IUCN Conservation Outlook Assessment 2017 **(archived)**

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Landscapes of Dauria

SITE INFORMATION

Country:
Mongolia, Russian Federation
Inscribed in: 2017
Criteria:
(ix) (x)

Site description:

Shared between Mongolia and the Russian Federation, this site is an outstanding example of the Daurian Steppe eco-region, which extends from eastern Mongolia into Russian Siberia and northeastern China. Cyclical climate changes, with distinct dry and wet periods lead to a wide diversity of species and ecosystems of global significance. The different types of steppe represented, such as grassland and forest, as well as lakes and wetlands serve as habitats for rare species of fauna, such as the White-naped crane and the Great Bustard, as well as millions of vulnerable, endangered or threatened migratory birds. It is also a critical site on the migration path for the Mongolian gazelle © UNESCO

SUMMARY

Conservation Outlook **Good with some concerns**

Conservation outlook for the Landscapes of Dauria WHS can generally be considered good with some concerns. The site's values are in a relatively good condition despite some existing threats. However, additional conservation measures are needed to preserve and maintain the site's values in the current form over the long-term. The management system is generally more efficient on the Russian side of the property, which is smaller, but seems to have greater pressures than the Mongolian side. The key issue with the Mongolian management system is insufficiency of resources, including finances, human resources, and equipment. Poaching is a serious threat, alongside spring hunting of birds, overgrazing, and fire. More effort is needed to address these threats successfully and minimize their impact on the site's values. There are other important threats to the property, such as unprotected powerlines that cause massive electrocution of birds on Mongolian side and border fence between China, Mongolia and Russia which disables free movement of the gazelles. With the global climate change in combination with already ongoing cyclic climate conditions, which determine the hydrological regime in the property and create harsh living conditions with ongoing adaption of species, in the long-term the property is about to experience even more severe conditions.

Current state and trend of VALUES

Low Concern
Trend: Stable

The Landscapes of Dauria World Heritage Site was inscribed on the World Heritage List in 2017 on the basis of criteria (ix) and (x). The sites values, as presented in this assessment, include: the mosaic of diverse ecosystems, including excellent example of the Daurian steppe, in which evolutionary processes are ongoing, threatened and migratory bird species, breeding grounds and migration route of the Mongolian Gazelle, and threatened and near-threatened mammals. Most of these values are in good condition and remain stable. Concerns, however, exist with regards to conservation status of some

threatened species, particularly the Tarbagan Marmot, due to ongoing pressures from poaching.

Overall THREATS

Low Threat

There are a number of threats that currently pose pressure to the World Heritage property. Primarily these include intensive grazing, frequent fire occurrence, poaching and uncontrolled hunting of birds, which could all potentially affect the integrity of the property if not managed well (World Heritage Committee, 2017). Nevertheless, the property is presently in good condition and not experiencing high human pressure. Apart from these main threats to the integrity of the property, there are a number of current threats that also need to be noted, including border fences between China and Mongolia, China and Russia, and Mongolia and Russia (in the vicinity of China) which affect the free movement of the Mongolian gazelles. Climate change is another threat that affects the property and, combined with fire and unsustainable grazing, influences the changes in the steppe. Potential threats to the property include mining and tourism development. The latter is extremely minor as currently hardly any visitor facilities exist in the property. Nevertheless, as plans for ecotourism development exist both in Daursky SNBR strategic plan in Russia, and in Dornod aimag Province development policy (2009-2016) in Mongolia (Natural Heritage Protection Fund, 2014; Strahm and Vasilijević, 2014), it should be noted that any tourism development has to be planned carefully. Mining is currently not occurring in the property, but is seen as a potential danger as it is allowed in protected area buffer zones in Mongolia, and even within SPAs with prior approval of the Ministry of Environment, Green Development and Tourism (Strahm and Vasilijević, 2014). As an assurance of absence of mining in the future, IUCN received a letter in June 2015, signed by the Deputy Minister of Environment, Green Development and Tourism of Mongolia, that guarantees no mining operations in the WH property and its buffer zone would occur (Daursky State Nature Biosphere Reserve et al., 2016). At time of nominating the property, the nomination dossier noted that mining operations had intensified in the areas of the then proposed (and now adopted) WH buffer zone near the soums of Gurvanzagal and Dashbalbar. However, there is no up to date information if these mining operations are active in 2017.

Overall PROTECTION and MANAGEMENT

Mostly Effective

Protection of the site is well assured by adequate legal mechanisms in both countries and enforcement of the legal framework seems to be effective, particularly on the Russian side which is better resourced than the Mongolian side. Inadequate funding on the Mongolian side of the property is reflected by under resourced SPA with no sufficient means for transport, research and monitoring and other activities. The total size of the property is 912,624 ha, while the buffer zone forms an additional 307,317 ha. The major part of the property (the remaining 602,115 ha) is composed of buffer zones of the Daursky SNBR and Mongol Daguur SPA, as designated under their national systems (Daursky State Nature Biosphere Reserve, 2016). Considering that the largest part of the property is formed by the buffer zones of Daursky SNBR and Mongol Daguur SPA, it is quite important how these buffer zones are managed. In Russia, Daursky SNBR has full control over its buffer zone management. However, in Mongolia, hay cutting, livestock grazing and farming in the SPA’s buffer zone are all under customary management with no involvement of Mongol Daguur SPA (which only controls hunting). It seems that more cooperation is needed to ensure the involvement of SPA’s staff in management of Mongol Daguur SPA buffer zone. Generally, relationship of parks’ staff with local communities seems to be satisfactory. There are various positive community conservation programmes which are in place with support from international organizations and local NGOs and some community training activities are also carried out.

FULL ASSESSMENT

Description of values

Values

World Heritage values

► **Mosaic of diverse ecosystems, including excellent example of the Daurian steppe, in which evolutionary processes are ongoing**
Criterion:(ix)

The Landscapes of Dauria World Heritage Site represents an outstanding example of the Daurian steppe ecosystem containing substantial and relatively undisturbed areas of different types of steppe, ranging from forest to grassland, as well as many lakes, wetlands and river floodplains (World Heritage Committee, 2017; Natural Heritage Protection Fund et al., 2014). It is considered as the transition region from northern circumboreal taiga forest biome to temperate continental grassland biome and ultimately to dry desert of Central Asia (Natural Heritage Protection Fund et al., 2014). The diversity of the transition-zone ecosystems and biotopes has been formed and continues to be altered under specific about 30-year long cyclic climate changes with distinct wet and dry periods (Natural Heritage Protection Fund et al., 2014). Cyclic climate variations that have led to ecosystem and high species diversity offer outstanding examples of ongoing evolutionary and ecological processes characterised by adaptation mechanisms developed by the biota (World Heritage Committee, 2017). In terms of the ecosystems, the main natural value of the property resides in its largely intact steppe (primarily grassland and also including areas of forest steppe in Ugtam Nature Reserve in Mongolia and a small area of the Daursky State Nature Biosphere Reserve (SNBR) south of Tsasucheysky Bor in the Russian Federation) interspersed with wet meadows and floodplains (World Heritage

Committee, 2017). Typical steppe vegetation is based on several species: Stipa krylovii, Cleistogenes squarrosa, Koeleria cristata, Agropyron cristatum, less frequently - Poa botryoides, a long rhizome grass species Leymus chinensis and rhizome sedge Carex durius¬cula (Natural Heritage Protection Fund et al., 2014). In different combinations, they form diverse associations. Meadow steppes are characteristic for mountain forest areas. The meadow steppes are represented by forbaceous, grass-forbaceous and tansy (Filifolium sibiricum) steppes, which are endemic of the Daurian region and steppes dominated with Leymus chinensis, which are characteristic for North-Mongolian plains (Natural Heritage Protection Fund et al., 2014). Forests that are characteristic for the property are pine forest consisting of endemic form of Scots Pine (Pinus sylvestris) known as the Krylov pine, birch (Betula manshurica) and shrubs (Rhododendron dahuricum, Spiraea media), birch forest with willow (Salix microstachya), larch forest (Larix sibirica) with a rich forb layer, and aspen forest (Populus tremula, P. suavolens) with shrubs (Spiraea flexuosa, Rhododendron dahuricum) (Daursky State Nature Biosphere Reserve et al., 2016).

► Threatened and migratory bird species

Criterion:(x)

The property conserves an excellent example of Daurian steppe and its characteristic bird species including a number of globally threatened bird species such as White-naped Crane (Antigone vipio) (VU), Hooded Crane (Grus monacha) (VU), Swan Goose (Anser cygnoid) (VU), Relict Gull (Larus relictus) (VU), Great Bustard (Otis tarda) (VU) and Saker Falcon (Falco cherrug) (EN) (World Heritage Committee, 2017). During the wet periods, the Torey lakes and adjacent areas are the nesting habitats for about 100,000 waterfowls and semi-aquatic bird species (Natural Heritage Protection Fund et al., 2014). The property also at times has a few immature summering or migrating Siberian Crane (Grus leucogeranus) (CR) (Strahm and Vasilijević, 2014). Red-crowned Crane (Grus japonensis) (EN) is listed as a breeding species in the property (there was one exceptional breeding pair in 2010) and it can also be rarely observed in the property (Strahm and Vasilijević, 2014). It is therefore possible to observe six species of crane in the property, including large numbers of breeding and migratory Demoiselle Crane (Anthropoides virgo) and Common Crane (Grus grus), both not threatened (LC), which is exceptional (Strahm and Vasilijević, 2014). The property

provides essential breeding and resting habitat for birds along the East Asian-Australasian Flyway, with up to 3 million birds in spring and 6 million in autumn using the area during migration (World Heritage Committee, 2017).

► Breeding grounds and migration route of the Mongolian Gazelle

Criterion:(x)

The property provides critical summer grounds and autumn migration routes of the emblematic Mongolian Gazelle (Procapra gutturosa) (LC), locally known as dzeren, Central Asian endemic species (World Heritage Committee, 2017). While the main breeding grounds for the gazelle are in the Mongolian part of the property (Mongol Daguur Special Protected Area (SPA), Daursky SNBR and the Valley of Dzeren Federal Nature Refuge (which make part of the World Heritage Site) are the only places where this species is known to breed in Russia (World Heritage Committee, 2017). Current estimates note there are about one million gazelles living in 275,000 km² of the steppe, 90% of which is contained within the Daurian ecoregion (Strahm and Vasilijević, 2014). About 7-8,000 are resident (non-migratory) individuals (following successful reintroduction to Russia in 2001 after the extinction in the 1970s) and up to 100,000 animals are variable migratory population during the winters (which makes 3-8% of the world population) (Natural Heritage Protection Fund et al., 2014). Mongolian Gazelle is among the largest and most migratory ungulate populations remaining in the temperate climate part of the world (IUCN WCPA, 2010a). Migrations occur between Mongolia and Russian, although most of the border is fenced - in 2008 parts of the fence were opened based on mutual transboundary cooperation (Strahm and Vasilijević, 2014).

► Threatened and near-threatened mammals

Criterion:(x)

The property provides sanctuary to threatened Central Asian-endemic Tarbagan Marmot (Marmota sibirica) (EN), as well as to near-threatened Pallas Cat (Otocolobus manul) (NT) (World Heritage Committee, 2017). While marmot is protected in both countries, Pallas cat is protected only in Russia where its population in the property has increased due to efficient conservation measures taken in the Daursky SNBR. These measures resulted with density of 4 individual animals per square kilometre near the Torey

lakes in 2010-2011, while currently there are about 300-400 animals in the Russian part of the property (Natural Heritage Protection Fund et al., 2014). In Mongolia, despite the species' global near-threatened status, it is allowed to hunt Pallas cat (Ross et al., 2010).

Assessment information

Threats

Current Threats

Low Threat

There are a number of threats that currently pose pressure to the World Heritage property. Primarily these include intensive grazing, frequent fire occurrence, poaching and uncontrolled hunting of birds, which could all potentially affect the integrity of the property if not managed well (World Heritage Committee, 2017). Nevertheless, the property is presently in good condition and not experiencing high human pressure. Apart from these main threats to the integrity of the property, there are a number of current threats that also need to be noted, including border fences between China and Mongolia, China and Russia, and Mongolia and Russia (in the vicinity of China) which affect the free movement of the Mongolian gazelles. Climate change is another threat that affects the property and, combined with fire and unsustainable grazing, influence the changes in the steppe.

► Utility / Service Lines

Low Threat
Inside site, localised(<5%)
Outside site

Electrical lines in Russia used to be unprotected, both inside and outside the protected areas, causing massive electrocution of birds, in particular raptors (including the Saker Falcon) (Strahm and Vasilijević, 2014). In recent years, Daursky SNBR established cooperation with the electricity company which has been gradually modifying its electrical lines to protect birds, with the

SNBR indicating priority areas. As a result, no dangerous powerlines for birds remain within the nominated area and buffer zone on the Russian side (IUCN, 2017). Moreover, several kilometres of powerlines in neighbouring areas have been equipped with bird protection devices in an effort to stem this threat. Whilst the problem seems to have been solved in Russia, it still remains to be dealt with in Mongolia. Positive steps forward have been taken by making an inventory of dangerous powerlines on the Mongolian side.

► Hunting (commercial/subsistence)

High Threat
Inside site, extent of threat not known
Outside site

The problem of overhunting of birds has been addressed and discussed at transboundary level where the Joint Russian-Mongolian Commission on Environment Protection (established in 1994) noted at its 5th Meeting (Ulaanbaatar, 2015) that spring hunt at key places of large gatherings of transient aquatic and semi-aquatic birds and at nesting areas of globally threatened birds needs to be prohibited (Daursky State Nature Biosphere Reserve et al., 2016). At the same meeting, the Parties noted the extreme negative impact of the spring hunt, especially in border steppe areas of Dauria. The Joint Commission of the Chinese-Mongolian-Russian Dauria International Protected Area (DIPA) also discussed the spring hunt (meeting in Hulunbuir, China, 2015) and suggested to the authorities to stop the spring hunt of birds on the territories that neighbour DIPA (Daursky State Nature Biosphere Reserve et al., 2016). The Statement of Outstanding Universal Value states that the States Parties have committed to set up additional “zones of peace” and to reduce the hunting season in the surroundings of the property (World Heritage Committee, 2017).

► Other Ecosystem Modifications

Low Threat
Inside site, localised(<5%)
Outside site

Borders with China are fenced both in Mongolia and Russia, as well as the border between Russia and Mongolia close to China. This impacts the free movement of the Mongolian Gazelle. The fence between Russia and Mongolia is of less concern as only part of the border is fenced leaving enough space

for transboundary migration of the gazelles. If necessary, in times of critical situations such as in 2008 heavy droughts when the food supplies in Mongolia were very low and the gazelles were searching for new grazing options, there is efficient cooperation between the two countries. Large sections of the fence were temporarily removed to allow entry of about 10,000 gazelles into Russia (IUCN WCPA, 2010a). Particularly problematic is the fence between China and Mongolia (located outside of the WH property) as it does not allow undisturbed migrations of the gazelles, resulting with the loss of wintering habitat and high concentration of animals in Mongolia (Strahm and Vasilijević, 2014).

► Temperature extremes

Low Threat
Inside site, widespread(15-50%)
Outside site

The effects of global climate change have been evident in the Landscapes of Dauria WHS. Research findings noted in the nomination dossier refer to the increase of annual air temperature (about 2°C over the last 59 years in Russia; 3-5°C in Mongolia), reduction of the average annual precipitation (in the past 50 years to 50-60 mm), and an increase in the amplitude of extreme events – droughts and floods (Natural Heritage Protection Fund et al., 2014). Climate change impacts are combined with fire and unsustainable grazing, which all together influence the changes in the steppe; i.e. Stipa-Filifolium sibiricum steppe has been replaced by Filifolium sibiricum steppe and Artemisia in some areas (e.g., in Shar Bulag) (Natural Heritage Protection Fund et al., 2014). Drying of lakes and ponds seems to also be more evident, which is possibly combined with a dry cyclic period the property is now experiencing.

► Livestock Farming / Grazing

High Threat
Inside site, scattered(5-15%)
Outside site

Development of agriculture is viewed as the most important cause for changing and degrading the Daurian steppe (Kiriliuk et al., 2017). The traditional nomadic lifestyle of the local people, which was able to sustain restoration processes of the natural steppe, is more and more being replaced

by sedentary living and the process is happening rapidly. The property is generally not densely populated, with about 2,450 people living in the property (Natural Heritage Protection Fund et al., 2014; Daursky State Nature Biosphere Reserve et al., 2016). However, the number of livestock seems large, although there are serious discrepancies in available data. The evaluation mission (Strahm and Vasilijević (2014) noted there are about 750,000 heads of livestock in Mongol Daguur SPA. The original nomination dossier does not provide any numbers of livestock in the Mongolian part of the property. In Russia, there are significantly less cattle (Daursky State Nature Biosphere Reserve et al., 2016). Although there is no clarity on the approximate number of cattle in the property, many references note the number of livestock has been rising over the years (particularly in Mongolia) and the effects of overgrazing are clearly evident. Overgrazing leads to exhaustion and degradation of significant steppe areas, particularly visible in dry periods and within 15-20 km around towns and around water resources (Kiriliuk et al.; WCPA, 2010b). While big cattle (cows and horses) does not seem to have much adverse effects on the steppe, sheep and goats do (Kiriliuk et al.). Camels also graze at the property. The areas that are most used form the WHS' buffer zone, with the buffer zone of Daursky SNBR apparently being more intensely used (mainly hay cutting and herds of livestock including cows and horses) than the buffer zone of Mongol Daguur SPA (Strahm and Vasilijević, 2014). Nevertheless, in Russia, the area that is overgrazed represents about 0.13% of the total property and 0.18% of its buffer zone (Daursky State Nature Biosphere Reserve et al., 2016). No information of such kind is available for Mongolian part of the property where the number of cattle is significantly larger. Daursky State Nature Biosphere Reserve et al. (2016) only note that in Ugtam Nature Refuge the past surveys did not show any signs of overgrazing in the refuge. The nomination dossier recognizes that overgrazing has been a major concern for Mongol Daguur SPA's buffer zone (which forms a large part of the WH property), noting also that the locals and military border personnel graze their livestock even within the SPA boundary (Natural Heritage Protection Fund et al., 2014). Grazing in Mongolia is under customary management by local herders which have maintained the steppe for centuries and the park has no control over grazing practices (Strahm and Vasilijević, 2014). One of the effects of overgrazing is fragmentation of wildlife habitat, including reduction of the summer range of

the Mongolian Gazelle (WCPA, 2010a).

► Fire/ Fire Suppression

High Threat
Inside site, widespread(15-50%)
Outside site

Fire is one of the major threats to the property's values, especially as the site includes forest steppe which potentially heightens the risk of fire. Fire frequency appears to be increasing with reports of multiple fires in single years, and post fire recovery is slow. Apart from natural phenomena such as lightning and climate change in general, ignition is mainly caused by careless human activities (Natural Heritage Protection Fund et al., 2014; IUCN, 2017). It is estimated that because of spring agricultural burnings about 40% of steppes burn out every year and up to 70% of meadows and wetlands in some years (Kiriliuk et al.). The fire results in reduction of grassland diversity and loss of vegetation cover, which causes soil erosion. Bird nests and eggs in forests and steppe get destroyed, and some species like Tarbagan Marmot and Mongolian Gazelle are pushed away from their habitats (Natural Heritage Protection Fund et al., 2014). Burnt areas are generally unsuitable for nesting of birds. Although fire control is essentially responsibility of each country, in 2016, the States Parties signed the joint "forest fire protection agreement" showing commitment to cooperate in early fire detection and reciprocal firefighting access rights (IUCN, 2017).

► Hunting (commercial/subsistence)

Low Threat
Inside site, extent of threat not known
Outside site

Hunting, together with cattle breeding, has traditionally been practiced by local population and there used to be a strict code of hunters guaranteeing the conservation of wildlife (Kiriliuk et al., 2017). As traditions got lost, illegal hunting became more evident, threatening species such as Mongolian Gazelle, Swan Goose, Great Bustard, Tarbagan Marmot, Grey Wolf (Canis lupus), Red Deer (Cervus elaphus), Red Fox (Vules vulpes), and Corsac Fox (Vulpes corsac). Mongolian Gazelle disappeared in Russia in 1970s due to overhunting and put under threat Great Bustard and Swan Goose (Kiriliuk et al.). Poaching control is better implemented in the Russian part of the

property and Daursky State Nature Biosphere Reserve et al. (2016) noted that illegal hunting is practically absent from it. A good measure of anti-poaching control is the successful recovery and abundant population of the Mongolian Gazelle in the Daursky SNBR. In contrast, the level of poaching in Mongolian part of the property is higher, but still lower than on the territories surrounding the Mongol Daguur SPA (Daursky State Nature Biosphere Reserve et al., 2016). Throughout recent years the population of Tarbagan Marmot reduced drastically due to illegal hunting (Natural Heritage Protection Fund et al., 2014) and lack of protection measures to safeguard the species (Clayton, 2016). Measures to combat poaching since the mid-90s have delivered good results (e.g. ban of spring hunting of waterbirds in the whole region of Zabaikalsky krai in Russia in order to prevent fires (Strahm and Vasilijević, 2014)), however, the very low budgets and staffing for the Mongolian protected areas need to be addressed to improve the control of poaching. An example of anti-poaching measures is seen at local level in Ugtam Nature Refuge in Mongolia where volunteer patrolling teams were established and provided a motorbike and a patrolling and small inspection fund to reduce and eliminate illegal hunting of Tarbagan Marmot and Red Deer (Daursky State Nature Biosphere Reserve et al., 2016).

► Roads/ Railroads

Low Threat
Inside site, localised(<5%)
Outside site

Solovyevsk in Russia and Choibalsan in Mongolia are connected with railway that is fenced, primarily to keep livestock safe. In part, the railway passes through the World Heritage property. While Kiriliuk et al. note that the fenced railway interrupts free movement of the Mongolian Gazelle, the IUCN mission (Strahm and Vasilijević, 2014) was told it does not pose a great problem for the gazelles.

Potential Threats

Very Low Threat

Potential threats to the property include mining and tourism development. The latter is extremely minor as currently hardly any visitor facilities exist in the property. Nevertheless, as plans for ecotourism development exist both in

Daursky SNBR strategic plan in Russia, and in Dornod aimag Province development policy (2009-2016) in Mongolia (Natural Heritage Protection Fund, 2014; Strahm and Vasilijević, 2014), it should be noted that any tourism development has to be planned carefully. Mining is currently not occurring in the property, but is seen as a potential danger as it is allowed in protected area buffer zones in Mongolia, and even within SPAs with prior approval of the Ministry of Environment, Green Development and Tourism (Strahm and Vasilijević, 2014). As an assurance of absence of mining in the future, IUCN received a letter in June 2015, signed by the Deputy Minister of Environment, Green Development and Tourism of Mongolia, that guarantees no mining operations in the WH property and its buffer zone would occur (Daursky State Nature Biosphere Reserve et al., 2016). At time of nominating the property, the nomination dossier noted that mining operations had intensified in the areas of the then proposed (and now adopted) WH buffer zone near the soums of Gurvanzagal and Dashbalbar. However, there is no up to date information if these mining operations are active in 2017.

► Mining/ Quarrying

Low Threat
Outside site

Mining is not allowed in SPAs and its buffer zones in Russia, while in Mongolia, it is allowed in buffer zones, and within SPAs only with prior approval of the Ministry of Environment, Green Development and Tourism. Mongolian Law on buffer zones of Strictly Protected Areas from 2012 also provides for mining ban in watersheds and forests (Strahm and Vasilijević, 2014). The Natural Heritage Protection Fund et al. (2014) and Strahm and Vasilijević (2014) noted that mining operations had intensified in the areas of the then proposed (and now adopted) WH buffer zone near the soums of Gurvanzagal and Dashbalbar. The Natural Heritage Protection Fund et al. (2014) also noted that a foreign mining company was running mining exploration in the area Avdar Tolgoi in Mongol Daguur SPA buffer zone. However, there is no up-to-date information if these mining operations are active in 2017 and if yes, how they affect the WH property. In June 2015, IUCN received a letter signed by the Deputy Minister of Environment, Green Development and Tourism of Mongolia with assurances of complying with the requirements on absence of mining operations in the WH property and its buffer zone (Daursky State Nature Biosphere Reserve et al., 2016). The

Mongolian State Party noted that the Mongolian Law does not prohibit mining in protected areas, but that the legislation of Mongolia recognizes the priority of international agreements together with conventions and programmes ratified by the country over the national legislation (Daursky State Nature Biosphere Reserve et al., 2016). This guarantees that no mining operations would occur in the WH property.

► Tourism/ visitors/ recreation

Very Low Threat
Inside site, localised(<5%)
Outside site

The property is not affected by tourism pressure nor is it undergoing any heavy tourism development. Plans for ecotourism development do exist and are embedded in Daursky SNBR's strategic plan in Russia, as well as in Dornod aimag Province development policy (2009-2016) in Mongolia (Natural Heritage Protection Fund et al., 2014; Strahm and Vasilijević, 2014). Nevertheless, tourism development is progressing very slowly. The managers of Daursky SNBR are moving very cautiously and do not plan to greatly increase the number of tourists; currently the park receives about 600 visitors per year. In Mongolia there is no systematic visitor counting. In Daursky SNBR, most visitors are school children, students, researchers, teachers and journalists. Visitors who are not employees of the SNBR or employees of its parent organizations are allowed only with a written permission signed by the administration of the reserve. Torey lakes, located in the buffer zone of the property, are frequented by fishermen during the wet season (there may be several thousand people per season) (Natural Heritage Protection Fund et al., 2014). Visitor infrastructure is practically non-existent in the property. In Russia, a bridge and a platform overlooking the Barun-Torey Lake for bird watchers and scientific monitoring has been built. In Mongolia, visitors usually gather at Chuh Nuur (Lake) in vicinity of the town of Dashbalbar where several tourist chalets were built in 1985. The lake and surrounding land is under communal ownership. "CHUKH" eco-tour conservation community, established in 2004, has been coordinating year-round bird watching. Approximately, there are 300 visitors per year to Chuh Nuur (Daursky State Nature Biosphere Reserve et al., 2016).

Protection and management

Assessing Protection and Management

► Relationships with local people

Mostly Effective

Relationship of parks' staff with local communities generally seems to be satisfactory. In its evaluation of the resubmitted nomination, IUCN concluded that the communal/customary regimes provided adequate protection to ensure the protection of the site's Outstanding Universal Value (IUCN, 2017). There are various positive community conservation programmes which are in place with support from international organizations and local NGOs and some community training activities are also carried out (IUCN, 2017). Some areas in the buffer zones of the SNBR and SPA are under communal ownership. For example, the Chuh Nuur area, which is part of the property, lies within the large buffer zone of Mongol Daguur SPA and is subject to communal ownership under a cooperative association of ten families (the "Chuh Lake Herder Association"). Whilst grazing is a key livelihood activity for these communities, they are also pursuing ecotourism opportunities linked to bird watching, accepting about 300 visitors annually, as well as nature conservation activities. In Russia, hay cutting and livestock grazing are allowed in the buffer zone, and the park has a "Scientific-Technical Committee of the Nature Reserves" which seems to set limits to these activities and include discussions at community level (Strahm and Vasilijević, 2014). Different stakeholders in Ononsky and Borzynsky Districts have different goals and aspirations, but it seems that compromise positions have been reached as the park continues to work with stakeholders towards strengthening conservation aspects (Strahm and Vasilijević, 2014). Based on an interview of 1,000 local people by SNBR's staff in 2014, more than 80% of locals support activities of the reserve, 60% support ecotourism development, and 20% are ready to participate in the future activities (Strahm and Vasilijević, 2014). In Mongolia, hay cutting, livestock grazing and farming in the SPA's buffer zone are all under customary management with no involvement of Mongol Daguur SPA in determining the carrying capacity (Strahm and Vasilijević, 2014). It seems that more cooperation is

needed to ensure the involvement of SPA's staff in management of Mongol Daguur SPA buffer zone. The property has cultural significance in that Buryat people have resided in the Daurian steppes for years and there are quite a few Buryat shrines (called 'obo') in the whole property. They seem to be respected by the authorities. In certain periods of the year, these sacred places are visited by Buddhists (sometimes a few hundred people gather for a ceremony), and these cultural rights seem to be appreciated by the parks (Strahm and Vasilijević, 2014).

► Legal framework

Highly Effective

Legal protection of the property is assured by several laws in both countries, including the Law on Specially Protected Nature Areas (1995) in Russia, the Law on Special Protected Areas (1994) and Law on Buffer Zones of Strictly Protected Areas (2012) in Mongolia (Natural Heritage Protection Fund et al., 2014; World Heritage Committee, 2017). Land tenure in the property is clear for the Russian side where Daursky SNBR including its buffer zone is owned by the federal government. The ownership of the Valley of Dzeren Federal Nature Refuge is not yet finalised, although most of the area belongs to the government (federal, Zabaikalsky krai, and municipal). Some plots of land are also privately owned (Strahm and Vasilijević, 2014). In Mongol Daguur SPA ownership relates to the soums of Chuluunkhoroot, Gurvanzagal and Dashbalbar on behalf of the government (Strahm and Vasilijević, 2014). It is not clear who owns the buffer zone lands, although it would seem to be a similar arrangement, with customary use allowed. Ugtam Nature Refuge is located in Bayandun and Dashbalbar soums.

► Enforcement

Some Concern

The legal framework seems to be effectively enforced on the Russian side which is better resourced than the Mongolian side. Due to lack of adequate resources, it is doubtful that the Mongolian side has enough capacity to detect violations through adequate patrols of the property.

► Integration into regional and national planning systems

Data Deficient

Data deficient

► Management system

Mostly Effective

According to the information provided in the nomination dossier, existing management plans for the property components include the mid-term management plan of the Daursky SNBR (2012-2017) and the management plan of the Mongol Daguur SPA (2011-2015) (Natural Heritage Protection Fund et al., 2014). There is no information if the latter has been revised and new management plan adopted. Daursky State Nature Biosphere Reserve et al. (2016) notes that Ugtam Nature Refuge is included in the general management plan for the territories controlled by the Administration of Strictly Protected Nature Areas of the Eastern Mongolian Province. In terms of the quality of management plans, the Daursky SNBR mid-term management plan is well developed and contains clear objectives, activities, indicators and monitoring (Daursky State Nature Biosphere Reserve, 2012). The Mongol Daguur SPA management plan could be improved with clearer definition of objectives, activities, and monitoring but given limited capacity in staff and resources, the management plan is better than could be expected. (Geo-ecology's Institution of Science Academy, 2010). As the WH property also comprises buffer zones of legally protected area in both countries, it is necessary to look at the management regimes of the buffer zones which differ in the two countries. In Russia, the buffer zone is managed by the Daursky SNBR, but in Mongolia, Mongol Daguur SPA has very limited control, apart from enforcing no hunting (Strahm and Vasilijević, 2014). Mongol Daguur SPA thus has very limited say in management of the SPA's buffer zone. The World Heritage Committee asked the States Parties to "prepare a joint management plan for the property to ensure a strengthened approach to sustainable regional development, tourism planning, threatened species conservation actions, research, monitoring and environmental education" (World Heritage Committee, 2015). The States Parties responded to this decision noting that based on the provisions of the trilateral agreement signed in 1994 in Ulaanbaatar by which China-Mongolia-Russia DIPA was established, each State Party is responsible for management of the national part of the DIPA (Daursky State Nature Biosphere Reserve et al., 2016). Thus, each component of DIPA has its own management plan, taking into regard

provisions for undertaking joint measures when needed (Daursky State Nature Biosphere Reserve et al., 2016) (note, however, that Ugtam Nature Refuge does not form part of the DIPA). Moreover, the Joint Commission of DIPA adopts a mid-term programme at its sessions, acting as a brief common management plan for DIPA (Daursky State Nature Biosphere Reserve et al., 2016). The last (6th) Session of the Joint Commission, held in China in 2015, adopted a mid-term programme with concrete actions for improvement of the overall management of the property in the period 2016–2020 (Daursky State Nature Biosphere Reserve et al., 2016). Considering the site has a transboundary character, transboundary cooperation is essential in order to ensure effective management of the property. This is where the role of the Joint Commission of DIPA, a high-level forum (that meets every several years), and DIPA Working Groups consisted of staff of protected areas (that meet once or twice a year), comes into focus. The Joint Commission assists with international projects, approves Working Groups plans, and supports their work financially (IUCN, 2017). The property (together with Chinese protected area Hulun (formerly called Dalai) Lake National Nature Reserve (Daursky State Nature Biosphere Reserve et al., 2016)) has a long history of transboundary cooperation which is well developed.

► Management effectiveness

Mostly Effective

Capacity on the Russian side is much higher than on the Mongolian side of the property, but considering an excellent transboundary cooperation, capacity is being raised also in Mongolia. The Mongolian side is under resourced and mainly reliant on customary protection by local people (note that the property consists largely of Mongol Daguur’s buffer zone which is not managed by the SPA apart from control of hunting). The property seems to be well managed on the Russian side which has greater pressures, and less well managed on the Mongolian side which appears to have fewer pressures, thereby being able to be maintained with lower management effort (Strahm and Vasilijević, 2014).

► Implementation of Committee decisions and recommendations

Highly Effective

So far, there were two World Heritage Committee decisions, the latest in

2017 inscribing the property on the World Heritage List and making a number of recommendations (World Heritage Committee, 2017) to which the States Parties did not have time to respond to yet due by the time of preparation of this assessment.

► Boundaries

Mostly Effective

The total size of the property is 912,624 ha, while the buffer zone forms an additional 307,317 ha. Out of the total nominated property, 310,509 ha are included in the Daursky SNBR*, Valley of Dzeren Federal Nature Refuge, Mongol Daguur SPA, and Ugtam Nature Refuge, thus having a protected area status in both countries. The major part of the property (the remaining 602,115 ha) is composed of buffer zones of the Daursky SNBR and Mongol Daguur SPA, as designated under their national systems (Daursky State Nature Biosphere Reserve, 2016). The boundary of the WH property slightly differentiates (6% enlargement) from the initially proposed WHS when the nomination was referred by the World Heritage Committee, among other issues, because of the inadequate boundaries (World Heritage Committee, 2015). At the time, the nominated property represented poorly the suite of transitional features of the ecosystem complex from the circumboreal taiga forest biome to the temperate continental grassland biome which makes the Daurian ecoregion unique. Thus as a response, additional areas were nominated to include representative areas of forest steppe ecosystems as an essential component to demonstrate Outstanding Universal Value, and to ensure the property includes more areas that are critical habitats of migratory birds and those associated with the migration of Mongolian Gazelle (World Heritage Committee, 2015; IUCN, 2017). Three new areas were added, the Chuh Nuur area (previously being included in the buffer zone) and Ugtam Nature Refuge in Mongolia, and forest steppe south of Tsasucheysky Bor in Daursky SNBR in Russia. With these additions, the property now forms a transnational serial WHS. At the time of inscription, the World Heritage Committee also encouraged the States Parties to consider, possibly with China, future expansion of the property (World Heritage Committee, 2017).

► Sustainable finance

Mostly Effective

Financing of the property's management is not equal across the different component parts, namely in Russia and Mongolia. There are huge disparities, with Russian part being much better funded than the Mongolian part. Protected areas in both countries generally receive most of their funding from their respective governments and some funding from international organisations and aid agencies (and small amount from the reserve's activities in Daursky SNBR). DIPA funds some joint activities, but specifies that funding is the responsibility of each side. Although not being high (at least in Mongolian part of the property), current levels of funding, as most comes from government, appear to be stable at least. The nomination dossier noted a total budget for the Russian part of the property in 2011 being about 800,000 USD, and for the Mongolian part 149,000 USD in 2012 (Natural Heritage Protection Fund et al., 2014). The States Parties have provided additional figures for 2015-2017 government and NGO/donor financing. This confirms an almost 10-fold difference in government funding between Russia and Mongolia, offset to some extent by more NGO/donor funding being directed toward the Mongolian side (IUCN, 2017). Inadequate funding on the Mongolian side of the property is reflected by under resourced SPA with no sufficient resources for transport (SPA does not own vehicles but local rangers patrol the park by motorbike (Strahm and Vasilijević, 2014)), research and monitoring, staffing, and other activities. There are 24 employees in Mongol Daguur SPA and 56 in Daursky SNBR (Natural Heritage Protection Fund et al., 2014).

► Staff training and development

Mostly Effective

Both staff of Mongol Daguur SPA and Daursky SNBR (there is no information available on Ugtam Nature Refuge) have been undertaking training programmes in their home countries and abroad. Daursky SNBR holds internal seminars in various areas, such as tactics of arresting violators, safety, field definition of birds and mammals (Natural Heritage Protection Fund et al., 2014). Periodically, employees of Daursky SNBR participate in Russian interregional and other training courses in their specialties.

► Sustainable use

Mostly Effective

The vast steppes in the property are grazed by livestock (cows, horses, sheep, goats, camels) and there is a high risk of the steppes becoming degraded. At the moment, the steppes seem to be in good condition (Strahm and Vasilijević, 2014), however, exhaustion of steppe areas is visible particularly in dry periods (Kiriliuk et al.). Recreational fishing is allowed during the wet season in Torey lakes when the lakes are abundant with fish (Natural Heritage Protection Fund et al., 2014). Medicinal plant collection is also evident, especially in Mongol Daguur SPA, and it seems to be sustainable so far. However, there is fear that the collection and use of these plants (Dog Rose (Rosa canina) and Great Burnet (Sanguisorba officinalis L.) for traditional medicine, the Saposhnikovia divaricata for export) is likely to increase (Natural Heritage Protection Fund et al., 2014). Local people also collect wild onions, wild leek and mushrooms for their household food needs. In Ugtam Nature Refuge, local people use wood from forest for firewood and for building livestock shelters (BirdLife International, 2017).

► Education and interpretation programs

Highly Effective

Educational activities are very well organised by the staff of Daursky SNBR and Mongol Daguur SPA (there is no information available on Ugtam Nature Refuge). Among many activities, they have organised children competitions for drawings on the theme of ecology including summer camps for the winners, diverse public awareness and educational activities for different target groups, promoted DIPA through organisation of the 20th anniversary of DIPA, held in Mongolia, and established an international biological station in Utochi cordon in Russia frequented by researchers (Strahm and Vasilijević, 2014). Furthermore, in Russia, there is a long-standing programme “Save the Dzeren in Zabaikalye” within which a set of educational and entertaining materials were published and lectures and excursions for schoolchildren provided (Natural Heritage Protection Fund et al., 2014). Information centres in both countries serve as points of distribution of relevant knowledge about the property. The visitor centre in Nizhny Tsasuchey also contains necessary equipment for demonstrating video-materials. Environmental education is also one of the goals in the Programme of Cooperation within the DIPA for the Years 2016-2020 (Daursky State Nature Biosphere Reserve et al., 2016). Among other activities, it includes preparation of educational programmes

for schoolchildren, practical field work for students, and development of promotional and educational materials.

► Tourism and visitation management

Highly Effective

Only about 600 visitors per year come to Daursky SNBR, and it is estimated that much less visit Mongol Daguur SPA (there is no formal visitor counting system in Mongolia) (Natural Heritage Protection Fund et al., 2014). Thus tourism is currently developed very limitedly, and, particularly on the Russian side, it seems to be well managed. Daursky SNBR contains two information points; a visitor centre in Nizhny Tsasuchey and an information desk in the buffer zone of the reserve at Utochi cordon. The latter contains accommodation facilities for a limited number of visitors. Two trails, one hiking and another by boat (season-permitting), exist in the reserve, with a total length of about 35 km. Additionally, two car-routes are also available in the buffer zone, with a total length of 160 km each (Natural Heritage Protection Fund et al., 2014). One of the attractions is an ecological-educational path on Adon Chelon Massif in the buffer zone, established in 2011. A bridge and a platform overlooking the Barun Torey lake for bird watchers and scientific monitoring has been built, and will be very interesting, particularly when the lake has water again. Along the coast of the Zun Torey Lake, there are minimally equipped recreational places for fishermen and tourists (fireplaces, benches, toilets). The new strategic goal of Daursky SNBR is the development of ecotourism, thus the reserve might be more self-sustainable in terms of financing; however, the staff of the reserve does not aim to enlarge the number of visitors (Strahm and Vasilijević, 2014). In Mongolia, there are two information centres, at the park administration and at Chuluunkhoroot soum. In 2011, approximately 300 persons visited the information centres (Natural Heritage Protection Fund et al., 2014), while there is no information available on the number of actual visitors of the SPA. Visitors usually gather at Chuh Nuur, not far from the town of Dashbalbar, where several tourist chalets were built in 1985. Considering that the level of tourism development and pressure from visitation is extremely low in the property and there are only a few facilities that serve the visitors, it can be concluded that the tourism management is at satisfactory level. With the WH status and attractiveness it creates, the situation might change in the future, which would then require careful

planning.

► Monitoring

Highly Effective

There are more than 200 monitoring stations in the DIPA that regularly monitor various indicators, including the changes in level of the lakes, main climatic indicators, chemical composition of water in the lakes, abundance dynamics of major rare and common species, community structure of birds and animals in key biotopes, dynamics of composition and quality of vegetation, dynamics of fish productivity in lakes, zoo- and phytoplankton (during the wet period), indicators of recreational load (in the buffer zone), the number of visitors (in Russia), area and frequency of fires, and information on violations of environmental protection regime (Natural Heritage Protection Fund et al., 2014). Cooperation between countries on biodiversity and ecosystem monitoring has been ongoing for years and is supported by DIPA transboundary process. The Programme of Cooperation within the DIPA for the Years 2016-2020, adopted at the 6th Session of the Joint Commission of DIPA, specifically includes tasks pertaining to transboundary cooperation on monitoring of birds, mammals, and ecosystems (Daursky State Nature Biosphere Reserve, 2016). This has also been highlighted in the Statement of Outstanding Universal Value.

► Research

Highly Effective

The component protected areas in the property undertake many and diverse research projects. Inventories of flora and fauna, as well as long-term studies on population dynamics of cranes, great bustards, raptors, waterfowl, passerines, and the northern populations of Mongolian Gazelle are being undertaken (Strahm and Vasilijević, 2014). Since 1994, the protected areas of DIPA have organised more than 100 scientific research expeditions and produced several joint scientific publications. There is an international scientific ornithological station at Utochi cordon in Russia. The Programme of Cooperation within the DIPA for the Years 2016-2020, adopted at the 6th Session of the Joint Commission of DIPA, further encourages continuation of joint research activities, such as inventory of fauna and flora, animal migration, state of ecosystems and factors affecting them (Daursky State

Nature Biosphere Reserve, 2016).

Overall assessment of protection and management

Mostly Effective

Protection of the site is well assured by adequate legal mechanisms in both countries and enforcement of the legal framework seems to be effective, particularly on the Russian side which is better resourced than the Mongolian side. Inadequate funding on the Mongolian side of the property is reflected by under resourced SPA with no sufficient means for transport, research and monitoring and other activities. The total size of the property is 912,624 ha, while the buffer zone forms an additional 307,317 ha. The major part of the property (the remaining 602,115 ha) is composed of buffer zones of the Daursky SNBR and Mongol Daguur SPA, as designated under their national systems (Daursky State Nature Biosphere Reserve, 2016). Considering that the largest part of the property is formed by the buffer zones of Daursky SNBR and Mongol Daguur SPA, it is quite important how these buffer zones are managed. In Russia, Daursky SNBR has full control over its buffer zone management. However, in Mongolia, hay cutting, livestock grazing and farming in the SPA's buffer zone are all under customary management with no involvement of Mongol Daguur SPA (which only controls hunting). It seems that more cooperation is needed to ensure the involvement of SPA's staff in management of Mongol Daguur SPA buffer zone. Generally, relationship of parks' staff with local communities seems to be satisfactory. There are various positive community conservation programmes which are in place with support from international organizations and local NGOs and some community training activities are also carried out.

▶ Assessment of the effectiveness of protection and management in addressing threats outside the site

Mostly Effective

Practically all threats to the site can be found within the site's boundaries and outside the site (e.g., poaching, overgrazing, fire, electrocution of birds by powerlines, etc.). While Daursky SNBR, apart from the SNBR, also manages the reserve's buffer zone, its involvement in addressing the threats outside the site is higher than in the case of Mongolia. There, Mongol Daguur SPA manages only the SPA, while vast territory of SPA's buffer zone is left to

customary management (part from enforcement of hunting ban). Apparently, customary management is so far sustainable, but still, it would be more reasonable and probably more effective to have SPA cooperate with local herders in management of the buffer zone. One of the successful developments in addressing the threats outside the site is seen in areas surrounding Daursky SNBR where the reserve's staff established efficient cooperation with an electricity company and installed anti-electrocution devices on powerlines outside (and inside) the reserve. This helped largely to stop mass electrocution of birds, which is still evident on the Mongolian side.

▶ **Best practice examples**

The site can be considered a best practice example in transboundary conservation. The official name of the transboundary site is China-Mongolia-Russia Daursky International Protected Area (DIPA) which is very well structured through a high-level governing body, Joint Commission of DIPA, and containing diverse Working Groups. The Joint Commission of DIPA meets regularly every several years and adopts mid-term programmes of cooperation and joint action in the site. Cooperation is intensive in the fields of biodiversity research, monitoring, and environmental education.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **Mosaic of diverse ecosystems, including excellent example of the Daurian steppe, in which evolutionary processes are ongoing**
Low Concern
Trend:Stable

The current state of this mosaic of ecosystems is considered to be good, and the Daurian steppe is praised as one of the very few remaining large temperate grasslands that are preserved in a relatively natural condition (IUCN WCPA 2010b; IUCN, 2017). Occupying a vast area of 912,624 ha, the site represents 15% of the Daurian steppe ecoregion that is primarily

stretching over eastern Mongolia and extending into Russian Siberia and north-eastern China (Strahm and Vasilijević, 2014). The Daurian steppe is composed of the Daurian forest steppe (in lesser extent) and Mongolian-Manchurian grassland. The whole mosaic of ecosystems that represent the property is subject to about 30-year long cyclic climatic conditions which determine the water levels with drying and filling the lakes and have led to high species diversity characterised by climate-related adaptation mechanisms (Natural Heritage Protection Fund et al., 2014). Thus the site is exposed to very specific climatic and hydrological regimes which cause extreme conditions for species that need to adapt to them. These specific conditions are getting amplified with global climate change, bringing about increased temperatures (the mean annual temperature of the region has already increased by 2-5°C), greater fluctuations in precipitation, and an increase in the amplitude of extreme events (droughts and floods) (Natural Heritage Protection Fund et al., 2014). Apart from climate change, there are other factors threatening the Daurian steppes, possibly the most important being fire and overgrazing. Climate change impacts are combined with fire and unsustainable grazing, which all together influence the changes in the steppe (Natural Heritage Protection Fund et al., 2014). Fire has always been present in the Daurian ecoregion, however, recently it started to occur more frequently than before, primarily due to human factor (Natural Heritage Protection Fund et al., 2014; IUCN, 2017).

► Threatened and migratory bird species

Low Concern
Trend:Data Deficient

The wetlands of the Landscapes of Dauria are of key importance to more than 3 million migrating birds in spring and 6 million in autumn along the East Asian-Australian flyway (World Heritage Committee, 2017). The key threats to preserving these values are linked to uncontrolled spring hunting and illegal hunting. The latter is being dealt with differently in the two countries, with more efficiency and control in the Russian part of the property (Daursky State Nature Biosphere Reserve et al., 2016), primarily due to serious lack of resources in Mongolia. Spring hunting of birds is widespread and is causing great concern of the parks’ staff. Unprotected electrical powerlines used to cause massive electrocution of birds, especially birds of prey (including the Saker Falcon (Falco cherrug)) throughout the property

and particularly in its buffer zones (Strahm and Vasilijević, 2014), and is still problematic in the Mongolian part of the property. While electrocution of birds was resolved successfully in the Russian part of the property and its neighbouring areas (IUCN, 2017), in Mongolia the problem still persists. Positive steps forward have been taken by making an inventory of dangerous powerlines on the Mongolian side.

► Breeding grounds and migration route of the Mongolian Gazelle

Good
Trend:Stable

The Mongolian Gazelle (Procapra gutturosa) (LC) is among the largest and most migratory ungulate populations remaining in the temperate climate part of the world (IUCN WCPA, 2010a). There are up to 7-8,000 resident (non-migratory) individuals (following successful reintroduction to Russia in 2001 after the extinction in the 1970s) and a variable migratory population of up to 100,000 animals, which makes 3-8% of the world population (Natural Heritage Protection Fund et al., 2014). Enabling free movement of the gazelles is of critical importance to ensure access to fresh feeding grounds. This is not always possible due to existence of fenced borders between the three neighbouring countries, China, Mongolia and Russia. The fence between Russia and Mongolia is of less concern as only part of the border is fenced leaving enough space for transboundary migration of the gazelles. If necessary, in times of critical situations such as in 2008 heavy droughts when the food supplies in Mongolia were very low and the gazelles were searching for new grazing options, there is efficient cooperation between the two countries. Large sections of the fence were temporarily removed to allow entry of about 10,000 gazelles into Russia (IUCN WCPA, 2010a). Particularly problematic is the fence between China and Mongolia (located outside of the WH property) as it does not allow undisturbed migrations of the gazelles, resulting with the loss of wintering habitat and high concentration of animals in Mongolia (Strahm and Vasilijević, 2014). Although cooperation through DIPA exists and it seems it is very efficient, this problem has not been successfully resolved. Generally, the population of the Mongolian Gazelle is stable.

► Threatened and near-threatened mammals

High Concern
Trend:Deteriorating

The property provides sanctuary to threatened and Central Asian endemic species Tarbagan Marmot (Marmota sibirica) (EN) whose population has been constantly declining in the last 10 or more years (Clayton, 2016). The species is protected in both Russia and Mongolia, but is being poached in Mongolia where conservation measures are missing and this has significantly fragmented its distribution (Clayton, 2016). Pallas Cat (Otocolobus manul) (NT) is near-threatened species and the Daurian steppes seem to be one of its safe refuges, at least in Russian part of the property, as in Russia the species is under special protection by law (Natural Heritage Protection Fund et al., 2014). Its population has increased in the Daursky SNBR due to efficient conservation measures (Natural Heritage Protection Fund et al., 2014). Nevertheless, there is lack of protection in Mongolia and the species is allowed to be hunted for household purposes (Ross et al., 2010). Pallas Cat raises young in marmot burrows and rock cavities, thus having strong dependency on marmots (Ross et al., 2010). As the population of marmots is declining, it may have impacts on the population of Pallas Cat.

Summary of the Values

► Assessment of the current state and trend of World Heritage values

Low Concern

Trend: Stable

The Landscapes of Dauria World Heritage Site was inscribed on the World Heritage List in 2017 on the basis of criteria (ix) and (x). The sites values, as presented in this assessment, include: the mosaic of diverse ecosystems, including excellent example of the Daurian steppe, in which evolutionary processes are ongoing, threatened and migratory bird species, breeding grounds and migration route of the Mongolian Gazelle, and threatened and near-threatened mammals. Most of these values are in good condition and remain stable. Concerns, however, exist with regards to conservation status of some threatened species, particularly the Tarbagan Marmot, due to

ongoing pressures from poaching.

Additional information

Benefits

Understanding Benefits

► Food, Collection of wild plants and mushrooms

Local people in Mongolian part of the site (there is no information available for the Russian part) collect wild onions, wild leek and mushrooms for their household food needs (Natural Heritage Protection Fund et al., 2014).

► Food, Fishing areas and conservation of fish stocks

Recreational fishing is allowed during the wet season in Torey lakes when the lakes are abundant with fish (Natural Heritage Protection Fund et al., 2014).

The site is currently in a dry period which lasts about 30 years and is a cyclic occurrence. Dryness and disappearance of many lakes in the property is further augmented by climate change effects.

► Food, Livestock grazing areas

Traditionally, livestock grazing in the Daurian steppes included also nomadic way of living that had the ability to sustain natural restoration processes of the steppes (Kiriliuk et al.). With changes in the lifestyle (sedentary way of living), livestock grazing has started to create problems for the steppe which has started to get degraded (Kiriliuk et al.).

Apart from overexploitation, another factor that impacts the changes in the traditional way of grazing and basically puts grazing a threat to the property, is the change from nomadic to sedentary lifestyle.

► Cultural and spiritual values, History and tradition

Mongolian people have practiced nomadic lifestyle in the Dauria region for centuries. It is one of the key traditions of the people living in this area, and it proved to be the most effective adaptation to cyclic climate fluctuations characteristic for Dauria and cyclic availability of water and other resources (Simonov et al., 2017). With socio-economic development, the area is experiencing changes in that nomadic lifestyle is being replaced with sedentary living, which makes the communities becoming less resilient to climatic changes (Simonov et al., 2013).

One of the most important factors causing the loss of traditional way of living is modernisation and economic development.

► Cultural and spiritual values, Sacred natural sites or landscapes

Dauria region has high cultural significance and there are many regionally important sacred sites of the Buryat people and Mongols (Simonov et al., 2017). Buryat shines (obo) can be found in the whole property and in certain times of the year, they are frequented by many worshipers. Cultural rights seem to be appreciated by the parks (Strahm and Vasilijević, 2014).

► Health and recreation, Collection of medicinal resources for local use

Medicinal plant collection is widespread in Mongol Daguur SPA, and it seems to be sustainable so far. However, there is fear that the collection and use of these plants, including Dog Rose (Rosa canina) and Great Burnet (Sanguisorba officinalis L.) for traditional medicine is likely to be increased (Natural Heritage Protection Fund et al., 2014). Another plant, Saposhnikovia divaricata, is collected for export and its collection has risen significantly (Natural Heritage Protection Fund et al., 2014).

► Health and recreation, Outdoor recreation and tourism

While there is potential to develop ecotourism, currently it is developed limitedly and with almost non-existent infrastructure. Visitation to the property is primarily linked to educational purposes (schoolchildren, students, researchers), although some people come also to hike and watch

birds.

► Health and recreation, Natural beauty and scenery

The site benefits from stunning scenery, vast Dauria steppe vistas intermixed in some places with lakes and rivers, as well as hilly areas such as Adon Chelon.

► Knowledge, Importance for research

Research is very important in the site and the component protected areas have undertaken more than 100 scientific research expeditions since 1994 when the official cooperation between Mongolia and Russia (and China) started (Strahm and Vasilijević, 2014). Torey lakes in Russia have a very long history of research and monitoring, ever since the 19th century (Simonov et al., 2017). The parks have produced joint scientific publications and have focused their research on developing inventories of flora and fauna, long-term studies on population dynamics of cranes, great bustards, raptors, waterfowl, passerines, and the northern populations of Mongolian Gazelle (Strahm and Vasilijević, 2014). The Programme of Cooperation within the DIPA for the Years 2016-2020, adopted at the 6th Session of the Joint Commission of DIPA, further encourages continuation of joint research and monitoring activities, such as making an inventory of fauna and flora, animal migration, state of ecosystems and factors affecting them, and climate change effects on the ecosystems (Daursky State Nature Biosphere Reserve, 2016).

► Knowledge, Contribution to education

The site serves as an educational hotspot for local schoolchildren in both Russia and Mongolia who apparently all visited the parks and its visitor centres in both countries (Strahm and Vasilijević, 2014). Many activities are being organised, such as drawing competitions, summer camps, lectures, diverse public awareness and educational activities for different target groups, promotion of DIPA through organisation of the 20th anniversary of DIPA, held in Mongolia (Strahm and Vasilijević, 2014). Numerous educational and promotional materials have been developed and the parks promote the natural values of the site efficiently through local media. The site contains also an international biological station in Utochi cordon in Russia which is

frequented by researchers.

▶ **Environmental services, Soil stabilisation**

The steppe vegetation generally prevents soil erosion, which is put to threat after fires (which are frequent) and strong rains (Natural Heritage Protection Fund et al., 2014).

▶ **Environmental services, Flood prevention**

The lakes and wetlands of Dauria act as the natural flood control system due to its ability for water retention (Simonov et al., 2017).

▶ **Environmental services, Water provision (importance for water quantity and quality)**

Uldz River basin is important as water supply for cattle, pastures and hay fields (Simonov et al., 2017).

▶ **Collection of genetic material, Collection of timber, e.g. fuelwood**

In Ugtam Nature Refuge, local people use wood from the forest as fuelwood and for building livestock shelters (BirdLife International, 2017).

Collection of timber is primarily impacted by frequent fires that destroy the area.

▶ **Contribution to local economy, Provision of jobs**

Mongol Daguur SPA employs 24 people, while Daursky SNBR employs 56 people (Natural Heritage Protection Fund et al., 2014). No information is available on how many local people are employed by the parks.

▶ **Contribution to local economy, Tourism-related income**

Tourism-related income exists, but is extremely limited considering limited visitation. Daursky SNBR generates some income from selling the souvenirs in its visitor centre in Nizhny Tsasuchey, providing accommodation at Utochi station, and organising tours (like Mongol Daguur SPA) (Natural Heritage Protection Fund et al., 2014). Local people near Chuh Nuur in Mongolia get

some income from birdwatchers who come to the lake.

It is supposed that tourism will grow in the future considering its development is one of the strategic goals in both Daursky SNBR and Mongol Daguur SPA, and that the site got listed as a WHS which might attract visitors.

Summary of benefits

The site provides many benefits, some being more evident and stronger than others. The site contributes highly to expanding general knowledge about the Daurian steppe ecosystems and wildlife it contains, as well as understanding the climate patterns of this region, which is very specific with its cyclic dry and wet periods. Research and monitoring are very well developed and have a long-standing tradition (e.g. Torey lakes in Russia have been at the centre of research ever since 1840 (Simonov et al., 2017)). The parks have undertaken more than 100 scientific research expeditions since 1994 when the official cooperation between Mongolia and Russia (and China) started (Strahm and Vasilijević, 2014). The Programme of Cooperation within the DIPA for the Years 2016-2020, adopted at the 6th Session of the Joint Commission of DIPA, further encourages continuation of joint research and monitoring activities, such as making an inventory of fauna and flora, animal migration, state of ecosystems and factors affecting them, and climate change effects on the ecosystems (Daursky State Nature Biosphere Reserve et al., 2016). The protected areas also dedicate a lot of time to educational activities targeted at different groups, primarily schoolchildren, students and researchers. Cultural and spiritual values are quite evident, with Buryat people (Buddhist) having several sacred objects (‘obo’) in the property, visited by worshipers (Strahm and Vasilijević, 2014). Unfortunately, traditional nomadic lifestyle is rapidly being replaced with sedentary living, thus the tradition is getting lost in the process of socio-economic development. Historic and traditional grazing practices are becoming replaced with stationary grazing, seen nowadays as potentially becoming threatening for the Dauria ecosystem (Kiriliuk et al.). Local people collect wild plants (wild onion, wild leek) and mushrooms for their household food needs medicinal plants, including Dog Rose (Rosa canina) and Great Burnet (Sanguisorba officinalis L.) for traditional medicine, timber for firewood and for building livestock shelters, and practice fishing during the wet season (Natural Heritage Protection Fund et al., 2014; BirdLife International, 2017). The site provides some important environmental services such as flood prevention, soil

stabilisation, and water provision. It offers spectacular vistas of the Daurian steppe and its wildlife, yet benefits related to recreation and contribution to local economy, although existing, are still to be better explored and exploited.

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