsy SNR component of the nominated property was noted in IUCN's 1982 analysis of areas for World Heritage potential, and Aksu-Jabagly SNR, another component of the property, is a mountain protected area that has been suggested within IUCN's 2002 Mountains Thematic Study as having potential to be nominated to the List. Part of this protected area also ranks highly in terms of global analysis of irreplaceable areas for species conservation.

In conclusion UNEP-WCMC's spatial analyses and literature review indicate that the biodiversity which characterizes the WTS region is potentially of global significance under both biodiversity criteria and the region clearly offers potential for complementary values to those of the Eastern Tianshan. Supplementary information provided by the State Party reinforces this view and indicates an intention by the three nominating States Parties to redesign and re-nominate the property under an adjusted set of criteria. IUCN welcomes the opportunity to revisit, within a sufficient timeframe, the justification and site configuration thus ensuring that the best serial configuration is proposed to complement the values of the Xinjiang Tianshan World Heritage property in China.

In summary, the property as currently nominated does not make a compelling case for meeting World Heritage criteria, but a reconfigured approach may have potential to do so, in particular in relation to criteria (ix) and (x).

4. INTEGRITY, PROTECTION AND MANAGEMENT

4.1. Protection

The majority of the nominated property is state owned across all three countries. In Kazakhstan all areas are under government ownership, except for 13.2 ha of private property in the area of limited economic activity in Sairam-Ugam SNNP. The areas of the buffer zones

are also state property. With the exception of the smaller paleontological areas certain activities are allowed in the buffer zones, including agriculture. In Kyrgyzstan all components are state property. In Sary-Chelek SBNR there is one settlement (Arkit) within the buffer zone. In Uzbekistan the concerned components are also under state ownership.

Each component protected areas have, individually, an adequate protection status under relevant national legislation. All the protected areas except Sairam-Ugam National Park (IUCN category II) are strict nature reserves (considered equivalent to IUCN category Ia) and all have a functioning management system. However, transboundary cooperation, which is required as an essential aspect of any serial nomination, is currently substantially absent across the series, and at no point in the evaluation was IUCN able to engage with all the three responsible authorities in a joint discussion of the nomination. The nomination provides no analysis of how protection will be coordinated to guarantee consistency of the protective regime for the nominated property as a whole. In conclusion protection and management of individual components of the nominated property appears adequate; however, there is no joint transboundary protection and framework yet in place for the entire nominated property (see also comments below under management).

Despite concerns regarding the inadequacy of transboundary cooperation and an overarching management framework, IUCN considers that the protection status of the nominated property meets the requirements of the Operational Guidelines.

4.2 Boundaries

The boundaries of the property as nominated are inadequate for reasons discussed below, and concerns on this were relayed to the States Parties via IUCN's letter of 16 December 2015. Of fundamental concern is the lack of a convincing values-based rationale to underpin the selection of component parts which make up the nominated property. The supplementary information received provides some further justification as to the choice of components within the three countries based upon ecological values, integrity and protection levels. It also confirms that the States Parties acknowledge the need to make boundary adjustments with respect to the removal of certain zones and newly proposed criteria.

The boundaries of the various protected areas which make up the nominated property are conceived on a variety of different rationales. A number of the components of the protected areas in Kazakhstan do not have boundaries which are based on ecological principles or which follow natural features such as contours or watercourses: for example Karatau SNR and parts of Sairam-Ugam SNNP. The configuration of the Irsu-Daubabin area within Sairam-Ugam SNNP is particularly confusing and was not able to be clarified by the field mission despite many requests. Here there appears to be an isolated area in the east and a large section within the property which is excluded.

In addition the components have differing approaches to buffer zones, including whether these are provided or not. Where they do exist they are of uniform width and do not appear to follow any ecological rationale which draws into question their effectiveness in protecting critical natural values. Two components (Besh-Aral SNR, consisting of two clusters and Chatkal SBNR, also consisting of two clusters) do not have buffer zones. In the case of Besh-Aral no explanation was provided to the mission on the reason why it does not have a buffer zone; however it may be that it is a very remote area with no human disturbance and therefore a buffer zone was not considered necessary. The boundary of the nominated site in Besh-Aral SNR in Kyrgyzstan follows the state boundary with Uzbekistan. As for Chatkal SBNR, it was explained to the mission that the two clusters of the nature reserve are located completely within a national park which serves as a *de facto* buffer zone. The Uzbekistan authorities were unable to provide a map showing the location of the nominated components within the national park which could have helped to clarify the situation. IUCN is concerned at the approach to define buffer zones by excision of a protected area.

Aside from issues with the boundaries of the component parts and buffer zones, there are concerns with respect to how the zoning systems within the protected areas operate and if they provide appropriate levels of protection to key values. The maps annexed to the dossier lack information on different zones within the component protected areas and the mission was unable to review consistent mapping across the property. As noted for the Sairam-Ugam component, this is critical as a part of the national park is an excision. Supplementary information provides a table showing the zones and areas within Sairam-Ugam SNNP and proposes a further exclusion of some 80,339 ha covering the 'tourism and recreation' and 'limited economic use' zones. Maps were not provided with this supplementary information to be able to clarify these boundaries, however they are reported as in preparation.

For the nominated components under criterion (viii) in Aksu-Jabagly SNR (which are not physically connected to the main area of the nature reserve), the adequacy of boundaries cannot be assessed, due to the lack of information on the localities of previous fossil sites excavated. The size of the nominated components results from the boundary of the nature reserve, and is not necessarily based upon the fossil occurrences, which could arguably be more extensive than the protected area.

The value of the nominated property as habitat for large range species such as Snow Leopard is compromised by its lack of continuity of the serial nomination. No information on the provision of connectivity between the components has been provided in the nomination, nor in the additional information. This would be a crucial issue to consider in a revised nomination related to biodiversity. Other concerns include that the most critical habitat for the

endemic Menzbier's Marmot is also excluded from the territory of one of the components (Sairam-Ugam SNNP) where an enclave area within the national park does not belong to the national park and is used for grazing.

In conclusion the nomination and supplementary information remain inconclusive as to the manner in which the serial property is configured to protect the most important areas with regards to the proposed biodiversity values and how they complement each other in demonstrating Outstanding Universal Value, and confirms that there are a large number of matters concerning the configuration of component parts, buffer zones and connectivity that require a substantial amendment to the nomination, in order to meet the integrity requirements of the World Heritage Convention.

IUCN considers that the boundaries of the nominated property do not meet the requirements of the Operational Guidelines.

4.3 Management

All component parts of the property individually appear to be managed adequately and have sufficient staff capacity to address existing threats, such as poaching, illegal logging and grazing, even though capacity could always be increased. Since almost all components are either strict nature reserves (IUCN Category Ia) or, in one case, a national park (IUCN Category II) they are subject to a specific management regime which is geared to ensuring protection. In Kazakhstan the responsible management authority is an authorised state executive body – the Committee of Forestry and Wildlife at the Ministry of Agriculture. In Kyrgyzstan management authority rests with the State Agency on Environment Protection and Forestry. In Uzbekistan the Chatkal SBNR is a protected area of national importance and managed under the regional authority, Tashkent Regional Khokimiat.

Two nominated components for criterion (viii) in Aksu-Jabagly SNR were reportedly excavated for fossils in connection with research carried out in the 1960s. All the fossils excavated during the period have been stored in St. Petersburg Museum. According to information received by the mission from local residents, no scientist has visited the sites in the past 20 years. Whilst noting the advice from the States Parties that the property will not be reconsidered under criterion (viii), the mission noted the lack of recent research and/or monitoring of the fossil values and raised questions about how management capacity would be re-established to ensure active protection.

With respect to general management all park managers carry out routine monitoring, for example for fire, visitors, etc. Clearer monitoring indicators are needed for the protection of ecosystems, biodiversity, threatened species and geodiversity.

On the level of the whole tri-national transboundary property, as noted above, there is no evidence of joint management arrangements being in place at site level.

During the mission, representatives of the respective state level agencies in Kyrgyzstan and Uzbekistan expressed their readiness to start exploring options of establishing some kind of joint management system. IUCN welcomes the advice in supplementary information that a Memorandum of Agreement between the three countries is under development, however, at the time of this evaluation report only Kazakhstan had signed the agreement (as transmitted in the supplementary information) and there is very limited integrated management across the serial property as a whole.

All component parts have their own management plans and their own monitoring systems; however, there is currently no common monitoring system. From the discussions with the staff of the component protected areas it became clear that there has to date been little consideration of the implications of World Heritage and that considerable further work is needed to consider how sites could be managed, for example in terms of monitoring of the values for the series as a whole, awareness raising and education programmes focused on the Outstanding Universal Value.

All component protected areas appear to have relatively adequate budgets, however, no additional budget is currently foreseen for the joint management system of the whole transboundary nominated property. Staffing levels are variable with a reported 233 staff across the three protected areas in Kazakhstan; 92 staff are reported for the Chatkal SBNR in Uzbekistan; and 142 staff are noted for the three protected areas in Kyrgyzstan. All areas appear to have appropriately qualified technical staff.

Tourism use of the property is currently modest. Most visitor centres have limited displays on the biodiversity and geoheritage values of the nominated areas, an area that would require attention and investment.

While protection and management of individual components of the nominated property appears adequate, joint transboundary management framework for the entire nominated property is currently lacking and IUCN considers the management of the nominated property does not meet the requirements of the Operational Guidelines.

4.4 Community

All component protected areas within the nominated property are state owned (with the exception of some small privately owned areas). They are generally subject to high level of protection with restrictions on access, since most of them are strict nature reserves. One exception is Sairam Ugam whose status as a national park implies lower level of protection and which also has significant integrity issues discussed elsewhere in the report. Certain types of use, such as hay production and berries collection for local use, appear to be allowed in some parts of some of the components; however, full information on these matters is not available, though it was requested during the evaluation mission. For example the components within Kazakhstan are located in a region

of high population density but population pressure in areas adjacent to the protected areas is relative low. The areas surrounding Chatkal SBNR are also subject to high population densities. Interactions with local people have usually centred on natural resource use (grazing, hay-making, logging, poaching and other harvesting). There is little evidence of participatory management engaging local people.

Overall, the nomination process appears to have had minimal impact on the local communities, over and above the current operation of the protected areas. It can be also assumed that inscription of the property will have little impact as the relationship between local communities and the component protected areas will continue as they are.

4.5 Threats

A number of components of the nominated property have suffered from intensive use (grazing, logging, hay collection) in the past before they were protected, but the areas have been recovering since the establishment of protected areas. This is the case in the following components:

- Karatau SNR which suffered from extensive logging and grazing in the 1990s. The nature reserve was created in 2004.
- Sairam-Ugam SNNP was created in 2006 only.
- Sary-Chelek SBNR and Padysha-Ata SNR (created in 2003) were also subject to logging in the past.
- Grazing occurred in some parts of Besh-Aral SNR in the past.

Some of the most significant elements of the nominated property have been severely impacted by past use, such as the Siverse's Apple forest stands which are now restricted to small separated patches. Despite this the protected areas in general appear to have substantially retained their values. Aksu-Jabagly SNR (Kazakhstan), established in 1926 is the oldest nature reserve in Central Asia and one of the best preserved areas in the region.

Grazing still represents an ongoing management issue in some areas, e.g. in the Chatkal component in Uzbekistan which as noted above is located in a more densely populated region. Cattle were observed by the mission on the boundaries of the component and the impacts of grazing could be observed within it. Chatkal SBNR also suffers from a range of invasive plant species. In all three Kazakh components, illegal grazing also occurs within the protected areas. In Sairam-Ugam SNNP there is an area located completely within the national park, but excluded from its territory, which is used for grazing. Moreover, since it is an enclave, the access to the area is only possible through the territory of the national park. This area is a critical habitat for the endemic Menzbier's Marmot.

Hay collection is permitted in some components within special use zones, but as described above the exact zonation of all components is not clear. Illegal hay collection and poaching most likely also occurs in many areas. According to the nomination dossier,

Argali, Siberian Ibex (LC), Wild Boar (LC), Bear, Badger and Porcupine are being targeted by poaching in the Kazakh components of the property. Little information is available on poaching in other components. No current threat to fossil values is present in the nominated components under criterion (viii) in Aksu-Jabagly SNR.

Visitor numbers in most of the components are currently low and, since most of the components are strict nature reserves, visitation is limited to very restricted areas and is only allowed by permit. In Kazakhstan only the Sairam-Ugam SNNP is open to visitors and numbers are strictly controlled. The three protected areas in Kyrgyzstan are closed to the public however some limited access is permitted to the Sary-Chelek SBNR. A limited number of visitors and outside researchers are allowed to work in the Chatkal SBNR in Uzbekistan. It is noted that many of the property's component parts are surrounded by areas of high population density suggesting the potential for significantly increased tourism demand in the event of World Heritage status being granted. This should be considered and management measures prepared.

In conclusion IUCN considers that the integrity and protection and management requirements of the Operational Guidelines are not met by the nomination at the present time, and significant further work is required in this regard.

5. ADDITIONAL COMMENTS

5.1 Justification to serial approach

When IUCN evaluates a nomination of a serial World Heritage property, it asks the following questions:

a) What is the justification for the serial approach?

While the serial approach can be justified in principle, in relation to biodiversity criteria, by the idea of including the most representative areas of unique biodiversity of Western Tien-Shan, neither the nomination dossier nor the discussions held during the mission give enough clarity about why exactly these components have been selected in each country and how they complement each other. The supplementary information contends that the components provide the best preserved and well managed protected areas in the region.

Nevertheless it remains unclear how the values of the different components complement each other to convey an overall story for the vast Western Tien-Shan (and the relationships to other parts of the Tien Shan range). More analysis of biodiversity such as the species overlaps between the components is needed to fully justify the serial approach. As was noted in IUCN's evaluation of the Xinjiang Tianshan (China) there are significant differences in physical geography and biological features in different parts of the Western Tien-Shan and no single component can completely represent Outstanding Universal Value. IUCN welcomes the intention of the State Parties to revisit the site's value arguments, choice of criteria and site

configuration, and stands ready to support the selection of components which represent a spectrum of diverse landform types and biological values which together make the case for Outstanding Universal Value.

The areas of potential significance under criterion (viii) include only two small paleontological sites in Kazakhstan which are officially part of the Aksu-Jabagly SNR, but are separated from the main reserve area. They are otherwise not connected to the rest of the nominated property and there are no other areas within the nominated property where globally significant geological values in the Tianshan Mountains are noted, thus for criterion (viii) the serial approach has not been justified.

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

The functional linkages between the component parts of this site as nominated are unclear and there is not yet in place a convincing case made that each of the components contributes to a coherent series representing the outstanding values of the Western Tien-Shan (and possibly the Central Tien-Shan) that complements other parts of the extensive Tianshan Range.

The components of the nominated property are sometimes separated by significant distance. However, since many of them are located in the remote inaccessible mountain areas, natural corridors for wildlife movement in those areas are probably not affected by any human disturbance. Karatau SNR is located quite far away from the rest of the nominated components and it also differs from the rest in terms of its vegetation types and fauna as it is situated in the much older Karatau mountain ridge. This area also displays very high levels of endemism with high numbers of endemic species and it is debated whether it is technically part of the Tien-Shan Mountains, or not.

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

As noted above, there is not yet in place a convincing transboundary management framework for the entire nominated property, nor a joint management system for nominated components in each country. The development of a tripartite Memorandum of Agreement is a very positive step however this has not yet been signed by the State parties of Uzbekistan or Kyrgyzstan and the instrument is a high level agreement of only 3 pages which lacks any technical detail.

5.2 Potential to meet other criteria

Noting the States Parties' advice that this property will be re-nominated under criteria (vii), (ix), and (x), it is important to recall that the comparative analysis indicates that the WTS region has the potential to meet criterion (ix) in relation to the variety of different types of forests and combinations of plant communities,

including the wild fruit species, that are of particular interest. The nominated property is situated in three ecoregions, two of which are not yet represented on the World Heritage List, as well as coinciding with a number of biodiversity priority ecoregions and centres of diversity. IUCN also notes that the Tentative List of Kazakhstan also includes other sites in the Tian Shan range that are not considered in the nomination, and considers these should be evaluated as part of an assessment of the overall potential to reconsider the nomination.

6. APPLICATION OF CRITERIA

The **Western Tien-Shan** has been nominated under natural criteria (viii) and (x).

Criterion (viii): Earth history and geological processes

The nomination under this criterion relates to the fossil site component parts within the nomination, that record a variety of abundant fossils such as insects, other invertebrates and some vertebrates. The two nominated component areas display very little evidence of this diversity in the field with only a few kinds of calcareous invertebrate fossils observed. Many fossils were removed from the site and there is little evidence of recent scientific interest as the most recent research dates from the 1960s and 1970s. The site potentially exhibits well-preserved fossil accumulations of high species diversity, and includes invertebrate as well as vertebrate assemblages. However the nominated areas fail to demonstrate how they inform the iconography of a tree of life, illustrate any major chapter of the story for the Jurassic Period or present Phanerozoic history in terms of communities and/or stages in the evolution of major groups. The nomination cannot be representative in time and space of both community structure and selected phylogenetic lineages. Fundamentally, the large majority of component parts do not contribute attributes relevant to this criterion, and thus the approach to recognising these values through the series is fundamentally flawed.

IUCN considers that the nominated property does not meet this criterion.

Criterion (x): Biodiversity and threatened species

The biodiversity that characterizes the region within which the nominated serial property is located appears to be of global significance with potential to meet biodiversity criteria. The Western Tien-Shan Region is globally important as the centre of origin of a number of cultivated fruit species as is its high diversity of different types of forests and unique combinations of plant communities. The region also overlaps with several underrepresented biogeographic regions and coincides with a number of globally important ecoregional priorities and centres of diversity. Situated in Central Asia, the nominated property is also within a region identified as a priority gap on the World Heritage List. WTS could constitute one of the most species rich sites in the Pamir-Tien-Shan Highlands province and it has been estimated that close to half of

the species recorded within the region are endemic to Middle Asia. WTS hosts some globally threatened species such as Snow Leopard and is also renowned for its Wild Sheep, with important populations of the Near Threatened Argali. The Menzbier's Marmot is an endemic species found only in Western Tien-Shan and of the nominated components only in Sairam-Ugam National Park in Kazakhstan. However, this component suffers from serious integrity issues and the most critical habitat for the Menzbier's Marmot is excluded from the territory of the protected area as it is used for grazing.

While most reviewers consider that the region of the Western Tien-Shan nominated property holds potential for Outstanding Universal Value, the lack of informative and convincing analysis on biodiversity, a confusing site configuration and a weak justification for the serial approach combine to mean the present nomination is not able to meet criterion (x). In addition neither integrity, nor protection and management requirements are met.

IUCN considers that the nominated property does not meet this criterion, however, a significantly revised configuration of areas within the Western (and possibly central) Tien-Shan area has potential to meet either, or both, criteria (ix) and (x).

7. RECOMMENDATIONS

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

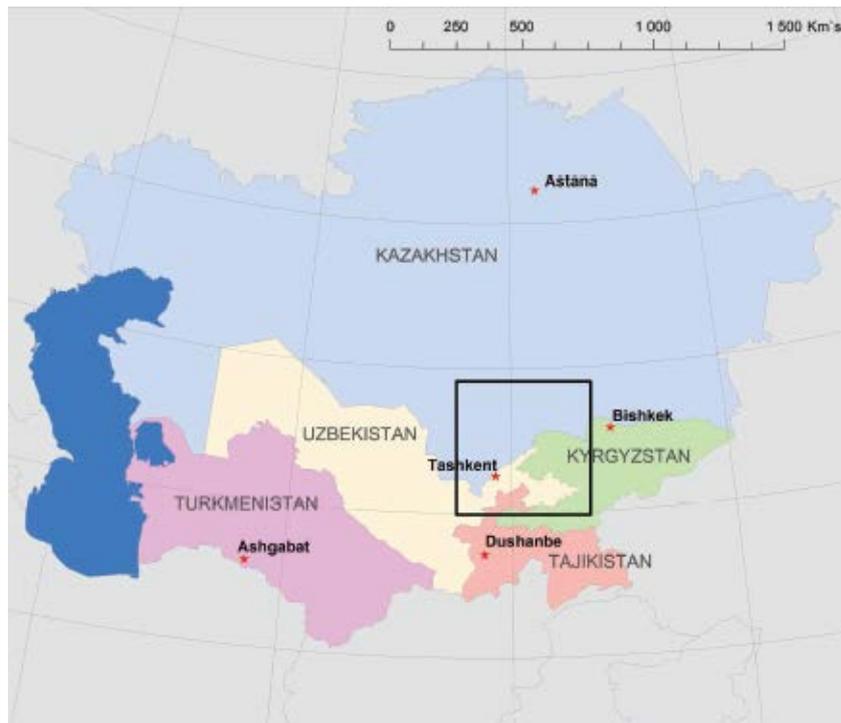
The World Heritage Committee,

1. Having examined Documents WHC/16/40.COM/8B and WHC/16/40.COM/INF.8B2;
2. Defers the nomination of **Western Tien-Shan (Kazakhstan, Kyrgyzstan, Uzbekistan)** in order to allow the States Parties, with the support of the World Heritage Centre and IUCN if requested, to prepare a new and significantly revised nomination that would be based on the following actions:
 - a) undertake a more in depth analysis of the natural values of the wider Tien-Shan Mountain Region, with respect to the potential to demonstrate Outstanding Universal Value, including consideration of existing World Heritage listings in the region and all relevant sites on national Tentative Lists, and reconsider fully the criteria that would best represent this potential;
 - b) based on the abovementioned analysis and the possible adoption of revised criteria, undertake a rigorous selection of component parts that would provide a convincing and clearly argued serial configuration to a new nomination;
 - c) ensure clear, consistent and ecologically based boundary mapping of the component parts and buffer zones of new nomination;
 - d) finalize sign-off of a tripartite Memorandum for management of the revised nomination between the States Parties of Kazakhstan, Kyrgyzstan

- e) and Uzbekistan, and include specific targets and timelines that would strengthen cooperation at field operational and technical levels;
- f) prepare a management framework for the new nomination, which details, at an appropriate level, integrated protection and management measures, which can be implemented through the respective national level policy and planning processes, and is fully connected to the protection and management plans for each of the selected component parts.

3. Commends the States Parties for the efforts to date towards transnational cooperation and encourages them to deepen further this cooperation in revising the nomination, and in the areas of protection and management capacity and coordination necessary to support a revised serial nomination.

Map 1: Location of the nominated property in Central Asia



Map 2: Nominated property (13 components in 7 Protected Areas) and buffer zone

