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## WORLD HERITAGE NOMINATION - IUCN TECHNICAL EVALUATION

### GOLDEN MOUNTAINS OF ALTAI (RUSSIAN FEDERATION)

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#### 1. DOCUMENTATION

- (i) IUCN/WCMC Data Sheet
- (ii) Additional Literature Consulted: Koshevoi, M.D.V. 1989. **Nature Reserves in the USSR**. Progress Publishers. Moscow; Krener, V. *et. al.* 1994. **Conserving Russia's Biological Diversity - An Analytical Framework and Initial Investment Portfolio**. WWF; Koshkarev, E. 1998. Critical Ranges as Centres of Biodiversity in **Russian Conservation News**, Winter (14); Davis *et. al.* Eds. 1995. **Centres of Plant Diversity**. IUCN/WWF. Messerli, B. & J. D. Ives. 1997. **Mountains of the World - A Global Priority**. The Partheon Publishing Group. New York.
- (iii) Consultations: 8 external reviewers, relevant officials from government and non-government organisations in Russia.
- (iv) Field Visit: J. Thorsell & Yuri Badenkov June 1996; D. Sheppard, September 1998.

#### 2. SUMMARY OF NATURAL VALUES

The nominated site is in the Altai Mountains in Southern Siberia on the territory of the Altai Republic, comprising the high mountainous areas of Altai, the headwaters of the Katun and Chulyshman rivers and Lake Teletskoye. The nomination is a cluster which consists of three separate areas: (a) Altaisky Zapovednik (872,000ha) and a buffer zone around the Teletskoye Lake (93,753ha); (b) Katunsky Zapovednik (130,000ha) and a buffer zone around Mt. Belukha (262,800ha); (c) the Ukok Quiet Zone on the Ukok Plateau (252,904ha). The total area is 1,611,457ha. Two of the areas are located along the borders with China and Mongolia. This nomination is a revision of an earlier one deferred in 1996 due to questions about boundaries and levels of support. The new nomination has been renamed and significantly more focused in its geographic coverage.

The Golden Mountains of Altai (GMA) comprises an extensive mountainous area which is the watershed between central Asia and the Arctic Ocean and includes the headwaters of the Katun and Baya rivers. The confluence of these two rivers, beyond the boundary of the nominated site, forms the river Ob at 5,410 kms, the fifth longest river in the world, which flows north into the Arctic Ocean. Typical relief features of mountain peaks, include the 4,605 metre Mt. Belukha, cirques, trough valleys with lake basins, morainal hills and ridges. The origins of the mountains can in general be traced back to the Caledonian-Hercynian period, although rocks of the Pre-Cambrian Mesozoic and Cainozoic periods are found. The single most important factor in the landscape has been the influence of glaciation with five glacial periods in evidence: of 1,499 glaciers in the Altai region, many are within the nominated property, in the south Altai group and the central Altai group. The multitude of lakes is also a particular feature of the GMA.

The Altai region has a continental climate with vast contrast between warm and rainy summers and cold winters with little snow cover in the valleys and canyons and heavy snow in the mountainous areas. During the winter, the Altai is in a region of high pressure of the Siberian anti-cyclone which has its centre over Mongolia, which brings dry, clear weather. During the summer the climate is influenced by the Atlantic, with high rainfall.

The key values of each of the sites within the GMA include the following:

The Altaisky Zapovednik and the Buffer Zone around Teletskoye Lake in the eastern part of the Altai is composed of a mountainous taiga, a glacial zone, mountain meadows, and high altitude tundra and steppes. More than 1,400 vascular plants (70% of the Altai flora) are found in the Zapovednik and of these 17% are endemic species. The area supports a diverse fauna, including 72 mammal species and 310 bird species. The snow leopard and the mountain ram “argali” are also found within the Zapovednik. The Teletskoye Lake is the largest body of freshwater in south-western Siberia.

The Katunsky Zapovednik and the buffer zone around Mt. Belukha is located in the southern part of the Altai. It features a wide altitudinal variation and associated ecosystems, including mountain taiga, alpine meadows, glacial zones, high mountain tundra, and steppe areas. The Katunsky Zapovednik contains many important relic and endemic species. A significant feature is the extensive glaciation in the area.

The Ukok Quiet Zone is located in the south eastern part of the Altai Republic, on a high mountain plateau. The area is dominated by hills, steppe landscapes with marsh, streams and lakes.

### 3. COMPARISON WITH OTHER AREAS

Evaluation of mountain sites requires not only a comparison with other mountain ranges but also an assessment of uniqueness within their particular environmental context. The Altai Mountains cover an area 650km long and 600km wide with the highest massif reaching 4605 meters. The range is of secondary importance compared with the Caucasus and the Alps but rates higher in terms of extension, height and biological diversity than the Pyrénées in Europe. The Altai mountains have a number of specific natural characteristics of unique importance in relation to other mountain areas:

- The Altai is the major mountain range in Western Siberia biogeographic region (Suslov, 1962) and plays a central role in maintaining the hydrological regime of the Western Siberian Lowlands. The Altai provide the source of the greatest rivers of Western Siberia -- the Ob and the Irtysh – which are of crucial importance in supporting socio-economic activities in the lowlands but also in maintaining ecological processes in lowlands (WWF-IUCN, 1995). It has been estimated that 30% of all water in Eastern Siberia comes from the Altai Republic and this water largely has its origins in the nominated areas. This area compares favourably with other mountainous areas in relation to protection of hydrological values.
- The Teletskoye Lake is the largest body of freshwater in south-western Siberia and Siberia’s second largest after Lake Baikal. From the biodiversity point of view the Teletskoye Lake is considered the third most biologically diverse lake of Central Asia but is in the most pristine state. (WWF-IUCN, 1995).
- From the phyto-geographic point of view the GMA represents the most complete sequence of altitudinal vegetation zones in Central Siberia from steppe, forest-steppe, mixed forest, sub-alpine vegetation and alpine vegetation (WWF-IUCN, 1995), a zonation sequence particularly well illustrated in the Altaisky Zapovednik.
- More than 1400 vascular plants (70% of the Altai flora) are located in the Altaisky Zapovednik alone, and of them 17% are endemic species, including 60 narrow endemics representing Paleo-endemic from the Pleistocene Period. This is the highest level of endemism in the whole Altai mountains but is higher than in the Pyrénées (5%) and the Alps (7%) and very close to the Caucasus (20%). In addition, the Altai is a major global centre of origin of the montane floristic assemblages of northern Asia, which have subsequently spread into Central Asia. These include a number of important crop plant relatives. Thus the Altai mountains have a global significance in

understanding the evolution of the vegetation of Central Asia (WWF-IUCN, 1995; Messerli and Ives, 1997).

- Due to the presence of a high number of undisturbed glaciers, the Altai is one of the mountain ranges identified as having global importance in assessing the effects of global warming in mountain ecosystems by monitoring the variation and state of glacial health.
- The Altai plays a key role in the conservation of the snow leopard (*Uncia uncia*), a globally endangered species (IUCN, 1996). The Gobi-Altai population of this species serves as a core source for dispersing snow leopard individuals into southern Siberia. Enhancing the protection of areas in this nomination would help provide a protected corridor for the natural movement of this species across the Mongolian and Kazakhstan population, helping to maintain a viable number across their international range (Koshkarev, 1998).
- The nomination covers a range of landscapes features, and includes samples of the evolution and influence of major glaciation in the Quaternary Period. There are well developed complexes of great curving moraines, drumlins, outwash plains and different moraine lakes. Teletskoye and Marka-Kul Lakes are good examples of tectonic lakes. Some of these landscapes characteristics are also to be found in other isolated alpine massifs but in the Altai they are well-preserved and have a great potential for comparative studies that provide key elements to understand the geological and geomorphological evolution of mountains in the temperate zone.

In conclusion, while the Altai mountains do not rank as highly as the Caucasus the Pamirs, the TienShan and the Alps in many respects, they have many significant features and, specifically, have global significance as a centre of plant diversity and as a key location of extensive, undisturbed glaciers of global importance for assessing the impact of global warming on mountain ecosystems. The nominated area also enhances the conservation of globally endangered species such as the Snow Leopard and combine in a relatively small area a high diversity of landscapes features.

Finally, there are no existing World Heritage sites in this particular biogeographic province (Udvardy's Altai Highlands biogeographic province). WWF's Global 200 programme also identifies the Altai-Sayan mountain ecoregion as a priority area for conservation.

## 4 INTEGRITY

### 4.1 Legal Status

Legal protection stems from a number of federal laws and decisions, as well as laws and decisions of the Altai Republic. These include new laws relating to the environmental protection within the Altai Republic enacted since the 1996 IUCN evaluation mission to the Altai. Specifically, these include a decision of the Altai Republic on the "inclusion of natural properties of the Altai Republic in the World Heritage List", signed by the Premier of the Republic and the Government Committee of Ecology. This decision covers all of the nominated sites and is a positive sign indicating strong commitment to the protection of key sites within the Altai Republic. Additionally, the Altaisky and Katunsky Zapovedniks are offered protection at the highest level under the laws of the Russian Federation with the buffer zones around the Teletskoye Lake and Belukha mountain protected under the Federal Forest Service. The Ukok Quiet Zone is protected by laws and decisions of the Altai Republic and has recently been given strict protected status. Other actions have been taken to protect the integrity of the site, including implementation of restrictions on grazing and herding of cattle from Mongolia. Overall, IUCN considers that the matrix of laws at the Federal and Provincial level provide adequate levels of protection to ensure that the environmental values of the nominated areas are maintained. However, it is considered that protection under

Federal laws should also be provided for the Ukok Quiet Zone, to bring its protection site into line with the other parts of the nomination.

#### 4.2 Management

The Altaisky and Katunsky Zapovedniks are managed by The State Committee on Environmental Protection of the Russian Federation under provisions of the Federal Law on Nature. Buffer zones surrounding Teletskoye Lake and Mt. Belukha are managed by the Federal Forest Service and Committees for Nature Protection and for Hunting and Fishing of the Government of Altai Republic. The Ukok Quiet Zone is managed under Committees for Nature Protection and for Hunting and Fishing of the Government of the Altai Republic.

Management of the GMA focuses on resource protection and research. All of the nominated areas have management plans or have plans in an advanced state of preparation. The Zapovedniks are relatively well staffed with 80 staff in the Altaisky Zapovednik and 70 in the Katunsky Zapovednik. However, the availability of funds for management pose a significant challenge. The budget for the Altaisky and Katunsky Zapovedniks comes from the Federal Committee for the Protection of Nature and the budget for the Ukok Quiet Zone comes from the Altai Republic. Funds for management are declining significantly and this greatly constrains management effectiveness (although WWF now has a US\$5 million project in the Altai). The involvement of international donors and partners can significantly assist and should be encouraged. Already, the British “Know How” Fund is supporting planning and management activities within the Katunsky Zapovednik. Although finance does pose a constraint on management, the low levels of use and threats to the area mean that no major problems for integrity exist at this time.

Ecological research is one of the major management activities within the site and has been undertaken for many years. It is important that future research programmes build on this wealth of experience and that research findings are applied to management programmes such as wildlife and fire management.

#### 4.3 Human Use of the Area

There are no economic activities within the nominated areas and activities allowed are restricted to ecological research and education. There is potential for tourism in the areas of the Teletskoye Lake (in Altaisky), the Belukha Mountain and the Katun river (in the Katunsky Zapovednik) such as climbing, camping, hiking, rafting, and other outdoor activities tourism and is increasingly seen as an important aspect of future development in the region. There are already some tourist developments adjacent to the nominated areas such as the tourist lodge at the southern end of Lake Teletskoye. At present, tourism is constrained by difficulties of access and lack of facilities. Nevertheless, a number of international tour companies have organised tourist trips to the region and it is anticipated that this will continue. A tourism strategy for the region, including facilities and infrastructure is considered a vital need. In relation to the Quiet Zone, all types of industrial and large-scale economic activities are prohibited, except for traditional grazing. Overland vehicles are prohibited from travelling in the area outside the one road recently been set aside for use by the border guards. Hunting and fishing are prohibited.

#### 4.4 Threats

There are few direct threats to the environment of the nominated sites at present. Grazing has been the principal human impact to date, but this has been isolated and at a low level. An issue has been raised in relation to rocket boosters associated with rockets launched from Kazakhstan, falling to earth within the Altaisky Zapovednik. The extent of this problem and the specific environmental impacts are unclear at this stage. It is understood that the Altai

Republic has developed an environmental agreement with two neighbouring Republics, and that one of the elements of this agreement relates to this issue.

## 5. ADDITIONAL COMMENTS

### 5.1 Cultural Heritage

The region has a rich cultural heritage. The first humans appeared in the region almost a million years ago as evidenced by Palaeolithic settlements located in the region of Gorno-Altai. The area of GMA was part of emerging and collapsing tribal unions, *khanates*, and the empires of the Scythians, Turks, Uigurs, Yenisey Kirgiz, Kidans, Mongols and Oitrats. From the middle of the 18<sup>th</sup> Century AD, the Altai region became part of the Russian Empire. The area is sparsely populated with local populations of Russians and Altaisky, a Turkish speaking people, mainly involved in traditional pastoralism, low intensity agriculture, hunting and gathering. These people have co-existed with nature for millenia and have a strong affinity with the natural environment. Indeed, one reviewer commented that the region's important biodiversity is probably not due to purely to natural factors but to the millenia of grazing. The Ukok Quiet Zone and Mt. Belukha have particular cultural and religious values for local people. Taking all this into account, there may be reason to consider the GMA on cultural grounds as well.

### 5.2 Regional Integration

Integrated regional planning for sustainable development is being undertaken in the Republic and it is important that planning for the GMA is linked with this broader regional planning framework. It is also important that planning for protected areas be integrated across boundaries. There is potential for expanding the boundaries of the nominated areas into adjoining Republics. Specifically, there is potential for linking the Altaisky Zapovednik in the Altai Republic with the Aba Kanske Reserve in the Hakacea Republic (Abakanske is contiguous with the north eastern portion of the Altaisky Zuapovednik). There is also potential for linking the Altaisky Zapovednik with adjoining protected areas in the Tuva Republic. Any expansion of the area between the Altai Republic and adjoining republics should be implemented in the context of the joint environmental agreement between the three Republics. There is also strong potential for transboundary expansion of the nominated area, in association with those parts of the Altai mountains in the neighbouring countries of China, Mongolia and Kazakhstan. It would be desirable for possible additions to the nominated area to be carefully considered and addressed as one integrated exercise.

## 6. APPLICATION OF WORLD HERITAGE NATURAL CRITERIA

The GMA are considered under all four natural criteria:

(i) *Outstanding Example of Major Stage of Earth's History and Geological Features.*

The nominated area provides an excellent example of the geological history of Asia. The most important factor in the development of the landscape has been the influence of glaciation, with as many as five glacial periods in evidence. There are particularly well represented in the Katunsky Zuapovednik and in the Mt. Belukha buffer zone. These areas contain all or most of the key interdependent elements of glaciation, in their natural relationships. The presence of the high number of undisturbed glaciers in the nominated area makes it significant as a site for assessing the effects of global warming in mountain ecosystems. IUCN, however, considers inscription under the criterion is not warranted as the geological values of the GMA are more of regional than international importance.

(ii) *Contains Outstanding Examples Representing Significant On-going Ecological and Biological Processes*

The nominated area has important hydrological values and provides an outstanding example of processes relating to fresh water. The Altai is the major mountain range in the western Siberia biogeographic region

and plays a central role in maintaining the hydrological regime of the western Siberian lowlands. Protection of catchment values within the nominated areas are particularly significant when it is considered that 30% of all water in eastern Siberia comes from the Altai Republic, largely originating from the nominated areas. However, IUCN considers inscription under this category is not warranted for the same reason as criterion (i).

(iii) *Contains Superlative Natural Phenomena or a Site of Exception Natural Beauty*

The variety of landscapes and ecosystems within the nominated area from the steppes to the glaciers, provides diverse and spectacular scenery but overall is not seen as being of the superlative character needed to meet this criterion.

(iv) *Contains Extremely Important Habitat for Biological Diversity and Threatened Species*

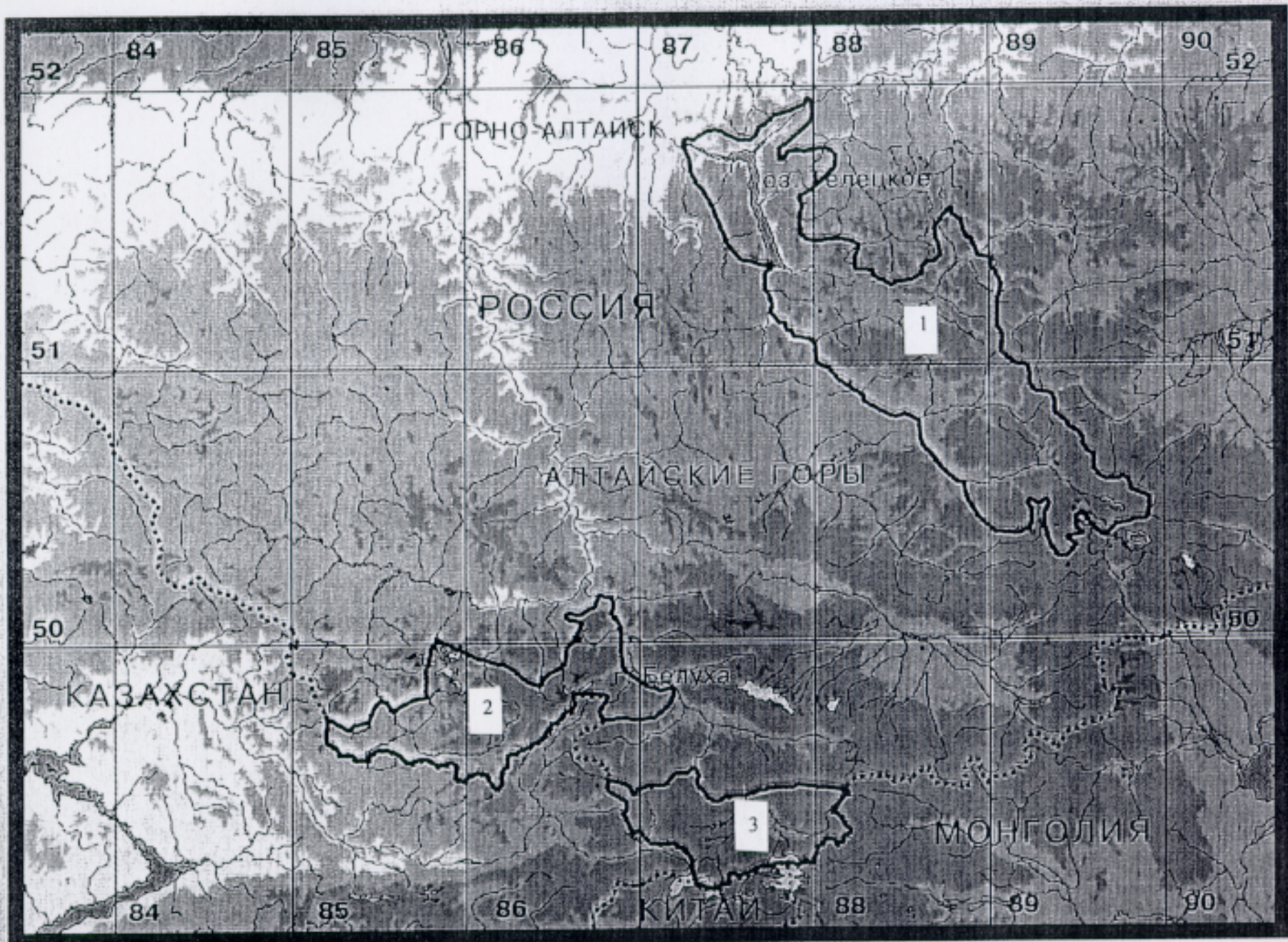
The Altai region is an important and original centre of biodiversity of plant and animal species, a number of which are rare and endemic. Particularly significant is the Altaiskiy Zapovednik which has a unique biogeographical position, representing the interaction of Eurasia floristic and faunal influences with different regions, (including Siberia, and Central Asia). The GMA also contains extremely important habitat for the protection of a number of globally threatened species, including the Snow Leopard, and the Altai argali. The Altai population of snow leopard serves as a core source for dispersing snow leopard individuals into southern Siberia.

The rich biodiversity of the GMA, its place as a major global centre of origin of the montane floristic assemblages of northern Asia and its importance as habitat for threatened species warrants inscription under this criterion.

## **7. RECOMMENDATION**

That the nominated area be inscribed on the World Heritage List under criteria (iv).

The Bureau may wish to recommend that the State Party to: complete management plans as soon as possible; develop a tourism strategy for the region; pursue international sources of funds to support management; and initiate a cooperative process with neighbouring states to consider possible transboundary expansion.



The Golden Mountains of Altai: 1. Altaisky Zapovednik and Teletskoye Lake; 2. Katunsky Zapovednik and Mt. Belukha; 3. Ukok Quiet Zone on the Ukok Plateau