



## Park Profile—Peru Calipuy National Reserve Calipuy National Sanctuary

**Date of last field evaluation:** February 2003

**Date of publication:** March 2003

**Location:** *National Reserve* - Santiago de Chuco and Chao districts, province of Santiago de Chuco and province of Virú respectively, department of La Libertad. *National Sanctuary* - district of Santiago de Chuco, province of Santiago de Chuco, department of La Libertad.

**Year created:** 1981

**Area:** 64,000 ha (National Reserve); 4,500 ha (National Sanctuary)

**Ecoregion:** Cordillera Central paramo of Ecuador and Peru

**Habitats:** *National Reserve:* Tropical steep-montane, tropical desert matorrales, tropical montane desert matorrales, tropical lowland desert matorrales, tropical premontane desert matorrales, semi-arid premontane desert matorrales, very-arid premontane desert matorrales.

*National Sanctuary:* Very humid paramo in sub alpine tropics, humid montane tropical forest



### Summary

#### *Description*

Calipuy National Reserve covers an area of 64,000 ha and features a variety of habitats typical of Peru's middle Andes, between 800-3,900 meters. The soil in the reserve is residual, with rolling terrain. The area is home to a large guanaco population. Calipuy National Sanctuary covers an area of 4,500 ha between 3,450-4,300 meters. The area features plant life typical of Peru's high Andean reaches. The sanctuary includes a large and dense population of Puya Raimondi.

#### *Biodiversity*

In general, there is little available information on the biodiversity of these protected natural areas, and further research is needed. The most significant species include the Puya Raimondi, which prompted the creation of Calipuy National Sanctuary in the first place, and the guanaco (*Lama guanicoe*), which prompted the creation of Calipuy National Reserve. There are also populations of puma (*Felis concolor*), spectacled bear (*Tremarctos ornatus*), and condor (*Vultur gryphus*), among others.

### *Threats*

Both protected natural areas, particularly Calipuy National Sanctuary, face serious threats that require urgent solutions. ParksWatch-Peru classifies both areas as **critically threatened**. The main threats to Calipuy National Reserve include poaching, livestock herding, firewood extraction, and lack of vigilance and control. Threats to Calipuy National Sanctuary include human encroachment, cattle ranching, burning and destruction Puya Raimondi and lack of vigilance and control.



*Guanacos in Calipuy National Reserve (photo: Diego Shoobridge)*

## **Description**

### *Physical Description*

Both protected areas lie at altitudes between 800 and 4300 meters; at 08° 35' 00" - 08° 30' 40" Latitude South and 78° 11' 15" - 78° 30' 00" Longitude West, approximately 64 km southeast of the provincial capital of Santiago de Chuco.

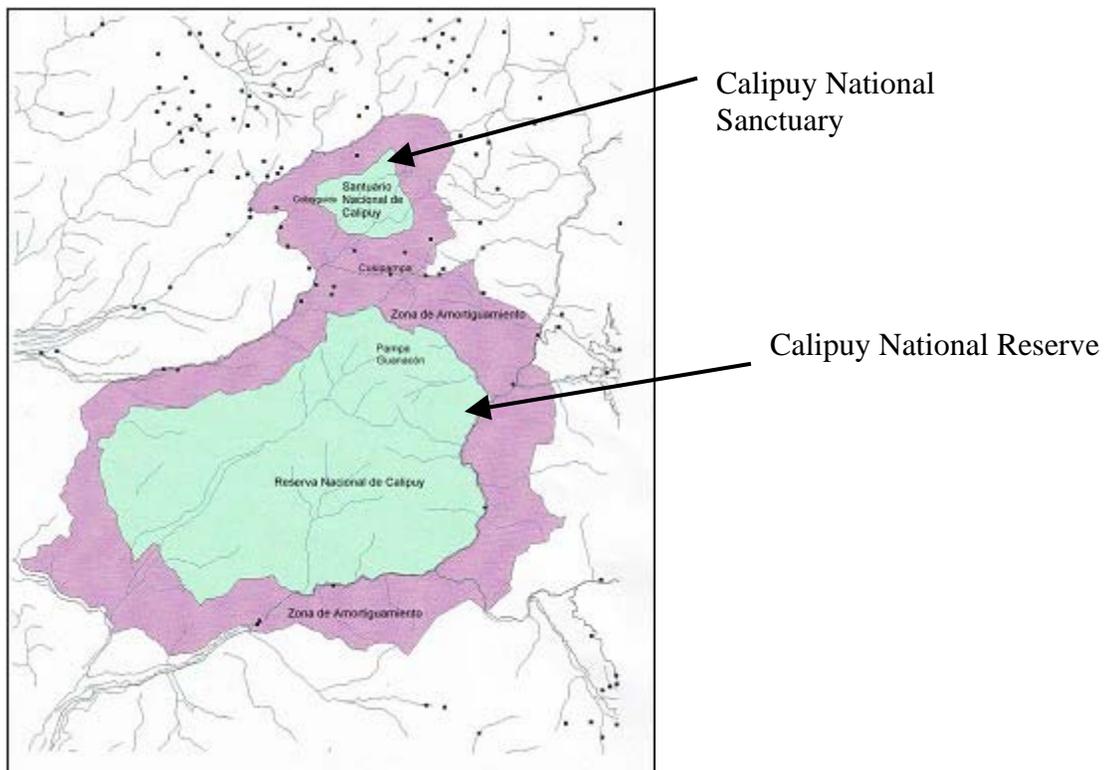
The hydrographic network is dendritic, where water flows on a seasonal basis through the watersheds of the Santa and Chao Rivers. The terrain is rolling and moderate to steep slopes are common. In Calipuy National Reserve, altitudes range from 800-3,900 meters. Some areas have been heavily eroded. In Calipuy National Sanctuary, altitudes range from 3,600-4,300 meters.

During the winter season (June-August) night temperatures are cold. Rains are scarce during this season, ranging from 280-500 mm, while during January, February and March precipitation can total 1,200 mm in the upper highland reaches, with erratic rains during October, November and December.

## Access

To get to Calipuy National Reserve, one takes the road from the city of Trujillo to the village of Santiago de Chuco, which is an 8-hour drive. From there continue to the community of Calipuy, where there are no roads, making it necessary to continue on foot. The reserve is a four to six-hour hike from the village. The trail can be driven by motorcycle, which cuts down on time and effort. Another access road runs from Trujillo to the village of Chao by car, and from Chao on foot to the communities of Llacamate and El Zaile. Another way to get there is by car from the city of Chimbote along the Santa River to the village of Galgada on the Tablachaca River. From Galgada, one sets out on foot up the mountain, a 12-hour trek to the reserve.

The same access routes can be used to reach the sanctuary, and the trail continues north of the reserve, either on foot or by motorcycle as far as the sanctuary, passing through the community of Cusipampa.



## *Biodiversity*

There is little information available on the biodiversity of these protected natural areas, despite the fact that the areas were created 22 years ago. One of the reasons the National Reserve was created was in fact to promote scientific research into natural resources.

## Flora

Most of the plants in the area are medium-sized or small, semi-woody and herbaceous, and grow in rocky terrain. Vegetation is more abundant on the hillsides; the semi-woody species are usually medium-sized bushes ranging from 0.60 y 1.50 meters in height. The main species include: *puya raimondi* (*Puya raimondii*), *Cheilanthes gruinata*, *Stenomesson coccineum*, *Calliandra expansa*, *Lupinus sp.*, *Verbena clavata*, *Salvia oppsotiflora*, *Satureja sp.*, *Satureja guamaniansis*, *Urocarpidum sp.*, *Arcythopphyllum thymifolium*, *Baccharis latifolia* and *Baccharis odorata*.



Puya Raimondi, belonging to the Bromeliad family, is a pretty plant that features the world's largest blossoms. It grows at altitudes ranging from 3,700-4,200 meters. In Calipuy National Sanctuary, there are approximately 3,000-4,000 plants, both young and old. The plant grows a thick and erect trunk that produces clumps of thorny leaves, in the middle of which appears a dense blossom that can reach a height of 6 meters. These plants are easily blown over by the wind because they are not sheltered and because they do not put down deep roots. Blow-over is the plants' main negative natural impact.



## Fauna

Key fauna species in the area include: the guanaco (*Lama guanicoe*), puma (*Felis concolor*), coastal fox (*Pseudalopex sechurae*), Andean fox (*Pseudalopex culpaeus*), weasel (*Mustela frenata*), deer (*Odocoileus virginianus*), spectacled bear (*Tremarctos ornatus*), and mountain viscacha (*Lagidium peruanum*). Bird species include the condor (*Vultur gryphus*), turkey vulture (*Cathartes aura*), black vulture (*Coragyps atratus*), red fronted conure (*Aratinga wagleri*), Ornate tinamou (*Nothoprocta ornata*), black-winged ground-dove (*Metriopelia melanoptera*), chiguanco thrush (*Turdus chiguanco*), Andean swallow (*Petrochelidon andecola*), and rufous-collared sparrow (*Zonotrichia capensis*). Reptile species include the fer-de-lance *Bothrops* sp. and coral snake *Micrurus* sp.

The guanaco is a rare species that is in danger of extinction in Peru. Their numbers have fallen dramatically, largely due to poaching. Calipuy National Reserve is home to the largest guanaco population left in Peru and is the southernmost population of guanacos.<sup>1</sup> Their plight is grave. In Peru, these camelids have been pushed to the brink of extinction, through poaching as well as competition from domestic livestock for grazing lands.<sup>2</sup> Of the 1,000 guanacos estimated in the reserve in 1965, only 400-500 remain.



## *Management*

### History

Calipuy National Reserve and Calipuy National Sanctuary were created by Supreme Decree N° 004-81-AA on January 8, 1981. The protected areas are adjacent and are linked by a buffer zone.

In the beginning, in the 1960s and even before, the land covered by the protected areas formed part of privately owned plantations. The 1969 Agrarian Reform launched by Peru's military government, however, confiscated the land from the plantation owners and handed it to the workers. These workers formed the Agrarian Society of Social Interest, SAIS Libertad N°18, a cooperative that replaced the plantation as the land's new owner and administrator of the area's resources. The cooperative proposed to set aside a reserve of 3,000 hectares to protect the guanaco and encourage tourism (October 1972). The cooperative established boundaries for its lands, marked out by stone walls to prevent cattle from crossing the borders. The cooperative began keeping watch over the resources of the protected area long before the National Institute of Natural Resources (INRENA) intervened.



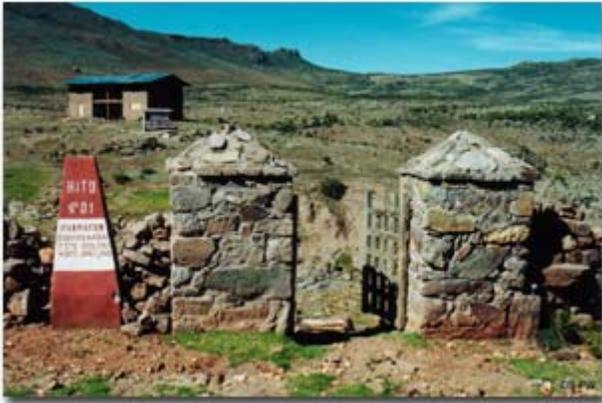
Economic and organizational problems had already undermined the SAIS Libertad cooperative, but its collapse was finally brought about by terrorism in the area in the late 1980s and early 1990s. As guerrilla violence spread, keeping watch over the protected area was no longer possible. After several years of scant government presence in these protected areas, a new director was appointed in mid-2001 to run both areas, and a series of steps were taken to attempt to recover and manage the areas.<sup>3</sup>

### Administration

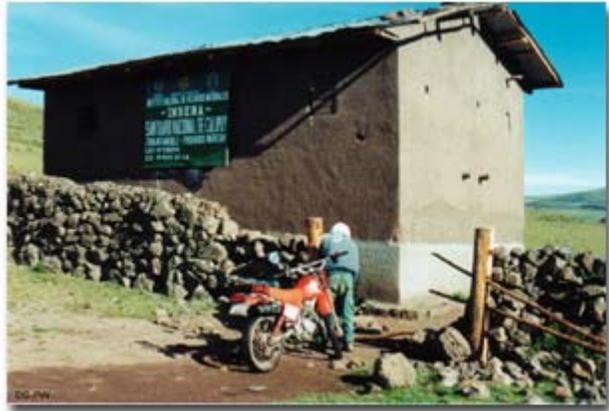
Peru's protected natural areas are managed by the General Department of Natural Protected Areas, part of the National Institute of Natural Resources, INRENA, which in turn is part of the Ministry of Agriculture. The current administration is ruled by Law N° 26834, the Law of Natural Protected Areas (June 30, 1997), and its regulatory Supreme Decree N° 038-2001-AG.

Even though Calipuy National Reserve and Calipuy National Sanctuary have different protection categories and management objectives, they share a single administration. Staff responsible for both protected areas includes one director, three park rangers, and one coordinator. Neither of the protected areas has a master plan.

The reserve has two operating control posts: the Guanacón control post in Pampa Guanacón and the Pulmarada control post on the Las Botijas hill near the area of Llacamate, both in the northern section of the protected area. The sanctuary has an operative and habilitated control post: Auginate, in the southern part of the protected area, and two control shelters in the northeast section of the sanctuary, which have not been fully implemented.



*Control post at Guanacón in the reserve  
(photos: Diego Shoobridge)*



*Control post at Auginate in the sanctuary*

The protected area's annual operating plan involves monitoring the guanacos in the reserve as well as the Puya Raimondi in the sanctuary, plus training and coordination workshops with local communities and the study of the spectacled bear.

The protected area's administration lacks enough financing to be able to carry out effective vigilance and control in the field. Park rangers are unable to make regular visits to the communities or patrol as often as they would wish, due to financial and logistical shortfalls.

### National Reserve Support Committees

The area's administration, which is overseen by INRENA, created support committees in April 2002. Representatives from nearby communities make up the committees. These committees are supposed to help conserve and protect the reserve. One problem that the support committees have already discussed involves grazing within the reserve. The proposed resolution was to have the committees manage the pasturelands, an idea accepted by the local population, who signed a formal agreement. The proposal, created with the support of committee members and INRENA, established an internal set of regulations to control the committees' functions and the usage of the pastures.

The National Reserve has 15 support committees. Four committees cover the buffer zone of the National Sanctuary (El Suro, Caypanda, Imbal and Carpabamba) and 11 committees have been assigned to the reserve's buffer zone (Molle, Llacamate, Huaraday, Cachubamba, Chagabal, Quiguir, Cusipampa, Munchugo, Calipuy and two committees in Zaile). On average, each committee has 30 members. INRENA tries to hold regular meetings with the support committees to deal with problems arising from grazing, internal functioning and illegal extraction of resources from the area.

### Management Committee

The management committee for the protected area was established in December 2002, and was approved by the Intendancy of Natural Protected Areas at INRENA. The management committee is made up of citizens and representatives from public and private institutions. They meet voluntarily to carry out measures that benefit the natural protected area while respecting the

guidelines set forth in the Working Plan approved by INRENA under the terms of Articles 15 and 16 of Law N° 26834, and while following the Law of Natural Protected Areas and other relevant regulations. The committee does not have legal status and has been created for an indefinite period. The committee oversees the entire area covered by Calipuy National Reserve and Calipuy National Sanctuary and their respective buffer zones.

The management committee's functions and objectives include the following:

- Propose strategies to meet the objectives and goals laid out in the Annual Working Plan of Calipuy National Reserve and Calipuy National Sanctuary, within the general framework of national policy on Natural Protected Areas.
- Support the management and administration of the Reserve and the National Sanctuary.
- Help coordinate various environmental programs and plans, research, education and conservation of the area's natural heritage as well as environmental plans governing the use of resources.
- Promote the preparation of the respective master plans of Calipuy National Reserve and Calipuy National Sanctuary to establish objectives, policy guidance and management strategies for existing resources.

### Budget

Financial management is handled by the Intendency of Forestry Control in La Libertad, which receives financing from the Intendency of Natural Protected Areas to cover the area's operating expenses. The Intendency of Forestry Control is in charge of disbursing funds to the administration of the protected area and receives accounts from the area's director, with the corresponding invoices and receipts arising from the expenses.

The area's operating expenses budget is extremely limited. The sanctuary is allocated S/. 1,500 (US\$435) a month, while the reserve receives S/. 3,000 (US\$870) a month. This totals to approximately US\$1,300 to cover monthly operating expenses in both areas, equivalent to US\$15,600 a year.

Personnel salaries are as follows: the area's director earns S/.2,500 (US\$725) a month and each park ranger S/.1,000 (US\$290) a month. This totals US\$1,015 for monthly wages, equivalent to \$12,180 a year. The total amount for managing both areas is US\$27,780.

Annual Operating Plans (AOP) are presented by the administration at the start of each administrative period. The AOP set out budgets to cover expenses for various planned activities. However, the administration generally receives only 30-40% of the amount requested, meaning that it is hampered in its efforts to implement planned activities to ensure the area's effective management.

## *Human Influence*

### Population

There are 22 villages found in the area of influence of the Calipuy Reserve and National Sanctuary, with a population of over 5,000 inhabitants. These communities make a living from farming and herding, mainly dairy cattle and sheep, as well as horses for transportation and work. Several peasant-farming communities located within the buffer zones have direct influence on the area.

Nearby communities include: Munchugo with around 80 families, Cusipampa (75-80 families), El Zaile (90 families), Huaradaya (50 families) and Llacamate (40 families).

Communities near the sanctuary include: El Molle with some 60 families, Quiguir (60 families), Cachubamba (70 families), Cusipampa, located between the two protected areas, Uningambal (100 families) and Mungurrall (40 families). Uningambal and Mungurrall belong to the province of Julcán. The village of Collayguida (70 families) is located inside the sanctuary.

### Tourism

While the natural protected area has major potential, tourism in the area is practically non-existent. The few visitors who do come here are mostly high school and university students, mainly from the town of Santiago and to a lesser degree, Trujillo. There are no facilities in the protected areas or nearby communities for promoting organized tourism. There is no lodging, no restrooms, restaurant services, visitors' center or signposting in the area. No foreign tourists visit the area. In fact, the area lacks the capacity to generate earnings from tourism.

### *Conservation and Research*

No research is done in either of the protected areas by outside researchers. INRENA's local personnel is in charge of research in the areas and have put together an inventory of flora in the sanctuary as well as monitoring of the Puya Raimondi, and analysis of population density. The Faculty of Biological Sciences at the University of Trujillo is preparing a methodology to propagate Puya Raimondi.

Workers have prepared a partial inventory of flora in the reserve, plus evaluations of guanaco population dynamics. INRENA personnel crafted a research proposal to analyze the presence and distribution of the spectacled bear in the reserve. The project has been included in the reserve's Annual Operating Plan, although its implementation is still pending.

## Threats

Threats to Calipuy National Reserve include:

- Poaching
- Livestock herding
- Firewood extraction
- Lack of vigilance and control

### *Poaching*

Unidentified villagers from nearby communities are suspected of hunting within the reserve, although this cannot be confirmed. The villages of Huaraday, Huaradaysito and particularly Llacamate, a village with heaviest trade, are apparently more involved in guanaco and deer poaching, in addition to the occasional killing of spectacled bears and pumas. These villages have a conflictive relationship with the administration compared with other nearby communities. These villagers allegedly truck the guanaco meat to the towns of Chao and Virú on the coast where it is sold. Demand for guanaco meat in these towns is apparently spurring villagers around the reserve to illegally hunt guanacos in order to handle this demand.

At the same time, there are also reports from villagers who claim coastal inhabitants enter the reserve through the area of Palo Redondo, southwest of the reserve, to hunt deer and guanacos. As this area is home to most of the reserve's spectacled bear population, one presumes that these animals also fall victim to poaching. These hunters supposedly come from the villages of Tanguchi, Huamansana and Santa Rita. They enter the reserve carrying firearms, meaning neither the park rangers nor the villagers has the capacity to confront them. Some people claim that specific villagers who live near the reserve hunt guanacos for their own personal consumption. During the visit to the area, Parkswatch also heard rumors to that effect.



*Troop of Guanacos in Pampa Guanacón, Calipuy National Reserve (photo: Diego Shoobridge)*

The alleged slaughter of guanacos is a highly delicate matter. A person from the area, now residing in Lima, has filed lawsuits against both the protected area's administration and the villagers who are reportedly killing guanacos. The plaintiff claims to have witnesses who can legitimize his accusations. This denouncement has spurred a great deal of ill feeling amongst the local population. Parkswatch's visit to the protected area found this situation has made the local population reluctant to talk or provide information.

Some people claim poachers make a living from selling baby guanacos, which they capture on request. Others claim that inhabitants in the village of Santiago de Chuco hold barbecues featuring guanaco meat; but when authorities ask about the meat, they are told it is goat.

The guanaco problem is very complex. The lack of physical proof means any investigation is limited to mere accusations and speculation. But, population evidence suggests something is going on. The reserve's guanaco population was larger in the past; in the 1990s and during this decade, the guanaco population has fallen significantly.

### *Livestock herding*

Grazing livestock in the reserve (cows and donkeys) are a source of competition for the guanacos and are a source of potentially dangerous contagious diseases. Years ago, a foot-and-mouth outbreak killed large numbers of guanacos. There have also been outbreaks of mange amongst guanacos, apparently infected by sheepdogs.

During the plantation years, before the agrarian reform, other farmers' livestock were not allowed to stray onto the land. Cattle were rounded up and slaughtered. In the days of the SAIS cooperative, cattle were expropriated. When the cooperative collapsed in the mid-1980s, all order was lost, cattle grazed in the area and there were settlers everywhere, heedless of the restrictions of a protected area.

The protected area's current administration is making major efforts to minimize the livestock problem and put the area's management in order. The administration has promoted the creation of the support committees for the reserve made up of villagers from nearby communities who own cattle. This has made it possible to organize the use of grazing areas within the reserve. Zoning has been established based on the capacity to use the pastures and zones for feeding guanaco. Areas where guanacos are constantly found have been set aside as restricted areas, while grazing pastures in the lowlands, where guanacos are not usually seen, have been designated as special use zones of traditional grazing areas.

The creation of the committees has enabled the reserve administration to constantly and directly coordinate with cattle owners and users of grazing areas within the reserve to prevent their discriminate use and lessen any impact on guanaco herds. The committees have established a set of regulations and a management plan by common agreement. Temporary use of the grazing meadows is permitted, with established shifts and rotation of zones used by each community, with set calendars.

However, the committee organizational system is not without its problems. Some farmers have more cattle than others, and that has sparked a conflict of interests. Limits have been set on the number of heads of cattle that each committee can bring into the reserve, and this has created

inequalities among committee members. Due to the lack of control, some bring their cattle into unauthorized areas. Many simply leave their cattle to wander without a shepherd, and the cows stray everywhere. Despite the fact it is strictly prohibited, some shepherds enter the area with sheepdogs and donkeys. There are also farmers who are not committee members that enter the reserve to make use of the pastures.

#### *Firewood extraction*

The scant availability of trees in the area has forced the local population to extract bushes for use as firewood. This is done on a small scale, but is constant. The most commonly sought bush is the maguey (*Furcraea occidentalis*, Agavaceae family). Extraction is limited, but the area's administration permits it as long as the extractor has engaged in prior coordination and retains the corresponding permit. Firewood extraction is concentrated in the buffer zone around the villages.

#### *Lack of vigilance and control*

Lack of vigilance and control is the most pressing problem in the protected area. Three park rangers are not enough to provide effective control over the reserve *and* sanctuary simultaneously. To make matters worse, the three park rangers rarely maintain a constant presence in the area. Personnel are often required for institutional coordination or administrative work, which means they have to work in Santiago de Chuco and not in the reserve and/or sanctuary. The control posts, while in good condition, are not used by the park rangers when in the area. Rather, the rangers prefer to stay at the home of a Cusipampa resident, where they have set up a bedroom and a deposit, and where the homeowner cooks them food.

The park rangers are capable of controlling just 10% of the territory of the reserve, focusing on the northern stretch, near their operations center in Cusipampa. This means they can monitor just 40% of the guanaco population. The park rangers keep an eye on about 100-120 of the 460 guanacos in the reserve, mainly in Pampa Guanacón. Despite efforts to run routine patrols, the fact that they do not stay at the control posts means the park rangers are not in critical spots at key moments, like in the early morning hours or at nightfall, when guanaco poaching occurs. The park rangers generally sleep in Santiago de Chuco, and head to the area every morning on motorcycle to run their monitoring activities. This is not an efficient system to provide effective vigilance.

Some of the vigilance and control activities carried out by the park rangers include establishing the legal zones along several stretches of the protected areas' borders, physically staking out reserve limits with border markers, and working on preliminary survey plans. The park rangers constantly work on awareness and environmental education campaigns, holding talks and workshops with local villagers.

## **Threats to Calipuy National Sanctuary include:**

- Human encroachment and cattle ranching
- Burning and destruction of Puya Raimondi
- Lack of vigilance and control

### ***Human encroachment and cattle ranching***

When the SAIS Libertad cooperative fell apart because of guerrilla violence in the area, its members distributed the cattle, and in 1985, a group of villagers settled inside the sanctuary. This settlement was partly promoted and guided by manipulative politicians who encouraged people to make use of the protected area, forming the village of Collayguida. The illegal settlers split up the land within the sanctuary between themselves. They have no land deeds or documents to back up their claim to the land.

There are around 70 families in Collayguida. These villagers are herders, mainly owning cows, pigs, sheep, donkeys and horses. They live off farming and herding. Each family has on average 15-20 cows, an average of 80 sheep and donkeys. One family alone has a flock of 400 sheep; all of this livestock enters the sanctuary to graze. The village of Collayguida has become the main threat to the sanctuary. There are no longer Puyas Raimondi growing around the village within the sanctuary as the plants have been destroyed by grazing and agriculture. A similar phenomenon is occurring inside the core zone of the sanctuary, which despite being free of villagers' homes and agriculture, is nevertheless used for grazing.

Cattle ranchers living outside the area have been known to hire villagers from Collayguida to tend their herds. Livestock owners bring their herds into the sanctuary. This is having a negative effect on the sanctuary by increasing pressure on the sanctuary's grazing areas.

The area's administration is making every possible effort to solve this problem by relocating the community. In the beginning, INRENA proposed two alternatives: either the villagers accepted voluntary relocation or they would face a lawsuit and consequent eviction. Several meetings were held with the people of Collayguida to explain the situation and to hear their concerns. At first, many of them refused to leave the area, but they eventually conceded. On one occasion, the administration held a meeting with provincial authorities, the local district attorney, deputy prefect, police and others. Those present signed an agreement stating that 1) the villagers accepted to be resettled in an appropriate area, and 2) that the Provincial Town Hall and municipal and education department officials were committed to participating in the process by relocating the school and help out in the construction of new housing. Five alternative locations have been identified; bearing in mind the availability of water, appropriate land, etc., in order to grant them property deeds once settled there.

Encroachment also occurs in the buffer zone. People from other communities are currently settling in the buffer zone. After the SAIS Libertad cooperative collapsed, the community members that remained did not have property titles, meaning that they have been unable to prevent further settlement and internal disorder. There is also a situation where members of the communities, who already have land, are further encroaching to expand their holdings.

Land management lacks coordination and institutional responsibilities and jurisdictions are unclear. The PETT (Special Land Titling Program) is in charge of land titling, but claims that they have no jurisdiction in protected areas' buffer zones and that INRENA is responsible. INRENA, meanwhile, claims that the PETT is responsible for land titling, creating a vicious circle.

### ***Burning and destruction of Puya Raimondi***

Most of the Puya Raimondi have been destroyed by peasant farmers who cut them down or burn them to prepare the land for agriculture. People also cut them down to use their leaves or blooms in roof construction (as beams or thatching), and to use the plants as firewood. Villagers also chop down Puya Raimondi, particularly in December, so that the plants will dry out for the cold season. One strategy used to topple the Puya Raimondi is to cut holes at the foot of the plants where they put down roots so it would look as if the wind had knocked them down to fool the park wardens. Another method is to damage the lower part of the trunk so that the plant dies and dries out, simulating a natural death. Puya Raimondi are chopped down to open up land for farming, generally in plots of land of 2-3 hectares each. The plants are burned to protect the cattle, especially sheep, from the thorny leaves that tangle in the sheep's wool, trapping them, or inflict cuts on the cattle.



*Puya trunks are intentionally destroyed in order to kill the plant, and in some cases, to harvest them as firewood (photos: Diego Shoobridge)*



### ***Lack of vigilance and control***

Just as occurs in the reserve, lack of vigilance and control is a serious problem in the sanctuary. Park rangers make their efforts to force cattle out of the reserve, but as soon as they leave, the villagers bring their cattle back in. Villagers destroy Puya Raimondi when the rangers are not present and therefore it is impossible to identify the offenders. Vigilance and control could improve with additional personnel, or by increasing the time existing personnel maintain presence in the sanctuary.

### **Future Threats**

#### *Increase in population*

An increasing population in the buffer zone, whether through additional encroachment, migration or the natural growth of the existing population, would imply more users and greater pressure on the natural resources in the protected areas, more cattle, greater demand for farmland, firewood and more contact with the guanacos.

#### *Increase in mining operations in the buffer zone*

There are currently several mining operations in the buffer zone, generally medium-scale outfits. Some of these operations have shut down, while others are temporary. However, miners are constantly prospecting in search of ore deposits. Because of this, it is foreseeable that in the future more mining operations could start up in the buffer zone and environs. With the region's record of accomplishment in mind, an increase in mining operations could pollute the area if proper environmental management plans are not put in place.

### **Recommended Solutions**

#### *Poaching*

Due to the fact Calipuy National Reserve is the most important remaining habitat for guanaco in Peru, maximum support is urgently need for its protection.

An exhaustive study needs to be made of the guanaco to be able to gauge their real population numbers, current situation, and to evaluate ecological aspects of the species such as fertility, lifespan, mating, feeding, natural predators, mortality, sickness, etc., to complement the knowledge acquired to date.

To lessen the potential danger of poaching, the administration of the protected area, together with the National Police need to implement a program to confiscate firearms from hunters who have no license, and monitor those who do.

The law must be obeyed, and precedents should be set by sanctioning those caught killing guanacos, selling body parts or simply caught with meat, skin, bones or guanaco young in their possession. The same should apply to poachers of spectacled bear, pumas, and condors. To implement legislation on this matter, direct coordination is needed between the area's administration, the National Police, the Deputy Prefect, and the local judge, among others. The

local communities must be informed through a clear enforcement campaign that anyone caught poaching these animals will be sent to jail. The administration of the protected area must make an effort to capture poachers in the short term to establish a precedent to hopefully dissuade other poachers from continuing to affect protected fauna.

### ***Burning and destruction of Puya Raimondi***

More information is need to add to existing data to calculate the number of Puya Raimondi left, to establish their current state of conservation, and to evaluate their reproductive potential. The fieldwork of the study begun by the faculty of biological sciences at the University of Trujillo must be conducted. The local communities urgently need to be made aware of the need to respect and protect the Puya Raimondi, including guidelines for cattle management so as not affect the plant species.



As in the case of poaching, the administration of the sanctuary needs to be firm when it comes to sanctioning those caught destroying Puya Raimondi. Precedents need to be set and offenders sanctioned so that the locals realize that the regulations are to be taken seriously and that they should respect the authority of the personnel working in the protected area.

## *Encroachments*

The people of Collayguida are aware that they must withdraw from the sanctuary. The meetings and signed agreement are proof of this. The administration of the sanctuary should take advantage of this situation and proceed immediately with resettlement before the momentum dies down and people change their minds. The Regional Department of Education must close down the Collayguida School, stop sending teachers and cease its functions. This would establish an additional element of pressure on the villagers to leave the sanctuary.

An alternative location for resettlement needs to be agreed upon quickly, after the corresponding consultation process with the population, before moving ahead with relocation. The administration of the protected area needs to coordinate with the PETT on the issue of land titling and allocation, and coordinate with regional organizations committed to supporting the relocation, before the offer is withdrawn.

INRENA must have clear jurisdiction over the buffer zone, including management and capacity to sanction those who violate its regulations. The Intendency of Protected Natural Areas has often requested support from other entities that have jurisdiction to solve problems in the buffer zone and has yet to receive an effective response to its requests. This has made implementing solutions impossible and has created obstacles for the efficient administration of the protected areas. Therefore, all buffer zone activity must first receive approval from the Intendency of Protected Natural Areas at INRENA. This means a shift in responsibilities, the departments of forestry, agriculture or other entities should no longer have first jurisdiction of buffer zone activities. They should help manage activities only after they are approved by INRENA. In addition, buffer zone management should include the reserve's support committees so that they are involved in the decisions regarding further encroachments in the area and unauthorized cattle in the reserve, among other issues.

## *Livestock*

The administration must round-up and confine livestock and then charge a fine per head of cattle captured. To be able to implement these steps, an organized system is urgently needed, with a set of sanctions and fines made official by INRENA to enable park rangers to crack down on unauthorized cattle. The set of regulations must explicitly include a list of violations and fines, and needs to be promulgated as soon as possible. The administration of the protected area must be strict in enforcing zoning regulations and in establishing order in the reserve's territory, and not permit users to violate established norms.



*Cattle in the reserve (photo: Diego Shooobridge)*

These protected areas are part of Peru's natural heritage. Some natural resources users within the reserve reap benefits at the cost of putting the entire area's integrity in jeopardy. In order for the reserve to receive compensation, and as a way of self-financing the area's management, the



*Sheep and cattle grazing in the reserve (photo: Diego Shoobridge)*

administration should consider a fee-system to charge for the use of grazing areas within the reserve. Guidelines and fee-scales need to be established per head of cattle that enter the reserve. This would help regulate the currently unregulated grazing system. Steep fees are not necessary, rather fees that match local income and the economic situation. Payment would mean a financial resource for the protected area, which unlike other parts of the country does not generate its own income.

### *Firewood extraction*

The administration of the protected area needs to regulate the use and extraction of firewood by villagers. Villagers must be prevented from continuing to use Puya Raimondi as firewood. The administration must seek appropriate firewood alternatives and substitutes for local consumption. Reforestation programs urgently need to be implemented in buffer zone communities to satisfy local demand for firewood. The National Program for Management of Watersheds and Soil (Pronamachs) needs to maintain greater presence in the area and implement efficient reforestation and management programs in coordination with the local population. Participation from the support committees will be key in any program. First, the support committees should be responsible for approving any resource extraction, including any firewood extraction, from the protected areas. Second, they should begin reforestation projects and pasture restoration projects in their communities so that those excluded from extracting firewood and/or excluded from grazing in the area have viable alternatives.

### *Lack of vigilance and control*

To ensure effective vigilance and control, more park rangers are urgently needed. We recommend at least 8-10 additional rangers for the National Reserve and five for the National Sanctuary. Greater logistical support is needed; we recommend a pick-up truck, two-way radios, solar panels, GPS equipment, and computers. At least one weapon is needed at each control post for security and to serve as a deterrent against armed poachers.

While the administration of the area needs to fill out paperwork and carry out institutional coordination in the region, its presence in Santiago de Chuco should be limited to a small office located in the Ministry of Agriculture's office. The protected areas' central office should be located in Cusipampa, because this town is halfway between the two protected areas. Cusipampa should also have a visitors' center. A control post is needed at Palo Redondo, southwest of the reserve, where it is suspected that poachers from the coast enter. Another control post is needed

in Quebrada El Pallar, where there are large numbers of guanacos, and a third control post near Llacamate, due to the influence this community has on the reserve.

While the protected areas currently lack the necessary financing to be able to implement these recommendations to improve vigilance and control, there are several things that existing staff can do with existing infrastructure and equipment. Primarily, the existing control posts must be properly manned. The park rangers must maintain permanent presence in the protected areas.

We also recommend that the administrators turn to other sources of funding, as the budget provided by INRENA is insufficient. International donors should help Calipuy improve its vigilance and control system. International donors and international non-governmental organizations (NGOs) must be informed about Calipuy's problems and needs. Currently, one organization called "Guanacon Group," is trying to raise international awareness to help save the guanacos (see PW news about this campaign at [www.parkswatch.org](http://www.parkswatch.org)). More such campaigns are essential. Once informed, the donors and NGOs need to respond and help Calipuy National Sanctuary and Calipuy National Reserve to effectively protect the guanacos and the Puya ramondis and to become conservation success stories rather than maintain their status quo as paper parks.



*View from the eastern border of the reserve*

## **Conclusion**

Both Calipuy National Reserve and Calipuy National Sanctuary are **critically threatened**. As the guanaco and the Puya Raimondi are the main elements to be conserved and protected in these areas, their loss and diminishing numbers go against the conservation objectives of both areas. The slaughter of guanacos, the destruction of Puya Raimondi and the presence of cattle and consequent overgrazing, encroachment, and the lack of vigilance and control are the main problems.

Sanctions should be harsher for offenders of the law. Poachers and those caught destroying Puya Raimondi must be duly sanctioned. Illegal settlers inside the sanctuary must be moved out of the area. Livestock within the reserve as well as the operation of the support committees need to be strictly monitored. The administration urgently needs to establish a system of fines and expropriation of unauthorized cattle, plus a fee system per head of cattle grazing within the reserve. Reforestation should be encouraged in nearby communities to ease the pressure that demand for firewood is bringing to bear on both protected areas.

Financing is a key issue. Major efforts need to be made to seek international sources of financing for both protected areas. At the same time, the area's administration should study the possibility of charging fees for cattle ranching, tourism and research as complementary sources of income. The areas urgently need to be promoted to tourists and research students, from both Peru and abroad. Local and regional visitors should also pay to enter the area, at least symbolic rates. This will promote awareness and respect for both Calipuy National Reserve and Calipuy National Sanctuary.

## **Park Profile Credits:**

Written by Diego Shoobridge, ParksWatch-Peru, March 2003

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Notes:

<sup>1</sup> Bonavía, D. South American Camelids. An Introduction to their Study. IFEA-UPCH-CI. Lima 1996. Page 49.

<sup>2</sup> Ibid. Page 546.

<sup>3</sup> Field Reconnaissance Guide for the main species of flora and fauna in Calipuy National Reserve and Calipuy National Sanctuary. Introduction.