

# *Venezuela: Avila National Park*

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**Date of most recent on-site evaluation:** March 2002

**Date posted:** June 2002

**Location:** Capital District and Miranda and Vargas States

**Year created:** 1958

**Area:** 81,800 ha

**Ecoregion:** Cordillera de la Costa Montane Forest

**Habitat:** Dry, Deciduous, Semi-deciduous and Cloud forests and Sub-páramos



## Summary

### *Description*

El Ávila National Park is located along the central stretch of the Cordillera de la Costa Mountains in northern Venezuela. El Ávila was declared a park in 1958, fulfilling an interest in its protection that had been prevalent since the 19th century. With its creation came the protection of the forested mountains that surround Caracas, the capital of Venezuela. These mountains now serve as both a recreational area and as a buffer to pollution and urban expansion. El Ávila has always been an important resource for the inhabitants of Caracas, who have used the area for a variety of activities, some of which have threatened its conservation. A hotel and a cable car, which climbs to the highest point at 2,135 m above sea level and drops down the other side to the city of Macuto, were opened in 1956. After being out of service for 20 years, this cable car was reopened in February of this year. It now carries such a large number of people into the park that they could well become a threat to its conservation if not properly regulated.

### *Biodiversity*

This park has a high diversity of fauna and flora. More than 100 butterfly species, approximately 120 mammal species, 20 amphibians, 30 reptiles and 500 bird species (36% of Venezuela avifauna) have been documented. Nine bird species are endemic to Venezuela and three threatened bird species live in this park. In addition, more than 1,800 plant species from diverse taxonomic groups can be observed. Several of these plants are endemic to the Cordillera de la Costa mountain range with some endemic to the park itself.

### *Threats*

El Ávila can be classified as [vulnerable](#) because there is a risk that the diverse threats it faces will increasingly threaten its biodiversity, unless in the near future constant monitoring occurs. The most immediate threats to the park, forest fires and illegal settlements, are located primarily near Caracas. However, the concentration of resources and vigilance in those areas closest to the city has resulted in more problems in the more isolated northern slope and eastern sector of El Ávila. These areas suffer from a lack of signs, infrastructure and vigilance. Other threats include the presence of exotic plants, the cable car and poaching.

## Description

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### *Physical Description*

El Ávila National Park is located along the central stretch of the Cordillera de la Costa, at 10° 32' latitude north and between 66° 12' and 67° 01' longitude west (see map). It covers the mountainous regions between the Caribbean Sea and the valleys of Caracas, Guatire, Guarenas and Barlovento. The park contains part of the following states: Vargas (northern slope), Capital District (southern and western slope) and Miranda (eastern slope).



*Map of El Ávila National Park (Modified by Sergio Porras, Ecograph 1997)*

The park follows a mountain range 80 km long and approximately 16 km wide. It contains over 81,800 ha encompassing a wide variety of ecosystems that vary along the altitude gradient from 120 m above sea level to 2,765 m above sea level at Naiguatá peak. In the lower areas of the northern side, the vegetation is mainly xerophytes, represented by a variety of cacti, shrubs and spiny species. From 300 to 600 m, semi-deciduous forests dominate, whereas from 600 to 800 m the seasonal semi-deciduous forests are common. From 800 to 1,500 m above sea level on the northern slope and from 1,200 to 1,600 m on the southern slope, the forests are mainly sub-mountainous evergreen forests. Due to the constant condensation by the cooling of the air masses and the decrease of atmospheric pressure, cloud forest dominates between 1,500 and 2,200 m above sea level. Finally, the lack of water at 2,200 m and higher permits only sub-páramo vegetation. Beautiful forests grow along the numerous watercourses that flow on either side of the mountain.



*Panoramic view of the city of Caracas and El Ávila National Park. The southern slope shows extensive burned areas, dominated by exotic grasses.*

The temperatures vary widely on El Ávila, with an average temperature of 13° C in the lower sections of Caracas valley and 10° C on Naiguatá peak, where the lowest temperature ever recorded was 2° C. The

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annual average rainfall fluctuates between 600 and 1,400 mm and is influenced by orography, which explains why rain is more abundant on the northern slope where the mountain faces the trade winds.

### *Biodiversity*

The fauna of El Ávila is highly diverse. In its forests there are more than 120 mammal species, approximately 20 amphibian species and 30 reptile species. The main attraction, however, is the park's 500 bird species, representing approximately 36% of all Venezuela's avifauna. Among the birds are nine endemic species to Venezuela: the violet-chested hummingbird (*Sternoclyta cyanopectus*), black-throated spinetail (*Synallaxis castanea*), guttulated foliage-gleaner (*Syndactyla guttulata*), scallop-breasted antpitta (*Grallaricula loricata*), Caracas tapaculo (*Scytalopus caracae*), handsome fruit-eater (*Pipreola formosa*), white-bearded flycatcher (*Phelpsia inornata*), Venezuelan bristle-tyrant (*Pogonotriccus venezuelanus*) and rufous-cheeked tanager (*Tangara rufigenis*) (Sharpe 2001).

Some locally and globally endangered bird species live in El Ávila as well, including the helmeted curassow (*Pauxi pauxi*), fasciated tiger-heron (*Tigrisoma fasciatum*) and black-and-white hawk-eagle (*Spizastur melanoleucus*) (Rodríguez & Rojas-Suárez 1999, Birdlife International 2000).

El Ávila is home to notable mammals like the red howler monkey (*Alouatta seniculus*), three-toed sloth (*Bradypus variegatus*), armadillo (*Dasybus novencinctus*), porcupine (*Coendou prehensilis*), the small anteater (*Tamandua tetradactyla*), fox (*Cerdocyon thous*), squirrel (*Sciurus granatensis*), weasel (*Mustela frenata*), paca (*Agouti paca*) and the tapir (*Tapirus terrestris*) (Naveda 1988, Manara 1998).

More than one hundred butterfly species have been reported for El Ávila, among them are *Metamorph epaphus*, *Dione moneta*, *Morpho peleides*, *Daethria mesticus*, *Chlosyne lacinia* and *Oleria stella* (Manara 1998).



*A view of the evergreen forest on Ávila's southern slope.*

More than 1,800 plant species are registered in El Ávila, although some botanists believe there could be as

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many as 2,000 species. Several documented species are endemic to the Cordillera de la Costa Mountains, like the shrubs resinoso (*Verbesina laevifolia*), cafecillo (*Palicourea pittieri*), clavo morado (*Monochaetum humboldtianum*), romerillo (*Arcytophilum nitidum*) and the giant tree known as "el niño" (*Gyranthera caribensis*). Other notable plants present in the highest zones of El Ávila, and endemic to the Andes, are the frailejón arbolito (*Libanothamnus neriifolius*), the falso frailejón (*Liabum megacephalum*), the quina (*Cinchona pubescens*) and 13 other species. In the sub-páramo zone the most abundant plant species are the shrub incienso (*Libanothamnus neriifolius*) and the grasses carrizo (*Arthrostylidium subpectuinatum*) and bambucillo (*Chusquea* spp.), the latter is limited to elevations above 1400 m. Finally, at least 17 species are endemic to El Ávila itself, including the shrub viravira avileña (*Archyrocline flavida*), three Sapindaceae from the genus *Paullinia* and the herbaceous *Warreella cyanea* (Steyemark & Huber 1978, Manara 1998).

The park hosts more than 180 orchid species, including *Cychnoches chlorochilon*, *Stanhopea wardii*, *Schomburgia undulata*, *Epidendrum fimbriatum*, *Lycaste macrophylla*, *Oncidium papilio*, *Brassavola cucullata*, *Acineta superba* and Venezuela's national flower, *Cattleya mossiae*. Some species such as *Oncidium zebrinum* and *O. falcipetalum*, found in the Andes of Venezuela, Colombia and Perú, flower in the highest zones of El Ávila sub-páramo (Steyemark & Huber 1978, Manara 1998).

The forests contain several species of lichens and fungi notable for their beauty or rarity, such as the beautiful pulpo rojo (*Phallades* sp.), the edible colmenilla (*Morcella* sp.), cacho de venado (*Clavaria* sp.) and an El Ávila endemic, estrella de tierra (*Myriostoma coliforme*). A pteridofite, *Lycopodium caracasum*, is also endemic to the park (Steyemark & Huber 1978, Manara 1998).

At the southern slope of the park there are several forest patches containing the palm *Ceroxylon ceriferum* from which leaves are cut and used by Catholics during Easter ceremonies.

### *Management*

The park is managed by the National Institute of Parks (INPARQUES), the government agency in charge of Venezuela's national parks and monuments. The management plan for El Ávila was written by INPARQUES in 1993. It includes definitions of 11 different management zones within the park and regulations for permitted activities. These management zones are defined below.

- **Integral Protection Zone:** Includes the areas that require strict protection. Access is restricted to INPARQUES personnel for monitoring and scientists for research. The sub-páramo and cloud forest are included in this category.
- **Primitive and Wilderness Zone:** Includes the areas that can tolerate moderate usage. Access is restricted, devoted to authorized activities like scientific research, monitoring and educational activities. Access is granted only under INPARQUES supervision. Hiking, posting educational signs and maintenance of existing trails are also allowed. These areas include all the moist pre-montane forests and dry lower-montane forests.
- **Managed Natural Environment Zone:** Includes all areas that were affected by moderate human use before the park was created. Basic infrastructure building, the posting of informational signs, vehicle use and passive recreational activities are permitted. Areas that do not fall under another category are included in this zone.
- **Natural Recovery Zone:** Includes all areas used for conservation and restoration of natural resources. The agricultural lands in the Lagunita-Los Naranjos, El Infiernito, La Albareña, La Haciendita, Moscu, Miguelena, El Rosario, Fila del Indio and Naranjal are included in this zone.
- **Recreation Zone:** Includes park areas that are favorable for development of low-impact recreation. Infrastructure building is permitted, and the area is open to the public for recreation. The following sectors of El Ávila fall into this category: San Julián River, Cerro Grande River, Uria River, Naiguatá

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River, Miguelena Creek, Hacienda Las Trincheras, Hacienda Corozal and El Vigía Fort in the northern slope, and Norte-La Churca River, Los Venados and Topo Zamurera in the southern slope. After the disastrous mudslides of 1999 many of the areas on the northern slope no longer exist as recreation areas.

- **Service Zone:** Includes INPARQUES infrastructure: 22 ranger posts in the southern slope and 20 former posts on the northern slope, according to the management plan. The buildings of the recreation center at Los Venados and the National Guard structures at Tacagua, Dolores, Puerta de Caracas, Plan de Manzano and Cotiza are also included. After the 1999 mudslides, the posts on the northern slope no longer exist.
- **Historical, Cultural and Paleontological Interest Zone:** Includes the areas of Camino de los Españoles, the Casona de Los Venados and 21 historical structures described in the management plan.
- **Special Use Zone:** Includes activities incompatible with conservation efforts for the National Park but which predate its creation. These areas are still maintained because they include infrastructure that provides services of social interest, for example: the old Caracas-La Guaira road, television, and telecommunication structures, electric wiring, the cable-car, the Humboldt Hotel, the Pajaritos firefighting camp, the Carenero-Guatire and Catia La Mar-Cantinas pipeline, 14 small dams on the creeks that flow into Caracas, and three small hydroelectric plants in Naiguatá, Curupao and El Encantado.
- **Native Villages:** Includes villages that existed before the creation of the park and whose activities are not especially harmful to the park: Galipán, Hoyo de la Cumbre and El Corozo.
- **Buffer Zone:** These areas form the perimeter of the park adjacent to the city of Caracas and require regulated use.
- **Environmental Protection and Recuperation Zone:** Includes the western and northern areas of the park that are outside Caracas, but have been affected by uncontrolled human encroachment. This zone is regulated under the Special Management Plan, decree No. 2.973 in the Gaceta Oficial No. 35.297, 15/09/1993.

The management plan describes the monitoring activities required to ensure that the regulations mentioned above are enforced. Administration and management programs are described to better harmonize the use of the park with its ongoing protection. These programs cover issues regarding protection, security, infrastructure, environmental quality, research, education, recreation and community involvement.

El Ávila has the largest number of employees and most infrastructure development of any Venezuelan park. Forty-three of its 26 rangers work in Caracas and are in charge of monitoring the park. In addition to rangers, there is one superintendent, an environmental education group and administrative personnel at the administrative center Los Venados. In El Ávila there are two information centers, a library, a conference room, an administration building and numerous recreational structures located both in and out of the designated recreational areas.

A radio network is in place for communications, and the Pajaritos firefighting camp is the largest and best in the country. Due to the disastrous floods in 1999, only the El Mirador ranger post is still working on the northern side. The few rangers that cover this area are working from their homes.



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*Photographs of the Los Venados information center. The numerous signs and the excellent condition of the buildings contrasts with the neglected north side of the park.*



The limits of the park and each of its zones are cartographically defined. Signs are posted in the Recreation Zones and along trails on the southern side where the mountains meet the city; however, signs are almost non-existent elsewhere.

### *Human Influence*

#### Park inhabitants

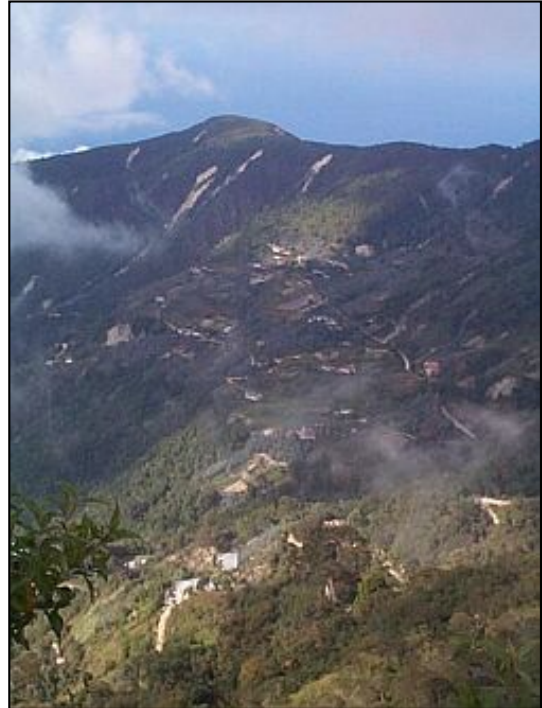
For centuries the park area has been of great importance to humans. Native inhabitants that lived in the mountains approximately 500 years ago built trails, which cross the mountains connecting the coast to the valley of Caracas. Spanish colonizers used some of these trails during the 17th century, as did pirates and merchants traveling to Caracas. Today, there are many more trails and roads which add to the recreational and tourism value of El Ávila. Many people from Caracas who enjoy the outdoors often use these trails. The so-called Camino de los Españoles (trail of the Spaniards) is the oldest trail, and together with some forts built during the colonial period, was declared national historic patrimony in 1966. They are protected by special legislation, which is mostly ignored.

El Ávila has endured a long history of human intervention and colonization, most occurring prior to its creation. On several occasions, the government bought private land at the base of the mountain facing Caracas. In 1974, agricultural lands in the state of Miranda were included to increase its area. The growth of slums in many of the lower areas around Caracas has diminished the natural sectors by several hundred

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hectares. To the west of Caracas, around La Guaira and along the old road to the airport, there are 21 slums and an estimated 600,000 people. All these people live within the Environmental Protection and Recovery Zone. Since the disastrous mudslides of 1999, when 30,000 people died and more than 60,000 homes were destroyed, the exact number of people who continue to live in this area is unknown.

*Cultivated zone in the native village of Galipán. The marks of the 1999 mudslides that affected the park can be seen at bottom*



There are three native villages that predate the formation of the park: Galipán (400 homes), Hoyo de la Cumbre (68 homes) and El Corozo (60 homes). There are also three agricultural communities: Culebrillas (45 homes), Santa Rosa (30 homes) and Sanchorquiz (45 homes). Information on these villages and communities is out-dated, and the current number of inhabitants is likely to be much higher. Last year a national census was conducted but the data is still unavailable.

### Tourism

Most visitors to El Ávila are Venezuelans who hike, camp or visit the recreational areas. Some foreign tourists visit the park on day-tours through Avenida Boyacá or educational tours to the village of Galipán. Bird watching tours are a potential tourism alternative to be developed.

Hiking and camping are important recreational activities in El Ávila. Thousands of people walk the trails daily, and many more on weekends for exercise and to access the campgrounds. Recreational hiking began with Alexander Von Humboldt, who reached the Silla de Caracas and the Pico Oriental (2,625 m above sea level) on January 3, 1800. Then, on April 23, 1872, English merchant James Mudies Spencer climbed the Pico Naiguatá, which at 2,765 m above sea level is the highest point of the entire Cordillera de la Costa range. Today, these mountains are used by various groups of mountaineers from the city. The first groups to use the park were the Centro Excursionista Caracas and Centro Excursionista Codazzi, and newer groups include Grupo Excursionista Oikos, Centro Excursionista Manuel Angel González, Centro Excursionista Universitario and the Centro Excursionista Loyola. In addition to these groups are many others that appreciate the recreational opportunities that El Ávila offers.



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*Hiking trails and roads below Ávila peak. The route is dominated by pine and eucalyptus trees, both exotic species.*

The hikers, media and several private companies comprise the most important allies of El Ávila. This support group has come together quite spontaneously. During ParksWatch visits to El Ávila, we were able to witness the good relationship between rangers and hikers, who are the people most familiar with the Park.

Most visitors utilize the park on weekends although it is difficult to quantify the precise number of hikers that use the many roads within El Ávila. Each weekend approximately 1,000 people visit the recreational area Los Venados and another 4,000 take the cable car up to Cerro El Ávila, while approximately 200 vehicles use the road that goes to Galipán.

### *Conservation and Research*

The great interest in El Ávila is evidenced by the number of research projects that have been conducted in the park. Carlsen (1999) lists 83 research projects in El Ávila. Many projects pertain to some aspect of the



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park's biodiversity. Among them are a list of the fungi by Iturriaga & Jackson, and a mammal inventory carried out by Jorge Naveda, both published in 1988. Dr. Winfried Meier carried out research on the flora and fauna of the park in 1998 and Dr. Chris Sharpe completed an inventory of birds in 2001.

Most conservation programs are directed toward solutions for forest fires. With the help of the Chinotto and Panamco Bottle companies, INPARQUES conducts reforestation and maintenance programs for an important firebreak on the southern slope. In 2001, a command center was built to control forest fires across the country. It includes members of the National Guard, Civil Defense, INPARQUES and the Ministry of the Environment. The Coordinator of Forest Fires of INPARQUES, Germán Gutierrez, informed us that in 2001 an external monitoring system was installed and it is run by the National Guard. The Guard is also in charge of training 400 men in firefighting techniques and has at its service a special helicopter for fighting forests fires.

Proyecto Avila is an alliance that works for the conservation of El Ávila and includes the Universidad Metropolitana, INPARQUES, the conservationist organization Vitalis, the Fundación para la Conservación de los Árboles (FUNDARBOL) and the oil company Exxon Mobil. This group maintains the firebreak close to the university, designed a botanic nursery for educational and reforestation purposes, promotes environmental awareness among the university community, and offers environmental courses on subjects related to the management of the national park.

By 2007, 53,000 million bolívares (US \$53,000,000) will be spent by the Ministry of the Environment on fire prevention throughout the country. This program supports prevention, maintenance and reforestation of firebreaks, as well as agreements between public and private companies. With regards to the Capital District, the program includes El Ávila and Macarao National Parks and the Caracas protected zone. In addition to this funding, 2,000 million bolívares (US \$ 2,000,000) is set aside for purchasing firefighting equipment including extinguishing equipment and vehicles for transporting water.

The Ministry of Science and Technology is researching urban design solutions to avoid tragedies like the mudslides of 1999. Interestingly, these large-scale mudslides seem to be periodic, having occurred in the late 1800s, in 1948 and again in 1999.

### **Threats**

El Ávila can be classified as a vulnerable park, because there is a risk that that park's biological diversity will be diminished if constant monitoring does not occur.

Due to extensive human activities in the park, which began long before its formation, its biological integrity is threatened in several ways. Even so, El Ávila has certain strengths including a large number of rangers, posts, and resources available for the administration, and a keen interest of the Caracas populace in its well-being. The hikers and other people who visit and enjoy the park on weekends are its biggest allies. The degree of interest and environmental consciousness of these frequent users is unparalleled in other parks. Partly because of these regular visitors, new threats are promptly identified. In spite of this public interest, there exists the following threats:

- Fires
- Human encroachment
- Exotic plants
- The cable car
- The centralization of resources

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- Poaching

### *Fires*

This is the biggest threat to El Ávila. In the summer of 1960, an 11-day blaze torched 1,400 ha of the southern slope. In 2001, 384 ha burned ([see PW news](#)), more than the total area burned during the two previous years combined (106 ha). The establishment of African grass species has facilitated the spread of fires, which are most often started by careless people. With fires having burned 40 ha thus far in 2002, the park has been forced to temporarily close several access points.



*The southern boundary of the park and the city of Caracas. Forest fires burn a large part of this area each year.*

### *Human encroachment*

#### Agricultural communities

In areas where the park limits are not well marked, the surrounding agricultural areas have encroached into the park. In some areas, access is difficult and information regarding the number of people present and what they are growing is difficult to assess.

#### Homeless people

The Avenida Boyacá highway in Caracas marks the beginning of the park in Caracas at 1,000 m above sea level. This limit is well marked and defined so people often use this area to access the mountains. However, homeless people and criminals who pollute the area and endanger park visitors recently occupied the area. They often make bonfires in the grassy areas, which have led to forest fires on several occasions. The relocation of the homeless and arrest of the criminals is not INPARQUES's responsibility, yet the safety of the park is endangered by the lack of help from the responsible government agencies.

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*Trash and waste in the area frequently used by homeless people.*

### Environmental Protection and Recuperation Zone

Most of this area is covered by slums, which predate the park's creation and have grown uncontrolled since. When the park was created, 70,000 people already lived in these areas. The addition of such areas to the park did not increase its biological value since the area was completely inhabited and practically without vegetation. By 1980, 234,161 people lived within this zone in 120 different towns. In 1990, it was estimated that 600,000 people lived there and today the number is no doubt higher, but the data stemming from the most recent census (2000) is not yet available. The living conditions in these areas are poor and conducive to disease. The inclusion of these areas in the park does not serve the park's purposes in any way.



*Numerous neighborhoods and a highway are within the park's Environmental Protection and Recuperation Zone. The government does not have the resources to relocate the inhabitants.*



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### *Exotic plants*

Species introduction to the park has been happening for a long time, mostly prior to its creation, but its effects are still visible today. The list of exotic species is long and their origins are varied. The main groups are represented by flowering plants, which were grown commercially at some point during the 17th and 18th centuries. Among these are the morning glory (*Ipomea nil*) from Mexico; *Thunbergia alata*, *Ricinus comunis*, *Gladiolus hortulanus*, *Agapanthus orientalis* and *Impatiens sultani* from Africa; *Hydrangea macrophylla*, *Iris confusa*, *Eriobotrya japonica* and *Zyzygium jambos* from Japan; *Morus alba*, *Holmskioldia sanguinea* and *Heydichium coronarium* from China and the Himalayan regions; and *Veronica polita*, *Plantago mayor*, *Papaver rhoeas* and *Taraxacum officinale* from Europe. Some fruit trees such as *Mangifera indica* from India, *Emilia coccinea* from Asia and Africa, *Ficus caria* from the Mediterranean, and the grasses *Bambusa vulgaris* from Asia, and *Panicum maximun* and *Melinis minutiflora* from Africa were also introduced (Steyemark & Huber 1978, Manara 1998). The latter two cover large areas of the southern slope of the mountain and increase their coverage with each fire. This "savanization" of El Ávila is the most serious consequence of introduced species. Its effects on the original ecological dynamics of the mountain lead to the annual fires, which in turn, reduce the forested area.

### *The cable car*

After being out of service for 20 years, the cable car reopened in February 2002 ([see PW news](#)). This required the construction of a new paved road in the Boca de Tigre via Galipán stretch in order to transport building materials. Some of the old structures were taken apart and left abandoned in the forest.

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*The cable car and Humboldt hotel represent a potential threat for the conservation of the park.*

The significant rise in the number of people who can now easily reach the park's peak could potentially generate problems. According to data provided by the company that runs the cable car (Inversiones Turísticas Caracas), approximately 600 people ascend from Monday to Thursday, 800 on Friday, and during the weekends the number jumps to approximately 4,000 visitors a day. At the peak times, the summit hosts 3,000 people.

In spite of being a recreational area within a national park, there is no guard station or information center where the ecological importance of this protected area is presented to visitors. Actually, the construction of a casino is proposed for the near future, which, of course, does not comply with the permitted uses of the park land. Although currently there are enough signs and garbage containers in this recreational area, the reopening of the Humboldt Hotel and the management of its sewage, garbage and supplies poses another serious threat to the park.

Information gathered by ParksWatch regarding the above inconsistencies in park management (from sources which did not wish to be identified), revealed the fact that the company that runs the cable car does not contribute any of its earnings to the park itself. It operates as a parallel entity and does not feel compelled to follow park regulations. The lack of communication between the cable car company and the park is worrisome, and at this point it is uncertain that regulations will be considered before construction on the casino begins.

### *The centralization of resources*

Although El Ávila has more resources and infrastructure than any other national park in Venezuela, they are all concentrated in the area closest to Caracas. This is because millions of people living in the capital can see the park from their homes, and INPARQUES wants to monitor the management of these areas closely. For this reason, the institution dedicates many resources to this park, specifically to this area of the park, which only represents an eighth of the entire park area. On most maps of El Ávila, the only area shown is that which is located directly in front of the city, and most of the published information regarding El Ávila is only about this sector.

In contrast to the amount of park resources concentrated near Caracas, the Silma ranger post does not have a vehicle and only houses the ranger. All repairs in the area have been carried out and covered by the ranger himself. In addition, there is no National Guard post in charge of environmental protection anywhere close by. On the north side of the park, there are no ranger posts, and the few rangers who work there do so from

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home. The posting of limits and trails in the area close to Caracas is excellent, but in all other areas signs are virtually nonexistent.



*The guard post Silma was reconstructed by the guards and is the only active post not in the southern zone near Caracas.*

ParksWatch was recently informed that six ranger posts on the south side were closed for remodeling. Bad timing in the destruction of the existing buildings and problems in paying the construction company have resulted in a work stoppage since January. The rangers have had to move or sleep in tents, and they are, for all practical purposes, unable to carry out their duties. This situation will no doubt become dire if it is not resolved before the rains begin.

### *Poaching*

Hunting is common in the eastern sectors of the south side of the park and originates from towns near Birongo and El Salmerón among others. It is only subsistence hunting, but there is no information about what is being hunted due to the lack of personnel in this area. Even so, because this area of the park is near populated areas and urban centers, hunting is much less a threat than in other national parks.

### **Recommended Solutions**

#### *Fires*

The superintendent and the board of the National Parks Institute have made efforts to improve fire fighting on the south side and have formed groups to help protect the park. The best-outfitted fire station is called Pajaritos. Support from other firefighting groups, good communication and access roads all help to control fires. Since 1946, a 20 m wide by 24.5 km long firebreak has prevented fires from spreading to higher elevations on the south side. In addition to the infrastructure, El Ávila counts on the help of volunteers for fighting fires, as well as donations from an important group of private companies. With the help of individuals who use the park, forty million bolívares (US \$40,000) were collected to be used for reforestation after the 2001 fires. The Panamco and Chinotto company donated more than 12 million bolívares (US \$12,000) and 4,000 trees. Companies like Procter & Gamble, Telcel, Banco Mercantil Foundation, Petróleos de Venezuela and the Metropolitan University among others, donate funds towards the maintenance of the firebreak. Reforestation is a priority for the board of the National Parks Institute, and areas damaged by fires are recovering thanks to a program designed by the superintendence. The importance



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of the park to city dwellers and publicity given to it by the media, have generated a support group, which INPARQUES can utilize for fighting fires. It would be ideal if other national parks had similar support groups to help prevent fires and improve management.

### *Human encroachment*

#### Agricultural communities

It is necessary to determine how many people live inside the park and surrounding areas, as well as the type of crops grown on park land. The farming town of Birongo, some five km away from the park in Miranda State, has grown significantly, and according to ranger reports, may now occupy park land. This needs to be verified.

#### Homeless

This is a complex problem that cannot be solved by relocating people because they could simply return. Their presence is a consequence of the dire social and economic crisis the country is experiencing at this time, and few resources are available to help these people. Institutions with experience in handling social emergencies like these should intervene to help solve this problem, not only for the park, but for the city as well. Brazil has had a positive experience getting homeless people involved in recycling programs affording them homes and a more dignified way of life.

#### Protection and Recovery of the Environment Zone

The threats that human settlements inside the park generate pose a difficult problem. The number of people living within park boundaries is very high, and the parks proximity to one of the most populated cities in the country makes relocation of these people an uneconomical solution. It has been suggested that new limits be drawn to exclude these populated areas but this would be interpreted as INPARQUES having given up under pressure. Ironically, it turns out that having these settlements within the park actually enables INPARQUES to control them better than if they were excluded. The long-term solution would entail turning these people into allies of the park through environmental education programs. This could teach them the value the park has for them, and eventually allow for economically sustainable practices to be worked out according to the Management Plan for the Environmental Protection and Recovery Zone.

### *Exotic plants*

It is not feasible to eradicate all exotic species from park grounds due to their high number. Even so, the effort to solve this problem begins by reforesting with only native species.

Ecologists working in Venezuelan universities should be consulted and involved in designing technical solutions addressing the simultaneous problems of fires and exotic species invasions. It is clear to these scientists that these introduced species have altered the original dynamics of this ecosystem, and that the recurring fires have become a natural cycle of the grasslands now common on the south side. What is not burned in a given year accumulates to support a more intense fire in following years. It is important to study the current systems and come up with a special plan to manage some of the African grasses like *Panicum maximum* and *Melinis minutiflora* that covers the southern slope of the park.

### *The centralization of resources*

## ***Venezuela: Avila National Park***

The solution to this problem can only come from INPARQUES itself, which was the source of this uneven distribution of resources. The attention that El Ávila garners in the general population should be directed towards the less well known areas. These tend to be farther away from the city and need the most help as far as infrastructure is concerned.

### *The cable car*

The company that won the bid for repairing and managing the cable car and the Humboldt Hotel has to pay 5.29% of its net income to the Venezuelan government for the next 30 years. Fondoturismo-the state's tourism agency-will receive these resources three years after the 1999 agreement. ParksWatch recommends that some of this money be directly invested in the park to alleviate the problems caused by the construction of the cable car. The national entity receiving this payment should be INPARQUES and not Fondoturismo, because the infrastructure is located inside the park's jurisdiction. These resources could be allocated to solve the lack of infrastructure and personnel problems in the northern slope and the west area of the park.

### *Poaching*

Although poaching is not carried out at an especially harmful degree, education programs addressing the importance of the maintenance of biodiversity should be made available to the population. These programs could highlight the possibility of ecotourism as an alternate income for people who live in communities where the threat of poaching exists.

## **Conclusion**

The closeness of El Ávila to Caracas works mostly to its advantage, allowing millions of people to keep an eye on its well being. This is reflected in the amount of resources INPARQUES sets aside for this park, although they are concentrated primarily in the area adjacent to the city. On the other hand, this proximity has resulted in problems like exotic species introduction, frequent fires and the inclusion of highways and populated areas inside the park. To help solve these problems, personnel and infrastructure need to be spread evenly over the entire park. The thousands of daily visitors from Caracas represent the principle allies of the park and have greatly helped to maintain and protect El Ávila from certain threats. In this respect, El Ávila serves as an excellent example for other national parks in Venezuela.

## **Links**

### **Conservation and research**

Winfried Meier: <http://www.schweizerbart.de/pubs/books/bo/dissertatb-064029600-desc.html>

Universidad Metropolitana: <http://www.unimet.edu.ve>

Vitalis: <http://www.vitalis.net>

Ministerio del Ambiente y Recursos Naturales: <http://www.marnr.gov.ve/>

Ministerio de Ciencia y Tecnología: <http://www.cdc.conicit.gov.ve/>

### **Mudslides in Venezuela, 1999**

[BBC news](#) : Mudslides in Venezuela

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