IUCN Conservation Outlook Assessment 2014 **(archived)**
Finalised on 03 September 2014

Please note: this is an archived Conservation Outlook Assessment for Central Amazon Conservation Complex. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Central Amazon Conservation Complex

SITE INFORMATION

Country:
Brazil
Inscribed in: 2000
Criteria:
(ix) (x)

Site description:
The Central Amazon Conservation Complex makes up the largest protected area in the Amazon Basin (over 6 million hectares) and is one of the planet's richest regions in terms of biodiversity. It also includes an important sample of varzea ecosystems, igapó forests, lakes and channels which take the form of a constantly evolving aquatic mosaic that is home to the largest array of electric fish in the world. The site protects key threatened species, including giant arapaima fish, the Amazonian manatee, the black caiman and two species of river dolphin. © UNESCO

SUMMARY

2014 Conservation Outlook

Good with some concerns

Overall, the conservation values of this very large property are in good condition, with only minor human impacts around settled areas. While local riverside communities engage in subsistence agriculture, hunting, fishing, and extraction of timber and non-timber forest products human population density remains low and impacts are limited to narrow bands of higher land on natural levees along stream courses. Overall, protection and management of the conservation complex is quite effective. Despite the currently very good state of conservation, the expected consequences of anticipated climate change and potentially increasing pressures due to urban expansion and better access (provided for example by a recently constructed bridge) give rise to some concerns.

Current state and trend of VALUES

Low Concern
Trend: Stable

Overall, the conservation values of this very large property are in good condition, with only minor human impacts around settled areas. While stable, there are serious concerns in the longer run due to the expected impacts anticipated of climate change. The construction of a bridge in Rio Negro might also result in increasing pressures on the lower portion of the Anavilhanas National Park and surrounding protected areas.

Overall THREATS

Low Threat

While local riverside communities engage in subsistence agriculture, hunting, fishing, and extraction of timber and non-timber forest products human population density remains low and impacts are limited to narrow bands of higher land on natural levees along stream courses, and to the effects of

traditional harvest of fish and other aquatic organisms. Over the long run, projected climate change effects could be severe, substantially modifying the property’s current ecosystems and species compositions.

Overall PROTECTION and MANAGEMENT

Mostly Effective

The property consists of four components - Jaú National Park, Amaná Sustainable Development Reserve, Mamirauá Sustainable Development Reserve and Anavilhanas National Pak. Each of these units is actively managed, and law enforcement is carried out by ICMBIO, IBAMA, IPAAM and Forest Police. Overall, protection and management of the conservation complex is quite good, though there is concern about sustainable finance for management of the Sustainable Development Reserves. At the time of inscription there was a concern the fact that one of the components of the property – Anavilhanas – is separated from the rest of the property.

FULL ASSESSMENT

Description of values

Values

World Heritage values

- **Ongoing ecological processes in the development of terrestrial and freshwater ecosystems**
  Criterion:(ix)

  The vast site exceeding 5.2 million hectares with parts of Solimões/Amazonas and Negro rivers, some of their important tributaries and lands, including landscapes and biodiversity comprised of a constantly changing and evolving mosaic formed by rivers courses, amazon tropical rainforests (e.g. Terra Firme Forests, Várzeas and Igapós), wetlands, lakes, rivers, and islands. It enables ongoing large-scale ecological processes in the development of these diverse forest and freshwater ecosystems, in particular white and black water systems. In Solimões/Amazonas the high sediments concentration maintains a myriad of life forms dependent on huge biomass formed in the wetlands, like the floating, constantly moving mats of vegetation typical of the white waters courses host a significant number of endemic species. In the black waters, the acid ph and low concentration in nutrients contributes to a singular and well adapted freshwater biodiversity, with low biomass but high number of species. The terrestrial landscapes represent important variation regarding vegetation types and associated fauna (WHC website).

- **Biological diversity of the Central Amazon**
  Criterion:(x)

  This vast property comprises stunning biological diversity of the Central Amazon. Regarding flora, the huge variation of vegetation types caused by

the variation of soil types, biochemistry and fertility of waters makes this region one of the most biodiverse in the world. As for the faunal diversity, the Jaú National Park alone protects an impressive sample of fauna, with many species associated to black-water river systems, with 119 species of mammals, 510 birds, 70 reptiles, 44 amphibians and 410 fishes. For Anavilhanas NP the limited data available in the Management Plan show the following figures: 334 fish species, 177 bird, 25 amphibian and 42 reptiles species. Among the many noteworthy species with the Complex are giant arapaima fish, the vulnerable Amazonian manatee, the black caiman, giant otter, jaguar, harpy eagle, giant river turtle and two species of river dolphin (UNESCO/World Heritage Centre website, retrieved 2014; IUCN Consultation, 2014).

Other important biodiversity values

► Other international designations

The Complex is part of the Central Amazon Biosphere Reserve, the largest in the Amazon Biome. The area is one of the Endemic Bird Areas of the World, one of WWF’s 200 Priority Ecoregions for Conservation, and it is also a Centre of Plant Diversity (UNESCO/World Heritage Centre website).

Assessment information

Threats

Current Threats

Low Threat

While local riverside communities engaged in subsistence agriculture, hunting, fishing, and extraction of timber and non-timber forest products human population density remains low and impacts are limited to narrow bands of higher land on natural levees along stream courses, and to the effects of

traditional harvest of fish and other aquatic organisms.

▶ Logging/ Wood Harvesting, Fishing / Harvesting Aquatic Resources, Other Biological Resource Use, Subsistence hunting

Low Threat
Inside site
Outside site

There are currently almost 3000 thousand riverine families living inside the 4 PAs forming the Complex, mainly along the "varzéas" and banks of the major rivers. These communities engage in subsistence agriculture, hunting, fishing, and extraction of timber and non-timber forest products. Some products, such as amazon nuts, fibers, oils are legally commercialized while others illegally enter markets, such as turtles and bush meat and pirarucu fish. However, human population density remains relatively low and impacts are limited to narrow bands of higher land on natural levees along stream courses, and to the effects of traditional harvest of fish and other aquatic organisms. Seasonal flooding also temporarily limits the human footprint on the terrestrial portions of the site. (Instituto Mamirauá, 2012; WDPA, 2011; IUCN evaluation, 2003; IUCN Consultation, 2014).

Potential Threats

Low Threat

Potential threats include increase in visitation and impacts of ships traffic which are both low threats. Projected climate change effects could be severe over the long run, substantially modifying the property’s current ecosystems and species compositions.

▶ Tourism/ visitors/ recreation

Very Low Threat
Inside site
Outside site

The construction of a bridge below Manaus has dramatically improved road access to the town of Novo Airao on the edge of Analvilhanas NP, which is much closer to the large metropolitan population of Manaus now, just 2 hours awayThis means that one of the component areas of the Central Amazon WHS will be much more accessible to visitors from the state of Manaus by

road which if properly managed could help promote local visitation and appreciation of the WH site. A new floating visitor center is also being planned (IUCN Consultation, 2014).

▶ Shipping Lanes

Low Threat
Inside site
Outside site

Anavilhanas NP lies along a navigable river portion of lower Negro river with regular transit of large ships carrying, among other things, petroleum products, since there are municipalities along this river only reached by boat and plane. There are no buoys or any other system in place to reduce the danger of a ship going aground in the archipelago: an oil spill upstream could do great damage to the fragile resources of the area (IUCN Evaluation, 2003). Fortunately, the traffic of boats is relatively low and is limited by demands to cities up river (IUCN Consultation, 2014).

▶ Temperature changes

High Threat
Inside site
Outside site

Models suggest that by the year 2050, temperatures in the Amazon may increase by 2–3°C. Jointly with an anticipated decrease in rainfall during dry months this could significantly increase the vulnerability of the forests. Longer and perhaps more severe droughts could result in substantial changes in seasonality. Coupled with large-scale deforestation and land-use changes elsewhere in the Amazon anticipated climate change is expected to trigger the degradation of freshwater systems, loss of ecologically and agriculturally valuable soils, increased erosion, decreased agricultural yields, increased insect infestation, and spread of infectious diseases (WWF, 2012).

Protection and management

Assessing Protection and Management

► Management effectiveness

Mostly Effective

The management effectiveness of the national parks was formally evaluated in 2002/2003 and 2010. The 2010 rating of Jaú is very high, the highest of all federal protected areas managed by ICMBio in Amazonia region. Management improved significantly from 2002/2003 to 2010, moving from a rating of 62% to 84%. On the other hand, the evaluation of Anavilhanas National Park gave it a lower rating of 55% in 2010, having come down from 58% in 2002/2003. (ICMBio, 2012) Management of the Sustainable Development Reserves is rated as “good”. The 2011 Annual Report for the Mamirauá Sustainable Development Institute rates management of the Mamirauá and Amaná at 72% (IDSM, 2012).

► Relationships with local people

Mostly Effective

In the National Parks (Jaú and Anavilhanas), consultative councils provide a regular mechanism to discuss management decisions, and build the technical capacity of stakeholders. The Sustainable Development Reserves (Mamirauá and Amaná) have Governing Councils made up of stakeholder representatives that make management decisions. Leadership training sessions are held in association with Council Sessions. In 2011, 519 community leaders from the Mamiruá and Amaná Sustainable Development Reserves were trained. (IDSM, 2012; SOUV, 2011; WDPA, 2011).

► Legal framework and enforcement

Mostly Effective

Jaú National Park was established by Federal Decree in 1980. The Anavilhanas conservation unit was declared an Ecological Station by Federal Decree in 2001, and later re-categorized as a National Park in 2008. Mamirauá, the first Sustainable Development Reserve in Brazil, was legally established in 1996 by the government of Amazonas State. The Amanã Sustainable Development Reserve was later established by the Amazonas State government in 1998. Each of these units is actively managed, and law enforcement is carried out by ICMBIO and IBAMA at federal level and IPAAM

and Forest Police at State Level (IDSM, 2012; SOUV, 2011).

► Integration into regional and national planning systems

Mostly Effective

Both the national parks and sustainable development reserves are well integrated into the national and state systems of protected areas and through them to the wider planning systems.

► Management system

Mostly Effective

The management system for the property has several components. Management of the Jaú National Park is a collaborative effort of the Chico Mendes Institute for Biodiversity (ICMBio) and the Victoria Amazonica Foundation, with most of the inputs for research, management, and environmental education provided by the Foundation. Anavilanas National Park is management directly by ICMBio with partnership with IPE – Instituto de Pesquisas Ecológicas. The management of both national parks is guided by a management plan. The Amazonas State Sustainable Development Reserves of Mamirauá and Amaná are managed by the Centro Estadual de Unidades de Conservação in partnership with the Mamirauá Institute for Sustainable Development, through a program of research, protected area management, and technical assistance to local communities. Management of the two reserves is guided by a management plan and decisions of the Governing Councils. There is also a Public Use Plan to further guide management of Mamirauá. Each of the 4 protected areas that make up the property also has specific resource protection, research, and environmental education plans (IDSM, 2012; SOUV, 2011; WDPA, 2012).

► Implementation of Committee decisions and recommendations

Data Deficient

The 2003 World Heritage Committee decision approving the extension of the property encouraged the State Party to "re-nominate the subsidiary area of Mamirauá Sustainable Development Reserve once it fully meets the conditions of integrity." No follow-up is known as of today.

► Boundaries

Some Concern

Boundaries are rivers and are understood by communities (draft SOUV, 2011). The boundaries of the site coincide with the limits of existing state and federal protected areas and include sufficient area to protect the site's heritage values. However, while Jaú, Amana and Mamairauá are contiguous, Anavilhanas, located along the Rio Negro, is separated from Jaú by a predominantly forested corridor consisting of state extractive reserves and an indigenous reserve (IUCN Evaluation, 2003). Recently a discussion regarding necessary adjustments of limits was conducted by the Councils of Jaú NP and Unini Extrative Reserve and a process of analysis is in course and if approved an extension of around 500.000 ha to both PAs would be possible (IUCN Consultation, 2014).

► Sustainable finance

Some Concern

Jaú and Anavilhanas National Parks receive funding from ICMBio and from the Amazonian Protected Areas Project - ARPA, the largest tropical forest conservation program in the world leaded by Brazilian Environment Ministry, which is administered by FUNBIO the Brazilian Fund for Biodiversity. Mamirauá and Amaná Sustainable Development Reserves receive funding from the Amazonas State Government. All the 4 PAs receive support from partner projects such as FVA, IDSM and IPE. Considering the size of all areas and many challenges to consolidate them, the resources at disposal nowadays are not sufficient and discussions regarding options for sustainable finance mechanisms are necessary (ARPA, 2012; IDSM, 2012; IUCN Consultation, 2014).

► Staff training and development

Some Concern

Low core staff numbers and retention appear to be a problem. It is a lengthy process to name new staff to the component reserves by ICMBio. There are just several professionals at Analvilhanas and Jaú for millions of hectares and a number of unfilled posts. There is no process in place to easily hire individuals from neighboring communities or even professionals from the

state of Amazonas, who have to compete in national calls of interest (IUCN Consultation, 2014).

► Sustainable use

Mostly Effective

The twin objectives of conservation and sustainable resource use are the focus of management for the Sustainable Development Reserves. The Mamirauá Sustainable Development Institute supports the sustainable use objective through research, training, and technical assistance. 72 communities received technical assistance in 2011. For the case of Jaú National Park a process is in place to develop an agreement for managed use of resources by the communities, a legal mechanism previewed in Brazilian law. (IDSM, 2012; WDPA, 2011; IUCN Consultation, 2014).

► Education and interpretation programs

Mostly Effective

Environmental Education Plans guide the work in this area in all 4 of the property’s conservation units. The Victoria Amazonica Foundation and IPE are particularly active in environmental education in the national parks, while the Mamirá Sustainable Development Institute carries out the Program in the Reserves. In all of the conservation units of the property the focus is on the training of community leaders and conservation of biodiversity in a participatory way. (IDSM, 2012; WDPA, 2011).

► Tourism and interpretation

Mostly Effective

There are low levels of tourism in all of the conservation units of the Property. There is a Visitor Center at the entrance to Jaú National Park, and in Mamirauá the Institute has developed a lodge which recently won an award for excellence from National Geographic Traveler (IDSM, 2012; WDPA, 2011).

► Monitoring

Mostly Effective

Biodiversity monitoring is carried out on a regular basis by the Victoria Amazonas Foundation in Jaú and by the Mamirauá Sustainable Develoment

Institute in Mamirauá and Amaná.

► Research

Mostly Effective

In Jaú, research is promoted and carried out by the Victoria Amazonica Foundation, which has carried out multi-disciplinary studies since 1992, inventorying flora, fauna, soils, and landscape types to support protection, education, and administration. The Foundation uses a Geographic Information System to generate topographic and thematic maps. There is housing for guest researchers in the Park (WDPA, 2011). Anavilhanas National Park has a floating base and another base on the mainland. Both have accommodation, laboratory and lecture space for visiting scientists (Religion, Science, and the Environment, 2006) and an administrative office in Novo Airão City. Research is a main activity of the Mamirauá Sustainable Development Institute in both Mamirauá and Amaná. In 2011, they carried out 28 research projects ranging from ecology, ecotourism, sustainable use of natural resources, health, and archaeology. 16 books, 51 articles, and 8 theses or dissertations were published (IDSM, 2012).

Overall assessment of protection and management

Mostly Effective

The property consists of four components - Jaú National Park, Amaná Sustainable Development Reserve, Mamirauá Sustainable Development Reserve and Anavilhanas National Pak. Each of these units is actively managed, and law enforcement is carried out by ICMBIO, IBAMA, IPAAM and Forest Police. Overall, protection and management of the conservation complex is quite good, though there is concern about sustainable finance for management of the Sustainable Development Reserves. At the time of inscription there was a concern the fact that one of the components of the property – Anavilhanas – is separated from the rest of the property.

► Assessment of the effectiveness of protection and management in

addressing threats outside the site

Some Concern

The conservation complex is extremely large exceeding the size of Switzerland, and there are no significant threats from surrounding areas. Thus, there is currently little tangible concern about exogenous threats. In the longer term, the combination of anticipated climate change and large-scale deforestation elsewhere in the Amazon does raise serious concerns and more recently the urban expansion in the lower Negro river course increased the deforestation and pressure for natural resources mainly in Anavilhanas NP and surrounding PAs.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **Ongoing ecological processes in the development of terrestrial and freshwater ecosystems**

Low Concern
Trend:Stable

Overall, the conservation values of this very large property are in good condition, with only minor human impacts around settled areas. While stable, there are serious concerns in the longer run due to the expected impacts anticipated of climate change (IUCN Consultation, 2014).

▶ **Biological diversity of the Central Amazon**

Low Concern
Trend:Stable

Besides localized overfishing and overharvesting of some species no major concerns are known (IUCN Consultation, 2014).

Other important biodiversity values

► Other international designations

The Complex is part of the Central Amazon Biosphere Reserve, the largest in the Amazon Biome. The area is one of the Endemic Bird Areas of the World, one of WWF's 200 Priority Ecoregions for Conservation, and it is also a Centre of Plant Diversity (UNESCO/World Heritage Centre website).

Summary of the Values

► Assessment of the current state and trend of World Heritage values

Low Concern

Trend: Stable

Overall, the conservation values of this very large property are in good condition, with only minor human impacts around settled areas. While stable, there are serious concerns in the longer run due to the expected impacts anticipated of climate change. The construction of a bridge in Rio Negro might also result in increasing pressures on the lower portion of the Anavilhanas National Park and surrounding protected areas.

► Assessment of the current state and trend of other important biodiversity values

Low Concern

Trend: Stable

Biodiversity values associated with other international designations (WWF Global 200 freshwater eco-region, Ramsar Site, and Bisosphere Reserve) are currently in good condition.

Additional information

Key conservation issues

► Climate change

Global

The key conservation issue is climate change, which is predicted to have severe effects on biodiversity values of the site in the long run.

Benefits

Understanding Benefits

▶ **Importance for research**

Research is an important activity in all of the conservation units of the complex.

▶ **Legal subsistence hunting of wild game, Collection of wild plants and mushrooms, Fishing areas and conservation of fish stocks**

The natural resources of the property provide for subsistence livelihoods of small indigenous communities within the property.

Summary of benefits

At the international level, the property is highly valued for conservation and the generation of knowledge. The natural resources of the property are of critical importance for the communities within the property and no doubt valued as such.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Conservation Leadership Program		Amazonian Manatee Conservation Project, Anavilhanas National Park, Brazil. The objectives of the project are to investigate the conservation status of this Amazonian manatee population, to determine and monitor habitat and landscape use by manatees and to verify the threats to the species

№	Organization/ individuals	Project duration	Brief description of Active Projects
2	Victoria Amazonica Foundation		Project to strengthen the system of protected areas in the lower Rio Negro through research, pursuit e of sound public policy, and local management. Financed by the Gordon & Betty Moore Foundation.
3	Victoria Amazonica Foundation		Monitoring of biodiversity in conservation units; a pilot experience in the Jaú National Park. The objectives focus on biodiversity monitoring in Jaú National Park and the temporal and special patterns of variation of communities. Financed by: Research Support Foundation, Amazonas State.
4	Mamirauá Sustainable Development Institute		Special Projects funded in 2011 for environmental education, public health, river dolphin studies and clean energy.
5	FUNBIO, Amazon Region Protected Areas Program		Provides financial support to management of Jaú and Anavilhanas National Parks until 2017.
6	IPE – Ecological Research Institute		Work in partnership with ICMBIO to support implementation of the management plan for Anavilhanas NP

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	N.A.	Include funding for the Mamirauá and Amaná Sustainble Development Reserves in the Amazonas Region Protected Area Project, and build long-term solutions for sustainable finance.	

REFERENCES