PARKSWATCH
Strengthening Parks to Safeguard Biodiversity

Profile of Protected Area – Peru
El Sira Communal Reserve

Date of last field evaluation: May 2003
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Location: Departments of Pasco, Huánuco and Ucayali
Year created: 2001
Area: 616,413.41 ha
Eco-region: Humid forests of the Ucayali River, Floodable pastures of the western Amazon jungle.
Habitats: Tropical humid jungle, very humid tropical highland jungle, tropical highland rainforest, tropical lowland rainforest, very humid tropical highland transitional jungle to tropical humid jungle, very humid tropical transitional jungle to tropical highland rainforest.

Summary

Description
El Sira Communal Reserve protects the ecosystem of the Cordillera El Sira, which is a unique ecosystem. It is a steep mountain range, rising up some 2,500 meters and covered with tropical forest, surrounded by the Pachitea and Ucayali Rivers in Peru's central jungle. The reserve aims to conserve the area's biological diversity, benefiting neighboring native communities. This conservation category establishes that local communities in coordination with Inrena's Intendency of Protected Areas handle the area's management and administration.

Biodiversity
The area features breath-taking landscapes and spectacular geological formations, with unique flora and fauna, the result of the isolated nature of this mountain range. The area is home to at least 300 bird species, 124 mammals, 140 reptiles and 109 types of fish identified to date, although the real numbers are believed to be higher. The communal reserve is botanically rich, with major diversity and many endemic species, while there is significantly diverse plantlife. Unique species include the El Sira tanager (*Tangara phillipsi*) and El Sira curassow (*Pauxi unicornis koepckeae*), both endemic to the area and considered endangered.

Threats
El Sira Communal Reserve is **vulnerable**. If the current rate of natural resource extraction continues unabated, the protected area runs the risk of failing to fulfill its medium-term goal of providing efficient protection for local resources and biodiversity. The main threat to the protected area stems from logging, which occurs in several ways throughout the communal reserve. At the same time, the construction of highways and access roads, excessive extraction of forest resources, disorganized agriculture and cattle ranching and gold mining in

part of the communal reserve, plus the possible presence of drug traffickers in the area make protecting natural resources and the entire protected area a complex matter.

El Sira Mountain Range from Ucayli River, foto © DS, ParksWatch – Peru.

Description

Physical Description

El Sira Communal Reserve lies in the department of Pasco, province of Oxapampa, department of Huanuco, province of Puerto Inca and department of Ucayali, provinces of Coronel Portillo and Atalaya. It lies between parallels 09°03´and 10°22´ Latitude South and Meridians 74°05´ and 74°48´ Longitude East. El Sira Communal Reserve covers an area of 616,413.41 hectares between the Ucayali River on the eastern side and the Pachitea River to the west.

Some 75 km south of the city of Pucallpa the Cordillera El Sira range gradually rises above the left bank of the Ucayali River. It is one of the eastern most of the Andean ranges. The massif reaches a peak of 2,250 meters above sea level. The southern stretch of the range features tropical pastures known locally as *pajonales*, forming the region of "El Gran Pajonal".

Physiography

The area features a rugged topography ranging in altitude from 100-2,250 meters, with contours ranging from terraces and hills to steep slopes. The Sub-Andean Belt, a range of hills that represent the transition between the Andes and the Amazon plain, which is entirely flat, covers the area.

The Cordillera El Sira range features steep slopes, sliced by deep gorges. The communal reserve stretches across three levels of altitude:

1. Cloud forest, which runs from 1,000-2,250 meters and sometimes even up to 2,250 meters (the highest peak in the Cordillera El Sira), where the terrain is mountainous,

with steep slopes. This rugged topography makes the area extremely fragile in the face of human activities.
2. The highland jungle, from 500-1,000 meters, with terracing cut into the hillsides, although agriculture and livestock herding are limited.
3. The lowland jungle, 500 meters in altitude, with gentle hills and a plain prone to flooding.

Geology

Its mountainous areas represent the final folds of the Andes, forming part of the transitional belt between the highland and lowland jungle. The area features a varied complex of sedimentary, igneous and to a minor extent, metamorphic rock. Sedimentary rock forms most of the region's geological structure, and are mainly made up of limestone, sandstone and quartz. Igneous rock lies only in the core zone of the cordillera. Metamorphic rock is less common and scattered.[1]

Soil

There are two differentiated types of soil in the communal reserve. One type is a soil derived from ancient alluvial material, formed by sediment from the Pleistocene Quaternary Era. In the area, these soils are distributed to varying degrees in high and middle terraces, as well as in low-lying hills. These soils are highly acidic in reaction, and are generally apt for the forestry industry and others as protection areas. These soils cover most of the area within the communal reserve.

The other type of soil derived from residual material, formed by alteration of sediments in the Continental Tertiary and Cretaceous Eras. These form part of a hilly landscape, occupying areas with lowland hillocks and hills. These soils are shallow, with a fine texture, and are extremely acid in reaction. These soils lie within protection areas within the communal reserve.[2]

Climate

The complex physiography and heterogeneous nature of the ecosystems in the Cordillera El Sira, generates different micro-climates, creating areas prone to high precipitation and clouds. Average annual temperatures vary little: 18.5°C in Shumahuani, in the southern section of the communal reserve, with an average maximum of 27.3°C and minimum of 9.7°C. And 26.2°C in Ciudad Constitución with a maximum of 30.5°C and minimum of 22.0°C.

Average annual precipitation ranges significantly. The area with the highest precipitation is Ciudad Constitución, with 7106.0 mm, Shumahuani (1634.2 mm), Atalaya (2942 mm) and Puerto Bolognesi (1900.1 mm). Precipitation varies around the area, depending on dry and rainy seasons throughout the year.[3]

Hydrography

The Cordillera El Sira attracts a great deal of humidity, as the region's cloudy fronts come up against the Cordillera and release their humidity, creating a series of gullies and gorges, through which flow dozens of streams. The mountain range feeds the two main rivers in the area: the Ucayali River to the east and the Pachitea River to the west side of the protected

area. In general, the rivers and streams that flow down steep trajectories over short distances turn into torrential rivers during the rainy season.[4]

Biodiversity

The area stands out for its beautiful scenery and spectacular geological formations, while the local flora and fauna feature unique elements, as the area is isolated by the mountain range. The area is a haven for at least 300 bird species, 124 mammals, 140 reptiles and 109 fish identified to date, although the real numbers are believed to be higher.[5]

Flora

The communal reserve features an undisturbed primary forest rich in biological diversity due to the complex ecosystems, the result of varying altitudes. Due to its geographic location, the communal reserve is botanically rich, with major diversity of species, a large number of endemic species and significant numbers of plant species.

Life zones in the communal reserve include: Tropical humid jungle, very humid tropical highland jungle, tropical highland rainforest, tropical lowland rainforest, very humid tropical highland transitional jungle to tropical humid jungle, very humid tropical transitional jungle to tropical highland rainforest.[6]

Fauna

There is significant fauna diversity in the reserve. Fauna native to the highland jungle area of the communal reserve includes white-eared opossum (*Didelphis albiventris*), woolly monkey (*Lagothrix lagothricha*), saddlebacked tamarin (*Saguinus fuscicollis*), southern two-toed sloth (*Choloepus didactylus*), nine-banded armadillo (*Dasypus novemcinctus*), Brazilian rabbit (*Sylvilagus brasiliensis*), Bolivian squirrel (*Sciurus ignites*), Branick's rat (*Dinomys branickii*), agouti (*Dasyprocta punctata*), paca (*Agouti paca*), spectacled bear (*Tremarctos ornatus*), puma (*Felis concolor*), jaguar (*Panthera onca*), ocelot (*Felis pardali*), and margay (*Felis wiedii*). The lowland jungle, meanwhile, features South American tapir (*Tapirus terrestris*), white-lipped peccary (*Tayassu pecari*), collared peccary (*Tayassu tajacu*), red brocket (*Mazama Americana*), giant otter (*Pteronura brasiliensis*), and capybaras (*Hydrochaerus hydrochaeris*).

There are around 400 bird species throughout the mountain range. Notable species in the cloud forest region include the endangered fiery-throated fruiteater (*Pipreola chlorolepidota*), the Andean cock-of-the-rock (*Rupicola peruviana*) listed as vulnerable. There are also several birds with restricted status including creamy-bellied antwren (*Herpsilochmus motacilloides*), Peruvian tyrannulet (*Zimmerius viridiflavus*), and cerulean-capped manakin (*Lepidothrix coeruleocapilla*), sickle-winged guan (*Chamaepetes goudotii*), black-streaked puffbird (*Malacoptila fulvogularis*), scarlet-breasted fruiteater (*Pipreola frontalis*), and the endemic hummingbird Koepcke's hermit (*Phaethornis koepckeae*) in the lowland forest.[7]

Some of the well-known endemic species include monkey frog (*Phyllomedusa baltea*), two toad species *Bufo nesiotes* and *Atelopus siranus*, the land-based frogs *Cochranella mariae*, *Leptodactylus pascoensis* and the poison-dart frog *Dendrobates sirensis*. Species also include El Sira tanager (*Tangara phillipsi) a*nd the El Sira curassow (*Pauxi unicornis koepckeae*), both endemic to the area and considered endangered.[8] In general, *Pauxi unicornis* are

considered vulnerable and a high priority for conservation. The subspecies *Pauxi unicornis koepckeae* is an immediate priority for conservation.[9]

Pauxi Unicornis *Tangara phillipsi*

(images from A Field Guide to the Birds of Peru. James Clements & Noam Shany. Ibis Publishing Company, 2001. Plate 17, pag. 34. and Plate 115, pag. 218.)

Management

El Sira is the second communal reserve created in Peru. Unlike other protection categories, in a communal reserve, nearby communities are in charge of managing the protected area in coordination with the Intendancy of Protected Natural Areas at Inrena. Supreme Decree No. 037-2001-AG created el Sira Communal Reserve on June 23, 2001. Department Ruling No. 304-2001-Inrena established the buffer zone for El Sira Communal Reserve. The borders of the buffer zone are provisional, and will be defined by the master plan in a participatory fashion.

History

The area is practically inaccessible due to the labyrinth of steep hills and dizzying canyons. The area is crucial for conservation because it harbors traditional hunting grounds, sacred places and significant biological diversity.[10]

The initial interest in creating El Sira as a protected area stems from two main sectors: on one hand, biology researchers and conservationist groups have been interested in the area since the 1970s, when the La Molina Agrarian University produced a document underscoring the importance of the mountain range and proposed a protected area be created. At the same time, the native communities and their representatives stated their interest in establishing a protected area from which they would benefit.

In the early 1990s, the Working Group on Indigenous Matters financed and implemented a systematic study on the El Sira region to create a communal reserve. The communal reserve aims to assign nearby native communities the legal right to use and administrate the protected area, ensuring their continuity as a native community through the long-term management of their natural resources. The communal reserve aims to maintain the Ashaninka, Asheninka, Yanesha and Shipibo-Conibo natives near the reserve in their respective territories, thereby preventing their cultures from spreading out. The protection status guarantees conservation of the area's biodiversity and the protection of the river basins that originate in the mountain range.

The creation of El Sira Communal Reserve was the result of a broad-based local consultation process and inter-institutional cooperation between national, regional and local organizations representing the native communities.

The objectives of the protected area are:
1) Guarantee the conservation and preservation of natural resources and the biological diversity existing in the region, particularly endangered flora and fauna species.

2) Ensure the continuity and survival of the indigenous communities through the proper administration, use and management of natural resources, particularly wildlife, as it is a traditional food source.

3) Protect and conserve the watersheds of the Cordillera El Sira, ensuring soil stability, maintaining water quality and quantity for the development of communities located in the lowlands, as well as ecological balance and a proper environment.[11]

Administration

Peru's protected natural areas are monitored by the Intendancy of Protected Natural Areas, under the administration of the National Institute of Natural Resources (Inrena), an agency of the Agriculture Ministry. The current administration is covered by Law N° 26834, the Law of Protected Natural Areas dated 30/06/97 and by its regulatory Supreme Decree N° 038-2001-AG.

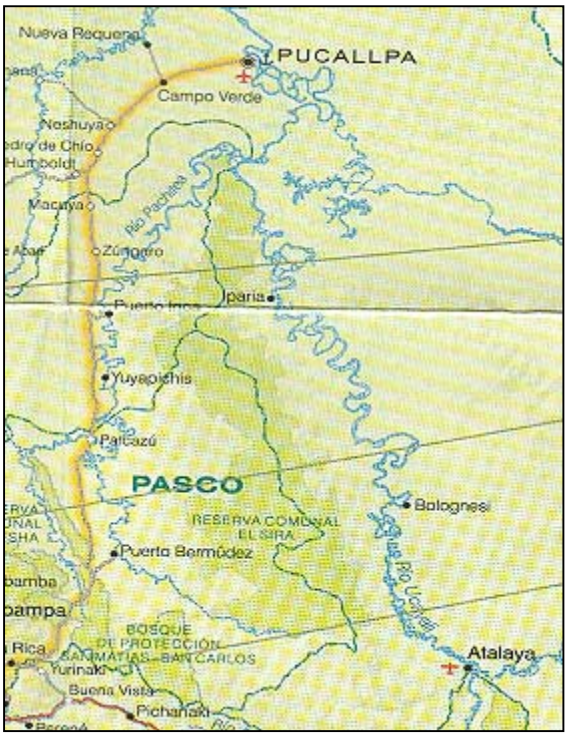
Article 17 of the Law of Protected Natural Areas establishes that the State grants recognition to and promotes private participation in the management of the natural protected areas, for which one may sign or award administration contracts for the area. These administration contracts or agreements are management mechanisms that confer non-profit legal status for running management and administration operations for the area. The administration contract signed with third parties does not eliminate or diminish the competence or responsibilities of Inrena, or its faculties such as monitoring and regulation.

Under Peruvian legislation, management of a communal reserve is handled directly by the beneficiaries according to their organizational structure. In terms of management of the protected area, the general coordination and supervision of El Sira Communal Reserve is run by the head of the area, under the authority of Inrena's Intendancy of Protected Natural Areas. At the same time, the accord must have a figure in charge of executing the administration contract who is in charge of coordinating management of the area, as well as a management committee that supports the area's functioning and represents all the local beneficiaries and sectors involved. The process is still at an early stage, and a lot of work is needed to consolidate and complete it.

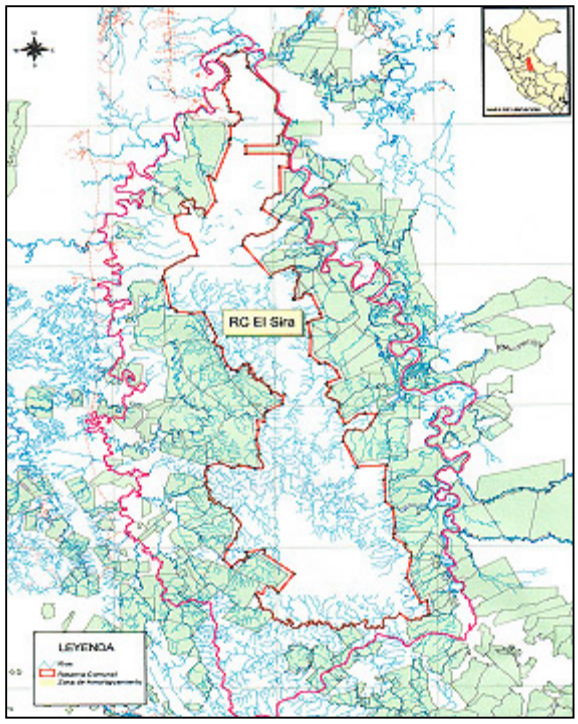
The Technical Unit Office in Puerto Bermúdez.

While the State has responsibility for control of the project, the communities themselves and the local management, together with Inrena are supposed to create the master plan for the protected area. The development of participatory management models and local organization are still being defined. The native communities will establish special use areas, areas granted strict protection, areas to be used, which will be incorporated into the master plan for the communal reserve.

The area covered by the communal reserve is currently being put into legal order. Borders need to be established for the protected area, overlapping boundaries with native community territories solved and property deeds granted for neighboring communities that do not yet have them. Private institutions such as the Institute of Common Good (IBC) and the Association for Research and Global Development (AIDER) will be in charge of putting boundaries in legal order and establishing geo-references.



Map from Peru's Atlas Department



Map: INRENA, Native communities map around El El Sira and its buffer zone.

Operating Personnel

At the time of this evaluation, four officials, based in two locales, staffed the administration of El Sira Communal Reserve. Puerto Bermúdez, currently the seat of the administration of the protected area, has a coordinator, who is a biologist specialized in the environment who works as head of the area, a professional sociologist of native origin specialized in indigenous communities, and an administrator of native origin in charge of financial management. The Atalaya office is staffed by a professional of native origin specialized in the environment, who works as a liaison with communities based along the Ucayali River. In Lima, there is an area coordinator, who wields authority over the team and is the liaison with upper management.

The administration of the protected area is in the process of hiring four park guards of native origin, two for the Ucayali River Basin, and two for the Pichis and Pachitea watersheds. At

the same time, the administration plans to hire two native promoters, for each basin, to serve as liaisons with the local communities.

Budget

Funding provided by the World Bank and the Global Environmental Facility (GEF) financed the budget for the management of El Sira Communal Reserve. They provide a total of US$10 million for the five protected areas run by the Project for Indigenous Participation in the Management of Protected Natural Areas, PIMA.[12] The Peruvian government is to provide a financial counterpart equivalent to 10% of the total amount awarded, or US$1 million. Of the total amount available, approximately US$2 million will be allocated to El Sira Communal Reserve over a five-year period.

Human Influence

El Sira Communal Reserve has approximately 400 native communities within its area of influence, with an estimated population of 25,000-30,000 inhabitants. Of these communities, 63 are neighboring villages, with an approximate population of 5-7,000 inhabitants. The Shipibo-Conibo people, who belong to the Pano language group, have settled the lower reaches of the Ucayali River. The Ashaninka and the Asheninka people (of the Arahuaca language group) have settled the upper reaches of the Ucayali River, in the southern stretch of the area in the sector of El Gran Pajonal and parts of the Pichis River watershed in the southwestern stretch of the area. The Yanesha, also of the Arahuaca language group, inhabit the western stretch of the area. There are also settlements of migrants throughout the territory.

These groups usually take to the mountains to extract natural resources, such as timber, fruit, fibers, medicinal plants, materials for arts and crafts, as well as hunting and fishing. The natives and migrants differ substantially in how they make use of their natural resources. In general, the natives are settled in native communities and make traditional use of their natural resources based on small-scale agriculture, hunting, fishing and gathering, while the migrant settlers farm on a larger scale, raise livestock, extract wood and fish on a commercial scale.

View of the Native Communities Fernando Stahl and Nuevo Paraíso, photo © DS, ParksWatch –Peru

Local Organization

The 400 native communities located around El Sira Communal Reserve, both within and outside the buffer zone, belong to various grass-roots organizations that represent them on regional and nationwide levels. This is the case of the Asheninka Organization of El Gran Pajonal (OAGP), the Indigenous Organization of the Atalaya Region (OIRA), the Organization of Development of Native Communities of the District of Tahuanía (ORDECONADIT), the Federation of Native Communities of the District of Iparía (FECONADIP), the Organization of the District of Masisea (ORDIM), the Federation of Native Communities of Ucayali (FECONAU), the Federation of Native Communities of Puerto Inca (FECONAPIA), the Union of Yanesha Nationalities (UNAY), the Association de Ashaninka Nationality of Pichis (ANAP), based in Puerto Bermúdez, the Central Office of Native Communities Central Jungle (CECONSEC), the Federation of Native Communities of Bajo Perené (FECONABAP), both based in Satipo. At the same time, there are other social organizations with less influence, such as the Organization of Indigenous Women of El Gran Pajonal (OMIAG).

All these grass-roots organizations have been invited to the consultation workshops, and are to some degree involved in the management process of the communal reserve. In general terms, the nearby population has heard about the communal reserve, above all the area of the Pichis River, but is unaware of the details. Along the Ucayali and Pachitea Rivers, the population is less informed, mostly due to the lack of communication from their organizations. The large number of neighboring communities and representative organizations poses a challenge for the participatory management process of the communal reserve.

Access

The Communal reserve is reached by land, river or air.

The main river access is down the Ucayali River, from the main port in the city of Pucallpa, down to where the Tambo and Urubamba Rivers flow together, near the provincial capital of Atalaya. Air travel is possible to areas with an airstrip: Atalaya has a runway nearly 1,000 meters long, where commercial aircraft as large as Fokkers can land. Other airstrips include Oventeni, Tornavista, Puerto Inca and Puerto Bermúdez, and airfields in some native communities. There is a road network used by the natives that leads to the protected area. One can get to the Jungle Marginal Highway overland.

Conservation and Research

Scientific expeditions have provided a greater degree of knowledge of species such as birds, reptiles and flora.

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Threats

Threats to El Sira Communal Reserve include:

- Logging
- Road building
- Gold mining
- Excessive use of natural resources
- Unregulated agriculture

Logging

The department of Ucayali has long been a major logging region. With the arrival of the highway to the city of Pucallpa over 70 years ago, timber trade in the area has boomed. The city of Pucallpa is the center of the region's timber industry, with major sawmills and overland transport infrastructure. Pucallpa is a timber collection point for nationwide distribution and exports.

Due to excessive extraction, one can no longer easily find valuable hardwood such as mahogany (*Swietenia macrophylla*) and cedar (*Cedrela odorata*), which today is found only in distant areas of difficult access such as the Cordillera El Sira range. Today, loggers cut down less valuable trees such as Tornillo (*Cedrelinga catenaeformis*), Shihuahuaco (*Coumarouna charapilla*), Lupuna (*Chorisa integrifolia*) and kapok tree (*Ceiba pentandra*). Due to the large quantities of wood extracted and the search of valuable wood, El Sira Communal Reserve is under pressure from the logging industry. Both the eastern area of the communal reserve, along the Ucayali River, as web as the western region of the Pichis River and the Puerto Bermúdez road are subject to intense logging.

Images the show the enormous quantity of timber in Ucayali, Pucallpa, photos © DS, ParksWatch –Peru

Today, concessions of large-scale, long-term logging, according to the conditions established in the Law of Forestry and Wild Fauna No. 27308, are still being granted in the department of Ucayali. Once these concessions are established, they will be managed by concessionaires, ousting hundreds of small-scale loggers who do not have the capacity to take on a large-scale concession under the terms of the Forestry Law. In the face of this change, large numbers of small-scale and medium-scale loggers are extracting trees at a speedy rate before concessions limit their access in the future. This has spurred small-scale and medium-scale loggers to enter native communities, and extract wood from communal lands, whether clandestinely or

in agreement with local villagers or the head of the community. This is often done through deceit, as the loggers take advantage of the weaknesses of the communities.

In many cases, once the communities have been deceived and the loggers have left the area, they then file complaints at the Forestry Control Board, when the office no longer has a chance to do anything. The communities leave it until too late to notify the board. First, they allow the loggers onto their land, and when the loggers fail to pay up, only then do the natives complain. The situation is occurring on lands of many native communities near El Sira Communal Reserve.

Use of chainsaws is common, despite the fact it is banned due to the amount of wood it wastes. The chainsaw is one inch thick, which translates into a great deal of waste. Trunks are cut into planks with a chainsaw on-site, before being carried for large distances on workers' backs down to gullies or rivers, where the wood is floated or loaded onto boats, which take them to market. This kind of grass-roots extraction, known locally as *tabloneo,* is very common in the region.

The area also features mechanized logging, where trees are cut down with chainsaws and the branches stripped before the trunks are dragged by tractors along a network of forest trails which is spreading as loggers enter new areas in search of wood. Loggers clear forest trails with heavy machinery, something that is a major threat to the forests in the area as they provide access to resources that encourages migrant settlements. Several large-scale logging concerns provide tractors to contracted loggers in every area, whereupon these local hires hand over the wood extracted.

The town of Lorencillo, which lies on the outskirts of Puerto Bermúdez to the west of the communal reserve, has become a major center for storing wood that is brought by road for transport and sale. Buyers come to the region from Satipo, La Merced, Chanchamayo and Iscozasin in search of wood. As wood is longer found nearby, loggers are forced to penetrate deeper into the forest, ever nearer to El Sira. Loggers are mainly looking for mahogany, chopping down even the smaller trees. There are 10 logging concerns operating in the area, five of which are from Ciudad Constitución. In Lorencillo, extractors are temporary hires or workers equipped by large-scale loggers.

Ramp from where timber is hauled from the river to the highway in Lorencillo.

The new forestry law has suspended logging permits, restricting legal access to forest resources for many loggers. However, they continue to operate. Ciudad Constitución features some 8-10 operative concessions that "launder" wood cut in other areas –in other words, these concessions sell illegally cut wood as if it came from their own areas. One logger in an interview said loggers needed a great deal of money to cut wood and take it to Lima, as officials at checkpoints have to be bribed along the way. That is why loggers prefer mahogany, as it fetches a high price and covers costs. Other tree species are worth less and do not cover costs. One can longer find valuable wood species near Yuyapichis, but many other

species are cut down anyway. Loggers are also extracting a great deal of wood in the Puerto Inca area, according to one Forestry Control official.

INRENA personnel from Vista Alegre going to check the passing loggers

There are two checkpoints run by Inrena's Technical Administration of Forestry & Fauna Control along the Ucayali River. These checkpoints do not have the capacity to detain barges carrying illegal wood, as there is no beach or appropriate site to dock them. Their effective function is limited to checking the documents of the wood shipments sent downriver and notify the Pucallpa office so it can impound the wood.

One official told Parkswatch that all kinds of wood are shipped out of the area. Mahogany is taken out, particularly during the rainy season, when the rivers are swollen by the rains, as this tree species is found in remote spots and loggers have to wait for the river levels to rise to be able to take the wood out of the area. The areas of Colonia de Caco, Tornavista and Puerto Inca are key sites that produce large amounts of wood. Irena impounds an estimated 20-25% of the illegal wood that comes through the area. For security reasons, forestry personnel at Vista Alegre do not run night patrols for fear they might be attacked during a raid. "They kill each other, so why won't they kill Inrena workers. They hate us even worse."[13] It is at night when the loggers, particularly the plank-cutters called *tabloneros* take advantage of the darkness to slip past the forestry checkpoint. Inrena coordinates specific detentions with the police and the navy, as the area is rife with armed robbery. A great deal of wood is stolen along the river. Often rafts loaded with trunks floating down to the city of Pucallpa are carrying other people's wood, trunks found along the riverbanks and which are untied at night to load onto other rafts.

An Agriculture Ministry official in Iparía, capital of the district, said that the most commonly-extracted species from wood-producing areas include cumala *Virola sp*., tornillo *Cedrelinga catenaeformis*, lupuna *Chorisia sp*., catahua *Amburana sp*., bolaina *Guazuma crinita*, quinilla, and that the areas where most wood is taken include the gullies of Tabacoa, Iparía, Tamshi and Cushani.

No valid forestry permits have been granted to the area; all extraction here is illegal. From February-April 2003, a large amount of wood has been taken out of the area, some 40,000-50,000 board feet of wood (15,000 board feet a month). Tree trunks are cut lengthwise into 5-10 meter boards to make transport easier.

Timber in the Native Community of Amaquiría, photo © DS, ParksWatch –Peru

Loggers in search of wood regularly visit the Shipiba community of Amaquiría. They used to use a forestry tractor to haul out tornillo and lupuna. As is common in all the local communities, Amaquiría was deceived by a logger who offered to provide the town with corrugated iron roofing and other supplies in return for extracting and storing wood, and never kept his word. A 45-minute walk from Amaquiría lies the Ashaninka community of La Selva, bordering El Sira Communal Reserve, home to 53 families and 300 people, 30% of whom are *mestizo*, or mixed blood. The community owns hectares of communal land, according to the village headman. However, despite the fact this community only owns this small patch of land, it did not stop the community from signing a contract with a logger looking to extract trees using a tractor. The community will receive 20% of tornillo wood extracted and 15% of lupuna, cumala and pashaco. The logger has given the community an electricity generator and cables running to each home plus 2,000 nuevos soles (US$580) in cash. It is clear that this sort of agreement aims to extract wood from El Sira Communal Reserve. One interviewee said loggers are chopping down trees on hillsides and taking them out of the area through the Sipiría gully. Wood is taken from both within communal land and outside it. The source estimated some 100,000 feet of wood was taken from the area in 2002.

Timber extraction using forestry tractor in the Native Community La Selva, photos © DS, ParksWatch –Peru

There is a logger working with a forestry tractor in the community of Nazareth. Local inhabitants are unaware what deal the logger has struck with community leaders. Apparently, both sides have reached an arrangement of sorts without the participation of the community, as stipulated by law. The logger has asked to take wood from the Paniquiari gully. The logger apparently has promised the community a great deal: two-way radio sets, a healthpost, etc.

He tells the local inhabitants that “the government isn’t going to give them anything, but he (and other loggers) will give them things,” in a bid to gain community approval. The logger, who apparently has enough financial backing, is also working in the community of Nuevo San Juan, which is applying for a forestry permit from Inrena’s forestry department together with the logger. He has reportedly paid them 10,000 nuevos soles (US$2,900) in cash to buy the generator and has promised them a 20% share of wood extracted from the area. The deal is a verbal contract, and no documents have been signed, something which is habitual in most communities and which has led to frequent deception.

Communities frequently request generators and electricity services in their towns in exchange for the wood that is extracted from their communal lands. However, the reality of the matter is that it is not a practical option as when the logger leaves the area, many communities cannot afford to buy fuel or maintain the generator, which then falls into disuse and disrepair. In one case, a logger gave the community of Fátima a very old generator which did not even last a year and which doubtlessly was worth a fraction of the value of the wood extracted from the area.

The native community of Fernando Stahl has requested a forestry permit, but the government authority has made observations as the proposed extraction area overlaps El Sira Communal Reserve. In the neighboring community of Paraíso, loggers are extracting wood using a tractor. These tractors cross the lands of the Fernando Stahl community, carving out trails and forest roads, and the community wants to charge a toll. This has sparked conflict between both communities. The loggers are telling the natives that soon their land will all belong to the State, and claim they should take advantage and cut down as much wood as possible before the State begins to control and prevent extraction.

Most political authorities in the region have vested interests in timber. Many village headmen are also involved in the business. Some leaders of indigenous organizations are also involved in this illegal trade and do not back this drive to establish order in the forestry industry in the area. In some cases, forestry control officials have detained a wood shipment, only to be told “this wood belongs to an army major, that over there belongs to the police chief, and that is owned by the district attorney”, making it difficult for forestry officials to intervene and sanction loggers.

There is a great deal of illegal wood extraction occurring in the area of influence, in the buffer zone as well as within El Sira Communal Reserve. Wood is extracted without the corresponding permits and without management plans, or if there are, they do not follow them. Loggers extract wood from unauthorized areas, do not heed approved limits and cut and transport wood at night to dodge the checkpoints. The native communities have reached agreements with illegal loggers, even in areas outside their communal land. Inrena’s Technical Administration of Forestry & Fauna Control is inefficient, mainly due to lack of budget and logistics. Problems include lack of coordination between the various forestry control offices and the forestry control offices in Pucallpa.

Road building

In El Sira Communal Reserve and its surrounding area, roads are little more than tracks to connect villages and provide access to trucks and other vehicles. In many cases, construction of these roads starts by marking out a track or footpath which then turns into a road for

vehicles, particularly in areas with forestry resources. These roads are made to provide access for heavy goods vehicles to areas for the purpose of wood extraction.

Peru's regionalization process has given regional governments autonomy in terms of administration and decision-making. Regional governments are promoting road-building as a development program alternative. The same tendency is ongoing in district municipalities; most district mayors near El Sira Communal Reserve are loggers or own interests in the lumber business. These mayors are pushing for road-building in areas with major forestry resources, including through the reserve, as part of their development programs. Municipalities receive backing from regional government in the form of financing and machinery, and in many cases reach agreements with loggers who commit themselves to building the road in exchange for access to forestry reserves.

An access track runs from Iparía on the Ucayali River as far as Tournavista on the Pachitea River. Today, it is a 65 km footpath that takes five days to hike from one village to the other, crossing through the communal reserve to the north. The municipality of Iparía aims to give priority to this project. The municipality is currently in debt and is unable to get work underway on the road, but continues to search for financing. Local inhabitants wish to build the road, as they believe it will serve to take their produce to market.

There are several settlements along this access trail from Iparía to Tournavista. Some 8 km from Iparía is the community of Nueva Esperanza de Tabacoa, home to 20 Asháninka families and a schoolhouse. Some 5 km further on is the community of Nueva Bellavista with 15 Asháninka families. Some 20 km further on is the village of Nueva Jerusalem, which has 18 migrant families who belong to the religious sect of La Misión Israelita del Nuevo Pacto Universal (the Israelite Mission of the New Universal Pact), with a school and 70 hectares of forest land which has been cleared for agriculture. Some 20 km away is the community of Santa Cecilia, with around 10 families from the same sect and a schoolhouse. La Paz is a village near Tournavista, with more families from the religious sect. These families drive from their village to Tournavista. At the same time, behind the village of Esperanza de Tabacoa lies the community of Nueva Islandia, with a mix of Asháninka and migrant families. The site is reached via a detour off the Iparía-Tournavista Trail. [14] These settlements, and the existing trail that connects them, represent a threat to the protected area in terms of future land claims by resource extractors and migrant settlements. At the same time, the zoning process and preparation of the master plan could result in additional land claims from these settlements. Their presence within the protected area could spur demands from these communities to maintain their autonomy and free access to the natural resources around them. They could even go so far as to request they be excluded from the communal reserve. In a worst-case scenario, the communities could request the northern section of the communal reserve be reduced in size.

Migrants will be drawn to the area with additional road construction. This will cause complications not just for the environmental situation, but will also heighten social conflict in the area. Tensions and conflicts are a constant in the region between natives and migrant settlers. In addition, there are constant complaints arising from conflict between native communities and members of the Israelita[15] religious sect

In conversations with local inhabitants, ParksWatch discovered the existence of several access trails around the communal reserve. One footpath leads from the native community of Fernando Stahl to the other side of the communal reserve, which the locals claim leads to the

migrant settlement of Misión Nevati, next to the Pichis River. The trail is used very sporadically for hunting and gathering. Similarly, another trail runs from the community of Alto Aruya and Fernando Stahl as far as the native communities of Platanillo de Jetarine and San Martín de Apurucayali.

South of the communal reserve, work has begun on a road from Puerto Prado on the Perené River as far as Atalaya, running through Oventeni, plus a detour to the native communities of El Gran Pajonal, near the communal reserve. A road is being opened up to Ponchoni located in the buffer zone south of the reserve. The provincial municipalities and the logging industries that back them are building the access roads. A road makes progress depending on how much timber is found along the way. There are no environmental impact studies or corresponding forest clearing permits as required by Inrena. Inrena officials in Atalaya said that the loggers claim they have been hired by the communities to extract wood, and are building roads to be able to transport the wood out of the area.

There is a major risk of landgrabs or illegal extraction in El Sira Communal Reserve because of building access roads. The scenario described above could be even worse if one takes into account the fragility of the ecosystems that will be affected, due to their hilly topography, and the vast ecological and cultural diversity found in the area.

Forestry road towards El Sira in Fernando Stahl. *Puerto Bermúdez – Pucallpa.Highway*
Photos © DS ParksWatch – Peru

Gold mining

Mining is focused in the western section of El Sira Communal Reserve, specifically in the district of Yuyapichis, where grassroot miners have been operating for many years. Today, mining activity is spreading. The district de Yuyapichis features 23 mining concessions in total, covering an area of 14,000 hectares, split into mining stakes of 100-1,000 hectares each.[16] Six hours from Yuyapichis is another mining concession that operates heavy machinery on a large scale, the Bonanza mine bordering the communal reserve near the Negro River. The mining concession has been operative for 12 years, giving it rights acquired before the creation of the protected area. The concession used to belong to a South Korean firm, which in 2002 polluted the area with mercury, exploited both natural resources and the local inhabitants, whom the company failed to pay for their work.

El Diablo is a community within the communal reserve, found at the headwaters of the Yuyapichis River. El Diablo has yet to gain official recognition, meaning it has no property

deeds despite existing in the area for several years. Andean migrants who have married native women and make a living from gold panning populate the village. The community borders the Bonanza mining concession, which charges a 15% concession for artesian miners working within the concession area. Mining brings outsiders who settle in the area and take up the trade.

Excessive use of natural resources

The Ucayali River is rich in resources, with a large variety of fish species that are the main food source for both local villages located along the riverbanks and tributary streams, and the cities of Pucallpa and Satipo. The problems facing the local fishing industry include overfishing, use of destructive fishing techniques, trading difficulties, the lack of awareness of dwindling resources, conflicts over access to fishing areas and a lack of inter-institutional coordination.

Commercial fishing boats are one cause of conflict. This occurs particularly when these boats operate in areas with their own fishermen and haul in catches from lakes and gorges, competing with local fishermen and having a negative effect on the area's resources. The boats enter community territory at night, dodging vigilance by local inhabitants. Fishermen from outside the area claim to have permits from the Fisheries Ministry, but are unable to show papers. These boats use fine-mesh nets and haul in large catches. These fishermen throw back the smallest fish (already dead) and take the largest and best of the catch without even sharing one fish from the catch with the local community.

During the season, fish undertake major seasonal migrations along the river to egg-laying areas. Fishermen take advantage of this migration to haul in large catches by heading to gullies and tributary streams of the Ucayali River and spreading their nets there. This interference with the seasonal fish migration affects the fish population along the tributaries that run out of the communal reserve. At the mouth of the Pachitea River, for example, fishermen from Pucallpa stretch large fishing nets from one riverbank to the other, catching migrating fish and preventing them from getting through. Upstream, the local population complains about their poor fish catches.

The native communities in particular use *barbasco* and *huaca* poisons from toxic native plants that they dump into the streams to stun the fish, which then float to the surface for oxygen and are easily caught. While these plants are indeed toxic, they are naturally biodegradable. However, the problem stems from the fact they are used frequently in the same stream, affecting the entire fish population, including smaller ones. At the same time, unscrupulous fishermen use non-biodegradable chemical poison in lakes and streams, wreaking havoc amongst the fish population and the habitat in general. Its potent residual effects impact bodies of water and the population who makes use of the resources.

Hunting game for subsistence is also creating problems. Game has become scarce around the communities due largely to pressure on resources from excessive hunting. Continuous human presence in growing villages, whose activities affect and scare away the larger fauna, is forcing animals out of the area. There is also growing demand for animal skins, a lack of proper control and lack of awareness of resources and forms of management are other factors contributing to overhunting.

There is heavy demand for wild animal skins, both for skins of authorized animals such as wild boar, peccary and deer, as well as clandestine demand for the skin of species such as felines and snakes. Limits and extraction quotas have been set for the extraction of authorized animal skins. However, established limits are not observed. There have been cases where trappers kill boar and peccaries and skin them, leaving the meat to rot instead of making use of it. Middlemen who visit the communities to buy the skins generally (poorly) manage the trade in skins.

Ocelot skin in La Selva Native Community, photo © DS ParksWatch – Peru

There is always demand for fresh game. Most people who make a living from hunting are unaware of the seasons and ways the species that they hunt actually reproduce. Although in some areas hunters admit that fauna have thinned out due to excessive hunting, there is a general belief that species do not disappear and that hunting is not a cause of extinction.

As far as gathering of non-timber forest products is concerned, the local inhabitants make use of some native species for their health, food and subsistence. Demand is heaviest for palm fronds for use in roofing homes, which brings to bear a great deal of pressure on the resource. There is also strong demand for palm fruits like the *aguaje* and the *ungurahui*, which have become scarce due to consumption by both the local population and the city of Pucallpa. Local inhabitants generally chop down the trees to harvest the fruit and cut fronds, making it increasingly difficult, if not impossible, for the species to reproduce.

Excessive hunting, fishing and extraction of non-timber forest products in communities around the communal reserve has resulted in less availability of these resources. Today, these resources are to be found in abundance within the communal reserve, meaning greater external pressure is being brought to bear on the protected area.

Unregulated agriculture

Agriculture in the region is subject to the natural processes that are typical of tropical forests, where climactic and ecological conditions limit farming. The main obstacles for agriculture in the region include poor soil that leads to low yields, crop blight, steep transport costs, and lack of either a market or technical support. Agriculturalists tend to cut down more forest every year and then burn the cut wood. This expansion of cleared forest land for agriculture is due to the fact local farmers are forced to plant new land because the old fields lose productivity in a few short years.

In the eastern section of the communal reserve, in the buffer zone of the Ucayali River, local inhabitants, particularly the indigenous population, generally plant relatively small plots that produce enough to feed their family, with little left over. Agriculture depends on family consumption and productive capacity and is restricted by the periodic flooding of the Ucayali

River, which while fertilizing the soil, hampers farming activity. Ucayali River farmers find it hard to get their produce to market. Sometimes there are no buyers, at other times no transport and at all times low prices. Under these circumstances, it is hardly surprising that Ucayali River farmers have little incentive to produce more. On the west side of the communal reserve, in the buffer zone next to the Puerto Bermúdez-Pucallpa road one finds larger fields and sweeping pastures for cattle grazing. Migrants in this area tend to cut down new areas of virgin jungle instead of going back and trying to manage land that has been planted in the past.

Deforestation for agriculture along the Aruya stream. Photo © DS, ParksWatch – Peru

Cattle ranching in the region, as in all tropical forests, is a low-productivity activity. The low productivity of the meat is due to the deficient genetic quality of the cattle and inept animal husbandry.[17] More importantly, the factor that hampers cattle breeding the most is the fact the jungle soil is so fragile. The extensive cattle ranching done in the area generally needs 1-2 hectares of grazing land for each head of cattle to maintain even mediocre yields. Every year ranchers cut down more forest to plant grass to maintain their herds. Cattle management is not intensively done with rotating corrals and production of forage, which to a degree would reduce the impact on the forest. Livestock herding in the area is based on grazing, forcing ranchers to constantly convert forestland into pastures. This can be seen especially along the Puerto Bermúdez–Pucallpa road, where there are large tracts of land that have been set aside for cattle grazing, and to a lesser degree along the Ucayali River.

Planted pastures for grazing in the western buffer zone of the protected area, Photo © DS, ParksWatch – Peru

Regional governments in the jurisdictions surrounding El Sira Communal Reserve have adopted cattle ranching as one of the development alternatives to be promoted in their respective regions. In addition, there are two important institutions promoting livestock herding as part of their regional development programs: the Consortium for Sustainable Development in Ucayali, CODESU and the Pichis Palcazu Project. Pichis Palcazu also promotes planting oil-producing

palm trees as an alternative to planting coca leaf in the western section of El Sira, despite low prices and trading difficulties.

Future Threats

There are several future threats that could negatively impact the communal reserve. First, it is possible that current threats will increase uninhibited. Another threat is oil exploration and a third future threat is drug trafficking.

Current threats increase

An increase in current levels of timber extraction and the consequent shortage of commercially valuable tree species will force the timber industry deeper into the communal reserve. At the same time, the expanding road network into the reserve will open up access to loggers and other extractors, as well as migrant settlers in search of land to settle and build townships.

While the communal reserve and resources inside it will be managed by the nearby beneficiary population, if the corresponding management and planning tools are not proposed and designed, along with management plans, overexploitation of natural resources (hunting, gathering, fishing) will continue in the communal reserve. Not only is there a risk that there will be no way of blocking outside extractors currently entering the area, but also there will be more of them, making protection and management of the communal reserve's resources even more difficult.

Poorly designed agricultural policies by the regional administration and municipalities could spur an increase in deforestation by providing incentives for or promoting the opening up of land for farming and cattle ranching. This threat is very real, particularly in the western section of the communal reserve, along the Puerto Bermúdez-Pucallpa road, where there are communities that subsist on cattle herding, such as Yuyapichis and Puerto Inca, and where the trade is on the rise. The spread of farming will, in the medium term, mean that the search for good, untouched soil will come ever closer to the communal reserve.

Gold mining is an activity that is spreading across the Yuyapichis area. New mining concessionaires are interested in applying for mining permits and concessions in the area. At the same time, it is probable that current concessionaires, once they have depleted their deposits, will apply for new concessions or simply head into other areas and set up illegal mining operations outside their concessions. The increase in gold mining operations involves clearing more forest for extraction and the building of roads and trails on one hand, while on the other hand it also brings more migrants to the region seeking to work in the mining industry. Further mining operations also mean more pollution, dumping mercury in the water, with the consequent negative effect on the area's water resources, food chain and human health and nutrition.

Oil exploration

Oil companies are interested in running seismic studies in the area around El Sira Communal Reserve, above all to the south, apparently within the buffer zone. Native communities are highly concerned, and are waiting for the oil companies to make a decision.

The Energy & Mines Ministry has established oil exploration blocks around the communal reserve. East of the communal reserve lie Blocks 34 and 35, which are being explored by Spanish oil company Repsol YPF, SA. These two blocks overlap the buffer zone of the communal reserve and could possibly stretch across El Sira Communal Reserve. The northwest sector of the protected area could be carved out into Block 22, currently under negotiation. To the west of the protected area, a little further away on the other side of the Puerto Bermúdez-Pucallpa road, lies Block 21, currently part of a technical evaluation agreement.

The possibility of oil exploration in the area will cause the huge impacts typical of the oil industry: the construction of roads and heliports, the arrival of workers, use of chemical products, fuel and explosives, generation of waste, use and pollution of water, an impact on the fauna and the landscape, among others. If prospecting is permitted within the communal reserve, the area will be suffer from all the impacts mentioned above.

Drug trafficking

Local inhabitants claim that drug trafficking is an ongoing trade within the communal reserve, in the shape of alleged coca leaf plantations and cocaine laboratories. Drug traffickers reportedly use the existing trails to enter the reserve. The community of Amaquiría is the last stop for boat services, and villagers claim outsiders arrive here before disappearing into the forest, where they are involved in unknown activities. On the western side of the communal reserve, the Puerto Bermúdez-Pucallpa road is a well-known route for drug trafficking operations. The drug barons convince local inhabitants to plant coca leaf, and villagers are often forced to accept it out of poverty. It is possible that drug traffickers are using the protected area clandestinely as a hideout for their illegal operations.

Recommended Solutions

Logging

The long-term protection of forest resources in El Sira Communal Reserve depends on control by the Technical Administration of Forestry & Fauna Control over the management of forestry resources in the area of influence around the reserve and the swift implementation of a vigilance and control system for the communal reserve by the Intendancy of Protected Natural Areas.

Large amounts of wood are being extracted from native communities bordering the communal reserve. Both Inrena and the communities need to tighten their controls with the participation and support of their grassroots organizations to put a stop to the illegal logging. One strategy implemented out of their own initiative in the western sector of the protected area, in the community of Ocho Yernos neighboring the communal reserve, involved setting up a communal committee for the control and defense of the area's natural resources, promoted by the organization ANAP.

ANAP recognizes the urgent need for implementing new committees in communities where wood is being smuggled out. The other native organizations around the communal reserve should follow their example and form their own natural resources defense committees. These committees need to coordinate with the administration of the protected area. One of the tasks of these committees will be to not only detect illegal tree-cutting and denounce it, but also

ensure the communities comply with the processes and requirements established by law: in other words, management plans, authorization granted by communal assembly, etc. This experience should be repeated around the entire communal reserve.

Critical timber extraction sites must be identified and strategic points located where the control committees can operate, for example at the mouth of streams or on hilltops and upper reaches. Communities need to promote coordination with other institutions involved in control operations such as the Peruvian navy and the national police force and involve them in the drive for vigilance and interdiction.

In an effort to promote greater efficiency and commitment from personnel in their work performance and eradicate corruption at the agency responsible for forestry control, state officials failing to comply with their duties and responsibilities should be dismissed from their posts via the corresponding administrative procedures.

Reforestation needs to be increased in the buffer zone using commercially valuable species, while forestry management needs proper planning and technology to prevent future generations from pressuring the communal reserve's resources. Researchers recommend increasing the volume of valuable wood tree species that are relatively unknown on the market, plus species that have interesting potential for markets such as oils, cosmetics, industrial supplies and natural medicine. This could be highly attractive for the concessionaire.[18]

Both native communities and extractors need to be trained regarding the importance of forest management required by law to obtain forestry permits. At the same time, it is indispensable that loggers be required to apply and strictly comply with conditions stipulated in corresponding forestry management plans, which involve a commitment to the plan, in order to receive an extraction permit.

Inrena's forestry department needs to be meticulous and strict in when it evaluates and approves corresponding management plans. Since the government requires applicants for concessions to submit forestry management plans, there is a growing tendency to file management plans produced en masse in offices, without visiting the site or conducting field evaluations. This produces plans that are mediocre and of dubious quality and which have been prepared for the sole purpose of meeting the requisite but not with an eye to designing a tool that would support the extraction process in orderly and sustained manner. For this reason, Inrena should not approve management plans prepared in a rubber stamp-fashion without due fieldwork to back them up. Inrena should also evaluate forestry engineers or environmental consultants authorized to prepare said forestry management plans, something that would guarantee at least an appropriate professional level.

An official at Inrena's Forestry Control along the Ucayali River claimed the system of large-scale concessions has eased pressure from small-scale loggers, the so-called *tabloneros*. The system of large-scale concessions makes it easier for the forestry authority to control the area. According to this official, in the past, it was difficult, if not impossible, to monitor the old system of granting 1,000 hectare concessions each. Large-scale concessions mean that monitoring can focus on less loggers working in large tracts of forest.

In the past, large numbers of loggers were working in many small extraction concessions, which fomented disorder and lack of control. Illegal extraction in the concessions is now

controlled by the concessionaire himself, who prevents others from taking wood from his concession. There are doubts as to how seriously some concessionaires take their commitments and the capacity of entities in charge of supervising, controlling, evaluating and promoting forestry management, as well as levying sanctions for those who break the law.

Protecting El Sira's forestry resources will depend on appropriate forestry management in native community land, the proper implementation of forestry concession systems around the protected area in Pasco, Huanuco and Ucayali and efficient control and monitoring by Inrena's Technical Administration of Forestry & Fauna Control.

Road-building

An awareness program is urgently needed to shed light on optimum sustainable development alternatives for the area and make municipalities and regional governments aware of the problems caused by opening up roads, which in the end do not provide sustainable options for development. It is indispensable that the government blocks all initiatives aimed at building access roads and trails that could affect the protected area.

Work needs to be done to monitor the existing access road from Iparía-Tournavista. Rehabilitation work must not be allowed to continue and the road must be kept from functioning. No new migrants should be allowed in along this access road. Similarly, the real status of the construction of an access road from Atalaya to Puerto Prado in the area of influence south of the protected area should be investigated and further progress stalled. Strict supervision is needed to monitor loggers operating in the area, and they should be banned from continuing to open up this access road.

More information is needed regarding the real status of the settlements within the communal reserve along the Iparía-Tournavista road. Corresponding measures need to be taken with migrants who have settled here after the communal reserve was set up. Settlements established here before the communal reserve was created should be granted a special status and permitted to stay within the framework of strict programs aimed at managing resources.

Gold mining

More research is needed regarding the actual status of the mining industry around the protected area. Inspectors need to visit the district of Yuyapichis to verify the presence of miners within the protected area and buffer zone to know how many people operate in the region and identify the impacts on the environment.

Miners working in the protected area need to be registered, their operating permits and contracts checked, and the scale of each operation determined. New mining operators should be banned from entering extraction zones within the protected area. Strict coordination is needed for this between the Energy & Mines Ministry and the Intendancy of Protected Natural Areas.

A mining use plan needs to be designed and implemented to provide the guidelines and mechanisms to run mining operations in a way so they do not affect the protected area or the environment. The master plan should establish zoning, which miners should strictly heed. Unannounced inspection visits should be made to mining operations to verify miners are

complying with the plan. Miners must use mercury recovery mechanisms to prevent further water pollution.

Awareness campaigns are needed to teach miners about issues regarding the protected area, environmental and mining legislation that involve them, and which they have to obey, and the importance of control and monitoring of mining operations by the corresponding authorities. The administration of the protected area needs to be in close contact with national and regional mining authorities to establish mechanisms for coordination and information flows.

While the Energy & Mines Ministry promotes growth in the mining industry by granting the sector facilities, it must be strict when enforcing mining legislation. This requires the presentation of environmental impact studies, and establishes that in order to implement mining operations in buffer zones, miners must request a technical opinion from Inrena. The entity should turn down any new mining activity in the area and oppose the start-up of new operations.

Excessive use of natural resources

As a result of the disorder and abuse by fishermen from outside the area, the communities of Amaquiría, Nazareth and Pijuayal came up with a fishing plan with backing from AIDER, and from their own initiative formed a vigilance committee which monitored fishermen, checked their fishing licenses and kept tabs on volumes of catches. Participating communities took turns staffing the group, providing personnel to cover established roles. However, a lack of coordination and misunderstandings brought the experiment to a halt. The communities of Fernando Stahl, Alto y Bajo Aruya, Paraíso and Cumbirishiari launched a similar system, forming a fishing monitoring committee, which also worked on a rotating basis. However, this system also ceased to function. These attempts form a precedent and were valuable experiences that should be reactivated and copied in other communities. To do so, diffusion and training are necessary, and additional work should be done to promote commitment among the participatory communities. These committees should be supported to strengthen their organizational and logistical capacity to maintain this vigilance. Both the administration of the protected area and the Fisheries Ministry should grant these committees official recognition and coordinate closely with them.

In the fishing trade, above all commercial fishing, ceilings regarding catches volumes, weight and size of the fish should be set and met. The communities, with backing from professionals and communities, need to organize their own mechanisms to control the fishing trade, marking out fishing limits and seasons, as well as preventing outsiders from entering the protected area. The use of nets should be restricted at the mouth of gullies and rivers to allow fish migration to pass through, without interfering with their reproduction. The use of *huaca* and *barbasco* by the communities needs to be regulated, with a commitment on their part to comply with agreements and prevent fishermen from continuing to affect the streams with this type of fishing. Greater control is needed over fishermen who use chemical poison for fishing. Fishermen caught using chemical poison should face charges, be placed in the hands of the corresponding authorities and a significant sanction given to set a precedent. This will discourage others from using this method.

Hunting monitoring and control mechanisms need to be promoted and incentives provided in the communities based around the protected area. This will require advice and training by professionals and supporting institutions. Measures such as seasonal hunting bans by species,

bans on killing animals with young, rotation of hunting grounds, restriction of firearms use, breeding wild animals, limiting commercial hunting, etc., should be taken into account when drawing up a hunting management plans.

On the issue of collecting palm fronds and fruit, extractors should be prevented from chopping down trees to harvest this produce. There are tools and mechanisms for climbing trees, and extractors should be trained to implement new methods that allow the trees to live and reproduce. Cutting down palm trees to harvest products such as the *aguaje* is reducing number of individuals in the sought species, because the palm trees bearing the best fruit are the first to be chopped down. However, there are three harvesting techniques that do not affect the tree: a) triangular-shaped sticks; b) rope and lasso; and c) winch and chair, the technique preferred by extractors.[19] It is crucial that these techniques are promoted in the buffer zone of El Sira Communal Reserve.

Management alternatives for the forest urgently need to be promoted using different wood products. Fibers, resins, medicinal plants, seeds and other products can be harvested in a sustainable way. Local arts and crafts represent a major opportunity for the socio-economic development of communities. Supporting entities need to make more of an effort to line up markets for these products. Extractors must undertake sustainable management commitments and present management plans to prevent abuse of resources.

Unregulated agriculture

Mechanisms must be found to ensure production units respect the soil capacity. Promotion of agriculture in the area must focus strategies on soil management, self-sufficient food production, the search for markets for commercial production, the diversity of products and not single-crop farming.

Work must be done to promote a shift away from traditional slash-and-burn agriculture towards more sustainable farming based on diversification, planting permanent crops, rotating less important crops and soil enrichment. Awareness campaigns, training and technology swaps are needed to promote efficient and sustainable management of the ecosystem outside the protected area, by implementing organic and diversified agriculture.

Oil exploration

If the oil companies in charge of the exploration blocks around the reserve decide to carry out seismic studies and extraction, this must be excluded from the area inside the communal reserve, and be limited to its area of influence.

Special care is needed with activities ongoing in the buffer zone and on lands owned by nearby native communities. The corresponding authorities need to carry out an exhaustive analysis of the environmental impact studies that are presented, plus a cost-benefit analysis of what this activity means to the area surrounding the communal reserve. The Energy & Mines Ministry, Inrena and the sectors involved in civil society must enforce and monitor the proper application of environmental management plans proposed by the oil companies operating in the area.

The possible presence of the hydrocarbon industry in the area should bring concrete benefits to the communal reserve, in the shape of a regional tax and specific contributions towards the

implementation and upgrade of management and equipment for the communal reserve. Clear profit distribution mechanisms need to be established, and these need to be monitored to check they effectively benefit the protected area and communities affected by hydrocarbon operations.

Drug trafficking

The institutions in charge of combating the drug trade, the police and the navy, in coordination with political authorities in each district, should sep up interdiction, both in the area of influence of the communal reserve as well as within it, to eliminate trafficking.

The local population must be made aware and become committed to supporting the fight against drug trafficking in the region. Appropriate communication channels need to be established between authorities and local inhabitants so they can report any signs of the drug trade. Total confidentiality and personal safety must be guaranteed for those who denounce drug traffickers. At the same time, police and navy presence in the area needs to be constant and real, both to fight drug trafficking as well as common crime.

Conclusions

El Sira Communal Reserve has rich biological diversity, with endemic and endangered species, abundant natural resources such as wood, fruit, flowers, fibers, medicines, a varied geography with a diversity of landscapes, hydrological systems and habitats, and cultural values of several different ethnic groups. The communal reserve represents a major opportunity to conserve a unique ecosystem. The conservation category of a communal reserve provides nearby communities with an opportunity to make use of the area's resources and proposes that the beneficiaries handle the administration of the protected area in a participatory manner in coordination con the State.

The implementation of the protected area is underway. Working teams are being formed, and a consultation and participation program for the communities and organizations involved. The participatory model of shared responsibility proposed by the protected area's management has made this an experience that is unique to date.

The communal reserve runs the risk of a variety of threats, which could endanger the goals of conserving and maintaining the protected area intact. Hopefully, joint operations by the Intendancy of Protected Natural Areas and the local population can revert these negative trends. Excessive logging, the construction of access roads, over-extraction of forest resources, gold mining and disorganized cattle herding are activities that urgently need to be corrected and monitored.

The authorities must be strict about enforcing the Forestry Law and the Law of Protected Natural Areas. Extractors of natural resources must be required to design and carry out management plans as stipulated by law. Incentives should be provided for communities based around the protected area to establish monitoring and control mechanisms for hunting, fishing and gathering forest produce.

More information is needed regarding the real status of the mining industry around the protected area. All the miners working within the protected area should be registered, and a

mining use plan needs to be designed and implemented. Also fundamentally important is the need to prevent mechanized mining operations from entering the area.

Regions and municipalities need to be made aware of the disadvantages of building roads through tropical forests. Farmers should be prevented from unnecessarily cutting down and burning the forest, and work should be done to promote the use of techniques to preserve soil nutrients and maintain land productivity. Livestock currently found in the buffer zone must be kept in stables. Where possible, new livestock projects should not be promoted in the communal reserve's area of influence. Local communities need to be involved in vigilance and control processes. To do so, work needs to be done to boost their organizational capacity and provide training.

The government must promote environmental education and implement training programs for both the local population as web as political authorities. Visits need to be made constantly to the communities for training and consultation, and continuity and cohesion in the process ensured by not letting too much time pass between visits.

El Sira Communal Reserve is geographically located around other key protected areas, such as Yanachaga-Chemillén National Park, San Matías-San Carlos Protected Forest, Yanesha Communal Reserve and Pui Pui Protected Forest, making up a major portion of protected territory in Peru's central jungle.

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NOTES

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The El Sira paujil is considered EN in the Birdlife/UICN classification. The group of Cracid specialists at the UICN has rated it Immediate (Conservation Priority), but only the Peruvian subspecies, *Pauxi unicornis koepckeae*, as the Bolivian subspecies *Pauxi unicornis unicornis* is rated in the inferior immediate category (Very High).Peruvian legislation considers "In Danger of Extintion".

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[13] Literal statement by an Inrena official at the Vista Alegre forestry control checkpoint along the Ucayali River.

[14] Data obtained from an interview with an official from the district Municipality of Iparía, who has personally visited the area.

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