

ASIA /PACIFIC

VALLEY OF FLOWERS NATIONAL PARK
(Proposed extension to Nanda Devi National Park)

INDIA



WORLD HERITAGE NOMINATION – IUCN TECHNICAL EVALUATION

VALLEY OF FLOWERS NATIONAL PARK (INDIA) (Proposed extension to Nanda Devi National Park), ID N° 335 Bis

Background note: The Valley of Flowers National Park (VoF) is proposed as an extension to the existing World Heritage (WH) property, Nanda Devi National Park (NDNP), inscribed on the List in 1988 for its mountain wilderness and spectacular topographical features (natural criterion iii) and threatened mammals (natural criterion iv). Key issues at that time concerned the status of the management plan, status of wildlife populations, enforcement provisions and the closure of the National Park to visitors. At its 22nd Extraordinary session (Kyoto, November 1988), the Bureau of the WH Committee encouraged the Government of India to extend the boundaries of the NDNP WH property to include the VoF National Park and Kedarnath Wildlife Sanctuary. Both the VoF and NDNP were visited during the 2004 IUCN mission, the latter not visited at the time of its nomination in 1987 due to weather conditions.

1. DOCUMENTATION

- i) **Date nomination received by IUCN:** April 2004
- ii) **Dates on which any additional information was officially requested from and provided by the State Party:** IUCN requested supplementary information on the 23 September 2004 following the mission, and the State Party response was received on 19 November 2004.
- iii) **IUCN/WCMC Data Sheet:** 2 references, of which the nomination contains a further 44 references
- iv) **Additional Literature Consulted:** Green/WCMC and IUCN CNPPA, 1993, **Nature reserves of the Himalaya and the mountains of Central Asia**. Oxford University Press, New Delhi; Jyotsna Sitling, 2004, **Guidelines for mountaineering expeditions in Uttaranchal**. Government of Uttaranchal; C.P. Kala, G.S. Rawat and V.K. Uniyal, 1998. **Ecology and conservation of the Valley of Flowers National Park, Garhwal Himalaya**. Wildlife Institute of India, Dehra Dun; S.S. Samant, 2003. **Nanda Devi Biosphere Reserve (Nomination Form for UNESCO-MAB net)**. G.B. Pant Institute of Himalayan Environment and Development / Ministry of Environment & Forests, New Delhi; W.A. Rodgers, H.S. Panwar, 1988. **Planning a wildlife protected area network in India**, Wildlife Institute of India, Dehra Dun; W.A. Rodgers, H.S. Panwar and V.B. Mathur, 2000. **Wildlife protected area network in India: a review**. Wildlife Institute of India, Dehra Dun; G.S. Rawat and W.A. Rodgers, 1988. **The alpine meadows of Uttar Pradesh: an ecological review**. In: Rangeland Resource and Management (Eds P. Singh and P.S. Pathak), Range Management Society of India, Jhansi; S.D. Davis, V.H. Heywood and A.C. Hamilton, 1995. **Centres of plant diversity: A guide and strategy for their conservation**. WWF and IUCN; O. Polunin and A. Stainton, 1984. **Flowers of the Himalaya**. Oxford University Press, Delhi; F.S. Smythe, 1938. **The mountain scene**. Adam and Charles Black, London; Jagdish Kaur, 1985. **Himalayan pilgrimages and the new tourism**. Himalayan Books, New Delhi; Hugh Thomson, 2004. **Nanda Devi: A journey to the last sanctuary**. Weidenfeld and Nicolson, London; J. Thorsell and L. Hamilton, 2002. **A global overview of mountain protected areas on the World Heritage List**. IUCN, Gland, Switzerland. BirdLife International, 2003 **BirdLife's online World Bird Database: the site for bird conservation**. BirdLife International, Cambridge, UK Version 2.0 (<http://www.birdlife.org>); C.P. Kala, 2004. **Pastoralism, plant conservation, and conflicts on proliferation of Himalayan knotweed in high altitude protected areas of the Western Himalaya, India**. Biodiversity and Conservation 13: 985-995; C.P. Kala, 2005. **Indigenous uses, population density, and conservation of threatened medicinal plants in protected areas of the Indian Himalayas**. Conservation Biology 19:368.
- v) **Consultations:** 5 external reviewers consulted. The mission met with the Secretary of Environment & Forests and other senior officials of the Government of India, Uttaranchal State Government officials, the Director and officers responsible for the Nanda Devi Biosphere Reserve, representatives of the Wildlife Institute of India and WWF-India, independent scientists, as well as the Eco-Development Committees at Govindghat and Bhiundar, the Women's Welfare Groups at Lata, Tolma, Reni and Paing villages, and local religious leaders.
- vi) **Field Visit:** Michael Green and Georgina Peard, September 2004
- vii) **Date of IUCN approval of this report:** April 2005

2. SUMMARY OF NATURAL VALUES

The nominated property, the Valley of Flowers National Park (VoF), is located in the Garhwal Himalaya of eastern Uttaranchal State¹, 340 km northeast of Delhi. It covers an area of 8750ha and is nominated as an extension to the current World Heritage property, Nanda Devi National Park (NDNP), which lies at a distance of 23km. Together

the VoF and NDNP comprise the two core zones within Nanda Devi Biosphere Reserve (NDBR). Respective details are summarised in table 1 below. The two core zones are contained within a large buffer zone of 514,857 ha, comprising civil forest (460,048 ha), reserved forest (49,017 ha) and forest panchayat (community reserved) (5,792 ha). A transition zone (54,634 ha) fringes the boundary of NDBR in the south and southwest.

Table 1: Details of the protected areas

Site	Area	Altitudinal range	Establishment	IUCN Category
VoF NP	8,750 ha	3,350-6,708 m	6 September 1982	II (National Park)
NDNP*	62,460 ha	2,100-7,817 m	6 November 1982	la (Strict Nature Reserve)
NDBR **	586,069 ha	1,800-7,817 m	November 2004	Unassigned

* Inscribed on the World Heritage List in 1988.

** Originally established as a national biosphere reserve on 18 January 1988.

The VoF is one of two hanging valleys lying at the head of the Bhiundhar Valley, the other featuring Hem Kund (4,150 m), a sacred lake to the east of the National Park. The Paspawati River runs westwards through the VoF, its source being the Tipra Glacier, which descends from Ghori Parbat (6,708 m)², the highest of several named, flanking peaks. The middle of the Valley lies at about 3,500 m and extends over some 1,000 ha, its gently inclined basin of alpine meadows and forested slopes rising sharply to rocky ridges and snow-covered peaks.

Geologically, the VoF falls within the Zaskar Range³: its rocks are primarily sedimentary with mica schists and shales, and its soils are acidic. Although shielded from the full impact of the south-west summer monsoon by its east-west orientation and the Great Himalaya Range to the south, conditions are cool (19°C maximum), wet and misty from late June to early September. The Valley is snowbound in winter, from November / December to April.

Within a global context, the VoF lies in the Himalayan Highlands biogeographical province of Udvardy. It falls within the West Himalaya, based on the national biogeographic classification of India. From satellite imagery, 73% of the national park is under perpetual snow and ice, 6% is forested and 21% comprises alpine meadows. The vegetation zones range from sub-alpine forest (below 3,500 m) to alpine shrubs and meadows (above 3,700 m).

The VoF has been subject to several floral surveys, some extending beyond the boundaries of the national park see Table 2:

The flora is important on account of its diversity and rarity. This reflects both the biogeographical location of the VoF and the impact from grazing and collection of

medicinal plants on alpine valleys in Garhwal (and elsewhere throughout the Himalaya). Six species are internationally threatened, of which *Aconitum balfourii* (I) and *A. falconeri* (V) are endemic to the West Himalaya, and *Acer caesium* (V), *Meconopsis aculeate* (E) and *Saussurea atkinsoni* (I) have not been recorded from elsewhere in Uttaranchal. A further three species have not been recorded elsewhere in Uttaranchal, and two species have not been recorded in NDNP. The flora is also of social and economic importance. Local people are known to use 45 species for medicinal purposes and several species, such as Brahmakamal (*Saussurea obvallata*), are collected to offer to Nanda Devi and other deities on auspicious days.

Less is known about the fauna. Ten mammal species have been recorded, of which Asiatic Black Bear (VU), Himalayan Tahr (VU) and Serow (VU) are threatened, and Himalayan Musk Deer (LR/nt) is near threatened. Local people report that Snow Leopard (EN), Common Leopard, Brown Bear and Blue Sheep (LR/nt) are also present. A first census of mammals was undertaken in October 2004 and will be repeated regularly. All of these species occur in NDNP, although the present status of Brown Bear is uncertain. Information provided in the nomination on birds is very anecdotal. While there are fairly extensive data on mammals, birds, reptiles, amphibians, fishes, butterflies, molluscs and annelids for the Biosphere Reserve, none of the distributional records relate specifically to the VoF.

3. COMPARISONS WITH OTHER AREAS

The nominated property lies in the West Himalaya, which stretches from the Sutlej River in Himachal Pradesh State to the Kali River that forms the border with Nepal. This biotic province falls mostly within Uttaranchal State

¹ Uttaranchal is a new state, established in 2000. It was formerly part of Uttar Pradesh, occupying the Himalayan portion. Thus, references to Uttar Pradesh in the literature are often synonymous with Uttaranchal. The spellings of villages, rivers and peaks vary throughout the literature. Spellings are taken from the 1:150 000 map of Garhwal-Himalaya-Ost, in the first instance, this being based on the Survey of India series.

² The height of Ghori Parbat (also spelt as Gauri Parbat) is based on records from the Survey of India and Himalayan Club. The nomination incorrectly cites 6,590 m (and the altitudinal range as 3,200–6,675 m), and the Guidelines for Mountaineering Expeditions in Uttaranchal incorrectly cite 6,601 m.

³ Also referred to as Zaskar Range.

Table 2: Floral Surveys of the Valley of Flowers

Authority, year	Survey area	Vascular plants	Plant diversity		
			Families	Genera	Species
Frank Smythe and R.L. Holdsworth, 1931	VoF and neighbourhood	Angiosperms Gymnosperms	44	142	253
		Ferns + allies	1	8	9
Botanical Survey of India (Wadhwa et al.), 1987	VoF extending to Govindghat, 1,800 m	Angiosperms Gymnosperms Ferns + allies	?	?	^a 613
Forest Research Institute (Naithani et al.), 1992	VoF and surrounding area	Angiosperms	82	294	^b 600
		Ferns + allies	12	18	30

^a Included 9 rare species listed in Red Data Book of Indian Plants.

^b Included 57 species additional to those previously recorded by Botanical Survey of India.

^c Included 58 new records for VoF, of which 4 are new for Himalaya in Uttar Pradesh.

^d Included 2 new records for VoF.

and equates to the Kumaon Himalaya, the northern parts of which are separately known as the Garhwal Himalaya. Comparative studies between the VoF and other potentially similar sites are limited because Garhwal has remained largely unstudied and unknown to the outside world due to its difficult access and strategic sensitivity.

In relation to natural beauty and aesthetic importance (criterion iii), Garhwal is renowned in Himalayan literature for its magnificent mountain scenery and associated religious importance (e.g. Longstaff in Tilman 1937; Groetzbach in Kaur 1985). The nomination refers to the VoF as being one of the most picturesque alpine valleys in the Western Himalaya, well known for its high floral diversity amidst a backdrop of majestic peaks and all within a relatively compact area of 78.5 km².

The VoF is widely acclaimed for its landscape and alpine meadows of flowering plants. In Hindu mythology it is named Nandan Kana, meaning 'Garden of Indra in Paradise'. The Valley takes its name from the mountaineer Frank Smythe who described his crossing the "Bhyundar Khanta Pass" in 1931 and entering an Eden of flowers: "It was the loveliest valley any of us had ever seen and it remains in memory as the VoF." Such views, subsequently endorsed by botanists from the Royal Botanic Gardens, Kew in 1939 and from the Botanical Survey of India in the 1950s and 1960s, eventually led to the Valley becoming India's first national park established specifically for conserving plants. Unlike most other protected areas in the West Himalaya, both the VoF and Nanda Devi are uninhabited, and grazing by livestock has been prohibited since their establishment as National Parks in 1982.

In terms of adding value to the existing WH property, the VoF complements NDNP in a number of key respects, as summarised in Table 3 below.

In relation to its biological diversity (criterion iv) the Nanda Devi region is a Centre of Plant Diversity (WWF/IUCN). This is due to its central location between the East and West Himalayan phytogeographic regions and its position at the junction of the Garhwal and Kumaon

Himalaya, where the Trans-Himalaya (including the Zaskar Range) meets the Great Himalaya. It features a rich mixture of species from both these phytogeographic regions, as well as some endemics (Polunin and Stainton 1984).

The flora comprises 25% of that found in Chamoli District, although the VoF constitutes only 1.3% of the District's total area. Comparison with much larger areas in the West Himalaya, notably the Tons Valley and the alpine parts of the Kumaon Himalaya, confirm that the VoF is rich in plant species as outlined in Table 4 below.

While some of the alpine valleys in the West Himalaya (Ralam, 20,000 ha; Pindari, 5,000 ha; Sunderdhunga, 13,000 ha; Khatling, 12,000 ha; and Harkidoon, 16,000 ha, within Govind Pashu Vihar Wildlife Sanctuary) are comparable with the VoF in their original floral richness (and aesthetic values), their meadows and alpine slopes have been degraded from overgrazing by livestock and collection of medicinal herbs. Field research by the Wildlife Institute of India has shown that the VoF has a much more diverse flora than three adjacent valleys (Khiron, Kakkhusandi and Bedini-Ali), with higher population densities of certain species listed as rare in the national Red Data Book of Indian Plants. The diversity of threatened medicinal plants is also higher than for any other Indian Himalayan protected area studied to date (Kala 2005).

Seventeen protected areas in the West Himalaya cover 6,028.5km² or 11.6% of this biotic province. The largest are Sangla Wildlife Sanctuary (650km²) in Himachal Pradesh, and Ascot Wildlife Sanctuary (600km²), Gangotri National Park (1,552km²), Govind National Park (472km²), Govind Pashu Vihar Wildlife Sanctuary (481km²) and Kedarnath Wildlife Sanctuary (957km²) in Uttarakhand: none is floristically comparable to VoF in terms of diversity.

Along with NDNP, the only other natural WH property in the Himalaya is Sagarmatha National Park (114,800 ha) in the Eastern Himalaya of Nepal. Other

Table 3: Complementarity of VoF and NDNP

Attribute	VoF National Park	NDNP
Geology	Lies in Zaskar Range	Lies in Great Himalaya Range
Geomorphology landscape	Glacial valley with terraces either side of river	Mountain wilderness presided over by Nanda Devi - "epitome of the inviolate mountain" (Hugh Thompson 2004)
Access	Easy - one day's gentle climb from road along well maintained trail, with food and lodging readily available en route.	Renowned as being extremely difficult, requiring at least one week and mountaineering equipment to reach the inner sanctuary.

Table 4: Comparison with other floral rich areas in the Himalayas

Name (Location)	Area ha	Altitudinal range (m)	Angiosperm plant diversity			Reference
			Families	Genera	Species	
VoF (Uttaranchal)	87,500	3,200 -6,708	61	234	499	Kala et al., 1998
Tons Valley (Uttaranchal)	450,000	1,500 - 4,500	132	480	761	Rana et al., 2003
Alpine flora of Kumaon Himalaya (Uttaranchal)	683,000	3,300 - 5,600	72	304	803	Rawat, 1984

Himalayan sites identified with having potential for consideration for nomination include Jigme Dorji National Park (Bhutan), Kangchendzonga National Park (Nepal/China/India) and Mustang (Nepal) (Thorsell and Hamilton, 2002). The VoF is distinct from all of these sites in terms of its flora and fauna, absence of human settlements and exclusion of livestock.

In terms of adding value to the existing WH property, the VoF holds a small number of plant species that have not been recorded in NDNP, perhaps reflecting its more northerly location within the Zaskar Range.

4. INTEGRITY

4.1 Legal Status

The VoF was declared a national park on 6 September 1982, under the Wildlife (Protection) Act, 1972. All rights in respect of land (including ownership) is vested in the Government of Uttaranchal State and, in accordance with this Act, livestock grazing ceased from 1982. The VoF was designated a core zone within the NDBR in February 2000, in addition to NDNP which was designated in 1988. UNESCO approved the addition of NDBR to its World Network of Biosphere Reserves in November 2004.

Mountaineering is regulated under State Government Order No. 997/CS/MT/2004, in accordance with new *Guidelines for Mountaineering Expeditions in Uttaranchal*. Two peaks, Rataban (6,126 m) and Ghori Parbat (6,601 m), within VoF National Park are open for mountaineering, subject to permission from the Chief Wildlife Warden and special conditions.

Legal and policy provisions for the protection and management of the VoF are considered to be adequate and will be enhanced by forthcoming regulations for trekking.

4.2 Management

The Forest Department of the State Government of Uttaranchal is the management authority. A Divisional Forest Officer, who reports to the Director of NDBR, manages both the VoF and NDNP. Overall responsibility lies with the Chief Wildlife Warden of Uttaranchal.

Management of the VoF is planned and carried out within the overall management of the NDBR, for which there is a Landscape Management Plan for the period 2003/04 – 2012/13. This Plan is implemented through a series of annual plans prepared in consultation with relevant bodies at village, district and state levels.

The management plan for VoF National Park was prepared in 1992 for implementation over a period of ten years. A new management plan is under preparation and expected to be ready by June 2005. The Landscape Management Plan for the Biosphere Reserve provides the overall management framework, while focusing on direct interventions in the buffer and transition zones in cooperation with local communities. Direct management intervention inside the core zones is minimal, focusing on biodiversity conservation and tourism management.

The total annual budget for NDBR equates to US \$ 272,000, of which US \$ 45,000 is for VoF National Park and US \$ 75,000 for NDNP. There are 67 permanent staff for the Biosphere Reserve, with 16 deployed in VoF National Park and 20 in NDNP. Resources for VoF are considered to be adequate; importantly, much of the management effort is directed towards the surrounding buffer and transition zones. A significant amount of management, such as trail maintenance along the approach route to the VoF and promoting environmental awareness, is achieved through the close partnership established with the local communities. For example, local employees of the Eco-Development Committees keep the trail along the Bhiundhar Valley clean and free

of litter. Similarly, three university graduates employed by the local Eco-Development Committee run the visitor centre at Ghangrea.

4.3 Boundaries

Connectivity

The VoF National Park is self-contained within a rim of peaks and geographically separated from NDNP by some 23km. Its relatively small size and isolation from NDNP is not a limiting factor with respect to the integrity of its flora, but provision of a protected corridor between these two core zones is important to enhance genetic exchange between large mammal populations and the conservation of wide-ranging species such as snow leopard.

The two national parks are separated by the Dhauli Ganga, which flows southwest from the international border with China, and its tributaries. Land either side of this river is largely reserved forest (comprising thick forest) under the jurisdiction of the Forest Department and civil forest (high mountains with snow, ice and scree) under the jurisdiction of the District Magistrate. A relatively small proportion of the reserved forest is community forest, for example 1,200ha is assigned to Tolma Village, which lies just outside NDNP. There are also some tiny pockets of private land along the valley floor. All of the intervening land lies within the buffer zone of NDBR.

It is recommended that the corridor between the VoF and NDNP, in its present status as reserved and civil forest, eventually be included in the WH property to create a contiguous WH property. Protection measures for reserved and civil forests are considered to be adequate for nature conservation purposes. Under the Forest Conservation Act 1980, conversion of any forest land for non-forestry purposes is prohibited without prior approval from Central Government. Moreover, the felling of trees in forests in hill areas is banned.

Altitudinal range

The boundaries of both NDNP and VoF are confined largely to the sub-alpine, lower alpine and higher alpine zones. Some temperate fir forest occurs in the lower altitudes of the Rishi Gorge in NDNP. Consideration needs to be given to having the full range of altitude (1,800–7,817 m) and vegetation in the biosphere reserve represented within the core zones. As noted by Rodgers and Panwar (1988), it tends to be the lower slopes of the West Himalaya that are least well represented in protected areas. It is recommended that the corridor to connect VoF and NDNP, proposed above, include lower altitudinal areas to at least partly address this concern. Consideration also needs to be given to the trans-Himalayan element, which lies adjacent to the eastern border with China in the vicinity of Laphthal, being designated as a third core zone within the NDBR and a possible further extension to the WH property. Apart from the recommended corridor area, representation of the full altitudinal range within the WH property and the inclusion of a new trans-Himalayan core zone are recommended in the long term. It is acknowledged that they will require time for desk and field survey work and for notification of new boundaries.

4.4 Management of human impacts

Local people

The VoF is uninhabited. Shepherds used to live here during the summer but livestock grazing ceased following the establishment of the national park in 1982. The nearest settlement is at Ghangrea (3,072 m), just below the entrance to the Valley. It is occupied only in summer to provide services to pilgrims and tourists.

Visitors

The VoF receives about 4,000 visitors annually, over 90% of whom are Indian nationals, between May and October when access is not impeded by snow. Numbers have increased steadily from about 1,500 in the late 1970s. Access to the National Park is principally via Ghangrea, where there is a Forest Department check post and an entrance fee is charged. Most visitors confine their movements to the 5km of trail along the valley floor and return within the day. However, each summer Ghangrea hosts up to 500,000 pilgrims bound for the Sikh temple at Hemkund, which is outside the National Park.

Community participation

The VoF and its main approach via the Bhiundhar Valley have been brought under effective management from 2003 as a direct result of the Forest Department fully engaging with local communities to address major problems arising from tourism and associated uncontrolled development. The main problems were: litter (300,000 plastic drinks bottles annually) and 'open toilets' along the approach route generated by the pilgrims en route to Hemkund; dung from the mules (500-600 kg per day) used to transport pilgrims and goods; and 400 shops that had sprung up along the route.

These problems were addressed by establishing Eco-Development Committees (EDCs) in Govindghat and Ghangrea, and working collaboratively with Women's Welfare Groups. Over 50 tonnes of plastic, cans and other rubbish were removed in 2003, while 120 stalls along the route were dismantled. Mechanisms have been put in place by the EDCs to manage the situation sustainably. The Forest Department has recently established a visitor and interpretation centre at Ghangrea, which is run by the EDC. The Forest Department and EDC also support local youths to be trained in eco-tourism and mountaineering skills. This model of collaboration between the local people and the Forest Department is exemplary.

4.5 Management of threats

Tourism

The current number of up to 50 visitors per day is not considered to be a threat, either to the integrity of the flora or the experience. Trampling of the alpine flora needs to be monitored with vigilance and visitors encouraged to stick to the trail. Mules are not permitted within the VoF, to safeguard the flora. Visitor management is a much bigger issue along the main approach to the Valley, between Govindghat and Ghangrea. It is now contained and regulated, as described in Section 4.4.

Invasive plants and other grazing impacts

While concerns about the impact of livestock on the floral diversity led to the establishment of the VoF as a national park, cessation of grazing since 1982 has led to the proliferation of virtual monocultures of *Polygonum polystachium* in areas where livestock used to congregate. The impact of livestock grazing, or its removal, on alpine meadows continues to be a subject of much uncertainty among ecologists. While there is plenty of good evidence that overgrazing and accumulation of nutrients at sites where livestock congregate is detrimental to floral diversity, extensive grazing by livestock may also enhance diversity of herbaceous plants (Rawat and Rodgers 1988). Alternatively, such weedy species may enhance the recovery of the original flora through their ability to stabilise erosion prone slopes (Kala 2004). The Forest Department is carrying out experiments to inform its management of this species. It is recommended, therefore, that the following research and monitoring be undertaken:

- Aerial surveys to be undertaken every five years to monitor the distribution of forest, scrub and meadows.
- The present status of herbaceous species recorded prior to 1982 to be assessed to identify any species that might have disappeared following the cessation of grazing.
- The herbaceous flora to be subject to a rigorous long-term monitoring programme to detect changes in species diversity and abundance, thereby informing management about such issues as absence of livestock grazing, potential increases in grazing by wild herbivores and climate change.
- The distribution of stands of *Polygonum polystachium* and other weedy species (balsam and the fern *Osmunda claytoniana*) to be accurately mapped annually, using a Global Positioning System, to monitor changes in distribution while cutting experiments continue.

Poaching and collection of flowers/medicinal plants

Poaching is not reported to be a serious problem in the VoF, but the low frequency of sightings of large mammals raises questions, particularly in the absence of grazing competition from livestock. Hunters may enter the VoF via high passes to the west and east between the end of the summer (visitor) season and prior to the onset of winter snow. It is recommended that a comprehensive monitoring and analysis of the status of wildlife in the NDBR, in general, and the VoF/NDNP, in particular, be undertaken to assess the level and impact of poaching, and more extensive and rigorous patrolling be undertaken during the winter period. In addition, a comprehensive survey of the mammals and birds in the VoF should be carried out, particularly with respect to its potential importance for restricted-range endemic birds.

Certain flowers were traditionally collected from the Valley by Bhotia women for religious offerings. Medicinal plants were also heavily exploited for local use and selling in the markets. These practices are now largely under control. The Forest Department has also established a 2ha nursery at Musadhar, just above Ghangrea, for conservation and future propagation of medicinal plants, as well for the education and benefit of visitors.

Development

The Forest Department needs to remain vigilant with respect to future development pressures. It did not agree to proposals a few years ago to build a road up to Ghangrea in view of the instability of the valley sides and biodiversity conservation interests. Given the ever-increasing numbers of pilgrims visiting Hemkund, such proposals may re-emerge and should continue to be refused.

5. ADDITIONAL COMMENTS

5.1 Serial property

The State Party has nominated the VoF as a serial extension to the existing NDNP WH property. IUCN usually asks the three following questions in relation to serial nominations:

What is the justification for the serial approach?

The VoF is one of two geomorphologically discrete, self-contained units designated as core zones within NDBR and fully protected as national parks. A serial approach is merited to complement the existing WH listing of NDNP.

Are the separate elements of the property functionally linked?

The VoF National Park and NDNP are discrete sub-catchments that lie either side of the Dhauri Ganga and are collectively drained by the Alaknanda River. They are functionally linked, while complementing each other in geomorphological and biodiversity terms. In ecological terms, they are linked by a protected corridor to the east, as discussed above.

Is there an overall management framework for all the units?

The VoF National Park and NDNP comprise the core zones of NDBR for which there is a ten-year Landscape Management Plan that embraces the separate management plans of the individual national parks. Management of the two national parks and encompassing biosphere reserve is integrated, as described in Section 4.2.

5.2 Name of property

In the event of NDNP being extended to include the VoF National Park, the Government of India has proposed, in additional information to the nomination provided on 11 November 2004, that the WH property be renamed as *Nanda Devi and Valley of Flowers National Parks*.

5.3 Nanda Devi National Park WH property visitor policy

The existing NDNP WH property, is currently classified as IUCN Category 1a (Strict Scientific Reserve), based on the previous policy of visitors (mountaineers and trekkers) not being allowed into the property. A 9km section of the route into the outer sanctuary of Nanda Devi was opened in 2003, subject to strict controls and a maximum number of 500 visitors per year. The Government of India proposes that the National Park should continue to be allocated to Category 1a, given that the section open to tourism is small relative to the total area. This policy of opening up NDNP to small groups of trekkers, subject to strict management measures, is welcomed by IUCN because it enables

people to experience the WH qualities of the property and tourism to contribute to the local economy and IUCN encourages the State Party to further develop opportunities for small numbers of visitors to experience this mountain wilderness in accordance with existing and emerging regulations on mountaineering and trekking. Given this change in policy, IUCN considers that IUCN Category 1b (Wilderness Area) is more appropriate.

5.4 Nanda Devi Biosphere Reserve

The concept of core, buffer and outer transition zones is being effectively applied to the NDBR and further enhanced by the WH status of one of the existing core zones. The developing interdependence and integration of WH with the MAB Programme is proving to be a model of synergy.

6. APPLICATION OF CRITERIA/ STATEMENT OF SIGNIFICANCE

The VoF National Park has been nominated as an extension to Nanda Devi National Park under natural criteria (iii) and (iv). IUCN considers that the nominated property adds value to the existing WH property and therefore merits inclusion as an extension.

Criterion (iii): Superlative natural phenomena or beauty and aesthetic importance

The VoF is an outstandingly beautiful high-altitude Himalayan valley that has been acknowledged as such by renowned mountaineers and botanists in literature for over a century and in Hindu mythology for much longer. Its 'gentle' landscape, breath-takingly beautiful meadows of alpine flowers and ease of access complement the rugged, mountain wilderness for which the inner basin of NDNP is renowned. IUCN considers that the nominated property meets this criterion.

Criterion (iv): Biodiversity and threatened species

The VoF is internationally important on account of its diverse alpine flora, representative of the West Himalaya biogeographic zone. It is also the first property to have been protected by the Government of India specifically for its flora. The rich diversity of species reflects the valley's location within a transition zone between the Zaskar and Great Himalaya ranges to the north and south, respectively, and between the Eastern and Western Himalaya flora. A number of plant species are internationally threatened, several have not been recorded from elsewhere in Uttaranchal and two have not been recorded in NDNP. The diversity of threatened species of medicinal plants is higher than has been recorded in other Indian Himalayan protected areas. The entire NDBR lies within the Western Himalayas Endemic Bird Area (EBA). Seven restricted-range bird species are endemic to this part of the EBA. IUCN considers that the nominated property meets this criterion.

7. DRAFT DECISION

IUCN recommends that the Committee adopt the following draft decision:

The World Heritage Committee,

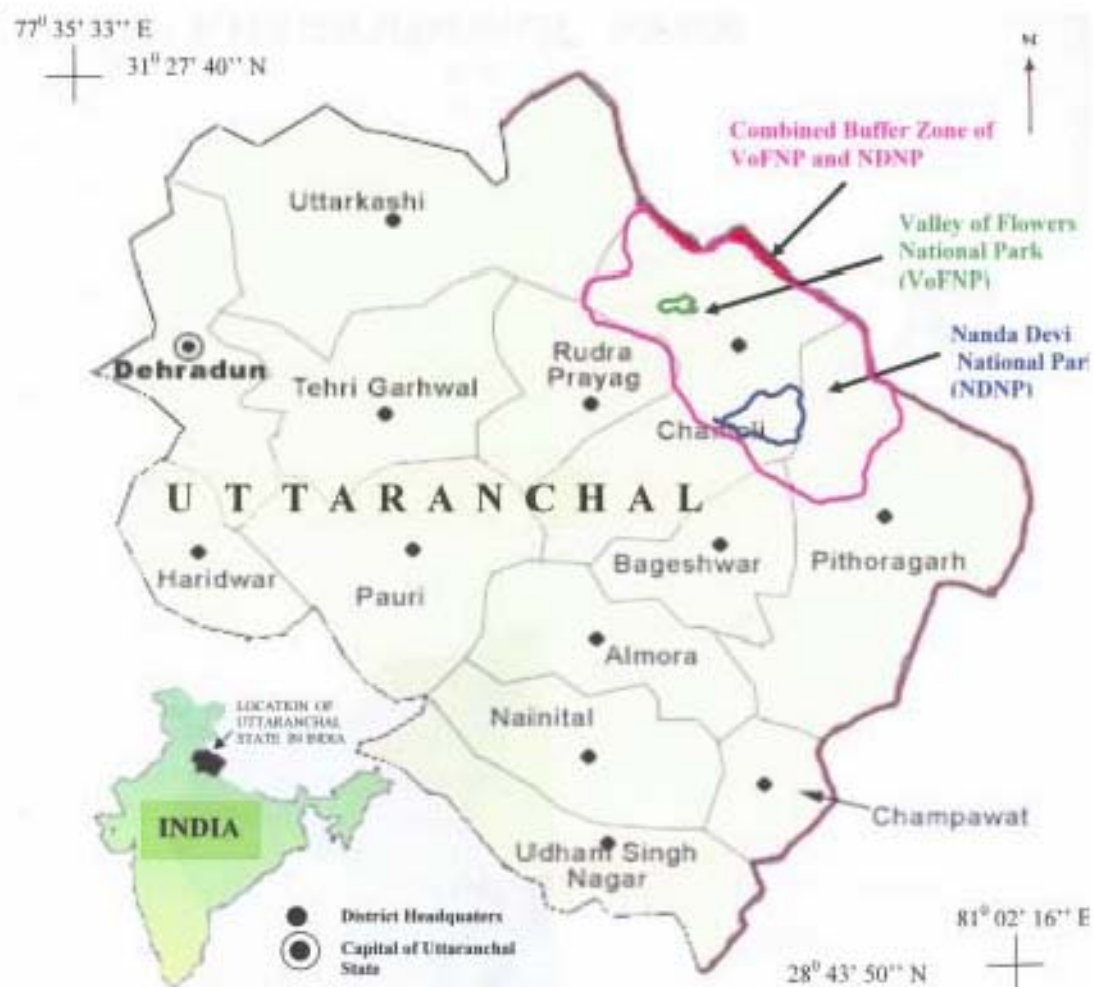
1. Having examined Document **WHC-05/29.COM/8B**,
2. Decides to extend Nanda Devi National Park World Heritage property to include the Valley of Flowers National Park on the basis of natural criteria (iii) and (iv),

Criterion (iii): *The Valley of Flowers is an outstandingly beautiful high-altitude Himalayan valley that has been acknowledged as such by renowned mountaineers and botanists in literature for over a century and in Hindu mythology for much longer. Its 'gentle' landscape, breath-takingly beautiful meadows of alpine flowers and ease of access complement the rugged, mountain wilderness for which the inner basin of Nanda Devi National Park is renowned.*

Criterion (iv): *The Valley of Flowers is internationally important on account of its diverse alpine flora, representative of the West Himalaya biogeographic zone. The rich diversity of species reflects the valley's location within a transition zone between the Zaskar and Great Himalaya ranges to the north and south, respectively, and between the Eastern and Western Himalaya flora. A number of plant species are internationally threatened, several have not been recorded from elsewhere in Uttaranchal and two have not been recorded in Nanda Devi National Park. The diversity of threatened species of medicinal plants is higher than has been recorded in other Indian Himalayan protected areas. The entire Nanda Devi Biosphere Reserve lies within the Western Himalayas Endemic Bird Area (EBA). Seven restricted-range bird species are endemic to this part of the EBA.*

3. Notes that the extended property of 71,210 ha will comprise Nanda Devi National Park (62,460 ha) and Valley of Flowers National Park (8,750 ha), and that its name should be amended to Nanda Devi and Valley of Flowers National Parks,
4. Encourages the State Party to enhance the natural values and protection of the World Heritage property by further extensions to include the corridor connecting Nanda Devi and the Valley of Flowers National Parks, and other areas to include the full altitudinal range and the trans-Himalayan element represented within the Biosphere Reserve.
5. Congratulates the State Party for its environmental clean-up of the approach to the property, and measures to manage tourism sustainably, notably through community-led initiatives and the introduction of regulations,
6. Welcomes the opening of part of Nanda Devi National Park to limited numbers of visitors, which ensure that benefits from such tourism help to sustain local economies; and encourages the State Party to further develop opportunities for small numbers of visitors to further experience this mountain wilderness.

Map 1: General location of nominated property



**LOCATION MAP OF NANDA DEVI
BIOSPHERE RESERVE IN UTTARANCHAL STATE (PROVINCE), INDIA**

Map 2: Boundaries of nominated property

