IUCN Conservation Outlook Assessment 2017 **(archived)**
Finalised on 10 November 2017

Please note: this is an archived Conservation Outlook Assessment for Golden Mountains of Altai. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Golden Mountains of Altai

SITE INFORMATION

Country:
Russian Federation
Inscribed in: 1998
Criteria:
(x)

Site description:
The Altai mountains in southern Siberia form the major mountain range in the western Siberia biogeographic region and provide the source of its greatest rivers – the Ob and the Irtysh. Three separate areas are inscribed: Altaisky Zapovednik and a buffer zone around Lake Teletskoye; Katunsky Zapovednik and a buffer zone around Mount Belukha; and the Ukok Quiet Zone on the Ukok plateau. The total area covers 1,611,457 ha. The region represents the most complete sequence of altitudinal vegetation zones in central Siberia, from steppe, forest-steppe, mixed forest, subalpine vegetation to alpine vegetation. The site is also an important habitat for endangered animal species such as the snow leopard. © UNESCO

SUMMARY

2017 Conservation Outlook

Good with some concerns

The current state of conservation of the property is good as a function of the remote location, the large size and commitment to conservation and management. The property would benefit from additional investment in staffing and funding, more coherent planning and management at the level of the entire serial property and further harmonization of management with the surrounding landscape in the Altai Republic and neighboring China, Mongolia and Kazakhstan. Local natural resource use is a fact and a necessity and has contributed to shaping the natural environment since the ancient human history of the Altai started. Direct involvement of indigenous peoples and local communities can be the basis to respect rights and needs, to understand and negotiate interests and to benefit from the sophisticated knowledge of people who have been using the harsh mountain environment over countless generations. Investment in the consolidation of governance and management is also the best option to prepare for climate change scenarios suggesting warmer and drier conditions. Despite this overall favorable outlook, more than 15 years of a still unresolved debate about the possible construction of a major gas pipeline project within the property cast an enormous shadow on the property. While the probability of project implementation remains difficult to judge, the State Party has never unambiguously distanced itself from the project, including the route through the property, suggesting that the proposal has never been put to rest.

Current state and trend of VALUES

Low Concern
Trend: Stable

The poaching of large mammals, including snow leopard, the apex predator of the Altai Mountains, remains a high concern. Other than that neither the state nor the trend of the World Heritage values is of major concern, provided the State Party will refrain from constructing a major gas pipeline inside the property

or in any other location directly or indirectly affecting the Outstanding Universal Value of the property.

Overall THREATS

Low Threat

Overall, the Golden Mountains are currently in a good state of conservation due to the remote location, size and active conservation and management efforts. Most tangible threats are manageable even though they may require increased funding and staffing to keep up with increasing tourism pressure, for example. As clearly and repeatedly articulated by the World Heritage Committee, the possible construction of a gas pipeline, if it were to go ahead, would inevitably be a driver of major change and affect the conservation values of the property, in particular on the Ukok Plateau. However, the current status of the project is unclear.

Overall PROTECTION and MANAGEMENT

Some Concern

Overall, the current management of the property itself is mostly effective; however, some aspects raise concerns. The World Heritage documentation contains many hints at room for improvement, as detailed in the recommendations of two reactive monitoring missions endorsed by the World Heritage Committee. Such recommendations include staffing, funding, the legal framework, involvement of indigenous peoples and local communities in governance and management, clarification and strengthening of mandates and in the subnational protected area categories, and a more coherent and strategic approach to tourism development. The property has exceptional potential in terms of both the integration of culture and nature and transboundary cooperation (Debonnet et al., 2012; Michel et al., 2004).

FULL ASSESSMENT

Description of values

Values

World Heritage values

▶ **Intact mountain ecosystems with high diversity of plants and degree of endemism**
Criterion:(x)

Covering much of the ecosystem diversity of the Altai Mountains, the property boasts more than 2,000 vascular plants with some 10 percent being endemics (UNEP-WCMC, 2011). The numbers for the Altaisky Zapovednik are even more with some 1,400 vascular plants for this component alone and a degree of endemism of 17 percent and as many as 60 narrow endemics (IUCN, 1998). The IUCN evaluation of the World Heritage nomination further notes that the property is regarded a global centre of origin of the montane floristic assemblages of northern Asia, which have subsequently spread across parts of Central Asia, including a number of important crop plant relatives.

▶ **Habitat for noteworthy terrestrial fauna**
Criterion:(x)

The large serial property conserves habitat for a broad array of species in an ecosystem mosaic along a major altitudinal gradient, which includes steppe, forest-steppe, coniferous forest, mixed forest, subalpine meadows, alpine tundra and glaciers (UNEP-WCMC, 2011). As many as 72 mammal species, 323 bird species, 11 species of herpetofauna and 5,000 invertebrate species – the latter in just one of the three components - have been recorded (UNEP-WCMC, 2011; IUCN, 1998). The arguably most spectacular mammal is the

endangered snow leopard (Panthera uncia), for which the Altai serves as one “core area” in its global distribution (Jackson et al., 2008). Two of its prey species are likewise charismatic large mammals: the Siberian ibex (Capra sibirica, LC) and the near-threatened argali (Ovis ammon). The latter is often referred to as “Altai argali” even though sub-specific taxonomy remains unresolved (Harris et al., 2008). Other mammals include, for example, Siberian musk deer (Moschus moschiferus, VU), wolverine (Gulo gulo, LC), manul cat (Otocolobus manul, NT) and Eurasian lynx (Lynx lynx, LC) (UNEP-WCMC, 2011). Within the impressive avifauna, the endangered Saker falcon (Falco cherrug), golden eagle (Aquila chrysaetos, LC) and Altai snowcock (Tetraogallus altaicus, LC) stand out as particularly spectacular representations.

Other important biodiversity values

► Major and largely undisturbed freshwater ecosystems

It is no coincidence that the original nomination was named “Sources of the Great Ob” (State Party of the Russian Federation, 1995), illustrating that the critically important headwaters of major rivers, including the mighty Ob River are located in the Altai Range. Important rivers include the Katun and Biya. Among the numerous lakes within the property, Lake Teletskoye stands out as the Altai’s largest lake, second only to Lake Baikal in terms of surface area all across Siberia. The lake is in a good overall conservation state and not only visually stunning but renowned for its rich aquatic flora and invertebrate fauna (UNEP-WCMC, 2011; IUCN evaluation, 1998). The around 20 species of freshwater fish include the endemic Coregonus pravdinellus (Bogutskaya et al., n.d.).

Assessment information

Threats

Current Threats

Low Threat

The Golden Mountains of the Altai are currently in a good state of conservation and not subject to acute and major threats. Concerns include the balance between legitimate local resource use and conservation and maintenance of the production capacity of grasslands, forests and water bodies and courses. Tourism is a local and seasonal concern requiring management attention. Overall, the existing threats are fully manageable.

▶ Temperature extremes

Low Threat
Inside site, throughout(>50%)
Outside site

Documented consequences of changing temperature and precipitation in the Altai-Sayan region include glacial retreat, upward movement of vegetation belts and warmer and drier conditions in the steppe areas (Kokorin, 2011). In Katunsky Strict Nature Reserve, temperature increases are of greater magnitude at lower altitude (Yashina, 2011). Despite observable changes, there are no signs of significant shifting of the ecological conditions at this point in time.

▶ Livestock Farming / Grazing

Data Deficient
Inside site, extent of threat not known
Outside site

With the exception of the glaciated areas most of the Altai range has been grazed by livestock throughout its ongoing human history, including what is today the World Heritage property. Livestock grazing can be an adapted use of ecosystems, but it can also result in important impacts when the grazing intensity exceeds the capacity of the rangeland, resulting in erosion and changes in species composition of the native vegetation. Less visible impacts include competition with native grazers, disease transmission between livestock and native fauna and incentives to control or remove livestock predators. Overgrazing has been suggested for parts of the Ukok Plateau while acknowledging uncertainty in terms of extent and impact (Debonnet et

al., 2012). UNEP-WCMC (2011) states overgrazing to constitute the “greatest pressure”, albeit without naming a source to underpin the claim. IUCN (1998) refers to grazing as the “principal human impact to date”, while also stressing that it remained “isolated and at a low level.” More recently, Ibisch et al. (2015) listed overgrazing as a “very high threat” in the Russian biosphere reserve overlapping with the property. It is clear that livestock grazing is both a major livelihood and a major conservation issue, which requires careful attention.

► Fire/ Fire Suppression

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

Altaisky Strict Nature Reserve is particularly susceptible to wild fires (Onuchin, 2012). It remains less than clear to what degree the frequent fires are part of natural disturbance regime and to what degree they are anthropogenic. At this stage, there is no evidence that the fire regime - regardless of the reasons of the fires - constitutes a major threat.

► Industrial/ Military Effluents

Data Deficient
Inside site, extent of threat not known

Air pollution is reported to stem both from nearby local mining and heavy industry in eastern Kazakhstan (UNEP-WCMC, 2011; Rao et al., 2007). A peculiar and contentious issue has been littering by booster parts from rockets launched from Kazakhstan which fall to earth in the Altaisky reserve (UNEP-WCMC, 2011). The extent and implications of these two concerns could not be verified within the scope of this assessment.

► Hunting (commercial/subsistence), Poaching, Logging/ Wood Harvesting, Fishing / Harvesting Aquatic Resources, Other Biological Resource Use

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

A broad range of local natural resource use occurs in the Altai Mountains, including the property. Medicinal plant collection and poaching have been

listed as threats in Ukok Qiet Zone Nature Park (Debonnet et al., 2012); poaching has also been listed as a (minor) threat to Altaisky Strict Nature Reserve, with 20 cases detected and prosecuted in 2006 (Rao et al., 2007). Helicopter hunting has also been reported (UNEP-WCMC, 2011; IUCN, 2009). Poaching threatens, for example, Argali sheep, Siberian ibex, musk deer and snow leopard, the latter related to both the wildlife trade and in the form of retaliation killings (Jackson et al., 2008). While commercial timber extraction is not an issue in the property, local communities do harvest non-timber forest products, including for commercial use and export (Rao et al., 2007). Fishing is common in the rivers and lakes.

► Tourism/ visitors/ recreation

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

Most of the property is remote and relatively difficult to access, which severely limits tourism. Furthermore, mass tourism is neither permitted nor practiced in Altaisky Strict Nature Reserve, except at the Korbu Waterfalls with almost 60,000 visitors in 2016 (State Party of the Russian Federation, 2017) and Katunsky Strict Nature Reserve. Therefore the threat from tourism appears to be localized at this point in time (Debonnet et al., 2012, UNEP-WCMC, 2011, Rao et al., 2007, IUCN, 1998). However, tourism is growing (State Part of the Russian Federation, 2017) resulting in signs of impacts, especially in the Ukok Quiet Zone Nature Park (IUCN et al., 2017). For example, IUCN et al. (2017) mention unauthorized presence of tourist groups. Ibisch et al. (2015) suggest the lack of sharing tourism benefits with local communities to be the main concern. The World Heritage Committee has repeatedly requested the development of coherent tourism planning and management as recommended by the 2012 reactive monitoring mission (World Heritage Committee, 2017; Debonnet et al., 2012).

Potential Threats

High Threat

The possible construction of a major gas pipeline through one of the components of the serial property constitutes the highest threat to the natural - and cultural - values of the property. Besides the less clear-cut

predictions in terms of the impacts of changing climatic conditions, the decision to construct or abandon the route crossing the property will be the decisive factor in the foreseeable future of the Golden Mountains of Altai.

▶ Oil/ Gas exploration/development

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

As well documented throughout the official World Heritage documentation for the property over the last years, the possible construction of a gas pipeline from the Russian Federation to China has been the main concern about the property in addition to triggering local opposition. While details and the exact state of planning and negotiations remain somewhat fuzzy and no impact assessment appears to be under elaboration, a route through the Ukok Quite Zone Nature Park appears to remain one option. Rao et al. (2007) noted expected negative impacts, including habitat destruction/degradation through soil movement, engineering works during construction of the pipeline and service road, hydrological alterations, disturbance, pollution and secondary threats such as increased poaching through improved access. The concerns increased when Decree 212 N 202 dated 2 August 2012 of the Republic of Altai created a legal foundation to build “linear facilities” and associated infrastructure in the property. This decision in effect legalizes construction works. The World Heritage Committee therefore, including in its most recent decision, expressed its utmost concern, urged the State Party to revoke the above decree and requested the State Party to take an unequivocal decision to abandon the plans for the construction of the pipeline through the property. The States Parties of the Russian Federation and China were urged to consider alternative routes (World Heritage Committee, 2017). However, the current status of the project remains unclear. If the project is to go ahead nevertheless, major impacts seem inevitable besides the formal consequences under the Convention.

▶ Temperature extremes

Data Deficient
Inside site, extent of threat not known
Outside site

The limited available projections suggest a scenario of increasing impacts

from climate change in the entire Altai Range, including the Golden Mountains of Altai (Kokorin, 2011; Yashina, 2011). One concrete consequence of drier and warmer conditions could be increasing fire frequency and intensity (Debonnet et al., 2012).

Protection and management

Assessing Protection and Management

► Relationships with local people

Some Concern

Civil society played an important role in the nomination effort through direct involvement of non-governmental organizations. At the same time, the involvement of indigenous peoples and local communities in the governance and management remains modest. Striking examples include the limited local benefits of tourism and the lack and alleged efforts to prevent civil society representatives from attending the stakeholder meetings during the most recent reactive monitoring mission (Debonnet et al., 2012). The World Heritage Committee has repeatedly urged the State Party to involve local communities in more meaningful ways, for example as regards the proposals for infrastructure development in ecologically and culturally sensitive areas (World Heritage Committee, and 2007). More recently, the World Heritage Committee (2012) requested the State Party to “strengthen the cooperation with the civil society and in particular the indigenous communities, taking advantage of their knowledge relevant for the management of the property”.

► Legal framework

Serious Concern

One particularity of the serial property is that the various components are not subject to a consistent legal status. Some of the areas are federal protected areas whereas some others are regional protected areas at the level of the Altai Republic. This is not per se a problem and there are no indications that this set-up has been a major bottleneck in terms of management effectiveness. Debonnet et al. (2012), however, suggested a “weak legal status of the regional nature parks”. Despite the clear regional

responsibility for those areas, the World Heritage Convention comes with a federal role also. Both reactive monitoring missions have recommended the establishment of an overarching legal framework for the management of the entire natural World Heritage property, as has been recommended by the World Heritage Committee (Debonnet et al., 2012; Rao et al., 2007). A major piece of applicable legislation is the Federal law “On Specially Protected Natural Areas”, No. 33-FZ dated 1995. However, a more recent law (Federal Law No. 365-FZ dated 2011) has been interpreted as significantly weakening the protection status of the components recognized as federally protected Strict Nature Reserves, in particular to the apparent changes in terms of the possibility to build infrastructure. At the subnational level, Decree 212 N 202 dated 2 August 2012 of the Republic of Altai raises similar concerns in terms of infrastructure development, which is why the World Heritage Committee (2017) urged the State Party to revoke the decree. Due to the ongoing legal possibility to construct infrastructure incompatible with natural World Heritage status, the situation is assessed as a serious concern.

► Enforcement

Some Concern

Enforcement suffers from budget and staffing constraints. An even more fundamental concern was expressed on the occasion of the most recent reactive monitoring mission. Debonnet et al. (2012) stated that the regional authorities managing the non-federal components of the property may not have an obvious law enforcement mandate.

► Integration into regional and national planning systems

Some Concern

Information on the integration the management of the serial property into regional and national planning systems is scarce, even as regards the coordination among the components. Due to the boundary location, it is clear that regional integration also implies transboundary considerations. The recent designation by the Russian Federation and Kazakhstan of the transboundary biosphere reserve overlapping with the property hints at effective efforts in this regard.

▶ Management system

Some Concern

The differing governmental governance, with federal and regional management responsibility, respectively, implies a need for harmonization. All components have individual management plans and an overall management strategy for the property was developed in 2008. According to Debonnet et al. (2012), however, it did not meet the expectations defined in the Operational Guidelines in terms of a joint management framework. The recent designation of the transboundary biosphere reserve raises the prospects for harmonization between the Russian Federation / Altai Republic and neighboring Kazakhstan. In summary, more is needed to harmonize the coherent management of the serial property in line with World Heritage expectations.

▶ Management effectiveness

Some Concern

Funding and staffing constraints, complex and fragmented management authority and land tenure reduces the overall management effectiveness (Debonnet et al., 2012).

▶ Implementation of Committee decisions and recommendations

Serious Concern

Debonnet et al. (2012) acknowledged significant efforts to follow up on some of the management-related recommendations formulated by the 2007 reactive monitoring mission, which were fully endorsed by the World Heritage Committee. However, the focus of Committee decisions and recommendations has been the proposed gas pipeline ever since the Observer of Russia informed the World Heritage Committee about the project in 2000 (World Heritage Committee, 2000). In fact, there are direct references to the project in decisions approved at its 24th, 25th, 30th, 31st, 32nd, 33rd, 35th, 36th, 37th, 39th, 40th and 41st sessions). In a nutshell, the Committee has repeatedly been requesting information on the planning status of the project to limited avail. Expressing its utmost concern, the Committee has clearly established the position that any decision to go forward with the gas pipeline project through the property would constitute a

threat to the site's Outstanding Universal Value and represent a clear case for inscription of the property on the List of World Heritage in Danger. Therefore, the Committee urged the State Party to take an unequivocal decision to abandon the construction of the Altai gas pipeline through the property, and ensure that no further preparatory works be undertaken within the property, and to ensure that the pipeline developer Gazprom considers alternative routes. At its most recent session, the World Heritage Committee reiterated its request that an unequivocal decision to abandon the project be taken (World Heritage Committee, 2017).

► Boundaries

Some Concern

The various federal and regional protected areas jointly comprising the property have clearly defined boundaries. An internal zonation is used to determine access and use. While spatically clearly defined, the legal status of some of the zones is less than clear (Debonnet et al., 2012).

► Sustainable finance

Some Concern

Funding is primarily based on separate governmental budgets from the federal and regional level, respectively. While no detailed and updated information is available, key sources consistently state insufficient funding since the IUCN evaluation (Debonnet et al., 2012, UNEP-WCMC, 2011, IUCN, 1998). The gap is somewhat compensated by a series of projects over the years from multi-lateral and non-governmental sources, which provided substantial support over many years. The concern is that more or less short-lived project support does not amount to a reliable funding approach.

► Staff training and development

Data Deficient

Altaisky and Katunsky Strict Nature Reserves benefit from adequate staff numbers of some 100 and 70, respectively. The sub-national categories, nature parks and a natural monument, are modestly staffed, consistently considered insufficient (Debonnet et al., 2012, UNEP-WCMC, 2011, Rao et al., 2007). No information about staff training and development programmes is

available.

▶ Sustainable use

Some Concern

Sustainable use zones are part of all protected areas constituting the property; livestock husbandry and the use of a wide range of non-timber forest products and other wild biodiversity products is common throughout the property (Debonnet et al., 2012). The use constitutes a necessity for local communities and indigenous peoples, while also bearing the risk of excessive use. Monitoring the situation as a foundation to maintain the balance is a permanent management requirement.

▶ Education and interpretation programs

Mostly Effective

(Visitor) education and awareness-raising programmes are integral parts of management, particularly in the Strict Nature Reserves (State Party of the Russian Federation, 2017; Debonnet et al., 2012).

▶ Tourism and visitation management

Some Concern

Large tracts of the property are rarely visited. Consequently, there are no corresponding concerns across most of the property. However, in a few selected locations, tourism is a major and growing factor, with reports of unauthorized vehicle entries, which requires management attention.

▶ Monitoring

Mostly Effective

There are a number of noteworthy monitoring activities at the level of academic and non-governmental projects, often focusing on charismatic species in addition to monitoring integrated into routine management. There is room to consolidate and scale up the existing monitoring to coherently cover the entire serial property, as recommended by the most recent reactive monitoring mission (Debonnet et al., 2012).

▶ Research

Mostly Effective

There is a long history of research being carried out in cooperation between the research departments of the protected areas, the Siberian Branch of the Russian Academy of Sciences, universities and other partners. For example, five universities have been cooperating in a global change research programme (UNEP-WCMC, 2011). Publication databases reveal an impressive number of around 1,000 peer-reviewed journal articles in international scientific journals in the fields of ecology, biodiversity and conservation about the mountain region.

Overall assessment of protection and management

Some Concern

Overall, the current management of the property itself is mostly effective; however, some aspects raise concerns. The World Heritage documentation contains many hints at room for improvement, as detailed in the recommendations of two reactive monitoring missions endorsed by the World Heritage Committee. Such recommendations include staffing, funding, the legal framework, involvement of indigenous peoples and local communities in governance and management, clarification and strengthening of mandates and in the subnational protected area categories, and a more coherent and strategic approach to tourism development. The property has exceptional potential in terms of both the integration of culture and nature and transboundary cooperation (Debonnet et al., 2012; Michel et al., 2004).

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

Some Concern

The property benefits from being surrounded by vast areas of comparable steppes and mountains with a high degree of naturalness, limited infrastructure and low population density. The location at the meeting point of four countries necessarily implies that management and conservation of actual or potential threats must be based on coordination and cooperation with at least one and ideally all tree direct neighbors. Investment in

cooperation amounts to investment in addressing current and future external threats. Efforts have been underway for more than a decade to agree on the extension of the property into China, Kazakhstan and Mongolia (Debonnet et al., 2012, Michel et al., 2004). The transboundary biosphere reserve between the Russian Federation and Kazakhstan designated earlier this year adds one layer of additional management and conservation attention and serves as an encouraging indicator of direct interest in more meaningful dialogue.

► **Best practice examples**

Longstanding efforts to initiate and/or consolidate transboundary coordination and cooperation despite the exceptionally sensitive and challenging political starting point after the breakdown of the Soviet Union. While much remains to be done, encouraging and constructive communication could be maintained at all times over some 15 years with the 2017 designation of a transboundary biopsphere reserve between the Russian Federation and Kazakhstan serving as a very recent sign of the effectiveness and usefulness of the dialogue.

State and trend of values

Assessing the current state and trend of values

World Heritage values

► **Intact mountain ecosystems with high diversity of plants and degree of endemism**

Low Concern
Trend:Stable

The various mountain ecosystems in and around the components of the serial property have a high level of integrity without an overall trend of deterioration (Debonnet et al., 2012). A range of human activities is occurring, such as livestock husbandry, accidental fires, localized tourism, use of wild plants and animals, which could potentially affect the integrity, especially when considering the uncertainty about the impacts of already

observable climate change.

▶ Habitat for noteworthy terrestrial fauna

High Concern
Trend:Data Deficient

The habitats of the large property are largely in an exceptionally intact state and the various components are embedded in a vast and remote mountain landscape with a high degree of naturalness. From a species conservation perspective, the main concerns are poaching of snow leopard, Argali, Siberian ibex and other mammals within and outside the property, including musk deer for commercial purposes (Paltsyn et al., 2012). Given the ecological, symbolical and cultural significance of the charismatic flagship species snow leopard, Argali and Siberian ibex, the pressure on both species is considered a high concern despite the absence of exact and reliable data.

Summary of the Values

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

Low Concern

Trend: Stable

The poaching of large mammals, including snow leopard, the apex predator of the Altai Mountains, remains a high concern. Other than that neither the state nor the trend of the World Heritage values is of major concern, provided the State Party will refrain from constructing a major gas pipeline inside the property or in any other location directly or indirectly affecting the Outstanding Universal Value of the property.

▶ Assessment of the current state and trend of other important biodiversity values

Data Deficient

Trend: Data Deficient

The fishing pressure and its direct and indirect consequences are not sufficiently known to permit a specific assessment. The effects of industrial air pollution reported to stem from heavy industry in Kazakhstan are likewise not known in detail, as are the effects of debris from rocket launches (Rao et

al., 2007). Both are potential sources of water contamination.

Additional information

Benefits

Understanding Benefits

▶ **Collection of wild plants and mushrooms, Fishing areas and conservation of fish stocks, Livestock grazing areas**

The collection of wild plants is practiced, both for subsistence and for trade, including international trade, e.g. to Japan (Rao et al., 2007). Freshwater fish is part of the local diet. Mobile herding is a central element of local livelihood systems

▶ **Cultural identity and sense of belonging, History and tradition, Sacred or symbolic plants or animals, Sacred natural sites or landscapes, Wilderness and iconic features**

The Altai Mountains, including all three components of the property have a long human history and harbor significant cultural and spiritual values (Debonnet et al., 2012). The exceptionally rich history is epitomized in the nearby Petroglyphic Complexes of the Mongolian Altai, a cultural World Heritage property inscribed in 2011 in neighboring Mongolia and - within the property - in the Ukok Plateau, which is numerous petroglyphs and tomb mounts dating back to the bronze age, and also the place where the burial site of a 2,500 year old Ukok Princess was found in the1990s (Altai Republic, 2003). However, the cultural and spiritual dimension of the Altai Mountains is by no means a thing of the past. Rather, it lives on in the cosmovision and belief systems of contemporary inhabitants (Erdenetsogt, 2017; IUCN et al., 2015).

There are concerns that the permafrost that preserved the burial kurgans for thousands of years is now melting away because of rising air and ground temperatures in the region (Raygorodetsky, 2013).

► **Collection of medicinal resources for local use, Outdoor recreation and tourism, Natural beauty and scenery**

Mountain tourism is practiced at a moderate intensity already on site, with only a few localized major tourism areas. Visitors are primarily attracted by the exceptional and unspoiled mountain scenery. Medicinal resources are collected as they are all across the Altai Range.

► **Importance for research, Contribution to education, Collection of genetic material**

The property has been contributing significantly to the scientific understanding of many facets of the Altai Mountains, as evidenced by the huge number of scientific literature based on work in the components of the property. It is beyond question that the local communities and indigenous peoples who continue to live in direct interaction with and dependence on the harsh mountain environment, have sophisticated complementary knowledge about the mountains, including the property. The considerable diversity of wild varieties of crop plants and endemic plants represents a great genetic reservoir for a wide range of uses.

► **Carbon sequestration, Soil stabilisation, Flood prevention, Water provision (importance for water quantity and quality)**

Both the grasslands and the various forest types contribute to carbon sequestration and storage and simultaneously soil protection. Harboring numerous lakes, creeks and rivers, including the largest lake of the entire range and headwaters of the mighty Ob River, the regulates and provides large quantities of high-quality water to downstream users.

► **Collection of timber, e.g. fuelwood, Sustainable extraction of materials (e.g. coral, shells, resin, rubber, grass, rattan, etc)**

In the forested parts, firewood tends to be a major or even the only source of energy. Many non-timber forests products are being harvested, including the

perhaps best-known product, the seeds of the Siberian stone pine.

▶ **Direct employment, Tourism-related income, Provision of jobs**

The property offers some direct job opportunities, while tourism locally and seasonally creates further opportunities.

Summary of benefits

The property and its surroundings are rich in biodiversity products and have been used in many ways for long periods of time by indigenous peoples and local communities who continue to be largely dependent on local natural resources to this day. Uses include natural pastures and a broad range of wild biodiversity for food, construction and medicine etc. Both locals and visitors are inspired by the overwhelming beauty of the mountains which have been inhabited and revered by the many cultures and ethnic groups which have been meeting in the Altai throughout its ongoing human history. Furthermore, water comes to mind as a major ecosystem service, with the property protecting a major freshwater reservoir and the headwaters of one of the world’s largest rivers, the Ob. As in the case of carbon sequestration, it is important to recall the large size of the property which contributes to its significance in terms of all benefits.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects

1	IUCN and ICOMOS	From: 2013 To: 2015	Connecting Practice represents an encouraging effort to think and work across the still existing barriers between "culture" and "nature" in the World Heritage arena. The Altai Mountains served as one of selected global case studies, fully confirming the intricate linkages between the inhabitants of the Altai and their environment. The project was supported by The Christensen Fund, TheGerman Federal Nature Conservation Agency (BfN) and the Swiss Federal Office for the Environment (FOEN) and benefited from cooperation with GIZ and GEF-SGP.

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	Consolidation of transboundary communication, coordination and cooperation	The Altai Mountains have an ancient history as a cultural and ethnic meeting place and are today shared by China, Mongolia, Kazakhstan and the Russian Federation. The discussion about transboundary conservation option goes back to at least the late 1990s (Michel et al., 2004). The 2017 designation of the transboundary Great Altay Transboundary Biosphere Reserve in the Russian Federation and Kazakhstan is encouraging and could serve as an impetus for further consolidation of management and conservation across international borders, including under a World Heritage umbrella.	From: 2017 To: 2017

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