

## World Heritage Sites

### Protected Areas and World Heritage



## PIRIN NATIONAL PARK BULGARIA

*The Pirin Mountains in south-west Bulgaria, reach 2,900 meters high. Pirin National Park has beautiful limestone and granite landscapes with alpine peaks, 118 glacial lakes, waterfalls, and extensive pine forests which shelter many endemic and rare species, many of which are relicts of the Balkan Pleistocene flora.*

*Threats to the Site: A development boom has, both legally and illegally, destroyed 250 ha of old growth forest for ski runs and lifts within the Park. However, the Bansko ski resort has become a model of economic development for Bulgaria despite considerable environmental damage to the central north slopes of the mountains.*

### COUNTRY

Bulgaria

### NAME

Pirin National Park

### NATURAL WORLD HERITAGE SERIAL SITE

1983: Inscribed on the World Heritage List under Criteria vii, viii and ix.

2010; Extended to include the alpine summit zone of the National Park under Criteria vii, viii and ix.

### STATEMENT OF OUTSTANDING UNIVERSAL VALUE

The UNESCO World Heritage Committee issued the following Statement of Outstanding Universal Value at the time of inscription:

#### Brief Synthesis

The World Heritage property covers an area of around 40,000 ha in the Pirin Mountains, southwest Bulgaria, and overlaps with the undeveloped areas of Pirin National Park. The diverse limestone mountain landscapes of the property include over 70 glacial lakes and a range of glacial landforms, with many waterfalls, rocky screes and caves. Forests are dominated by conifers, and the higher areas harbour alpine meadows below the summits. The property includes a range of endemic and relict species that are representative of the Balkan Pleistocene flora

**Criterion (vii):** The mountain scenery of Pirin National Park is of exceptional beauty. The high mountain peaks and crags contrast with meadows, rivers and waterfalls and provide the opportunity to experience the aesthetics of a Balkan mountain landscape. The ability to experience remoteness and naturalness is an important attribute of the Outstanding Universal Value of the property.

**Criterion (viii):** The principal earth science values of the property relate to its glacial geomorphology, demonstrated through a range of features including cirques, deep valleys and over 70 glacial lakes. The mountains of the property show a variety of forms and have been developed in several different rock types. Functioning natural processes allow for study of the continued evolution of the landforms of the property, and help to understand other upland areas in the region.

**Criterion (ix):** The property is a good example of the continuing evolution of flora, as evidenced by a number of endemic and relict species, and the property also protects an example of a functioning ecosystem that is representative of the important natural ecosystems of the Balkan uplands. Pirin's natural coniferous forests include Macedonian Pine and Bosnian Pine, with many old growth trees. In total, there are 1,315 species of vascular plants, about one third of Bulgaria's flora, including 86 Balkan endemics, 17 Bulgarian endemics and 18 local endemics. The fauna of Pirin National Park includes 45 mammal species, including brown bear, wolf and pine marten, and 159 bird species. Pirin is also home to eight species of amphibians, eleven species of reptiles and six

fish species. Although the forests are affected by some historical use, the natural functioning of the ecosystem ensures the protection of its regionally significant biodiversity values.

### **Integrity**

The original inscription of the property in 1983 proved to be inadequate in representing and maintaining the Outstanding Universal Value of Pirin, but an extension in 2010 has addressed the issues to the best possible degree and represents the minimum area of Pirin National Park that can be considered to correspond to the requirements of Outstanding Universal Value set out in the World Heritage Convention.

The National Park is clearly defined from the point of view of its mountainous nature and ecology, and the boundaries of the property are of sufficient size to capture the natural values of Pirin. Adequate boundaries have been established through the extension of the initially inscribed property, to include the most remote areas of the interior of the National Park, and exclude adjacent areas that are not compatible with World Heritage status due to impacts on integrity from ski development. The values of the property as extended retain the attributes of a natural landscape but they closely adjoin areas subject to intensive tourism development that are a risk to the integrity of the property.

### **Protection and Management Requirements**

The property is covered by national legislation which should ensure strong national protection of the values of the property, including the prevention of encroachment from adjoining development. It is essential that this legislation is rigorously enforced and is respected by all levels of government that have responsibilities in the area. The property also has an effective and functioning management plan, provided its implementation can be ensured through adequate resources to both maintain the necessary staffing levels and undertake the necessary management activities to protect and manage the property. A system of regular monitoring of the natural values of Pirin and ongoing programmes to maintain habitats and landforms in their natural state, avoid disturbance and other impacts on wildlife, and to preserve the aesthetic values of the property are required.

The World Heritage property has long been subject to tourism pressure, largely caused by the development of ski facilities and ski runs. Small ski areas were developed at Bansko, Dobrinishte and Kulinoto in the 1980s and 1990s. Activities such as night skiing, off-piste skiing and heliskiing are activities which may affect the values and integrity of the property and require rigorous control. Bansko, adjoining the property, has become one of the most rapidly developing towns in Bulgaria with hotels and holiday resorts constructed literally on the park boundary. Tourism development within and around the property has not been effectively controlled in the past including some areas that were developed within the property and caused significant damage. The management plan for the property needs to ensure a long-term priority for the protection of the natural values of Pirin, and to guard against any encroachments and impacts within the property from skiing, sporting events or other inappropriate development. Equally the planning documents that are created by national, regional and local authorities need to similarly ensure the protection of the natural values of the property, and also integrate the benefits it provides as a natural landscape to the surrounding area.

Other threats to the property include illegal logging, poaching and the use of snow mobiles and quad bikes. These uses require close monitoring, management and the enforcement of effective regulations. The management of visitor use to both prevent negative impacts and provide opportunities to experience the values of the property in a sustainable way is also an essential long term requirement for this property

### **INTERNATIONAL DESIGNATION**

1977: Dupki-Dzindziritza designated under the UNESCO Man & Biosphere Programme (2,858.5 ha).

### **IUCN MANAGEMENT CATEGORY**

Pirin National Park II	National Park	
Includes:	Yulen Reserve	Ib Strict Nature Reserve
	Bayuvi Dupki-Dzindziritza Reserve	Ib Strict Nature Reserve
	Tissata Strict Nature Reserve	Ib Strict Nature Reserve
	Malka Djindjiritza-Segmentepe	Unassigned

### **BIOGEOGRAPHICAL PROVINCE**

Balkan Highlands (2.33.12)

### **GEOGRAPHICAL LOCATION**

In the Pirin mountains of southwesternmost Bulgaria, immediately south of Bansko, between the valleys of the rivers Strouma and Mesta. Located between 41°53'12" to 41°36'24" N and 23°17'43" to 23°34'17"E.

### **DATES AND HISTORY OF ESTABLISHMENT**

1934: Bayuvi Dupki Nature Reserve formed in the northwest Pirin Mountains to protect pine forests;

- 1962: Vihren Peoples' Park (6,736 ha) established in the Vihren valley in the north central Pirin Mountains by the Council of Ministers Order 3074;
- 1974: Bayuvi Dupki Reserve enlarged to 26,413.8 ha and renamed Pirin Peoples' Park by the Ministry of Forests and Nature Protection Order 3011; 1976: 34 ha added;
- 1977: The Dupki-Dzindziritza Strict Nature Reserve designated a UNESCO Biosphere Reserve;
- 1979: This was renamed the Bayuvi Dupki - Dzindziritza Strict Nature Reserve (2,873 ha) by Council of Ministers Order 976;
- 1983: The Park designated a World Heritage site as Pirin National Park (27,442.9 ha);
- 1987: Pirin Peoples' Park extended to its present size by the Committee of Environmental Protection Council of Ministers Decree 1036;
- 1989: Transferred to the Ministry of Environment and Water (MOEW);
- 1994: Yulen Strict Nature Reserve established within the Park (3,156.2 ha) by MOEW Order RD223;
- 1999: Park renamed Pirin National Park with an area of 40,332.4 ha, later recalculated as 40,356 ha. by MOEW Order 395.
- 2010: Extended by ±12,136 ha of alpine country. New hillside ski-run areas (150.6 ha) excluded from the property.

## **LAND TENURE**

100% state owned. In Blagoevgrad district. Administered by the Pirin National Park Directorate (PNPD) of the Ministry of Environment and Water (PNPD, 2007).

## **AREA**

38,350 ha including a 1,078.2 ha buffer zone (UNESCO, 2010). The area includes an extension of ±12,136 ha covering the previously excluded alpine level. Within the gazetted area are Yulen Reserve (3,156.2 ha), Bayuvi Dupki-Dzindziritza Reserve (2,873 ha), Tissata Strict Nature Reserve (574 ha), Seimen Tepe and 11 nature sites (339 ha).

## **ALTITUDE**

950m to 2,914m (Vihren Peak)

## **PHYSICAL FEATURES**

The Pirin Mountain range in southwestern Bulgaria runs for some 35 km northwest-southeast between the graben valleys of the rivers Strouma on the west and Mesta to the east. The Park is in the north half of the range and covers very varied country: approximately 62% of the extended site is high mountain over 1,800m; approximately 26% lies between 1,000 and 1,800m, and approximately 12% is low mountain below 1,000m. See Map 2, Annex 1. Much of its very scenic northern quarter between the summits of Vihren, the third highest peak on the Balkan Peninsula, and Kaminitza, is composed of a steep karst landscape of limestone developed predominantly in Proterozoic marbles (45% of the underlying rock of the park); the lower southern three quarters are a middle Tertiary pluton of granites (35%) and gneiss (20%). The high ridges and sharp peaks, 60 of which rise over 2,600 meters, are the remains of an old Miocene peneplain; the lateral ridges are of Pliocene age. Together these form an alpine landscape of crags, caves and waterfalls, screes and moraines, with ravines and deep valleys which divide both sides of the mountain into long steep ridges. The area was widely denuded and differentially glaciated during the Pleistocene epoch though some of the high land escaped glaciation, forming a refuge for wildlife. Within the Park above 2000m there are 35 cirques and 118 mostly glacial cirque lakes, the largest being Popovo, Banderishki, Vasilashki and Valyavishki (PNPD, 2007). There are 113 caves in the karst, and in the foothills more than 70 hot springs. Where not calcareous or skeletal, most of the soils are fertile brown forest and mountain forest soils. Those over limestone are droughty. The rivers supply water for drinking, irrigation and hydropower for some 70,000 people.

## **CLIMATE**

The mountains are in the South Bulgarian sub-region, influenced by a northern Mediterranean climate on their southern flanks. Temperatures and rainfall differ markedly with altitude. Summers at height are cool and short and winters are long and cold, with snow cover for four to eight months, strong winds and intense solar radiation. The average annual rainfall varies from 1,000-1,200mm or more in the high mountains, to 600mm at low elevation. It is heaviest in winter to early spring. On the cooler northern

side the average annual temperatures range from 2.5°C to 9.5°C, the average January temperatures from -2°C to -5°C, and the average maximum July temperatures from about 16°C at 1,600m to 20°C at 2,000m. The hotter and drier climate of the southern foothills is sub-Mediterranean: the southern town of Sandanski at 190m has a mean annual temperature of 14°C and a mean January temperature of 2.4°C (MOEW, 2004; PNP, 2007). Climate warming is beginning to affect the skiing industry, obliging it to decrease water supplies to the Bansko area to feed snow-making equipment (I. Hristo, pers. comm., 2007).

## VEGETATION

The Park is on the intersection of the European, Mediterranean and Pontic biogeographical regions. The relative isolation of the range, the presence of limestone, its incomplete glaciation and its location close to the Aegean, made the Pirin Mountains an important biotic refuge. The three climatic zones, alpine, mid-montane and foothill contain 24 plant communities, a mixture of Alpine and glacial relict, central European, Balkan mountain and sub-Mediterranean species, the last penetrating via the Struma and Mesta river valleys and forming 12% of the total species. The principal vegetation zones are montane coniferous forest and subalpine scrub dominated by dwarf pine *Pinus mugo* and common juniper *Juniperus communis nana*, meadows and bare rock. The traditional well-controlled sheep and cattle grazing prevented forest expansion, contributing to the high biodiversity by maintaining open grassland within the forests and the *Pinus mugo* belt. The Park is a nationally Important Plant Area. The Park contains about a third of the Bulgarian flora: 1,315 species of vascular plants (34% of the national total), 18 locally endemic (over 50% of the national total). 114 are nationally endangered and there are 182 plants of medicinal value. It includes 329 mosses (49.3% of the national total), 375 fungi (7.7% of the national total), 165 algae (5.5% of the national total) and 367 lichens (52% of the national total). 21 are on the IUCN Red List. No invasive alien species are recorded (PNP, 2007).

90% of the forest is coniferous and, including the upland dwarf pine area, covers approximately 43% of the Park. The Balkan endemic relict Macedonian pine *Pinus peuce*, and endemic Bosnian pine *Pinus leucodermis* grow in the highest zone of the karst up to 2,200m and along with unique stands up to 250-300 years old and 30-45m high are found in the Bayuvi Dupki-Dzhindziritsa Reserve. The average age of these forests is 140 years but some individual *P. leucodermis* are over 500 years old and the Baykuchevata Macedonian pine is 1,350 years old and one of the oldest trees in Bulgaria. Several tree species are pre-glacial relicts. On the granite half of the mountain mixed forests occur between 1,600 and 2,200m, mainly on stony acid soils over silicate bedrock with a high diversity of species in the undergrowth (PNP, 2007). Macedonian pine is widespread and forms the tree line created over a long period by man's activities: in some places it lies at 2,200-2,300m, in others it is lower than 2,000m. Lower forests contain black pine *Pinus nigra* on the limestone, Bosnian pine *P. heldreichii* on the marble and Scots pine *Pinus silvestris* on warmer and poorer soils; others are silver fir *Abies alba*, Bulgarian fir *A. borisi-regis* and spruce *Picea abies*. Their canopy shelters rare plants. At lower levels between 1,000 and 1,500m, some broadleaf forest mainly of beech *Fagus sylvatica*, covers 5% of the Park.

In the subalpine zone above 2,000-2,200m, there are widespread thickets of dwarf mountain pine and Siberian juniper *Juniperus sibirica*. Between 2,400m and 2,600m is the zone of alpine meadows, stony slopes, screes and rock. The flora, especially on the limestone which is one of the most active centres of floristic speciation in the Balkans, includes many rare species such as the Pirin poppy, *Papaver pirinica*, golden aquilegia *Aquilegia aurea*, edelweiss *Leontopodium alpinum*, yellow gentian *Gentiana lutea*, dotted-flower gentian *Gentiana punctata*, Banderitsa lady's mantle *Alchemilla bandericensi*, Kozuharov's oxytropis *Oxytropis kozuharovii* and Pirin wild thyme *Thymus perinicus*.

## FAUNA

174 vertebrate species breed within the Park of which 114 species are under some degree of threat (PNP, *in litt.*, 2003). They include 45 mammals, 8 amphibians, 11 reptiles and 6 fish (PNP, 2007). The 45 mammals are over half of the Bulgarian total, 19 being nationally protected and 2 included on the IUCN Red List. They include 12 species of bat, two glacial relicts, European snow vole *Chionomys nivalis*, and Günther's snow-vole *Microtus guentheri*, European ground squirrel *Spermophilus citellus* (VU), brown bear *Ursus arctos* (>40 pairs), grey wolf *Canis lupus* (64 individuals), jackal *Canis aureus*, pine marten *Martes martes*, rock marten *Martes foina*, polecat *Mustela putorius*, badger *Meles meles*, Eurasian otter *Lutra lutra*, wild cat *Felis silvestris*, wild boar *Sus scrofa*, red deer *Cervus elaphus*, roe deer *Capreolus capreolus* and Balkan chamois *Rupicapra rupicapra balcanica* (250-380), another relict (Ikononov n.d.); also the greater mouse-eared bat *Myotis myotis*, brown big-eared bat *Plecotus auritus* and Greek tortoise *Testudo graeca* (VU).

The area is a nationally Important Bird Area. 159 bird species are recorded, 33% of the Bulgarian total; of these, 143 are nationally protected and 44 species are of European conservation concern (SPEC). Among them are greater spotted eagle *Aquila clanga* (VU), golden eagle *Aquila chrysaetos*, lesser spotted eagle *A. pomarina*, short-toed snake-eagle *Circaetus gallicus*, booted eagle *Hieraaetus pennatus*, saker falcon *Falco cherrug* (VU), peregrine *F. peregrinus*, Levant sparrow hawk *Accipiter brevipes*, capercaillie *Tetrao urogallus* (170), hazel grouse *Bonasa bonasia*, eagle owl *Bubo bubo*, four glacial relicts, boreal owl *Aegolius funereus*, Eurasian pygmy owl *Glaucidium passerinum*, white-backed woodpecker *Dendrocopus leucotos* and Eurasian three-toed woodpecker *Picoides tridactylus*, black woodpecker *Dryocopus martius*, wallcreeper *Trichodroma muraria* and Alpine chough *Pyrrhocorax graculus* and the endemic subspecies of Alpine accentor *Prunella collaris subalpina* (Kostadinova & Gramatikov 2007, PNP, 2003; 2007, Shurulinkov & Stoyanov 2006). Two of the fish, souffia *Telestes souffia* and sea trout *Salmo trutta*, are also relict species. 3,400 known species of invertebrate dominate the Pirin fauna: more than 26.7% of the country's families. Of these 294 are rare species, mostly in the Araneae and Lepidoptera (449 species). 217 (10.4%) are nationally endemic, highest within the Myriapoda (50%), Plecoptera (40.0%) and Mollusca (37.5%). The local endemics total 39 species. The clean mountain waters harbor an exceptional diversity of macrozoobenthic taxa, 37 taxa being recorded in one river alone, the Zelezina, and though at present only the *Mollusca* and *Arthropoda* are investigated in detail, these two groups are found to comprise 2,091 species, (PNPD, 2007).

### CONSERVATION VALUE

The Park contains striking karst and granite mountain scenery, 35 cirques, 118 glacial lakes, waterfalls, caves, hot springs, pine forests, and a rich flora containing hundreds of endemic and rare species, including Mediterranean species, and many representative of the Balkan Pleistocene flora for which the mountain was a refuge. The Park lies within a WWF Global 200 Freshwater Eco-region and a WWF/IUCN Centre of Plant Diversity and also contains a UNESCO Biosphere Reserve. The whole Park and a large part of the surrounding territories are proposed as potential Natura 2000 sites under the European Union Habitats and Wild Birds Directives. However, the forest below 1,200m and some surrounding lands have been excluded by the government from Special Protection Area status.

### CULTURAL HERITAGE

There are relics of successive Thracian, Roman, Byzantine and Slav occupations of the region: Thracian tumuli, remains of a pre-Roman fortress in the Yulen Reserve, medieval churches. The Wine Gate pass in the northern Pirin was a main trade route, and an important painting school originated in the area, examples of which are shown in the World Heritage site of the Rila Monastery north of Bansko. In the Bulgarian Revival of the 18<sup>th</sup> to 19<sup>th</sup> centuries there was prosperity based on timber and tobacco. The tradition of mountain grazing limited expansion of the forest, thus contributing to the conservation of both biodiversity and landscape. To modern Bulgarians the mountains are famous for having sheltered and been the base for historic freedom fighters: independence from the Ottomans came only in 1912.

### LOCAL HUMAN POPULATION

The Park has no permanent inhabitants but the mountain meadows were traditionally grazed until the 1990s. The reduction of grazing is to some extent because of the growing mass tourism in the Bansko region, which is replacing the former sustainable uses of the Park's resources with more intensive development. In addition, the reduction of grazing is a result of the low prices for milk products, which prevent cattle owners from producing sustainably. Mushrooms, herbs, wild berries and fuel wood are still gathered under regulation, but skiing is overtaking the sustainable use of the natural resources and has become the present main visitor activity. Furthermore, the existing ski resorts have a negative influence on most of the local population and benefit only the individual developers who have monopolized the tourism industry in the region (Hristov 2004). The nearby municipalities of Bansko, Sandanski, Goce Delchev, Razlog, Simitli, Strumiani and Kresna, had a total population in 2000 of nearly 141,000. The towns on the north side of the mountains are industrial.

### VISITORS AND VISITOR FACILITIES

The Pirin mountains offer some of Bulgaria's most consistent skiing. They also offer good hiking, mountaineering, wine-tasting trails and some ecotourism, but far less than they might. Moreover, if not managed properly, the alternative sports may become a major threat to biodiversity in the Park (Spiridonov *et al.*, 2007) Ski areas with four slopes, two chair and two T-bar lifts were constructed at Chilgarnika-Tadorka in the Banderitsa river valley above the town of Bansko on an 818-hectare area within the National Park, before its inscription as a World Heritage site, dividing the site in two. To date there are no statistics on the total number of visitors in the Park (PNPD, 2007), though experts

assessed the number at 300,000-500,000 visitors a year. According to Rashev (2003) this number is considerably overestimated because the number of tourists has dropped in recent decades and few organised groups are visiting the National Park despite free entrance. He suggests that the number of tourists varies between 50,000 and 100,000 a year. The recreational capacity of the Park in summer is 14,096 persons per day, and in winter 10,000 (PNPD *in litt.*, 2003). Summer visitors in 2000-2001 averaged 14,650 of which 1,512 were foreigners (PNPD, 2007).

There is an information centre in the Park Directorate office in Bansko, 6 guard posts with information points, and 15 main with 17 secondary tour itineraries. To attract more tourists, chalets have been renovated and new chalets, camp sites and furnished recreation sites have been built along tourist routes. Hiking is popular but within Strict Nature Reserves is only on marked trails in small guided groups. Rock climbing, caving, mountain biking, riding and angling are also popular. The Mountain Rescue Service has 9 stations in the Park's huts. Accommodation of 2,000 beds is available in hotels, huts, cabins, institutions and camps. Roads lead into the park from Bansko, Razlog and Gotsi Delchev in the Mesta valley to the north and from Kresna, Strumiani, Sandanski and Melnik in the Struma valley in the south. After the year 2000 the ski resort was significantly extended to include over 12 new ski slopes, for only six of which Environmental Impact Assessments were prepared, and 21 ski lifts, 15 of which did not have EIAs (Save Pirin, 2006). There is pressure to construct more ski grounds and luxury hotels above Bansko next to and within the National Park since the improvement of facilities is attracting greater numbers of international tourists to the area. This hotel expansion is considered one of the biggest threats to the National Park according to an independent assessment prepared by experts from the Save Pirin Coalition of NGOs (Save Pirin, 2006). According to Spiridonov *et al.* (2007) the development of ski tourism in Pirin is the most serious threat to both forest and alpine habitats.

## SCIENTIFIC RESEARCH AND FACILITIES

Botanical investigations in the nature reserves have been made by the Institute of Botany of the Bulgarian Academy of Sciences. A research team of two zoologists and a botanist carry out observations, and a detailed study was made for the Management Plan. Researchers from the Institute of Zoology have studied nocturnal raptors and caves and cave fauna have been investigated by the Bulgarian Speleological Association. In 2002 a sociological study of local public opinion was conducted. An administration building with information centre and a natural history exhibition and five research stations have been planned. A Scientific Council was established in 2004 and a national monitoring system is to be pioneered in Pirin, focussing on bear, European ground squirrel, several bird species, forest condition, medicinal plants and tourists. Key site condition monitoring indicators will be endemic plants, biodiversity, soils and lake water quality.

## MANAGEMENT

The initial World Heritage site included the mountains' most valuable forests, but excluded most of the alpine zone. The inclusion of alpine meadows, rocky screes and mountain summits, mostly above 2000m, which are also the territories of free-ranging larger animals, was a major reason for extension of the World Heritage site in 2010. At present the Park is managed as a Special Park Project the terms of which are updated every 10 years. Under the detailed ten-year Management Plan approved in 2004 the site has six management zones: A Reserve zone that goes down to 1,150m, in the Bayuvi Dupki and Yulen Reserves where most human activity is prohibited, (14.8% of the Park); Limited Human Impact zone (19.4%), where the natural environment is slightly modified; a Forest Ecosystem Conservation & Recreation zone at about 2,000m (48.7%) for water catchment and erosion control where no construction is allowed and only traditional managed pastoral activities are permitted; a Sustainable Use zone with recreation (13.8%); a Tourism zone (2.6%); and a Buildings and Facilities zone (0.7%) which includes chalets (PNPD,2007). The duties of the Park administration under the Plan are to promote the protection, good management and maintenance of wilderness and biodiversity, to promote education and interpretation, scientific research, recreation, sustainable tourism and the livelihood of the local people, and to monitor habitats and species (PNPD, 2007).

Specific species conservation measures are rarely taken except for the census of birds and some large animals such as the Balkan chamois *Rupicapra rupicapra balkanica*. These are usually conducted by NGOs in partnership with the Park administration. In 2002 a WHC mission urged more effective management controls, clearer updated details of the development and its boundaries, provision of measures to mitigate and reforest disturbed land around abandoned ski-runs, and the creation of a scientific advisory body (IUCN, 2002; UNESCO, 2002). The existing Management Plan for the Park adopted in 2004 does not allow for any further expansion or building of new ski slopes in the Park. However, expansion of the ski-resorts is still continuing: the Save Pirin coalition of NGOs announced

that the concessionaire for the area is now building new ski-lift facilities (press release, 13 May, 2007). And around new ski slopes, hotels have been built to meet the growing tourist demand. A National Parks monitoring system is being established, starting with Pirin as a model when funds become available.

In the future the Park, with the western Rhodope mountains, could become part of a trans-boundary reserve with Macedonia and Greece, a plan supported by OECD and Council of Europe and funded through PHARE (PNPD, 2007). If part of the Western Rhodope Mountains, where there are at present 12 nationally endangered and 21 rare plant and animal species, becomes protected, it would be one of the largest protected areas in Europe. However, protection would inhibit the construction of two large resorts which the Ministry of Environment and Water has already approved (Leshtarska & Slavcheva, 2007) and government exclusion of potential Natura 2000 sites neighbouring the Pirin mountains, may hinder this project. The initial list of Special Protection Areas (SPAs), under the Bird Directive approved by the Council of Ministers as a part of the Natura 2000 network in Bulgaria has excluded parts of Pirin under 1,200m. Currently the approved Pirin SPA includes only the National Park, not the whole proposed Important Bird Area as required by EU legislation. Other excluded key SPAs around the National Park that would have ensured corridors for animal movements are the Melnik pyramids to the south (Natura 2000 proposed BG0002072), the Mesta river valley to the east (BG0002076), Rupite to the west (BG0002098) and some nearby sites. Slavianka mountain on the Greek border and other sites South of Pirin mountains that are an important stop-over for many migrating species has been excluded from the initial list of proposed Sites of Community Importance under the EU Habitats Directive. Finalisation of the Natura 2000 sites list is expected in the last months of 2007.

## MANAGEMENT CONSTRAINTS

The main threats to the site in 2010 were developments of the Bansko ski resort and lack of mechanisms for effective management; other main issues were the definition of boundaries and illegal logging (UNESCO, 2010). Pirin's status as a protected area is guaranteed by two Bulgarian laws, the European Bern convention, the CORINE biotope network, and eventually the Natura 2000 network. There has long been a lack of coordinated planning to resolve conflicts caused by commercial developments. According to Hristov (2004), a representative of the National Park Administration who preferred to stay anonymous suggested in an interview that local people, including the Park Administration itself, do not see the advantages and the benefits of Pirin National Park as a UNESCO site. A feasibility study for enlarging the Biosphere Reserve in the park suggests that the level of knowledge about biosphere reserves and awareness of the environment possessed by most local people is very low (Topalova-Rzerzycha, 2006).

The impacts of ski-tourism have burgeoned since 1986, especially above Bansko in the north and two smaller areas above Dobrinishte in the east. The Bansko ski zone set a national precedent for development and further plans for large ski resorts have been made for Predel, Popovi Livadi at the Gotse Delchev area, Dobrinishte and Kulinoto near Razlog. These include ski-slopes, ski lifts, golf courses and small airports, off-piste and helicopter skiing. Following the commercial success of Bansko ski zone the Ministry of Environment & Water approved in 2000 a development within the Park adjoining Yulen Strict Nature Reserve, partly financed by the European Bank for Reconstruction & Development. The EIA was submitted without consultation with the public or scientists. In 2001 a Territorial Development Plan included a concession area of 100 hectares within the Park in order to add five new ski runs within the World Heritage site and enlarge two near Bansko. In 2003 the development opened, having developed a further 150 ha without an Environmental Impact Assessment, having graded the surface of 900 vertical meters of ski-run, and clear-cut an area of old growth forest nearly three times more than that permitted (see Annex 2, Map 1). It also caused major erosion on the north side of the mountain by clear-cutting for ski slopes, and the loss of adequate water supplies for Bansko among other negative impacts.

Though concessionaires are contractually obliged to make good construction scars, erosion by massive earth-moving has physically destroyed hillsides, which, with chemicals and tourist wastes, has polluted the local water. In addition, artificial snow-making on the ski-slopes, and the needs of hotels in the hills above Bansko, aggravated the shortage of water, as will existing plans for further enlargement of ski-facilities and lodgings. According to a representative of the National Park administration, building reservoirs in the mountain may solve this problem (Hristov 2004). However, further development in the region would run counter to the conservation of national and internationally significant natural resources if the range were to be included in Natura 2000. According to Spiridonov *et al.* (2007) this ski project in one of the most valuable parts of the Pirin National Park has caused large-scale damage to old forests

of *Pinus heldreichii*; the construction of water installations in the Park is also unacceptable because of the negative impacts they could have on biodiversity. Areas of protected land may therefore be diminished to exclude areas of investor interest.

At least 1,400 people are expected to move into the Park in connection with new developments which are supported by the tourism industry and by several government departments, and opposed only by the country's NGOs such as the Save Pirin group (IUCN, 2001; UNESCO, 2005; Save Pirin, 2007). Problems of ski-tourist traffic, overcrowding, conflicting uses and littering already occur near the huts and chair lifts around Banderishka Poljana and Tzarna Mogilla. There are also political tensions between outside development corporations and local small landowners, and over the pollution by wastes and snow-making of municipal water supplies. In the years since the enlargement of ski resorts in the area, prices and crime, water shortages and pollution have all increased. As a result a local initiative group was established in the Bansko region (which remains anonymous because of threats to personal security). In a communication (May 15, 2007) to the Bulgarian NGOs' forum, it suggested that with the ski-tourism development in the region, Bansko and the nearby Pirin Mountains have lost their spiritual value and the town is becoming a waste of concrete.

There were few pressures from traditional uses of the forests and pastures, which fell significantly after the early 1990s mainly due to the lack of markets for animal products and the development of mass ski tourism. The effects on wild species of this abandonment of pastures are not known, but in the Nomination document, it was stated that reduction in the numbers of animals and livestock may have resulted in the extinction of vultures in the Park in the early 1960s (PNPD 2007), and in the advance of scrub and forest in former meadows. This suggests that the abandonment of pastures can have negative impact on other species as well. Hunting and fishing are permitted in certain parts of the mountain only by licence, but many streams are being stocked with non-native species. Illegal trophy hunting of capercaillie, Balkan chamois and other large mammals has noticeably reduced their numbers in the Park, but due to lack of systematic monitoring exact figures cannot be given. Illegal logging occurs all over the Park (Spiridonov *et al.*, 2007). Another potential threat to the biodiversity of the mountain is the development of wind farms, which may hamper local and migrating birds from reaching feeding and breeding grounds (Spiridonov *et al.*, 2007). Avalanches are accepted as part of the natural order. Fires are few but large. A study of the ecological and social aspects of fires and the environment in the Bayuvi Dupki-Djindjirica Biosphere Reserve (Topalova-Rzerzycha, 2006), gives specific values of areas burned in the Park (see Table 1, Annex 1).

## **STAFF**

This totals 53 including the Director, department heads for administration, control and scientific expertise, plus 12 assistants and 37 rangers. Seasonal staff includes part-time wardens, fire watchers, afforestation and construction workers. The Park has five regions with a main office in the town of Bansko, others in the towns of Sandanski, Kresna, Razlog and Dobrinishte village and 6 guard posts (PNPD, 2007).

## **BUDGET**

The Park is funded by the state for the payment of salaries and management. Between 2004 and 2006 this averaged Leva 1,425,935 a year. Over the same period the government also paid an annual average of Leva 457,635 through the State Enterprise for the Management of Environmental Protection Activities, the total being Leva 1,883,570 (US\$1,303,700). The Swiss government financed production of the management plan and preliminary biodiversity monitoring. Additional funds are raised for small-scale projects by national NGOs. In 2004 USD15,000 funded preparatory assistance. The EU PHARE Program is funding a transboundary project (PNPD, 2007). Rashev (2003) has estimated that the National Park can create an annual surplus of 2.67 to 5.34 million Leva per year from ecotourist visitors.

## **LOCAL ADDRESS**

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## DATE

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