WORLD HERITAGE NOMINATION - IUCN TECHNICAL EVALUATION

WESTERN CAUCASUS (RUSSIAN FEDERATION)

1. DOCUMENTATION

i) **IUCN/WCMC Data Sheet:** (4 references).

ii) **Additional literature consulted:** V. Akatov et al. (eds.) **Adygea: Nachhaltige Entwicklung in einer Bergregion des Kaukasus**. Grüne Liga/NABU, Berlin, 1999. A.M. Amirkhanov et al (eds.) **Biodiversity Conservation in Russia**. State Committee of the Russian Federation for Environment Protection, Moscow, 1997; I.V. Chebakova (ed.) **National Parks of Russia: A Guidebook**. Biodiversity Conservation Center, Moscow, 1997; S.D. Davis et al. (eds.) **Centres of Plant Diversity: A Guide and Strategy for their Conservation, Volume 2, Asia, Australia and the Pacific**. WWF/IUCN, Gland, 1995; V. Krever et al. (eds) **Conserving Russia's Biological Diversity: An Analytical Framework and Initial Investment Portfolio**. WWF, Washington DC, 1994; N.M. Zabelina et al. (ed.) **Zapovedniks and National Parks of Russia**. LOGATH, Moscow, 1998; documents relating to review of Kavkazskiy State Biosphere Reserve by UNESCO Advisory Committee on Biosphere Reserves, 1998; maps of geology, soils, and forest taxa in Kavkazskiy State Biosphere Reserve.

iii) **Consultations:** 2 external reviewers, relevant officials from government organisations in Russia, consultant from NABU, Greenpeace Russia, WWF Russia, IUCN Russian office.

iv) **Field visit:** M. Price, June 1999.

2. SUMMARY OF NATURAL VALUES

The nominated site is at the far western end of the Greater Caucasus mountains within Krasnodar Kray and the Republics of Adygea and Karachevo-Cherkessia (see Map 1). It includes a number of units, totalling 351,620ha (see Map 2). The largest of these is the Caucasus (Kavkazskiy) state biosphere reserve (275,841ha), together with its buffer zone (6,000ha), most of which is 1km wide and runs along much of the perimeter of the reserve except in the Republic of Karachevo-Cherkessia and where the reserve abuts Georgia (Abkhazia). A further 56,910ha of the nominated site comprises the three elements of the most strictly protected zone of Sochi National Park (all in Krasnodar Kray). The remainder of the nominated site comprises four small areas in the Republic of Adygea: the Bolshoy Thach nature park (3,700ha); and the nature monuments of Buiny Ridge (1,480ha), the headwaters of the Tsitsa River (1,913ha) and the Pshecha and Pshechashcha Rivers (5,776ha).

The region is mountainous, ranging in altitude from 250m to peaks over 3,000m, of which the highest is Akaragvarta (3,360m). The geology is very diverse, including sedimentary, metamorphic, and igneous rocks from the full span of periods from the Precambrian to the Paleozoic; it is also very complex, reflecting the origin of the Caucasus mountains. The north part of the site is characterised by karst limestone massifs with many caves, including 130 in the Lagonaki massif alone. Over the majority of the site, the landscape has a typical glaciated relief, with high peaks, 60 remnant glaciers (total area 18km^2), moraines, and over 130 high-altitude lakes. The main rivers on the north side are the Bol'shaya Laba and Belaya, which feed into the Kuban; on the south side, the rivers are shorter, flowing into the Black Sea. There are numerous waterfalls, up to 250m in height.

The flora of the area is characterised by clear zonation, both vertically and from west to east. The western part has oak-hornbeam and beech and beech-fir forests; the higher central parts have fir-spruce forests with birch and maples at high altitudes; and the eastern parts have both fir-spruce and pine-cedar forests. Above the timberline at c. 2,500m are endemic rhododendron thickets as well as subalpine and alpine meadows. In total, 1,580 vascular plant species have been recorded on the site, including 967 in the high mountain zone, of which about one third are endemic. Of the forest plant species, about one fifth are relict or endemic. About 10 percent (160) of the vascular plant species are considered threatened with extinction in the Russian Federation, the Republic of Adygea, and Krasnodar Kray. There are over 700 species of fungi, including 12 which are threatened in Russia.

The fauna is also rich, with 384 vertebrate species. The 60 mammal species include wolf, bear, lynx, wild boar, Caucasian deer, tur, chamois, and reintroduced European bison which is globally endangered. Signs of snow leopard area occasionally seen (globally endangered). There are 246 species of birds, including many endemics, 24 of which are threatened in Russia, and 24 which are globally threatened. There is also a high species richness of amphibians, reptiles, and fish, with many rare species. About 2,500 insect species have been recorded; the projected total is 5,000.

3. COMPARISON WITH OTHER AREAS

The site is part of one of the major mountain ranges of Europe, and needs to be compared both with these and with other mountain ranges around the world. With a total length of 1,100km, the Greater Caucasus is the third longest mountain range in Europe, exceeded only by the Scandinavian mountains (1,500km) and the Urals (2,000km). It is longer than the Alps or the Carpathians. The Caucasus rises higher than any of these other European ranges; its highest peak is Elbrus (5,642m). However, the site does not include the highest peaks of the range. Its scenery is also not as spectacular as in the higher parts of the Caucasus, being more reminiscent of the Alps or Rocky Mountains than the high mountain ranges of Asia or South America.

The Caucasus as a whole is isolated from other mountains by seas and plains, and this high degree of isolation – together with its transitional position between Europe and Asia – is responsible for a high level of endemism. The vascular plant species richness of the entire Greater Caucasus is estimated at 6,000 species, and the site includes nearly one-third of these, including Tertiary relicts, Mediterranean and Asiatic Turano-Iranian elements, and many endemic species.

The Greater Caucasus may be subdivided into three subunits, each with different ecological conditions. On the territory of the Russian Federation, there are four other reserves of national park or reserve (zapovednik) status, of which three are in the central Caucasus (Prielbrussky national park and Kabardino-Balkarsky and Severo-Osetinsky zapovedniks). The only other reserve or national park in the warmer, humid western Caucasus is the Teberdinsky zapovednik/biosphere reserve (85,000ha), at altitudes from 1,260 to 4,042m. The vascular flora includes 1,260 species and there are 224 vertebrate species. The geology includes only crystalline rocks. Before 1935, the area was used for intensive grazing, logging and hunting. In comparison, the nominated site is much larger, encompasses a greater range of vegetation zones, and has a greater species diversity and a greater geological variety. It has also had a very limited human influence. Around its edges, there have been some pressures from grazing, logging, and hunting – and these have led to some boundary changes. Some of the areas taken out of the zapovednik are now either under strict protection in Sochi National Park (established in 1983), or nature parks or monuments established by the President of the Republic of Adygea; these are all included in the proposed site. Overall, the site is remarkable because it primarily consists of natural ecosystems with minimal or no human influence.

A principal reason for the establishment of the zapovednik in 1924 was to re-establish the mountain sub-species of the European bison. Hybrids of the sub-species were reintroduced to the wild in the 1940s, and have gradually recolonised much of the northern part of the zapovednik, which provides a reservoir from which animals have spread into adjacent areas. The current population in the

zapovednik is about 350, down from a high of c. 700 in the early 1990s primarily due to bad winters. Local scientists aver that the morphological attributes of the present herd are very similar to those of the original sub-species.

In conclusion, although the site is not in the highest part of the Caucasus, it has a remarkable diversity of geology, ecosystems, and species. It is of global significance as a centre of plant diversity (WWF/IUCN, 1995). Apart from the Virgin Komi forests of the Urals, it is probably the only large mountain area in Europe that has not experienced significant human impacts, containing extensive tracts of undisturbed mountain forests that are unique at the European scale, and subalpine and alpine pastures that have only been grazed by native animals. No mountain World Heritage site in Europe has a comparable range of habitats, from lowland forests to glaciers. The forests include very large specimens, including possibly the largest trees in Europe: specimens of Abies nordmanniana (Nordmann fir) 85m high with a diameter of more than 2m. The site also provides core habitat for the endangered mountain sub-species of the European bison (even though these derive from hybrid populations) and is occasional habitat for snow leopards. Finally, there are no existing World Heritage sites in this particular biogeographic province (Udvardy's Caucaso-Iranian Highlands province).

4. INTEGRITY

4.1. Ownership and legal status

The site consists of land under three types of ownership and legal status:

1) Caucasus State Biosphere Reserve (CSBR): created in 1924 and now under federal jurisdiction through the State Committee for Environment Protection (Goskomehkologia) under the federal law on protected natural areas (15.02.95);

2) Sochi National Park: created in 1983 and under federal jurisdiction through the Ministry of Forestry under the federal law on protected natural areas (15.02.95);

3) the buffer zone of the CSBR, the Bolshoy Thach Nature Park, and the Nature Monuments of Buiny Ridge and the headwaters of the Tsitsa, Pshecha, and Pshechashcha rivers which are protected territories of regional importance, under the jurisdiction of the Forests Committee of the Republic of Adygea. The buffer zone was declared in 1981 and the other protected areas in the 1990s, by decree of the President of the Republic of Adygea.

4.2. Management

The various parts of the site are under different management regimes. Totals for staff are given for the entirety of both the CSBR and Sochi National Park, although both of these include areas outside the nominated site.

1) CSBR. The director-general is in Adler, with a sub-director in Maikop responsible for the part of the reserve in Adygea (about one-third of the CSBR). There are regulations for the reserve, and a management plan was prepared in 1997. The reserve is divided into six regions, each with a head ranger and other rangers under him. The total staff of the reserve is 199, including 15 administrative staff, 45 scientific workers, 95 rangers, 8 people in the department of ecological education, and 44 technical personnel.

2) Sochi National Park. The director is in Sochi; as well as the federal Ministry of Forestry, the Forest Committee of Krasnodar Krayhas some influence over activities in the park through its complex programme of nature protection. In 1987, a project for the forest management of the park was produced, with detailed maps showing four zones: protected, landscape protection

(zakaznik), extensive use, and intensive use. A proposal has been made to change these zones, and to have a five-fold zonation. However, no decision has been made in this regard, and it was not possible to obtain a map of current or proposed zonation during the field visit or subsequently. The total staff of the park is 169, including 17 in administration, and 15 forest guards. The remainder are guards, technicians, and other workers.

3) Buffer zone, nature monuments and nature park in Adygea. There are no personnel allocated to the management of these areas, but they are managed to some extent by staff of the CSBR, under agreement with the government of the Republic of Adygea. While these areas have had regulations for two years, there is no management plan for any of them, though they fall within the scope of the complex programmes of social-ecological development and of tourism for the Republic. According to the regulations, all human uses (particularly logging and hunting) are forbidden in the nature monuments. No logging takes place in the Bolshoy Thach Nature Park.

During the field visit and subsequently in Moscow, the issue of formulating and implementing a single management plan for the entire site was discussed with officials from all of the agencies responsible for managing the various elements of the site. The management of the CSBR and representatives from the Republic of Adygea indicated that they did not see a difficulty with having one management plan for the land under their jurisdiction, though it was noted that the State Committee for Environment Protection would have to pay for its preparation. However, there are questions as to whether the National Park management is prepared to have parts of the park included in a management plan for the entire site and this is still unresolved. Discussion with officials of Krasnodar Kray and the federal Ministry of Forestry determined that the director has a certain degree of autonomy in making such a decision. IUCN considers that development of an integrated management strategy for the entire site is important, that it should involve all relevant agencies and that it should be undertaken as quickly as possible.

4.3. Human use of the area

Human use of most of the area is very limited, apart from employees of the CSBR and the national park and a small number of visiting scientists. Approximately 2% of the area of the CSBR is allocated to the rangers to grow crops and for grazing their animals; rangers are also allowed to remove small quantities of wood for fuel and for bridges. All of these areas are around the edges of the reserve. There are a few wooden buildings in the reserve to provide shelter for rangers and scientists.

Part of the reserve – the Lagonaki plateau (16,500ha) – was not included in the nomination because of past high levels of grazing and continuing tourist use. The area was within the initial boundaries of the CSBR but later removed. Until 1955, 50-60,000 head of livestock (cattle, horses, sheep) were grazed on the plateau each summer. This led to significant changes in vegetation as well as some soil erosion. By the end of the communist era, numbers of cattle had declined significantly, not least because of lowered primary productivity. In 1992, the area was returned to the CSBR, and currently no more than 1,000 head of cattle (and some horses) graze the area each summer, all owned by local farmers.

Lagonaki is also the starting point for Federal Trail 30. This starts at the end of the only asphalt road to enter the reserve (but only for a few hundred metres). The trail passes through the CSBR, crossing the main ridge of the Caucasus on the way to the Black Sea. In the communist era, 10-15,000 people used this trail, in organised groups. In recent years, only 1-3,000 people a year have used the trail. It is likely that the forests along this trail have been used to some extent to provide firewood and shelter. There are also other trails on the Lagonaki plateau.

Apart from the road to Lagonaki, the only other road reaching the northern part of the reserve goes to the small settlement of Guzeripl, where the reserve has a museum which attracts about 3,000 visitors a

year. On the south side of the site, the parts of Sochi National Park included in the nomination are not accessible by road. No information is available on numbers of tourists to these areas, although an official in the federal Ministry of Forestry noted their attractiveness.

4.4. Threats

Overall, the site is characterised by a very high degree of naturalness. Four types of threats can be recognised: hunting, a potential road, tourism, and logging.

Hunting. The nomination document includes a table which shows significant decreases in the numbers of game animals over the period 1990-97: deer 2500 -> 1300; tur 6331 -> 2900; chamois 2800 -> 2090; bison 733 -> 350; roe deer 300 -> 200. During the field visit, considerable time was spent in exploring these declines. The principal reason appears to have been severe winters in the early 1990s, when the majority of the losses occurred; numbers have subsequently been reasonably stable. Another reason given by CSBR staff was that funds for providing salt for animals in the reserve (formerly placed by helicopter) have decreased, so that less salt has been placed – while over the same period, the same amount (if not more) salt has been placed in hunting reserves (zakazniks) and domestic grazing areas adjacent to the CSBR. At the same time, the numbers of animals permitted to be shot each year in these reserves has increased; a decision of the Department for Hunting of the federal Ministry of Agriculture. Thus, it would seem that some animals are being drawn out of the reserve and then shot, decreasing overall populations.

There is also some illegal hunting within the reserve. This is mostly by local people from Adygea, for food; each year, rifles are confiscated and a few people are imprisoned and fined. More critical has been hunting by people from Abkhazia, who sometimes spend considerable periods in the CSBR killing animals and preparing meat to take back. There have been gunfights with CSBR staff, and some people have been killed. Another possible threat to wild ungulates is posed by wolves, which were shot from 1975 until 1982. However, there was general agreement that these pose more of a risk to the livestock of rangers than to wild ungulates. The general consensus was that populations of ungulates are stable in spite of undoubted pressure; and the size of the site is one of its guarantees of integrity in this regard.

Potential road. At present, no roads cross the site. Roads reach the northern boundary at Guzeripl and Lagonaki, where the road then becomes the one major long-distance hiking trail across the main ridge of the Caucasus to the Black Sea. A road has been proposed more or less along this route (to Dagomys on the coast), and initial technical and engineering studies have been undertaken. The Republic of Adygea has asked the Federal Road Service for funds for the economic and environmental evaluation of the proposal. There appear to be two main reasons for this proposal: 1) to provide better access from Adygea to the Black Sea coast; and 2) to facilitate the development of tourism in the mountains around the road (see section below).

With regard to the first reason, there is already a road which connects Adygea to the Black Sea coast at Tuapse. This road is serviceable, but needs upgrading. However, once upgraded, it would be usable all year, as it crosses only low mountain passes. In contrast, the road through Lagonaki would cross a high mountain pass, and would probably be open only c. 4 months a year because of the high snowfall in the area. It would run through difficult terrain, and would be likely to have substantial environmental impacts both directly (e.g., road construction, habitat loss, animal mortality from traffic, increased numbers of landslides) and indirectly through increased access potentially leading to hunting, increased tourist use, and possibly logging on the southern slope. These impacts are of concern when considered in the context of the nomination of this area as a World Heritage site.

There has been significant public outcry against the Lagonaki-Dagomys road, coordinated by the Socio-ecological Union of the Western Caucasus. The issue was raised during the field visit with the

President of the Republic of Adygea, who was not willing to give an assurance that the road would not be built. It is noted that the Republic's Minister of Environmental Protection is against the construction of the road, as is the government of Krasnodar Kray.

IUCN considers that the status of this road in relation to the nominated area should be clarified before a final decision is made on the World Heritage nomination.

Tourism. At present, levels of tourism to the site are very low, though no data are available except for the museum at Guzeripl (3,000/year). The management of the CSBR recognises that tourism can have environmental impacts, but at the same time they need financial resources, and tourism is an obvious source. In 1998, the CSBR placed a barrier at the Lagonaki entrance to the reserve. The only vehicles allowed in are those of the cattle herders on the Lagonaki plateau or those on official business. Visitors are charged an entry fee, and this provides an important contribution to the budget of the CSBR.

Given that this zapovednik suffers from the same problems of financial insecurity as all others in Russia, it is not appropriate or realistic to ban tourism; and the management of the CSBR indicated during the field visit that the development of areas on the Lagonaki plateau and in the buffer zone for tourism will be undertaken in consultation with the reserve's scientific council. Nevertheless, in at least one meeting considering the proposed Lagonaki-Dagomys road, officials of the Republic of Agygea responsible for the Fisht ecological-tourist zone immediately north of the CSBR were in favour of developing the road. Similarly, the President of the Republic has recognised the value of the road for developing tourism.

Overall, it seems likely that levels of tourism in the Lagonaki-Fisht area and some parts of the border areas of the site will increase. However, the management of the CSBR and officials of the Republic of Adygea recognise the need for appropriate development; and it must be recognised that access to the north side of the site is limited and seems likely to remain so.

No information is available regarding levels of tourism, if any, in the parts of Sochi National Park within the proposed site. Adjacent to the southern boundary of the CSBR is the summer and winter sports resort of Krasnaya Polyana. This – as well as the various resorts along the coast of the Black sea – is certainly a source of tourists, and both the management of Sochi National Park and the federal Ministry of Forestry recognise the tourism potential of the park and adjacent parts of the CSBR.

Logging. Although the site includes very large trees, only the parts in the four protected areas in Adygea have experienced significant logging. This should now effectively have stopped with their designation. At present they are not easily accessible by road.

To the south of the site, a zone designated for forestry divides the Sochi National Park in two, reaching the southern boundary of the CSBR. However, as the terrain in this area is very rugged, it appears unlikely that there would be logging near this boundary. In the parts of the site within Sochi National Park, there may be pressure for logging to supply the towns along the Black Sea coast, or for export. It was not possible to explore these issues in any detail during the field visit. The situation with logging should be kept under review.

5. ADDITIONAL COMMENTS

Regional management context. The majority of the site is designated as a biosphere reserve. Adjacent to the site is not only the remainder of Sochi National Park (to the south), but also seven zakazniks and the Fisht ecological-tourist zone of the Republic of Adygea to the north. In one way or another, all of these areas are formally devoted to the objectives of conservation and/or sustainable development; and it is notable that a sustainable development concept has recently been developed for

the part of the Republic of Adtgea north of the CSBR, to be implemented from late 1999. There is therefore considerable potential for more integrated regional planning and for fuller implementation of the objectives of the biosphere reserve concept in this region. This would require greater levels of involvement of the local population, and better coordination between the individuals and agencies responsible for managing the various areas.

Lagonaki plateau. One part of the CSBR is excluded from the nomination: the eastern part of the Lagonaki plateau which was formerly excessively grazed and now has limited grazing and some tourism. Following discussion and a site visit during the field visit, it would seem appropriate to consider this part of the Lagonaki plateau as part of the nomination, for the following reasons: 1) the high biological diversity of this area: the carabid species diversity is particularly high, and two-thirds of the site's vascular plant species, including many endemics, are found there; 2) grazing levels are now low; 3) CSBR managers plan to use the area for research on revegetation of eroded areas and on increasing species richness on heavily-impacted areas; and 4) CSBR managers are aware that tourism should be developed sustainably and in an integrated way with the site.

6. APPLICATION OF WORLD HERITAGE NATURAL CRITERIA

The site has been nominated under all four criteria.

Criterion (i): Earth's history and geological features

The nominated site includes sedimentary, metamorphic and igneous rocks from all periods from the Precambrian to the Paleozoic. It is very complex, primarily consisting of a series of thrust sheets, with a major Triassic anticline composed of karst limestone with deep gorges and many caves in its northern part. It shows all the effects of quaternary glaciation; remnant glaciers still remain. However, none of these characteristics are of outstanding significance at the global scale, being typical of many mountain ranges around the world.

Criterion (ii): Ecological processes

Since the last glaciation, ecological succession has taken place across the nominated site, resulting in a great diversity of ecosystems. The forests are remarkable at the European scale for their lack of human disturbance, i.e., natural ecological processes have continued over millennia. Vegetation dynamics and timberline have not been influenced by the grazing of domestic animals; an unusual situation at a global scale. There are important populations of both ungulates and wolves, providing opportunities for studying both competitive interactions between grazing animals and predator-prey interactions. Given the size and untouched nature of the site, it should be considered for inscription under this criterion.

Criterion (iii): Superlative natural phenomena, scenic beauty

The nominated site includes the typical variety of mountain landscapes. Overall, these cannot be considered as being of the superlative character needed to meet this criterion.

Criterion (iv): Biodiversity and threatened species

The Caucasus are one of the global centres of plant diversity. The nominated site includes nearly one-third of the 6,000 plant species of the Greater Caucasus, including Tertiary relicts and Mediterranean and Asiatic Turano-Iranian elements. About a third of the high mountain species and about a fifth of the forest species are endemic. The fauna is also very rich. The site is the place of origin and reintroduction of the mountain sub-species of the European bison, and acts as a reservoir for its expansion through the region. There are stable populations of many other large mammals. The

avifauna is rich, and includes many endemic species. There are also high levels of species richness and endemicity in the lower orders.

Apart from the Virgin Komi Forests of the Urals, the nominated site is probably the only large mountain area in Europe that has not experienced significant human impacts. Its subalpine and alpine pastures have only been grazed by wild animals. Its extensive tracts of undisturbed mountain forests, extending from the lowlands to the subalpine zone, are unique in Europe. The forests include very large specimens, including possibly the largest trees in Europe: specimens of Abies nordmanniana (Nordmann fir) 85m high with a diameter of more than 2m.

The rich biological diversity of the site, reflecting its location at the meeting place of elements from surrounding regions and its isolation; its size, including a wide range of undisturbed ecosystems over an altitude of more than 3,000m; and its importance as habitat for threatened species warrants inscription under this criterion.

7. RECOMMENDATION

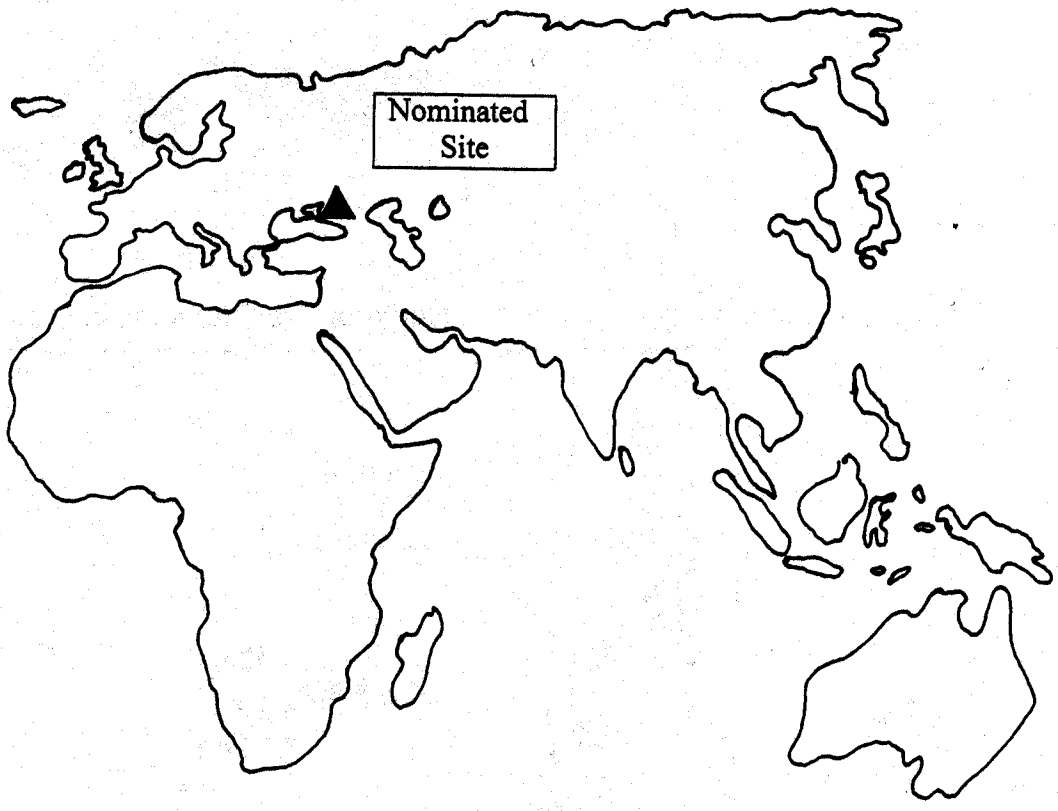
That the Bureau note that the following areas (see Map 3) have potential for inscription on the World Heritage List under criteria (ii) and (iv):

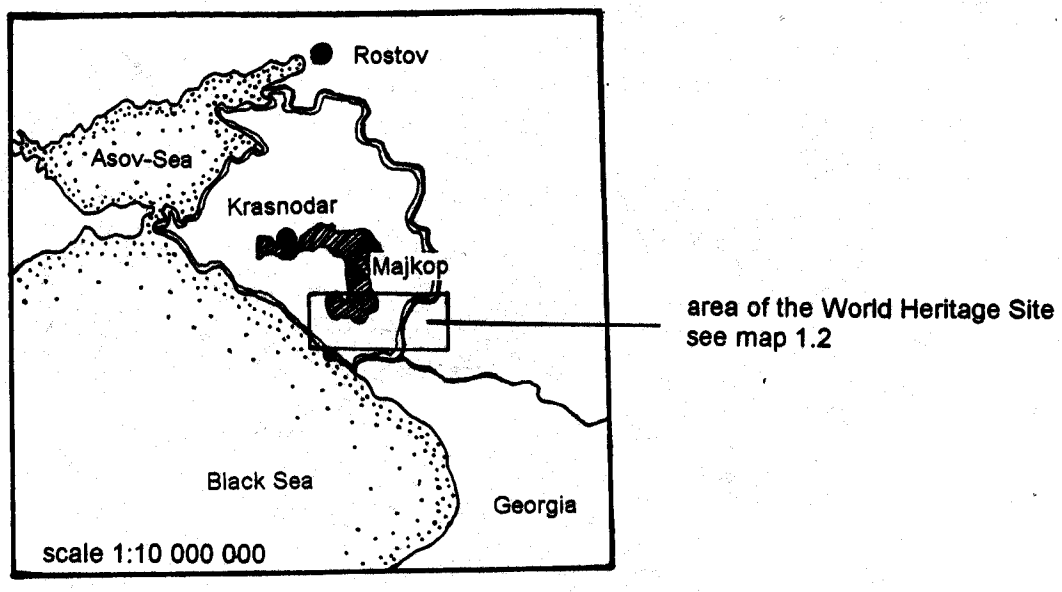
- the entire territory of the Caucasus State Biosphere Reserve (CSBR) with the exception of the Khosta Yew-Box Grove, but including the entire Lagonaki plateau;

- the buffer zone of the CSBR, the Bolshoy Thach nature park, and the nature monuments of Buiny Ridge and the headwaters of the Tsitsa, Pshecha, and Pshechashcha rivers which are protected territories of regional importance, under the jurisdiction of the Forests Committee of the Republic of Adygea.

IUCN also notes the uncertainty over the future of the Lagonaki-Dagomys road and its potential impact on the integrity of the site. IUCN thus recommends to the Bureau that this site be **deferred** and that the Bureau recommends that the State Party:

- submit a revised nomination with boundaries covering the above recommended area;
- advise of the status of the Lagonaki-Dagomys road in relation to the nominated area; and
- advise on mechanisms proposed for ensuring the integrated management of this area including the preparation of a management plan.





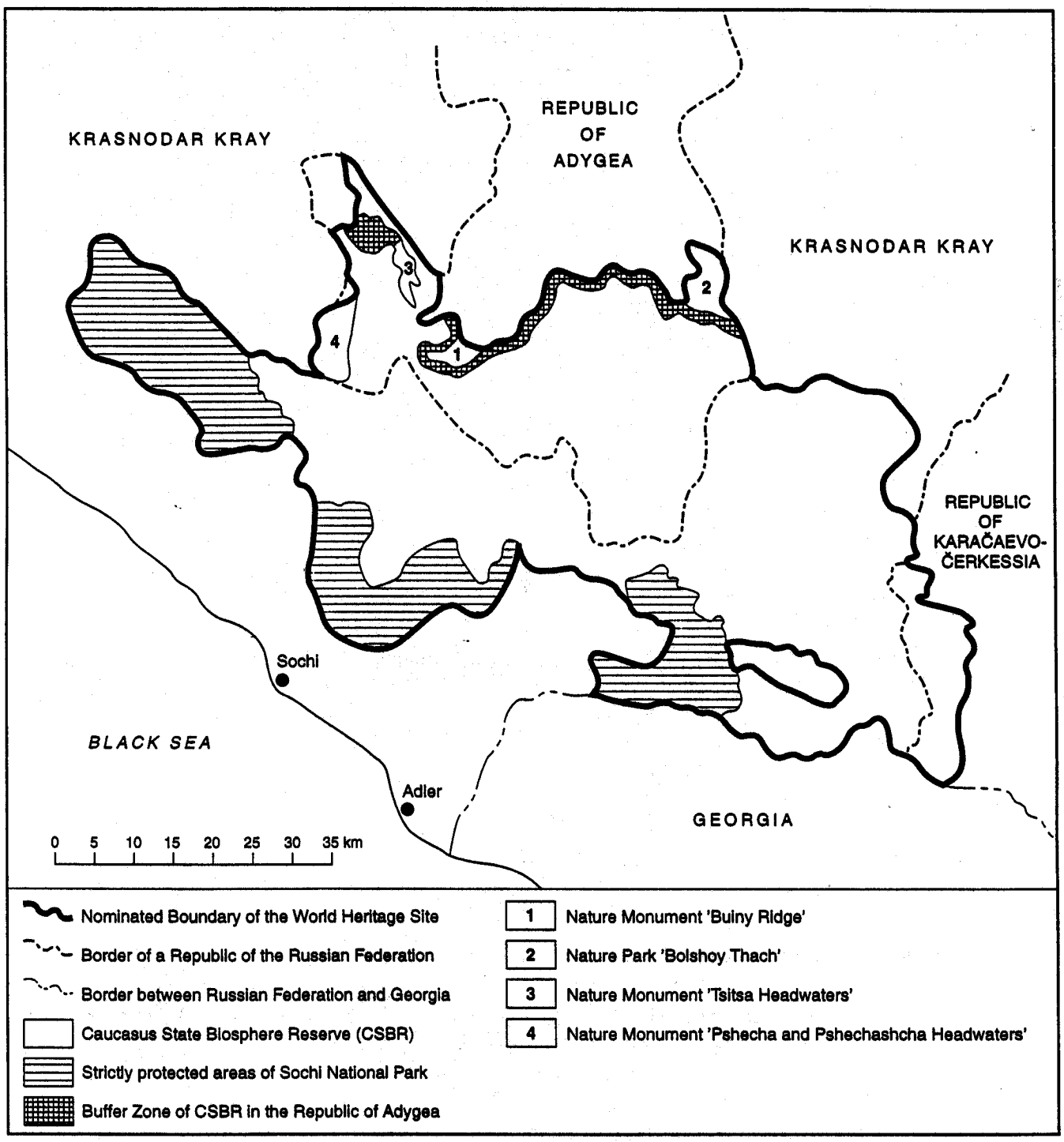
World Heritage Site 'Western Caucasus'

Map 1.1: Position of the World Heritage Site in the Old World (top) and within the Krasnodar Region of the Russian Federation (bottom)

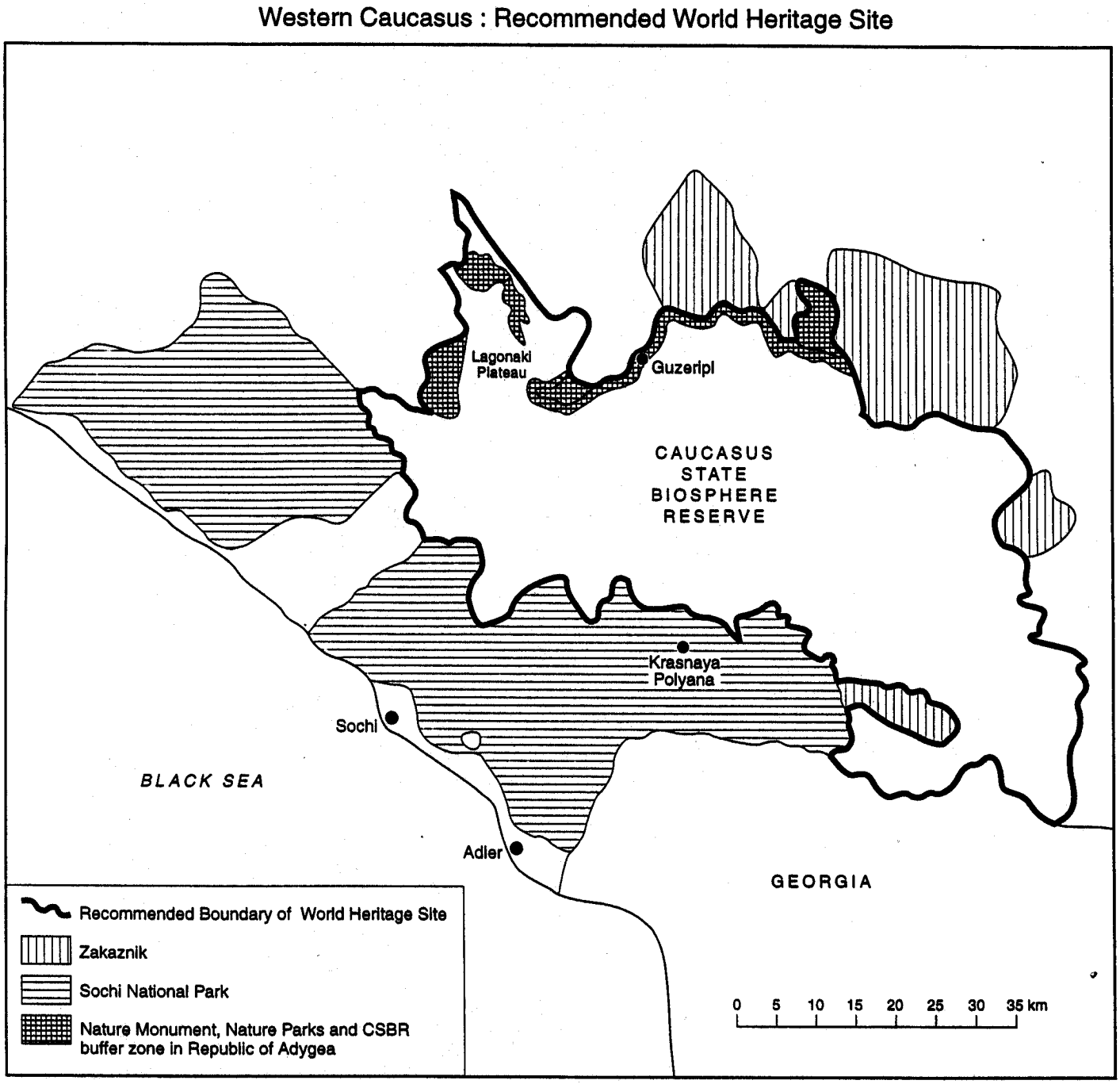
- Location of the World Heritage Site (top)
- Location of the World Heritage Site (bottom)
- Krasnodar Region
- Republic of Adygea

Map 1. Location of Nominated Site

Western Caucasus : Nominated World Heritage Site (Nomination, April 1998)



Map 2: Nominated Site



Map 3: Recommended Site