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NATIONAL PARKS, CONSERVATION, AND AGRARIAN REFORM IN PERU*

MARY L. BARKER

CONSERVATION policies are a relatively recent feature in Latin America. For nearly three centuries, the Spanish colonies were regarded as sources of wealth to be exploited—a philosophy that created a powerful historical precedent that persisted since independence in the early nineteenth century. The first national parks were established in Argentina and Chile during the 1920s, but progress with other conservation policies was minimal for decades because the continued importance of private landownership and its direct ties to political power remained an important obstacle. By the 1960s seven Latin American countries had set aside natural reserves.¹ In some countries conservation measures and policies designed to alter the traditional pattern of landholdings were adopted concurrently. Several themes common to Latin America have a profound influence on the timing and the form of approaches to conservation.² The most important themes are the lack of a broadly based tradition of nature preservation, the prevalence of authoritarian leadership, the importance attached to landholdings, and the inheritance of the Roman legal system. Although the region has highly centralized national governments and systems of authoritarian leadership, continuity in policies and programs is difficult to maintain owing to frequent shifts in regimes.

Mention of national parks is found in several types of legal documents: general laws or acts in which parks and other reserves are included as one topic, specific national park legislation, and presidential decrees and other legal dispositions referring to specific reserves.³ Many parks in Latin America have been created by presidential

* I am grateful for the assistance provided in Lima, Peru, by Ing. Carlos Rivera Concha, Subdirector, Unidades de Conservación, Dirección General Forestal y de Fauna, by Dr. Blas Silva Cuentas, Director, Parque Nacional Huascarán in Huaráz, and by Dr. Gerhard Eisbacher who contributed his support throughout the study. Thanks are also due to my colleagues, Michael C. Roberts, Frank F. Cunningham, and Philip L. Wagner who commented on an early draft of this paper.

¹ I. N. Constantino, *The Planning of National Parks in Argentina and Other Parts of South America, in Canadian National Parks: Today and Tomorrow* (edited by Gordon G. Nelson and Robert C. Scace; Calgary: University of Calgary Press, 1968), pp. 675–678.

² Gary B. Wetterberg, *The History and Status of South American National Parks and an Evaluation of Selected Management Options* (unpublished Ph.D. dissertation, Department of Forestry, University of Washington, Seattle, 1974), p. 41.

³ Wetterberg, footnote 2 above, p. 57.

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decrees in compliance with national legislation, which is broadly based but primarily concerned with the extractive use of the renewable resource base. Responsibility for park planning and for wildlife conservation often rests with a ministry of agriculture. Examples of the low priorities assigned to conservation programs and of the conflicts with other elements of the same legislation are common.

Agrarian reform, which had been initiated in twelve Latin American countries by the early 1960s, is altering the traditional relationship between landownership and political power, but the political significance of land remains a critical factor in the establishment and the management of parks and reserves. Nature conservation has not gained the same degree of support from a population that is more interested in addressing other long-term problems. As in North America, conservation measures have been introduced and parks created as a result of the influence of a few individuals rather than of popular demand. The evolution of a system of conservation units in relation to modern, agrarian reform programs in Peru is the subject of this paper.

THE FIRST NATIONAL PARKS AND RELATED RESERVES IN PERU

The combined impact of authoritarian leadership, of the inherited legal system, of the political significance of landholdings, and of the absence of a nature-preservation tradition is observable in recent developments in Peru. Park planning and conservation policies have evolved from an inadequate legal base for protection of the reserves set aside in the 1960s to a major policy revision in 1975 that laid the foundation for a national system of conservation units. During that period, wildlife-protection measures were introduced, and agrarian reform programs altered the traditional pattern of landholdings throughout the country. Agrarian reform had popular support, especially from landless peasants. In contrast the first parks were established and the early wildlife conservation measures were introduced as a result of pressure from a few concerned individuals.

Cutervo, the first Peruvian national park, was created in 1961 to protect the avifauna and montane rain forests of the Cordillera de Tauros in the Marañón basin of northern Peru (Fig. 1). The issue of protection was raised initially in 1947, when large caverns inhabited by an oil-bearing bird, the guacharo, were discovered. Before 1916 this part of the eastern Andes was heavily forested and inhabited by a small indigenous population that cleared land to cultivate corn, potatoes, and beans. The area was later settled by immigrants of Spanish descent, who adopted local customs, expanded the clearings, and felled trees to construct fences and corrals. When the park proposal was introduced, the forests were heavily exploited. Grazing was intensive, and the local inhabitants killed the young guacharos for their oil. In 1952 Salomón Vichez Murga, who had studied and lived in the region for some time, began a campaign to have the area set aside as a wildlife reserve. A newspaper campaign was initiated, and in 1956 he presented a proposal for protective legislation to the Peruvian Chamber of Deputies. His primary aim was to protect the oil-bearing guacharos.⁴ The reserve was established in 1961, and its fauna and flora protected, in theory, under the general provisions of a legal decree in 1963 that authorized the

⁴ Salomón Vichez Murga, *Parques nacionales del Perú* (Lima: Editorial y Imprenta La Promotora, 1968), pp. 83–85.

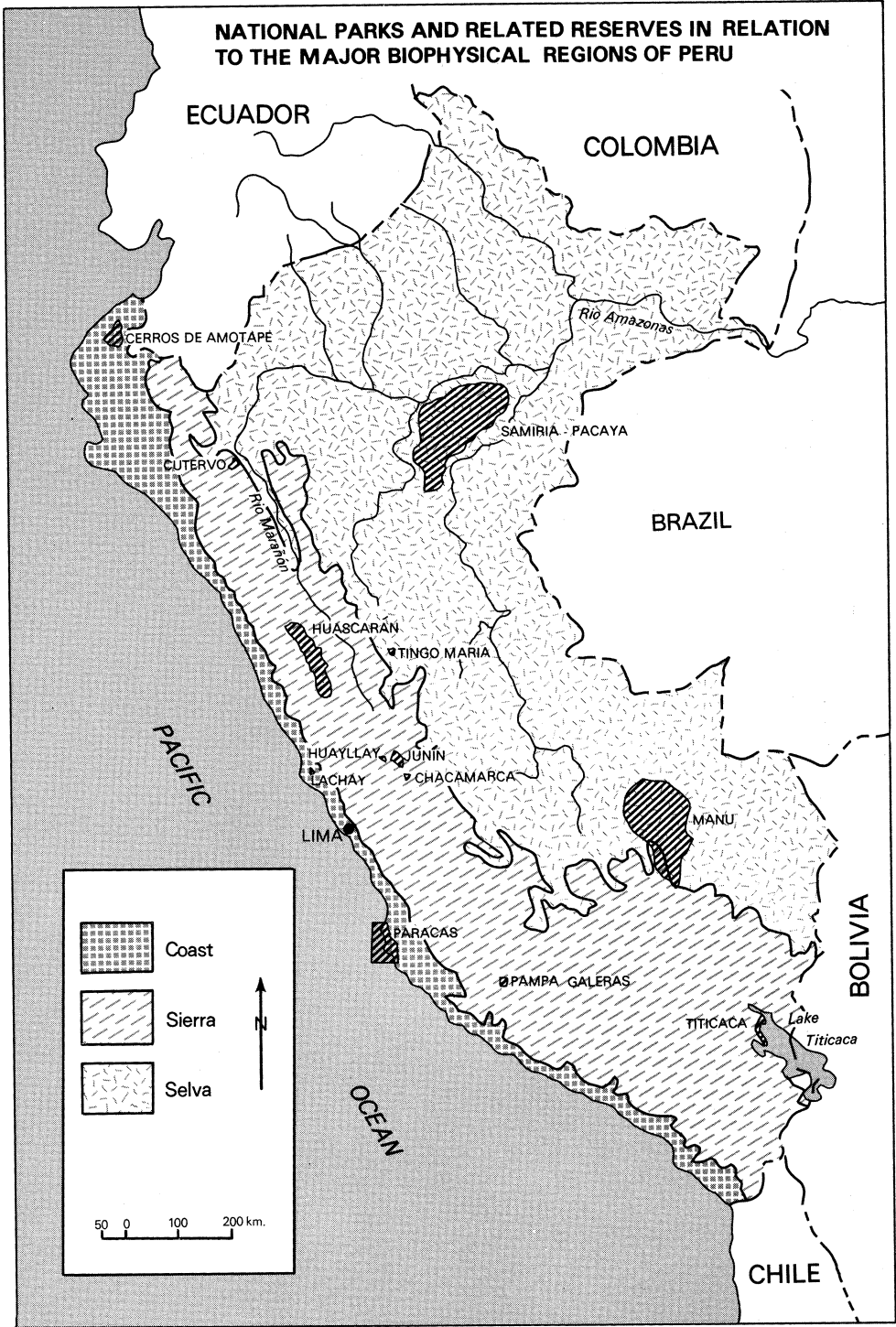


FIG. 1

Forest and Hunting Service of the Ministry of Agriculture to create national parks in areas deemed unsuitable for agriculture. Felling of trees and livestock grazing continued on a substantial portion of the twenty-five-hundred-hectare park that remained in private hands. In 1967 the government allocated funds to conduct a survey, and a year later a biologist-administrator was appointed to organize studies and to determine park boundaries. During the survey, Indian petroglyphs, a small population of tapirs, and more oilbird caverns were discovered.

Questions have been raised about the effectiveness of protection in Cutervo National Park. It was excluded from the 1971 edition of the "United Nations List of National Parks and Equivalent Reserves" on the grounds of inadequate protection since establishment of the park.⁵ Some improvements earned its inclusion in the "U.N. List Addendum" (1972) and in the 1975 United Nations list. The 1972 volume claimed that the park was totally protected, with no occupation, no exploitation, and logging mostly forbidden.⁶ A later government source stated that the level of protection was "very bad."⁷ Illegal loggers continued to operate, and the park remains too small to provide adequate protection for the wildlife in the area.⁸

Tingo María National Park, eighteen thousand hectares of selva, the heavily forested Amazon basin, in central Peru, was set aside in 1965 to protect a large colony of guacharos and the adjacent tropical forest (Fig. 1). The area was given theoretically full protection under the same decree governing Cutervo National Park. Little land remained in private ownership, but the forest continued to provide timber and fuel for the local farming population. Logging is regulated rather than forbidden, and the oilbird continues to be harvested. Because of these practices, the park was excluded from the 1972 and 1975 United Nations listings.⁹

The first national parks in Peru were created under a presidential decree rather than a national park act and thus lacked a firm legal base that would guarantee complete protection. Other areas were set aside as national forests, but the sixteen units, most of them in the selva, were designed primarily as timber reservations for future utilization.

A significant step was taken in May, 1967, when a reserve for vicuña, Pampa Galeras, was established on the *puna* (Andean plateau above four thousand meters in elevation) of central Peru (Fig. 1). As early as 1825, Simón Bolívar ordered the vicuña to be protected as a national symbol. In 1940 hunting of this species was declared a crime against the national heritage, but their numbers continued to decrease. An estimated population of two million before the Spanish Conquest had been reduced to fewer than twenty-five thousand by 1950 and perhaps to ten thousand by the late 1960s.¹⁰ The ban on both hunting of vicuña and export of their wool

⁵ International Union for Conservation of Nature and Natural Resources, United Nations List of National Parks and Equivalent Reserves (Morges, Switzerland, 1971), p. 382. The criteria for inclusion in this list are adequate legal protection by statute against all exploitation of natural resources, minimum size based on population density, and effective management as indicated by size of staff and by amount of budget.

⁶ International Union for Conservation of Nature and Natural Resources, United Nations List of National Parks and Related Reserves: Addendum (Morges, Switzerland, 1972), p. 77.

⁷ Internal government document (Lima: Ministerio de Agricultura, Dirección General Forestal y de Fauna, 1976).

⁸ J. A. Brack and S. Vichez, Informe sobre la situación actual del Parque Nacional de Cutervo (Lima: Ministerio de Agricultura, Dirección General Forestal y de Fauna, 1974).

⁹ The rationale for exclusion is stated in International Union, footnote 5 above, pp. 382-383.

¹⁰ Ministerio de Agricultura, Dirección General Forestal y de Fauna, Proyecto Utilización Racional de la

proved ineffective to control the actions of poachers, who smuggled the wool and hides into Bolivia where such prohibitions were still absent or who exported the items directly, hidden among other goods. Peru signed an agreement in 1969 with Bolivia in an attempt to give more protection to the vicuña. The agreement was not entirely successful, and smuggling continued. Although the vicuña once extended over the puna from northern Peru through western Bolivia to northern Chile, the species was threatened with extinction. Concerned about the decline of the vicuña population on his hacienda north of Lake Titicaca, the late Francisco Paredes began to raise them in captivity. During fifty years of experiments, he developed a large herd of vicuña and alpaca-vicuña crossbreeds, and his effort was recognized by a presidential award.¹¹ At the time of the first government attempt to protect the species, small, widely separated groups of wild vicuñas persisted in southern Peru. The only known concentration was in the Pampa Galeras.

A program of vigilance against illegal hunting in the Pampa Galeras area began in 1965. A national reserve was created in 1967, entailing a formal contract with the community of Lucanas that held ancient, inalienable rights to the lands in the area. The vicuña would be protected from poachers, but the peasant community would eventually derive economic benefits from direct use of the species and from tourism, when the herd had been enlarged.¹² This arrangement was a significant departure from conservation programs in other countries that were designed to provide complete protection without eventual commercial use of the endangered wildlife. The Pampa Galeras reserve occupies community lands where the central government cannot obtain ownership of the vicuña range, and any conservation measures must be negotiated with the community of Lucanas. Economic incentive was the means to involve the community in the conservation program and to redress the loss of traditional grazing land.

The stated objectives of the Pampa Galeras National Reserve are to manage the vicuña in order to increase their numbers and to develop the herd to increase the regional income. These goals coincide with the objectives of the national program for the conservation and the use of the vicuña: to develop a population of 1.5 million vicuña on 6.5 million hectares of puna, to increase the income from marginal lands of the puna, to encourage peasant enterprises and communities to manage vicuña on their lands, to develop management techniques based on biological production studies, to produce vicuña meat, wool, and hides, to include other wildlife species in an integrated management scheme, to encourage tourism by creating centers of tourist attraction in the high Andes based on sport hunting and scenery, to obtain experience in wildlife management and to develop a model for the management of other economic species, and to develop the means to export high-value products of which Peru would possess a monopoly (Fig. 2).¹³

The Pampa Galeras National Reserve, now extending over sixty thousand hect-

Vicuña: Desarrollo Integral 1964-2000 (Lima, 1977), p. 3; and I. R. Grimwood, Notes on the Distribution and Status of Some Peruvian Mammals, *American Committee for International Wildlife Protection and the New York Zoological Association, Special Publication No. 29*, New York, 1969, p. 69.

¹¹ Tony Morrison, *Land above the Clouds* (London: Deutsch, 1974), pp. 93-94; and W. L. Franklin, *High, Wild World of the Vicuña*, *National Geographic Magazine*, Vol. 143, 1973, pp. 77-91, reference on p. 91.

¹² Ministerio de Agricultura, footnote 10 above, p. 6.

¹³ Ministerio de Agricultura, footnote 10 above, p. 4.

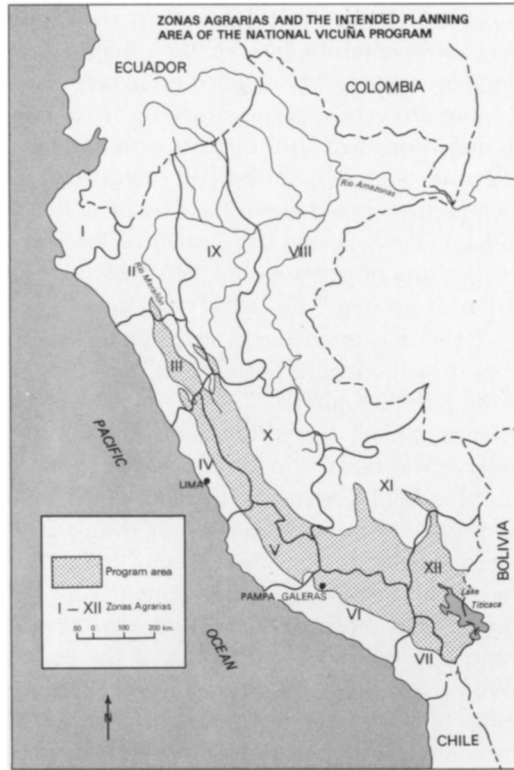


FIG. 2

ares, contains a small, rigidly protected zone surrounded by an extensive buffer zone. Since inception of the program, the vicuña population has increased from some 600 to approximately 4,000 animals in the reserve, and a further 25,000 receive protection in the adjacent area. Financial aid has been granted to some peasant communities, and a limited vicuña harvesting program began in 1979.¹⁴

Implementation of the national vicuña program produced numerous problems. Delays were caused by a lack of support from other national planning bodies and by obstruction at both the national and the regional levels. The goal of increasing the vicuña population to 1.5 million by the year 2000 seems unrealizable, even under optimal administrative and financial arrangements. The program should be interpreted in the context of the intense, mounting pressure on the available land base and of Peruvian political realities. It would be difficult to ensure or even to justify complete protection of the vicuña solely on aesthetic, moral, or ecological grounds because the subsistence of many peasants depends on the use of marginal land.

During the initial conservation phase, Cutervo and Tingo María national parks were created as a consequence of individual initiatives rather than as a part of an in-

¹⁴ Ministerio de Agricultura, footnote 10 above, p. 7. Financial support for the Peruvian program has been provided by the Public Treasury of Peru, by the Federal Republic of Germany, and by external donations from the Belgian government, the Zoological Society of Frankfurt, the International Union for Conservation of Nature and Natural Resources, and the World Wildlife Fund.

tegrated national program. Wildlife protection began also from the activities of concerned individuals to protect the vicuña, but there evolved a national program designed to expand the vicuña population to a level where it could provide economic benefits. The difficulties encountered in both park and wildlife protection stemmed from population pressure on the limited land base. The success of conservation programs depend on their integration with new policies to change the traditional system of landholdings, that is, agrarian reform.

AGRARIAN REFORM AND CONSERVATION INITIATIVES

Inequities in the distribution of landholdings and severe problems of the feudalistic agricultural system of Peru led to the introduction of agrarian reform measures during the 1960s. Legislation passed early in the twentieth century sought to protect the rights of the remnant indigenous communities, but the efforts were ineffective because the peasants lacked the means to defend themselves against continued land seizures by the owners of haciendas.

Between 1960 and 1962 there were peasant invasions of hacienda lands in the sierra. The inauguration of Fernando Belaúnde Terry as president on July 28, 1963, sparked a wave of land invasions by peasants tied to haciendas and by members of indigenous communities. Belaúnde won the election on a platform that emphasized land reform. In 1964 he introduced a program with three objectives: redistribution of landholdings, increased production on existing holdings, and increased cultivated acreage.¹⁵ Only the third objective was pursued with any vigor, and a costly program to provide communication links and infrastructure was initiated to encourage colonization of the remote selva region. Very little redistribution of landownership occurred in existing large holdings, and attention was diverted from the large commercial estates concentrated in the coastal region where cash crops such as cotton and sugar were produced for export.¹⁶ The military removed Belaúnde from office in 1968, and on June 24, 1969, the new military government proclaimed a new agrarian reform program to redistribute ten million hectares or 47 percent of the available agricultural land. The program was to benefit 300,000 peasant families by the end of 1975.¹⁷ Policies were to be enacted in twelve *zonas agrarias* that were created in 1962 (Fig. 2).

Within eighteen months, more land had been redistributed than during the previous four years under Belaúnde. The emphasis of the new program shifted to the promotion of collective enterprises, and little of the expropriated land was redistributed in private parcels. The regime established two types of enterprises on former hacienda lands. *Cooperativas Agrarias de Producción* (Agricultural Production Cooperatives) would be run by former tenants or hacienda workers who eventually would hold title collectively to the expropriated land. *Sociedades Agrícolas de Interés Social* (Agricultural Societies of Social Interest) are a variant of the production coopera-

¹⁵ Francois Bourricaud, *Power and Society in Contemporary Peru* (New York: Praeger Publishers, 1970), pp. 329–330; and Clifford T. Smith, *The Central Andes, in Latin America: Geographical Perspectives* (edited by Harold Blakemore and Clifford T. Smith; London: Methuen, 1971), pp. 314–316.

¹⁶ Bourricaud, footnote 15 above, p. 331.

¹⁷ José María Cabarello, *Sobre el carácter de la reforma agraria peruana, Latin American Perspectives*, Vol. 4, 1977, p. 146.

tives, designed to incorporate communities of peasant smallholders that would otherwise continue to be excluded from agricultural development. The SAISs were designed to centralize land-management decisions and to bring large numbers of peasants into the wage economy.¹⁸

It has been estimated that 76 percent of the redistributed land would go to the production cooperatives and SAISs. Other lands have been reallocated to *comunidades campesinas* (peasant communities), *grupos campesinos* (peasant groups) and, to a minor extent, individuals. Expropriation, which concluded in June, 1976, took place on haciendas of more than fifty hectares in the coastal region and on holdings larger than thirty hectares of irrigated land or an equivalent area of nonirrigated land or natural pasture in the sierra. More than seven-and-a-half million hectares had been redistributed by December, 1976: 90 percent of them to *cooperativas agrarias*, SAISs, *comunidades campesinas* and *grupos campesinos*.¹⁹

The agrarian reform program of the military regime has had a major impact on the economic and social organization of Peru, even though its full effects remain to be seen and many peasant families remain landless.²⁰ The landholding system, inherited from Spanish colonization, has been forcibly broken, but the problems of subsistence farming and of other forms of marginal economic status remain. There is also the question of integrating the policies of agrarian reform with other programs such as the conservation of wildlife and the protection of nature reserves.

Toward the end of the expropriation phase of the agrarian reform program, additional legislation established the basis for "the national use of natural resources contributing to the social development and effective economic independence of the nation."²¹ Law-Decree 21147 (*Ley Forestal y de Fauna Silvestre*) proclaimed on May 13, 1975, contained new regulations for exploitation of forests, for reforestation, and for hunting of wildlife and established a new system of conservation units. The objective of the system is to preserve representative samples of the three major ecological regions of Peru: coastal desert, sierra, and selva (Fig. 1).²² The Act specified four types of conservation units. A national park is an area designated to protect flora, fauna, natural associations, and scenic attractions as representatives of major biomes. A national reserve is an area for the protection and the propagation of specific wildlife species. A national sanctuary is an area designed to protect individual species or associations of flora and fauna, while a historical sanctuary is intended to protect areas of national historical interest.²³ In addition, *bosques de protección* (forested areas) are to be maintained for watershed protection; hunting in them can be regulated or prohibited.

¹⁸ Clifford T. Smith, *Agrarian Reform and Regional Development in Peru*, in *Social and Economic Change in Modern Peru* (edited by R. Miller, C. T. Smith, and J. Fisher), *University of Liverpool, Centre for Latin-American Studies, Monograph No. 6*, Liverpool, 1976, p. 101.

¹⁹ José Manuel Mejía, *Pastoreo, reforma agraria y desarrollo rural*, in *Pastores de Puna* (edited by Jorge A. Flores Ochoa; Lima: Instituto de Estudios Peruanos, 1977), p. 262.

²⁰ *The Current Economic Position and Prospects of Peru* (Washington, D.C.: International Bank for Reconstruction and Development, 1973), p. 51.

²¹ Carlos Rivera Concha, *La conservación de los recursos naturales renovables* (paper presented at the *Semana Forestal Nacional, Zona Agraria VI, Arequipa, Peru*, 1975).

²² Marc J. Dourojeanni, *Machu Picchu and Peru's National System of Conservation Units*, *Parks*, Vol. 1, 1976, p. 8.

²³ *Ministerio de Agricultura, Dirección General Forestal y de Fauna, Ley Forestal y de Fauna Silvestre* (Decreto Ley No. 21147), Lima, 1975, pp. 6-7.

TABLE I—PERUVIAN SYSTEM OF CONSERVATION UNITS

CONSERVATION UNIT	AREA (hectares)	YEAR ESTABLISHED
National parks		
Cutervo	2,500	1961
Tingo María	18,500	1965
Manu	1,536,800	1973
Cerros de Amotape	91,300	1973
Huascarán	340,000	1975
National reserves		
Pampa Galeras	60,000	1967
Samiria-Pacaya	1,387,500	1972
Junín	53,000	1974
Paracas	335,000	1975
Lachay	5,070	1977
Titicaca	36,180	1978
National sanctuaries		
Huayllay	6,814	1974
Historical sanctuaries		
Chacamarca	2,500	1974
Total conservation area	3,875,164	

Eleven conservation units were established by 1975, including Cutervo and Tingo María parks and six other areas that had been defined between 1972 and 1974 (Table I). The largest reserve is Manu National Park, established in 1973 and encompassing more than 1.5 million hectares of remote, undeveloped tropical forest in the selva. This important Peruvian representative of Amazonian flora and fauna is totally protected, even though indigenous Machiguenga tribes live in the area. Access is limited to the rivers and a small airstrip, so there are few visitors, other than small scientific groups.

Samiria-Pacaya National Reserve, almost as large as Manu National Park, was created in 1972 to protect the paiche, a local fish, but the tropical rain forest and freshwater bodies in the reserve contain rare fauna not found further south in Manu. Although the area has suffered from hunting, poaching, and the inroads of oil prospectors, the reserve has few permanent residents and now receives rigorous protection.²⁴

Two conservation units were established recently. Lachay National Reserve was created in 1977 in order to protect one of the lomas (oases of mist-dependent vegetation) that are scattered on the coastal desert. In November, 1978, a national reserve was created on the northern arm of Lake Titicaca, an area rich in waterfowl characteristic of the lakes on the puna of southern Peru.²⁵

Five additions to the national system are in the planning stage, including Machu Picchu Historical Sanctuary, Cutibireni National Park, and an enlargement of Cutervo National Park to twenty-four thousand hectares.²⁶ An additional fifteen units,

²⁴ International Union, footnote 6 above, p. 77. The List notes that Samiria-Pacaya National Reserve was created in 1968; however, Peruvian sources confirm that it was established in 1972.

²⁵ Ministerio de Agricultura, Dirección General Forestal y de Fauna, Administración del sistema nacional de unidades de conservación, Lima, 1978, Table 3.

²⁶ Carlos Rivera Concha, Subdirector, Unidades de Conservación, Dirección General Forestal y de Fauna, Ministerio de Agricultura, Lima, September 1977, personal communication.

intended to protect endangered flora and fauna and including some of the Pleistocene refuges of the Amazon basin, have been proposed. When all of these additions have been made, representative samples of the major biomes in Peru will be under some type of governmental protection. The progress since 1972 is remarkable, and other actions have been initiated to parallel this major program. For example, Peru ratified the "1973 Washington Convention on International Trade in Endangered Species of Wild Flora and Fauna." In 1975 the Peruvian government signed an agreement with Brazil to coordinate flora and fauna conservation in the Amazon basin. Hunting was suspended throughout the selva in October, 1973, with the exception of subsistence hunting of nonendangered species that are still abundant. That action was the first stage in the assessment and the planning of controlled hunting in the Amazon basin. The ban effectively halted the export trade of live animals, especially primates, and removed legal access to markets for animal skins, although illegal poaching continues. Endangered species were granted full protection throughout Peru, although limited hunting of the more common species was permitted in the sierra and coastal region. Enforcement of these restrictions and bans has been difficult in remote areas, in spite of the presence of members of the *Policía Forestal* in each of the conservation units.

Peruvian parks and reserves do not receive the intense visitor pressures that comparable areas of Europe and North America bear, but visitor use is increasing. In many cases, visitor use tends to be specialized. For example, mountaineering parties account for a large proportion of the visitors to Huascarán National Park. Proposals have been made to accommodate visitors at some existing units, particularly Huascarán and Paracas, that received twenty thousand and ten thousand visitors, respectively, in 1976.²⁷ Visitor facilities are also being planned for Machu Picchu and Titicaca. Eventual accommodation of visitor growth at the remote Manu National Park is being considered. Existing levels of visitation produce only limited potential for conflicts between recreational use and preservation. Plans, however, are being developed to handle anticipated pressures.

The national system of conservation units has been refined to incorporate zoning provisions that have a close resemblance to those in North America and elsewhere. In 1977 the conservation units were classified in a seven-part system (Table II). The same legislation called for master plans of the conservation units to incorporate zoning proposals. It further mandated the creation of an advisory council for the national system to make recommendations to the Ministry of Agriculture and to coordinate agency activities. The membership of this advisory council is to include representatives of the major government ministries, the universities, and the National Agrarian Federation. Local committees, which may be convened by the director of a *zona agraria*, are intended to include representatives of public and nonpublic organizations and individuals involved in the development and the operation of the conservation units.

The impact and the effectiveness of this effort cannot be assessed at the present time. In 1975 Carlos Rivera Concha raised a cautionary note. He stated that laws cannot be effective if bureaucrats attempt to meet their intent without public participation. Participation, in addition, would be ineffective without an underlying public

²⁷ Dourojeanni, footnote 22 above, p. 9.

TABLE II—ZONING SYSTEM FOR CONSERVATION UNITS

ZONE	CHARACTERISTICS
Prohibited	Natural areas, unaltered or only slightly altered by man, that contain fragile ecosystems requiring absolute protection, and from which all visitors are to be excluded.
Restricted	Natural areas with minimum human intervention in which only use for scientific investigation is permitted.
Primitive	Areas with distinctive scenic or ecological characteristics that are to be protected; only limited human activities are permitted.
Recreation	Areas where the development of relatively intense recreational activities, including visitor services and infrastructure, must allow the environment to remain as natural as possible.
Direct utilization	Areas in national reserves to realize the productive use of wild life.
Recovery	Areas in which restoration of severely damaged natural environments must be undertaken.
Service	Small areas in which administrative or visitor-information centers and infrastructure can be installed.

Source: Decreto Supremo No. 160-77-AG, Lima, 1977, pp. 3-4.

acceptance of conservation values.²⁸ The Peruvian conservation program consequently may be delayed by cumbersome administrative procedures, by a lack of financial support, and by slow public acceptance.

HUASCARÁN NATIONAL PARK

The objectives of the Peruvian system of conservation units and the constraints that must be overcome for the program to be successful are well illustrated by Huascarán National Park. The park was established in 1975 to preserve distinctive landscapes and endangered species and to augment the regional economy with revenues from tourism. Although local concern for park status began in 1960, international interest in the Cordillera Blanca goes back to the beginning of the twentieth century.

The Huascarán National Park is part of the Cordillera Blanca, one of the few extensively glaciated regions in the tropics (Fig. 3). There are 4,000 meters of relief between Nevado Huascarán Sur—at 6,768 meters the highest peak in Peru—and the Río Santa which flows north through the Callejón de Huaylas to the Pacific Ocean (Fig. 4). Arêtes, truncated spurs, morainal ridges, and U-shaped valleys are the evidences of extensive glaciation (Fig. 5). As the highest tropical cordillera in the world, the Cordillera Blanca contains varied and unique ecosystems that range from humid tropical through subalpine to alpine and tundra.²⁹ The high valleys contain remnants of *quenua* and *quisuar* forests with their characteristic gnarled, papery appearance. In the south, a few isolated groves of *Puya raimondi*, a relative of the pineapple, create the impression of oases in the open, windswept puna dominated by a stiff, spiky bunchgrass called *Ichu* (Fig. 6). Elsewhere high alpine meadows and tundra rise to meet the scree and the permanent ice of the mountain peaks. The most com-

²⁸ Concha, footnote 21 above.

²⁹ For a general introduction to the physical features, flora, and fauna see John F. Ricker, Yuraq Janka: Cordilleras Blanca and Rosko (Banff: Alpine Club of Canada and American Alpine Club, 1977). More detailed information is provided in Informe técnico para establecer los límites provisionales del Parque Nacional Huascarán (Huaráz: Oficina Agraria Huaráz, Proyecto Parque Nacional Huascarán, 1974), pp. 4-11.

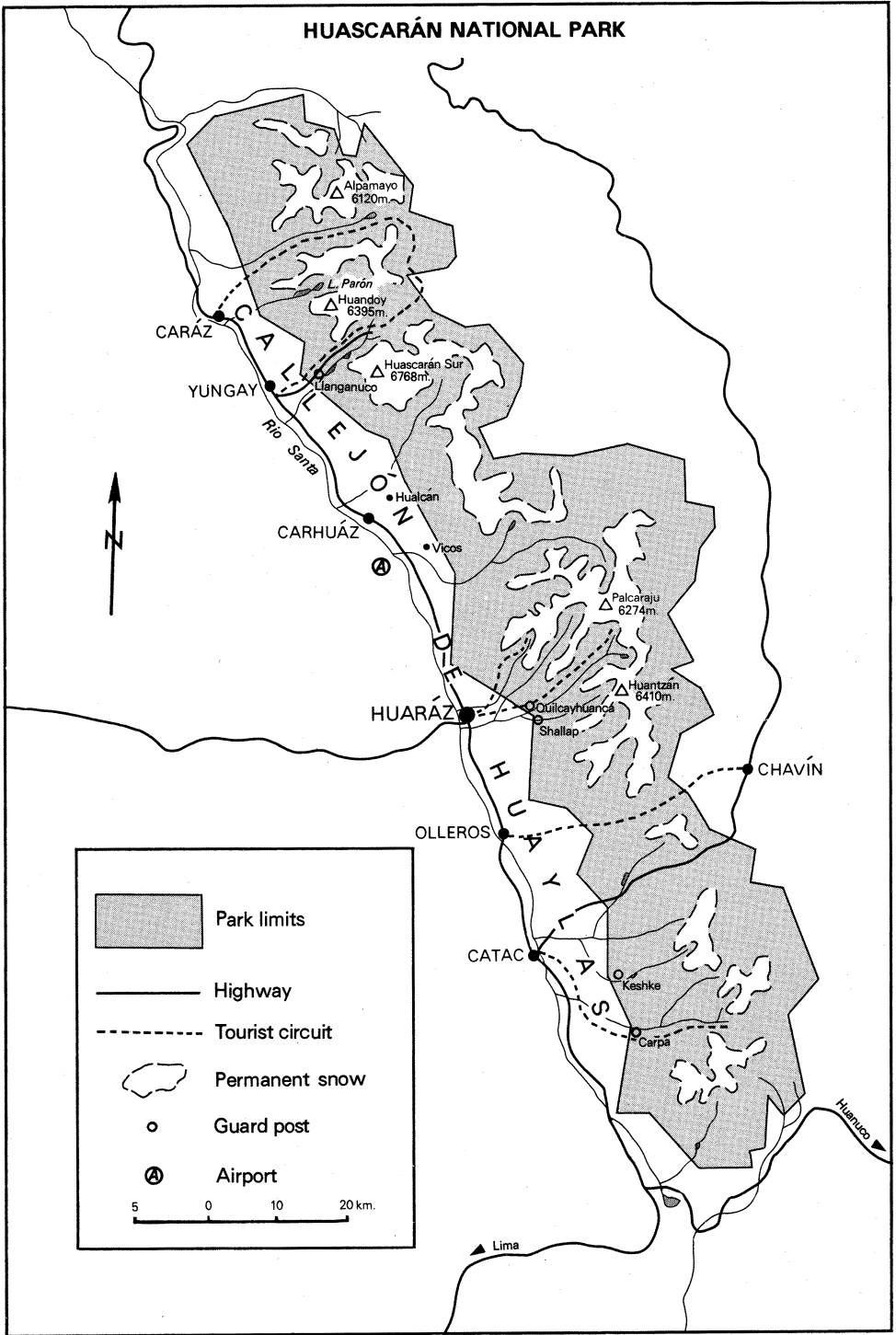


FIG. 3

mon mammal is the rabbit-like viscacha. The Andean fox, puma, and deer occur in small numbers, and approximately eighty vicuña live in the southern portion of the park. Some sightings of the extremely rare, spectacled bear have been claimed in the



FIG. 4—Nevado Huascarán (6768 m.) from the Callejón de Huaylas. Eucalyptus is the dominant vegetation in the foreground.

area. The puma, the vicuña, the spectacled bear, and the Andean deer are endangered species. The condor, the largest Andean bird, with wing spans reaching three meters, lives in the park along with eagles, hawks, falcons, and other predatory birds. Andean geese occupy the mountain lakes, and there is a distinctive population of nectar-seeking birds restricted to the groves of *Puya raimondi*.

The natural pastures on the floor of steep-walled valleys are used to graze sheep, cattle, and horses. Cultivation begins below 3,500 to 4,000 meters. Potatoes are grown at this upper limit, while oats, barley, alfalfa, and corn are cultivated at lower elevations. On the lower terraces and the floor of the Callejón de Huaylas, dry farming gives way to irrigation agriculture. In the northern part of the Callejón de Huaylas, the climate is mild enough to allow the cultivation of sugar cane, oranges, and bananas. Cacti are common, even at high elevations, and orchids occur on protected sites in the lower valleys. The eucalyptus, an exotic import from Australia, now dominates the Callejón de Huaylas where deforestation of native species was the consequence of demand for firewood.

The challenging peaks of the Cordillera Blanca have attracted foreign visitors since the mid-nineteenth century. The creation of a park in the Cordillera Blanca was proposed in 1960 when a local senator, Augusto Guzmán Robles, presented a bill



FIG. 5—Quebrada Llanganuco. The floors of many such deeply incised valleys are used for livestock grazing. (Photograph courtesy of G. H. Eisbacher)



FIG. 6—*Puya raimondi* at Carpa. The short-lived flower stalks of this rare bromeliad reach a height of ten meters.

for the establishment of Huascarán National Park to the Peruvian congress. In February, 1966, a local bylaw was approved that forbade the felling of trees and the hunting of wildlife. The intent was to provide a sanctuary for endangered wildlife and to protect the remnants of quenua and quisuar forests.³⁰ In 1967 a survey of the park area was begun by two members of the American Peace Corps working for the Forestry and Hunting Service. At the same time, a vigilance zone extending more than ten thousand hectares was established to protect small groups of vicuña and the *Puya raimondi*. A series of studies were undertaken by government departments during the late 1960s, including detailed mapping and remedial measures related to the control of alpine lakes, whose periodic outbursts presented the threat of catastrophic debris flows and flooding.³¹

On May 31, 1970, a major earthquake caused landslides, avalanches, and floods that seriously damaged the region. The interministerial committee responsible for emergency relief and recovery operations suggested that a national park be created in the Cordillera Blanca. In 1972 the Huascarán National Park project was initiated, and on July 1, 1975, the legal decree establishing the park was approved. The stated objectives of the park were to conserve the flora, the geology, the archaeology, and the scenery of the Cordillera Blanca; to promote scientific studies of natural resources; to contribute to the improvement of the quality of life for peasant communities and groups; to diffuse natural and historical values at the regional, national, and international levels; and to stimulate and regulate tourism in the Cordillera Blanca.³²

The number of climbing expeditions had increased rapidly in recent years, from twenty-six in 1971 to forty-eight in 1974. The number of tourists exploring the Callejón de Huaylas increased fivefold from 1964 to 1974.³³ Three types of groups now visit the park: tourists who take day trips to see the *Puya raimondi* at Carpa or to visit the beautiful alpine lakes of Llanganuco and Parón (Fig. 7), mountaineers who spend an average of approximately ten days in the park, and expeditions that spend an average of three weeks completing difficult climbs above 5,000 meters. These visits are concentrated in the four-month dry season, June to September.

Establishment of the park, demarcation of its boundaries, and its management proposals must be viewed in the context of social and economic changes taking place in the region. The Callejón de Huaylas, which contained highland estates with tenant laborers and sharecroppers, was one of the first areas subjected to agrarian reform. The catastrophic earthquake of 1970 flattened villages, disrupted agriculture, and served as a catalyst for reforms. A comprehensive reconstruction-development plan was drawn up for the Callejón de Huaylas. It included agrarian reform, development of cooperatives, provision of infrastructure, and water-resource develop-

³⁰ Informe técnico, footnote 29 above, p. 2.

³¹ L. Lliboutry, B. M. Arnao, A. Pautre, and B. Schneider, Glaciological Problems Set by the Control of Dangerous Lakes in Cordillera Blanca, Peru: Historical Failures of Morainic Dams, their Causes and Prevention, *Journal of Glaciology*, Vol. 18, 1977, pp. 239-254.

³² Informe técnico, footnote 29 above, p. 3.

³³ Informe técnico, footnote 29 above, p. 15. Approximately 5,350 tourists visited the Callejón de Huaylas in 1964, of whom 30 percent were foreign. Ten years later, 28,017 visited the area, of whom less than 10 percent were non-Peruvian.



FIG. 7—Laguna Parón, fed by a glacier on the flanks of Nevado Artesonrajú (5999 m.). The water level in the lake is to be controlled in order to prevent a catastrophic outbreak that would damage the nearby town of Caráz. (Photograph courtesy of G. H. Eisbacher)

ment.³⁴ Bureaucratic complexities delayed much of the program for four years when a reconstituted regional government organization, ORDEZA, began to coordinate all related public and private activities from its head office in Huaráz.³⁵

The establishment of boundaries for Huascarán National Park was facilitated by the reversion of land to state control. Wherever possible, the boundaries were drawn to exclude settlements. But several communities continue to use land within the park for livestock grazing, although there are attempts to regulate the practice. Based on a land-capability survey, the boundary generally follows the 4,000-meter contour that marks the approximate upper limit of cultivation in this region.³⁶ Some exceptions to this pattern occur in areas where communities have long-established rights to marginal lands. There have been no changes in the boundary since 1975, although negotiations regarding the traditional land-use rights of peasant communities continue. In 1974, ninety-one properties, only eight of which were not part of community or peasant enterprises, were involved in boundary decisions on the western and the eastern margins of the park.³⁷ Compensation in the form of money, bonds, or future employment in the park was granted during the land-expropriation phase that took

³⁴ Douglas E. Horton, *Land Reform and Reform Enterprises in Peru*, Appendix A (Madison: University of Wisconsin, Land Tenure Center, 1974), p. III, 2.

³⁵ Henry F. Dobyns and Paul L. Doughty, *Peru: A Cultural History* (New York: Oxford University Press, 1976), pp. 262–263; and Horton, footnote 34 above, p. III, 5.

³⁶ Blas Silva Cuentas, Director, Parque Nacional Huascarán, Zona Agraria III, Ministerio de Agricultura, Huaráz, September 1977, personal communication.

³⁷ Informe técnico, footnote 29 above, pp. 20–21.



FIG. 8—Hiking on an Inca road at Punta Yanashallash (4680 m.) on the Olleros-Chavín tourist circuit. (Photograph courtesy of G. H. Eisbacher)

place before the park was established. It was proposed to use peasants as tourist guides in cases where use of grazing lands was no longer permitted.

By September, 1977, five guard posts had been established at key access points along the western perimeter. Park rangers based at Llanganuco, Shallap, Quilcayhuanca, Keshke, and Carpa oversee approximately ninety-seven thousand hectares, less than one-third of the total park area. Responsibilities of the rangers include visitor checks and extensive horseback patrols to investigate illegal hunting and to prevent burning or felling of quenua and quisuar forests.

Communities of the Callejón de Huaylas have traditionally used the natural pastures at higher elevations for migratory and rotational grazing of cattle, sheep, horses, llamas, and alpacas. These pastures have low productivity, and some overgrazing has occurred. Because of the limited availability of productive land, the communities have few options to the utilization of these traditional grazing lands. A decision to maintain the pastures on an experimental basis was justified on the grounds that the livestock did not compete with the few remaining vicuña that depend on different grass species.³⁸ A land-capability analysis is being conducted to determine the extent of overgrazing. If the pastures are overpopulated with livestock, the herds are to be reduced proportionally in relation to ownership. The goal of eventual elimination of grazing from the park may be difficult to achieve because of long-established rights. Illegal colonization, a problem in other parks, seems not to be a factor in Huascarán. There has been local opposition to the abolition of hunting rights, and illegal hunting of protected species such as deer, vicuña, and condor persists. Trout have been introduced to many lakes and streams of the Cordillera Blanca to provide

³⁸ Silva Cuentas, footnote 36 above.

a new source of food for nearby communities. The scarce fuel supply remains a problem to be solved in part by eucalyptus trees, which are being used increasingly as a source of construction timber.

The opening of small mines in the park is not regarded as a major source of conflict, unlike the situation in North American parks. In one case, a gravel road constructed through the park by a mining company will be maintained by park authorities with funds provided by access fees charged visitors who use the road.

Access to the Cordillera Blanca is afforded by dirt roads leading to several alpine lakes, horse trails to high pastures, and remnants of Inca roads crossing high passes (Fig. 8). Park planners intend to utilize the existing routes as principal access corridors for visitors to the park. They also recognize the potential contribution of both day-visitors and mountaineering expeditions to the local economy. Income is generated from local transportation, accommodations (particularly in Huaráz), and purchase of food supplies. Construction of more hotels near the park and provision for a guide service have been proposed. As a first stage, five tourist circuits with treks of one to five days have been developed along old pathways. The tourist circuits are intended to provide access to the *Puya raimondi* or to remote alpine areas. Visitors traveling on these circuits must obtain a park-entry permit and inform the guard posts of the intended route. A brochure and a map have been produced as a first stage in a program to inform visitors about park features. In accordance with the 1977 decree that required land-use zoning in all conservation units, planners have begun to zone for visitor access and wildlife protection in the most heavily used areas. Detailed studies of the *Puya raimondi*, of the vicuña, and of other wildlife species have been initiated with the intent of developing a more comprehensive zoning system.³⁹

CONCLUSION

Conservation policy and park management in Peru are the by-products of political events during the last decade. Recent programs have been incorporated in a national scheme that is linked to international conservation efforts and that draws, to some extent, on experience in other countries. The agrarian reform program still must cope with large numbers of landless peasants. Any innovative policy by planners of Peruvian parks must consider this factor as a constraint. Trends emerging during the next few years should indicate whether the ambitious Peruvian conservation programs can be harmonious with efforts to bring the landless and low-income peasants into the economic mainstream of Peru.

³⁹ Silva Cuentas, footnote 36 above.