

# Salonga National Park

## 2020 Conservation Outlook Assessment

### SITE INFORMATION

**Country:** Democratic Republic of the Congo

**Inscribed in:** 1984

**Criteria:** (vii) (ix)



Salonga National Park is Africa's largest tropical rainforest reserve. Situated at the heart of the central basin of the Congo river, the park is very isolated and accessible only by water. It is the habitat of many endemic endangered species, such as the dwarf chimpanzee, the Congo peacock, the forest elephant and the African slender-snouted or 'false' crocodile. © UNESCO

### SUMMARY

#### 2020 Conservation Outlook

Finalised on 02 Dec 2020

**CRITICAL**

The values of Salonga National Park remain intact but under pressure, following the significant loss of emblematic species of forest elephant and bonobo to large-scale poaching for ivory and bushmeat over the last decades, which has significantly impacted the values of the property. Since the establishment of a co-management arrangement between ICCN and WWF in 2016, the overall management of the property is improving considerably. Capacity and law enforcement are being strengthened including through a major operation between ICCN and the Congolese army FARDC to remove armed forces from the property and significantly reduce large-scale commercial poaching. Recent 2015-2018 biological inventories indicated that populations of flagship elephant and bonobo species have stabilised which, combined with the significant reduction in large-scale commercial poaching, is encouraging. However, their population numbers remain far below the ecological potential of Salonga and poaching pressures continue, so it is critical that management conditions ensure their recovery going forward.

Important management issues remain to be addressed including, but not limited to, the critical renewal of the co-management arrangement which expired in 2018; ensuring full surveillance of the park and ecological corridor; effectively managing threats that continue such as poaching; securing sustainable long-term funding; and establishing a long term monitoring programme to ensure a fully effective management system for the property and the recovery of flagship species. Although the State Party reports that oil exploration is no longer on the political agenda, clarification is required as to whether oil concessions overlap with the property or not. Overall, it is anticipated that the conservation outlook for the property will follow a continued positive trajectory through a renewed co-management agreement and securing funding into the future.



## FULL ASSESSMENT

### Description of values

#### Values

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##### World Heritage values

- ▶ **Vast area of intact lowland tropical rainforest covering a wide range of habitats with high biodiversity.** Criterion:(vii)

Salonga National Park, situated in the Democratic Republic of the Congo, represents Central Africa's last and biggest fully intact block of evergreen lowland rainforest. With its 36,000 km<sup>2</sup>, divided into two blocks separated by an inhabited 25-50 km-wide corridor, Salonga National Park is not only Africa's largest protected area of tropical rainforest, it also includes vast marshland areas and almost inaccessible gallery forests, which having never been explored can be considered as practically virgin (World Heritage Committee, 2012). Its wide range of habitats (primary forest, secondary forest, periodically and permanently flooded forest, savannah islands, dense river network) results in high biodiversity. The headwaters of some of the Congo basin's most important rivers, containing fish stocks that millions of people depend on downstream, are protected within the Salonga National Park. Fish diversity is very high. Because of its vast size it likely plays a critical role in the regulation of local climates and constitutes a very significant carbon sink.

- ▶ **An example of biological evolution and the adaptation of life forms in a complex equatorial rainforest environment** Criterion:(ix)

The plant and animal life in Salonga National Park constitute an example of biological evolution and the adaptation of life forms in a complex equatorial rainforest environment. The large size of the park ensures the continued possibility for evolution of both species and biotic communities within the relatively undisturbed forest (World Heritage Committee, 2012). Salonga National Park is likely to be the most important site for emblematic species such as the endemic bonobo (*Pan paniscus*), Congo peacock (*Afropavo congensis*) and one of the last strongholds of forest elephant (*Loxodonta cyclotis*) in the Congo basin, despite their low densities resulting from poaching (Hart et al., 2008). The vast size of the park makes it an important source area not only for these flagship species, but also for all other organisms living therein. The value of Salonga National Park resides in its ecosystem as a whole: a critically important reservoir of a peculiar, interdependent biodiversity that may serve as reservoir benefitting local communities outside due to the spillover effect replenishing adjacent areas. Similar to the elephant, the bonobo is important for maintaining the forest composition due to seed dispersal. Being mega-gardeners, these species guarantee the long-term viability of the forest that all other organisms depend on, while at the same time they contribute to this highly interconnected biological web (Beaune et al., 2013a; 2013b; 2013c).

##### Other important biodiversity values

- ▶ **A source for the discovery of new species**

The huge size of the park, its remoteness, as well as past political insecurity have contributed to Salonga National Park being one of the least known and explored parks in Central Africa. Although vertebrates are said to be relatively well known (with the exception of some mammals such as rodents and bats; and some amphibians, fishes and reptiles), recent investigations in other parks have revealed new species even among primates (Hart et al., 2012). All other taxa are mostly, if not completely, unexplored by science. This peculiar situation allows plenty of space for the discovery of new species.

## Assessment information

### Threats

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#### Current Threats

High Threat

For many years, the presence of armed militia and large-scale commercial poaching within the property have been a significant threat to the property's values, leading to a major impact on emblematic and endemic species (forest elephant, bonobo). Major anti-poaching measures by the Congolese Institute for the Conservation of Nature (ICCN) through the joint 'Operation Bonobo' with the Congolese army FARDC, have removed armed forces from the property and significantly reduced large-scale commercial poaching, however the threat of poaching continues within the property, especially in remote areas. Illegal and unsustainable fishing activities persist. Deforestation does not appear to be a significant threat to the integrity of the property, however slash and burn agriculture continues within the property and may increase the pressure as the local population grows. The long-term ecological integrity of the site remains threatened by the fact that the corridor between the northern and southern blocks needs to be strengthened to ensure a viable ecological link. Overall, threats to the property remain, however these are being addressed through improved park management resulting from the co-management between ICCN and WWF since 2016, which should be continued into the future to address all threats.

► **Fishing / Harvesting Aquatic Resources**

High Threat

*(Illegal fishing)*

Inside site, throughout(>50%)  
Outside site

Illegal fishing is widespread in the park, and destructive methods are used (particularly small mesh size, dynamite and poison) (ICCN, 2011). The rivers are easily navigable for great distances into the heart of the park. Bushmeat hunting and elephant poaching are often associated with illegal fishing activities.

► **Other**

High Threat

*(Separation of the southern and northern blocks)*

Inside site, extent of threat not known  
Outside site

The 2012 UNESCO/IUCN Reactive monitoring mission raised concerns that the only remaining part of the corridor that fulfills the role of providing an ecological continuum between the northern and southern blocks of the park was in the south-east part of the corridor, designated as the Luilaka Community Based Natural Resource Management area (CBNRM) (IUCN and UNESCO, 2012), which benefits from lower human density and an intact forest not very different from the interior of the park. Encroachment by villages continues in the block, which was raised as a matter of concern by several Committee Decisions. In the southeast portion of the corridor, at the level of the ecological continuum, three villages with associated fields are located inside park boundaries at the end of the 'route administrative' coming from Monkoto. The ensuing path traverses the ecological continuum and hosts a string of smaller settlements. Near these villages and settlements, human pressure inside the park is high and corresponds to low elephant density (ZSM, 2017). The planned installation of a guard Station at Longolongo and the planned participative park demarcation in the area (State Party report, 2020) are promising elements to counter this threat.

The 2020 UNESCO/IUCN Reactive Monitoring mission noted that the State Party has developed, with the support of the co-managers of the property, a model based on the granting of community forest concessions which aim to establish use zones and rules of use on the periphery of the property, including inside the corridor, compatible with the maintenance of functionalities between the two blocks. Six community forest concessions have been established in agreement with the communities, by the provincial authorities, covering more of 170,000 ha. However, it also noted that the creation of the ecological continuum between the two blocks is a complex process that will likely take several more years and recommended that the current efforts to minimize the impacts of human activities (eg: fishing, shifting slash and burn agriculture) on the OUV of the property and its integrity, be continued and consolidated (IUCN and UNESCO, 2020).

► **Hunting and trapping**

**High Threat**

*(Commercial poaching for ivory and bushmeat hunting)*

Inside site, throughout(>50%)  
Outside site

Poaching for ivory and bushmeat commerce (involving the majority of vertebrate species) has been very intense in past years and has thus affected the biodiversity values of the park. The Congolese military were heavily involved in this illegal activity for many years (since the late 1970s for ivory) and local elites (administrative and traditional authorities) have also often been involved (ICCN, 2011; IUCN and UNESCO, 2007, 2012). The demand for bushmeat comes from cities outside the park, such as Mbandaka and Boende to the north; Lodja, Kole and Kananga to the south; as well as cities all the way to the capital, Kinshasa.

A recent large-scale anti-poaching operation "Operation Bonobo" was implemented to address commercial poaching, which has led to the significant reduction of large-scale poaching, particularly of elephants and bonobo, although guard patrol data and recent biological survey data indicate that poaching continues to persist (IUCN and UNESCO, 2020). In the park's north block, poaching pressure originates mainly from the south-east, where park delimitation is incomplete and guard patrol posts have not yet been installed. The planned installation of a guard Station at Longolongo and the planned participative park demarcation in the area (State Party report, 2020) are promising elements to counter this threat. Already, in areas where guard patrols have been intense and consistent over the past years, guard patrol data and biological survey data indicate an important reduction in poaching pressure and a steady increase in elephant activity (ZSM, 2018a; ZSM, 2018b).

► **Crops**

**Low Threat**

*(Forest clearance for agriculture)*

Inside site, localised(<5%)  
Outside site

In 2003, six per cent of the park was affected by slash and burn agriculture (ICCN, 2011). In 2020, the Reactive monitoring mission reported that small scale slash and burn agriculture by local communities continues, however forest cover in the property estimated by the rate of deforestation has changed very little since the previous 2012 mission, and that satellite images show no significant change is predicted between 2016 and projections for 2021. The most significant changes are concentrated outside the property, near the main anthropized sectors and to a lesser extent, inside the corridor separating the two blocks (IUCN and UNESCO, 2020). As the population in the vicinity of the property continues to grow, this is likely to increase as a threat to the property.

► **War, Civil Unrest/ Military Exercises**

**Low Threat**

*(Presence of armed militia)*

Inside site, throughout(>50%)  
Outside site

In 2011, an armed rebellion set up a quasi-independent administration in the park creating insecurity and no-go areas for ICCN. A joint operation with the Congolese army FARDC entitled 'Operation Bonobo' which concluded in 2016 had success in restoring the rule of law and in acting as a strong deterrent for further insecurity. In 2020, the State Party reported that armed groups are no longer operating in the property and a FARDC military company remains stationed in Monkoto in the event of any further joint actions required with ICCN ecoguards, whose mission it is to also pursue security and safety intelligence. Furthermore, a monitoring strategy has been adopted for the property since 2018, which covers 63% of the territory of the property (IUCN and UNESCO, 2020).

**Potential Threats**

**High Threat**

Concession blocks for oil exploitation have covered Salonga National Park for many years, however it was thought that to date no concessions had been granted. In 2018, a Presidential decree attributed oil exploration permits to three blocks that cover a part of the property, with discussion of potential decommissioning of part of the Salonga and Virunga properties, raising significant concerns by stakeholders including the World Heritage Committee. Although in 2020 the State Party reported that oil exploration in the property is no longer on the political agenda, the overall current state of oil concessions and whether these overlap with the property or not remains unclear. Until such clarification is provided by

the State Party, oil exploration constitutes a high potential threat to the property.

► **Oil/ Gas exploration/development**

**High Threat**

*(Oil exploitation concessions)*

Inside site, not applicable  
Outside site

Concession blocks for oil exploitation have covered Salonga National Park for many years, however it was thought that to date no concessions had been granted. In 2018 and 2019, the World Heritage Committee raised significant concerns over a 1 February 2018 Presidential decree (issued by an outgoing government) which attributed oil exploration permits to three blocks that cover a part of the property, and the related potential decommissioning of part of the Salonga and Virunga properties, reiterating that extractives are incompatible with World Heritage status and requesting the concessions be cancelled (UNESCO, 2018 and 2019). Concerns were raised by various national and international government and civil society stakeholders including ICCN, WWF, community chiefs and international dignitaries (IUCN and UNESCO, 2020). In 2020, the government reported to the World Heritage Committee and also the Reactive Monitoring mission, that oil exploration in the property is no longer on the political agenda (State Party of the DRC, 2020; IUCN and UNESCO 2020), however the overall current state of oil concessions and whether these overlap with the property or not remains unclear. The mission report therefore requested clarification from the State Party (IUCN and UNESCO, 2020), and until such clarification is provided, oil exploration constitutes a high potential threat to the property.

► **Tourism/ visitors/ recreation**

**Low Threat**

*(Potential threat of disease transmission)*

Inside site, extent of threat not known  
Outside site

The recent outbreaks of Ebola Hemorrhagic Fever in areas north of the Park (Mbandaka and Boende regions), coupled with the constant movement of people and traders between the Park and Mbandaka/Boende, pose issues of potential disease transmission to both bonobos and the local human communities (IUCN Consultation, 2020). The presence of researchers/visitors/tourists may also enhance disease transmission and pose a risk to ape populations. LuiKotale Bonobo Project (LKBP) uses surgical masks in order to prevent transfer of human respiratory diseases to bonobos. Within the framework of the LKBP in collaboration with RKI and INRB, reversed disease pathways were investigated. Other threats, such as the zoonotic transmission of blood-borne pathogens from animals to humans, were identified, with local young men and mature women handling bushmeat being a risk group (Mossoun et al., 2017).

**Overall assessment of threats**

**High Threat**

For many years, the presence of armed militia and large-scale commercial poaching within the property have been a significant threat to the property's values, leading to a major impact on emblematic and endemic species (forest elephant, bonobo). Major anti-poaching measures by the Congolese Institute for the Conservation of Nature (ICCN) through the joint 'Operation Bonobo' with the Congolese army FARDC, have removed armed forces from the property and significantly reduced large-scale commercial poaching, however the threat of poaching continues within the property, particularly in remote areas that remain under limited protection. Illegal and unsustainable fishing activities persist. Deforestation does not appear to be a significant threat to the integrity of the property, however slash and burn agriculture continues within the property and may increase the pressure as the local population grows. The long-term ecological integrity of the site remains threatened by the fact that the corridor between the northern and southern blocks needs to be strengthened to ensure a viable ecological link. Overall, threats to the property remain, however these are being addressed through improved and more consistent park management resulting from the co-management between ICCN and WWF since 2016, which should be continued into the future to address all threats. Concession blocks for oil exploitation have covered Salonga National Park for many years, however it was thought that to date no concessions had been granted. In 2018, a Presidential decree attributed oil exploration permits to three blocks that cover a part of the property, with discussion of potential decommissioning of part of the Salonga and Virunga properties, raising significant concerns by stakeholders including the World Heritage Committee. Although in 2020 the

State Party reported that oil exploration in the property is no longer on the political agenda, the overall current state of oil concessions and whether these overlap with the property or not remains unclear. Until such clarification is provided by the State Party, oil exploration constitutes a high potential threat to the property.

## Protection and management

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### Assessing Protection and Management

#### ► Management system

Some Concern

Since 2016, the Salonga National Park has been co-managed through a 3-year partnership agreement between ICCN and WWF. The agreement expired in August 2018 and, following an evaluation process by ICCN in July 2019, a new partnership agreement is under negotiation (State Party of DRC, 2020). The property has a 2016-2025 Management and Development Plan, and a new three-year plan has been drawn up for the period 2019-2021. On this basis, annual operations plans are implemented with available funding (European Union project of 17.4 million euros for 2017-2021, KFW project renewed for the period 2020-2021, PBF project phase IV under negotiation) as part of the co-management contract between ICCN and WWF (State Party of the DRC, 2020). The 2020 UNESCO/IUCN Reactive Monitoring mission concluded that overall management has improved significantly since the previous 2012 Reactive Monitoring mission and highlighted the signing of a new co-management agreement as a matter of priority (IUCN and UNESCO, 2020).

However, various important management issues remain to be addressed including, but not limited to, the critical renewal of the co-management arrangement which expired in 2018; ensuring full surveillance of the park and ecological corridor; effectively managing threats that continue such as poaching; securing sustainable long-term funding; and establishing a long term monitoring programme to ensure a fully effective management system for the property and the recovery of flagship species of elephants and bonobo. Further improvements are anticipated through a renewed co-management agreement and securing funding into the future.

#### ► Effectiveness of management system

Some Concern

Management effectiveness has greatly improved following the establishment of co-management between WWF and ICCN in 2016 and the appointment of numerous senior staff. Since 2016, an Integrated Management Effectiveness Tool (IMET) administration session has been held each year to assess the management effectiveness of Salonga National Park. The State Party reports a large improvement between 2016 and 2019 (16.7% (2016); 30.7% (2017); 29.9% (2018) and 67.2% (2019)), resulting from controlling threats as well as political and social support for management (State Party of the DRC, 2020). The presence of armed forces that inhibited management across the property have been largely addressed through recent operations and surveillance of the property continues to increase (see other sections). However, although conditions are improving, various measures remain to be put in place to ensure a fully effective management system. See also management section above.

#### ► Boundaries

Some Concern

The demarcation of the property boundaries continues. In 2020, 121 km (52%) of the total 231 km had been demarcated, with priority given to problem areas with local communities (State Party of the DRC, 2020).

#### ► Integration into regional and national planning systems

Some Concern

Given the extreme poverty and isolation of the region, and the current absence of effective regional planning and development structures, there is little integration of park management into regional and national planning systems. The situation is further complicated by the fact that the park lies astride four

Provinces. This aspect is expected to be strongly implemented by the present administration.

► **Relationships with local people**

**Some Concern**

Relations with local populations have generally been conflictual for most of the park's history. As the region is extremely poor and isolated, 95% of local peoples' activities are based on natural resource use. As these resources become impoverished in the periphery of the park, people have moved inside the park to exploit them. Only relatively recently have community conservation and environmental education activities been conducted, which were essentially limited to the corridor between the two blocks, at Mundja (ICCN, 2011), and in the Groupement de Bolongo, where LKBP has been operating since 2002 (Fruth, 2011). In 2020, rural development programs to empower local communities are underway, including through engagement of local development committees (CLD) in the villages located in the Monkoto corridor in order to better guide the strengthening of management capacities. In the same area, the park team supported the structuring of rice producers in Monkoto, which enabled the establishment of 4 cooperatives which obtained their letters of approval as Association Sans But Lucratif from the administrative authority local (AT). In the Watsikengo area, to the north of the property, a storage center has been built for the benefit of 21 associations of coffee planters which have been set up on the 4 axes. The provisional committees of all these Associations have been set up, and support has been given to them for the preparation of basic texts. In the southern zone of the property, a survey was carried out to assess the impacts of the park's support at its various intervention sites. A feedback workshop was organized for the benefit of stakeholders including, among others: agricultural households, fishermen, hunters, traders, teachers and shipowners with agricultural activities. In addition, as part of the structuring and capacity building of local organizations, 144 Farmer Organizations and 69 Local Development Committees benefited from support in this area.

Since 2016, the UGPNS has been making huge efforts to settle Monkoto farmers through the "pilot farm" approach, this approach consists in promoting sustainable and profitable agriculture. Established in 2016 with 10 pilot farmers, these pilot farmers are mirrors in their respective villages, their mission is to promote this approach and also help other farmers wishing to replicate this model at home, but also to share the seeds. The team has set up a permanent monitoring system for pilot and replicating farmers and provides ad hoc technical support. During this year, more than 60 replicators were identified, including 40 sites mapped and monitored, which revealed several technical weaknesses for which advice and support were provided (State Party of the DRC, 2020). A similar approach, has been implemented by OXFAM in the area of Dekese (Kasai), starting from 2017. The transport of the agricultural products produced within the framework to the main market of the country (including Kinshasa), was also facilitated (IUCN Consultation, 2020).

► **Legal framework**

**Some Concern**

The property is designated as a National Park under various national legislation summarised in the latest 2020 UNESCO/IUCN Mission report. The legal framework has been considered inadequate due to land tenure disputes relating to the historic presence of Yaelima communities in the southern block, the result being that these communities refused to leave and their (illegal) presence has been tolerated by ICCN. A voluntary relocation activity is underway initiated by WCS and with OXFAM (State Party of DRC, 2020). In 2018, important concerns were raised over a new Presidential decree passed to allocate an oil concession that potentially overlaps with the property (see "Potential Threats").

► **Law enforcement**

**Serious Concern**

In 2011, an armed rebellion set up a quasi-independent administration in the park creating insecurity and no-go areas for ICCN. A joint operation with the Congolese army FARDC entitled 'Operation Bonobo' which concluded in 2016 had success in restoring the rule of law and in acting as a strong deterrent for further insecurity. In 2020, the State Party reported that armed groups are no longer operating in the property and a FARDC military company remains stationed in Monkoto in the event of any further joint actions required with ICCN ecoguards, whose mission it is to also pursue security and safety intelligence. Furthermore, the 2020 mission team was advised that a surveillance strategy has been adopted for the property since 2018, which in 2020 covered 63% of the territory of the property across six monitoring areas. Plans to create two new operational zones will increase these to eight sectors and



increase the property's surveillance coverage rate to 80% (State Party of the DRC, 2020; IUCN and UNESCO, 2020). Overall, law enforcement in the property has significantly improved from the presence of armed groups in the past, however areas of the property remain unpatrolled, noting that in 2019 three strategic patrol posts were no longer fully operational in the Watsi Kengo Sector (State Party of the DRC, 2020) which is historically known to be the best protected Sector (IUCN Consultation, 2020), and threats such as poaching continue, so law enforcement efforts should be further strengthened to ensure law enforcement is fully effective in addressing threats and ongoing management. Furthermore, consistent and regular patrol coverage over time is required to ensure appropriate protection of the property.

As of June 2019, WWF's conservation partner Zoological Society of Milwaukee (ZSM) stopped operating in DRC, thereby ending its Bonobo & Congo Biodiversity Initiative (BCBI) program for Salonga. ZSM's conservation support regarding law enforcement concentrated on the Watsi Kengo Sector and allowed 3 strategic patrol posts [Estate, Lotulo and Biondo Biondo] to initiate patrols directly from the posts, whereas park management supports patrols that consistently originate from the 6 main ICCN Stations only. It is recommended that patrol-post-based patrols are reintegrated into park management in order to perpetuate the historically high level of protection for these areas (IUCN Consultation, 2020).

In 2019, BuzzFeed News published a series of articles making serious allegations of human rights abuse by government eco-guards supported by WWF, including in Salonga National Park. In response, WWF commissioned a high-level independent review to investigate the allegations and new management measures included the implementation of a new Code of Conduct, to be signed by all park employees; a plan to improve and expand the complaints mechanism in Salonga in 2019; an immediate end to joint patrols between ecoguards and military units; and ongoing efforts to help implement community forest enterprises as one way to ensure the involvement of local populations and sustainable livelihoods for communities as stewards of conservation (WWF, 2019).

► **Implementation of Committee decisions and recommendations**

**Some Concern**

A number of requests and recommendations have been made by the World Heritage Committee every year since the inscription of the property on the List of World Heritage in Danger. At the time of this report, the most recent ones are included in Decision 43COM 7A.10 (World Heritage Committee, 2019). During this time, the State Party has addressed some of these requests, however many remain to be addressed.

► **Sustainable use**

**Some Concern**

The only legal use of natural resources is fishing on the rivers that form the boundary of the park. For many years, this has been a source of conflict between the park and the communities, but over the past three years, progress has been made to clarify rules and regulations and co-management agreements have been signed (see above). However, no protection zones were defined, and there are strong indications that current methods employed are no longer sustainable.

► **Sustainable finance**

**Some Concern**

Annual operations plans are implemented with available funding (European Union project of 17.4 million euros for 2017-2021, KfW project renewed for the period 2020-2021, PBF project phase IV under negotiation) as part of the co-management contract between ICCN and WWF. The total amount to be mobilized for the next 3 years: 2 million Euro (German funding under the biodiversity conservation program and sustainable management of forests), \$ 8.5 million (American funding under the CAFEC program ) and almost 1.5 million remaining as part of the financing of the 11th European Development Fund) (State Party of the DRC, 2020).

The existing funding for the park can cover 60 to 70% of the needs for the current year (2020) + 1 year. The process of negotiating new funding is underway; the donors reaffirmed their commitment to support the management of the property over a longer period (USAID from 2020 to 2024, KfW from 2020 to 2021 and European Union from 2022 to 2028) (State Party of the DRC, 2020). It will be important to

secure ongoing long term sustainable funding for the property into the future.

► **Staff capacity, training, and development**

**Serious Concern**

Senior management capacities have been greatly improved with the hiring of new qualified personnel in recent years. The Salonga National Park staff includes about 30 WWF administrative and technical staff working in offices in Monkoto, Oshwe and Kinshasa; ICCN has a dozen administrative and technical employees, located in Monkoto. There are 300 eco-guards, who work from 6 ranger stations of the park: Monkoto (located east of the southern block), Mondjoku (west of the northern block), Yokelelu (east of the northern block), Watsikengo (north of the northern block), Anga (south of the southern block) and Mundja (northwest of the southern block), and several dozen permanent and temporary patrol posts (Salonga National Park, 2020). Since 2015, patrol data has been collected using LEM sheets and GPS devices provided to patrol teams who have received training in this area. Agents have also been trained in the use of the SMART tool and the data collected is transmitted to the site SMART officer who compiles it and makes it available to managers to allow decision-making for patrol planning. The availability of financial means has also improved working conditions (patrol rations, performance bonuses, equipment, health care). The Park Management has implemented a disciplinary policy to ensure compliance with standards and procedures, with a preventive component. This disciplinary policy aims to combat the various misconducts of eco-guards and human rights violations (State Party of DRC, 2020). As a result, 102 eco-guards were retrained in November 2018 and another training has taken place in 2020 (IUCN Consultation, 2020).

► **Education and interpretation programs**

**Some Concern**

In 2020, the finalization of an environmental education and awareness strategy is underway (State Party of the DRC, 2020). Education and sensitisation activities are conducted by the various partners in the areas where they work. A programme of environmental education financially supported by USFWS has been conducted in secondary schools in the sector of Lokolama, including teachers, pupils and the population of adjacent villages (Fruth, 2014).

► **Tourism and visitation management**

**Some Concern**

There are currently no tourism activities in Salonga National Park. However, with funding from the ARCUS Foundation, LKBP (MPI) carried out an evaluation for bonobo ecotourism in 2011, and conducted a viability analysis thereafter. Areas such as LuiKotale forest with ongoing research and conservation activities have a high potential for ecotourism that may promote community development, however the high costs of investment have to be balanced against the profit for conservation and community development (Hohmann & Fruth, 2013; Fruth, 2016). Even though tourism is not mentioned in the management plan, identification of ecotourism opportunities is part of the co-management agreement with WWF (IUCN Consultation, 2017), and in 2020 the State Party reports that various protection actions are aimed at a future increase in the populations of flagship species with a view to organizing tourism (State Party of the DRC, 2020).

► **Monitoring**

**Some Concern**

Since its creation in 1970, very few ecological monitoring studies have been carried out and a monitoring programme has been absent. Studies on elephants were carried out in 1999 (Alers et al. 1992), 2004 (Blake 2005 and Hart 2006), and for the bonobo, only one complete study on the distribution and abundance of bonobos in the South block had been carried out (Grossman et al. 2008). Following inscription on the List of World Heritage in Danger, and following the recommendations of Reactive monitoring missions, various partners have increased their efforts to better understand the biological values of the property (State Party of the DRC, 2020), such as the Zoological Society of Milwaukee (ZSM) (Reinartz et al., 2006), Max Planck Institute (MPI) (Fruth & Mohneke, 2008) and the Wildlife Conservation Society (Fruth, 2016).

From 2015 to 2018, a large scale inventory of flagship species (elephant and bonobo) was carried out by various organizations (WCS, ZSM and ICCN/WWF/MPI) throughout the park and the corridor, and of other mammal species and Congolese peacock in only the southern block (2016-2018), covering at total area

of 38,252 km<sup>2</sup> (State Party of the DRC, 2020). The results indicated that populations of flagship elephant and bonobo species have stabilised, i.e. with an estimated population of around 1,400 elephants (State Party of DRC, 2020) compared to 1,200 recorded by the CITES MIKE program in 2004 (Blanc et al., 2007). Likewise, the number of bonobos remains stable and in the order of 15,000 individuals in the property and the corridor separating the two blocks (IUCN and UNESCO, 2020).

An ecological monitoring programme will be continued into the future, covering six large sample sub-blocks within the property, and the Reactive Monitoring mission recommended that this monitoring be extended to also include the ecological corridor (IUCN and UNESCO, 2020).

► **Research**

**Some Concern**

ZSM conducts research in the northern block in the Watsi Kengo sector, between the Salonga and Yenge Rivers. Research focuses on bonobo ecology, forest elephants and the impact of human activities on their distribution. MPI and LMU are conducting research on three habituated groups of bonobos in two research camps (LuiKotale and Ekongo) close to the fringe of Block South. Research focuses on all aspects of bonobos' ecology, physiology, behaviour and evolutionary history as well as on ethnobotany. MPI and RKI (Robert Koch Institute, Germany) conducted studies focusing on zoonotic diseases and the threat of transmission of human diseases to wild bonobos and vice versa. The presence of research activities contributes significantly to the protection of the sites where research is ongoing.

**Overall assessment of protection and management**

**Serious Concern**

The overall protection and management of Salonga National Park is improving considerably since the establishment of a co-management arrangement between ICCN and WWF in 2016. Law enforcement is being strengthened including through a major operation between ICCN and the Congolese army FARDC to remove armed forces from the property and significantly reduce commercial poaching; surveillance is increasing (63% in 2020); boundaries are being demarcated (52% in 2020); etc. However, various important management issues remain to be addressed including, but not limited to, the critical renewal of the co-management arrangement which expired in 2018; ensuring full surveillance of the park and ecological corridor; effectively managing threats that continue such as poaching; securing sustainable long-term funding; and establishing a long term monitoring programme to ensure a fully effective management system for the property and the recovery of flagship species of elephants and bonobo. Further improvements are anticipated through a renewed co-management agreement and securing funding into the future. Finally, although the State Party reports that oil exploration is no longer on the political agenda, clarification is required as to whether oil concessions overlap with the property or not.

► **Assessment of the effectiveness of protection and management in addressing threats outside the site**

**Some Concern**

The overall management of Salonga National Park is improving since the establishment of a co-management arrangement between ICCN and WWF in 2016, including to address threats from outside the site such as pressure from armed forces and forest concession agreements with local communities in the ecological corridor between the two components of the property. However, the management of external pressures remains of concern, including a continuing population growth in the park's immediate vicinity and the need to ensure improved ecological connectivity in the corridor between the two blocks. Regarding the issue of oil exploration in the DRC in the past, the State Party reports that oil exploration is no longer on the political agenda, however the potential presence of oil concessions in and around the property remains to be clarified and therefore constitutes a potential concern for the property in future until clarified.

► **Best practice examples**

Small-scale projects, operating permanently and long-term in the area, such as LKBP, provide good examples for evolved project-stakeholder relationships, communal development, conservation measures and conservation success. They generate data crucial for large-scale management plans

due to generation of detailed knowledge on species concerned.

## State and trend of values

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### Assessing the current state and trend of values

#### World Heritage values

- ▶ **Vast area of intact lowland tropical rainforest covering a wide range of habitats with high biodiversity.**

**High Concern**  
**Trend:Improving**

The 2020 Reactive monitoring mission reported that Salonga National Park remains among the few forests still ecologically functional in Central Africa. Small scale slash and burn agriculture by local communities continues and may increase in future with growing populations, however forest cover in the property, estimated by the rate of deforestation, has changed very little since the previous 2012 mission, and satellite images show no significant change is predicted between 2016 and projections for 2021. The most significant changes are concentrated outside the property, near the main anthropized sectors and to a lesser extent, inside the corridor separating the two blocks (IUCN and UNESCO, 2020). As the State Party continues its work on participatory management with local communities and forest concessions in the ecological corridor between the two blocks of the property, strengthened management should ensure that deforestation is effectively managed into the future.

- ▶ **An example of biological evolution and the adaptation of life forms in a complex equatorial rainforest environment**

**Critical**  
**Trend:Stable**

The significant loss of emblematic species such as the forest elephant and the bonobo to large-scale poaching over the last decades has significantly impacted the values of the property, noting also the ecosystem consequences as these species are the two largest seed dispersers. They are responsible for maintaining the forest's current floral diversity. When they are gone, many of the big trees bearing large, fleshy fruit needing animal dispersal (endozoochory) will disappear and likely be replaced by wind dispersed species. The complexity of this system, including insight into primary and secondary dispersers, has been researched by Beaune and colleagues (Beaune et al., 2012a; b; 2013a; b; c) and gives insight into the complexity of this fragile ecosystem. Recent 2015-2018 biological inventories of Salonga National Park allowed for the collection of significant data on the fauna and flora of the property including terrestrial vertebrates, entomofauna and the discovery of new species for science. The inventory of flagship species (elephant and bonobo) indicated that populations of these species have stabilised, i.e. with an estimated population of around 1,400 elephants (State Party of DRC, 2020) compared to 1,200 recorded by the CITES MIKE program in 2004 (Blanc et al., 2007). The number of bonobos remains stable and around 15,000 individuals in the property and the corridor separating the two blocks. An ecological monitoring programme will cover six large sample sub-blocks within the property, and the Reactive Monitoring mission recommended that this monitoring be extended to also include the ecological corridor (IUCN and UNESCO, 2020). Six active elephant bais (Bekalikali, Iyono, Yusu, Somo, Bomanga and Premiere Piste) are being monitored by camera traps since 2019; the bai data should allow to assess the evolution of threat levels over time. It is promising that areas with consistent patrol coverage demonstrate an increase in elephant activity and reduction in human infiltration (Zoological Society of Milwaukee, 2018a;b).

It is positive that elephant and bonobo populations appear to have stabilised, however their numbers remain far below the ecological potential of Salonga (IUCN and UNESCO, 2020), and therefore the conditions for their recovery must be ensured through effective management going forward. Other species of high conservation value such as forest buffalo, leopard, African golden cat and giant ground pangolin also show small population size (Bessone et al., 2020), and would benefit from the further reduction of poaching.

## Summary of the Values

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

**High Concern**  
**Trend: Stable**

Forest cover, habitat diversity and floral diversity values are still intact despite some local deforestation by subsistence agriculture in the two enclaves in the park and along disputed park boundaries. The significant loss of emblematic species, i.e. forest elephant and the bonobo, to large-scale poaching over the last decades has significantly impacted the values of the property, noting also the ecosystem consequences of these species being the two largest seed dispersers.

The most recent 2015-2018 biological inventories of Salonga National Park included terrestrial vertebrates, entomofauna and the discovery of new species for science. The inventory of flagship species indicated that elephant and bonobo populations have stabilised, which combined with the significant reduction in large-scale commercial poaching, is encouraging. However, since their population numbers remain far below the ecological potential of Salonga and poaching pressures continue, the conditions for their subsequent protection and recovery must be ensured through effective long-term ecological monitoring and management of threats going forward.

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

**Data Deficient**  
**Trend: Data Deficient**

Not applicable.

## Additional information

### Benefits

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#### Understanding Benefits

##### ► Carbon sequestration, Flood prevention, Water provision (importance for water quantity and quality)

Several very large rivers start in the park or flow through it. The vast area of forest through which they flow ensures regulation of downstream flows. The 36,000 km<sup>2</sup> of dense tropical rainforest also constitutes an important carbon sink. This vast area of intact and continuous rainforest almost certainly has an important regulating effect on regional and continental climate systems.

Factors negatively affecting provision of this benefit :

- Climate change : Impact level - Moderate, Trend - Increasing

##### ► Outdoor recreation and tourism

A first ecotourism assessment made in 2011 highlights the potential for tourism. Further evaluations provide detailed assessments of benefits and risks (Hohmann & Fruth, 2013; Fruth, 2016).

##### ► Fishing areas and conservation of fish stocks

Salonga National Park is highly valued for its fish diversity on which millions of people depend directly or indirectly. The park acts as a reservoir for fish stocks downstream.

Factors negatively affecting provision of this benefit :

- Overexploitation : Impact level - High, Trend - Increasing

- Invasive species : Impact level - Moderate

## Summary of benefits

The national and global benefits in terms of nature conservation (central African humid forest biodiversity and endemism) and environmental services (water, carbon, climate regulation) are exceptionally important. However, the nature conservation benefits are at risk because of the scale of the poaching of wildlife.

## Projects

### Compilation of active conservation projects

<b>Nº</b>	<b>Organization</b>	<b>Project duration</b>	<b>Brief description of Active Projects</b>
1	UGPNS- WWF/ICCN		In charge of park management, improvement of ICCN infrastructures and accessibility, support to capacity development of rangers and social benefits. Community forest development – eco corridors, development planning in periphery.
2	Wildlife Conservation Society		WCS implements CARPE funded activities in the Salonga landscape. Works on conflict resolution issues in and around the park, participatory boundary marking, and wildlife surveys and monitoring.
3	Milwaukee Zoological Society		Conducts research on the ecology of bonobos, undertakes monitoring, and supports anti-poaching, staff training, education and various development initiatives.
4	LuiKotale Bonobo Project (Projet MPI)		Research on ecology and social behaviour of bonobos at the LuiKotale research site at the outside fringe of Block South of Salonga National Park. Focus on research and conservation on biodiversity, ethnobotany and medicinal plants; environmental education, biomonitoring and longitudinal studies.
5	Gottfried Hohmann; Barbara Fruth, Directors LuiKotale Bonobo Project (LKBP)		Operates in community development and agricultural projects.
6	Impresa Servizi Coordinati - ISCO		Supports the park with regards to the improvement of infrastructures and accessibility.
7	Oxford Committee for Famine Relief OXFAM, Integrated Civil Society Organizations System		Operates in community development and agricultural projects.

## REFERENCES

### Nº References

- 1 Afrique Nature International (AFI), 2016 - Établissement d'une Fondation dans le cadre d'un partenariat entre l'ICCN et le WWF pour la cogestion du Parc national de la Salonga; projet n°40000448 EU Salonga, 106 p
- 2 Beaune, D., Bollache, L., Bretagnolle, F. and Fruth, B. (2012a). Dung beetles are critical in preventing post-dispersal seed removal by rodents in Congo rain forest. *Journal of Tropical Ecology*, 28, pp.507-510.
- 3 Beaune, D., Bollache, L., Fruth, B. and Bretagnolle, F. (2012b). Bush pig (*Potamochoerus porcus*) seed predation of bush mango (*Irvingia gabonensis*) and other plant species in Democratic Republic of Congo. *African Journal of Ecology*, 50, pp.509-512.
- 4 Beaune, D., Bretagnolle, F., Bollache, L., Bourson, C., Hohmann, G. and Fruth, B. (2013c). Ecological services performed by the bonobo (*Pan paniscus*): seed dispersal effectiveness in tropical forest. *Journal of Tropical Ecology*, 29(5), pp.367-380.
- 5 Beaune, D., Bretagnolle, F., Bollache, L., Hohmann, G., Surbeck, M. and Fruth, B. (2013b). Seed dispersal strategies and the threat of defaunation in a Congo forest. *Biodiversity and Conservation*, 22(1), pp.225-238.
- 6 Beaune, D., Fruth, B., Bollache, L., Hohmann, G. and Bretagnolle, F. (2013a). Doom of the elephant-dependent trees in a Congo tropical forest. *Forest Ecology and Management*, 295, pp.109-117.
- 7 Bessone, M., et al. (2020). "Drawn out of the shadows: Surveying secretive forest species with camera-trap distance sampling." *Journal of Applied Ecology* 57(5): 963-974.
- 8 Blanc, J.J., Barnes, R.F.W., Craig, G.C., Dublin, H.T., Thouless, C.R., Douglas-Hamilton, I. and Hart, J.A. (2007). African Elephant Status Report 2007: an update from the African Elephant Database. Occasional Paper Series of the IUCN Species Survival Commission, No. 33. IUCN/SSC African Elephant Specialist Group. IUCN, Gland, Switzerland. Vi + 276 pp.
- 9 Bolembé, M. (2018) - Rapport de sensibilisation sur la malnutrition face à la conservation des RN dans le secteur Bianga. WCS-BCP-PNS/USAID, mars 2018, 5 p
- 10 CERDI-BAS/ASBL (2016) - Etude stratégique sur les options de gestion des populations résidentes dans le Parc national de la Salonga. Rapport final, WWF, août 2016, 80 p.
- 11 ERAIFT/UNESCO-MAB (non daté) - Parc National de la Salonga, République Démocratique du Congo
- 12 Fruth, B. (2011). The CBD in the Democratic Republic of Congo (DRC): the project "The Cuvette Centrale as a reservoir of medicinal plants" in the process of implementation. *Curare*, 34, pp.51-62.
- 13 Fruth, B. (2014). Final Report for USFWS; "Improving in-situ conservation of bonobos (*Pan paniscus*) by environmental education and capacity building in schools and villages West of Salonga National Park, DRC".
- 14 Fruth, B. (2016). The ARCUS Foundation Interim Narrative Report; "Viability Assessment for Bonobo Ecotourism in the Salonga National Park Region".
- 15 Grossmann, F., Hart, J.A., Vosper, A. and Ilambu, O. (2008). Range occupation and population estimates of bonobo in the Salonga National Park: Application to large scale surveys of bonobos in the Democratic Republic of Congo. In: T. Furuichi and J. Thompson (eds) *The Bonobos: Behaviour, Ecology and Conservation*. New York: Springer, pp. 189-216.

**Nº References**

- 
- 16 Hart, J. A. Grossmann, F., Vosper, A., and Ilanga, J. (2008). Human Hunting and its Impact on Bonobos in the Salonga National Park, Democratic Republic of Congo In: T. Furuichi, and J. Thompson (eds) *The Bonobos: Behaviour, Ecology and Conservation*. New York: Springer, pp. 189–216.
- 
- 17 Hart, J.A., Detwiler, K.M., Gilbert, C.C., Burrell, A.S., Fuller, J.L., Emetsu, M., Hart, T.B., Vosper, A., Sargis, E.J. and Tosi, A.J. (2012). Lesula: a new species of *Cercopithecus* monkey endemic to the Democratic Republic of Congo and implications for conservation of Congo’s Central Basin. [online] *PLoS One*, 7(9), p.e44271. Available at: [Accessed 11 March 2019].
- 
- 18 Hohmann G. and Fruth B. (2013). Report to KMDA; “Anti-poaching patrols protect the bonobo population at LuiKotale: Combining forces against killing of bonobos and other wildlife in the buffer zone of Salonga National Park, DRC”.
- 
- 19 ICCN (2018) – Stratégie d’éducation et de sensibilisation environnementales pour le paysage Salonga, novembre 2018, 45 p.
- 
- 20 ICCN. (2011). Plan Général de Gestion du Parc National de la Salonga.
- 
- 21 IUCN Consultation. (2017). IUCN World Heritage Confidential Consultation: Salonga National Park, Democratic Republic of Congo.
- 
- 22 IUCN and UNESCO. (2007). Reactive Monitoring Mission Report Salonga National Park (Democratic Republic of the Congo). [online] Gland, Switzerland and Paris, France: IUCN and UNESCO World Heritage Centre. Available at: [Accessed 12 March 2019].
- 
- 23 IUCN and UNESCO. (2012). Reactive Monitoring Mission Report Salonga National Park (Democratic Republic of the Congo). [online] Gland, Switzerland and Paris, France: IUCN and UNESCO World Heritage Centre. Available at: [Accessed 12 March 2019].
- 
- 24 IUCN and UNESCO. (2020). Joint Monitoring Mission Report Salonga National Park (Democratic Republic of the Congo). Gland, Switzerland and Paris, France: IUCN and UNESCO World Heritage Centre. [online] Available at: <https://whc.unesco.org/en/list/280/documents/> (Accessed 20 July 2020).
- 
- 25 Mampeta Wabasa, S. et al. (2014) - Recensement et enquête socioéconomique sur la Communauté Yaelima/Parc National de la Salonga/Sud, Territoire De Dekese/Kasaï-Occ. Rapport de mission, Novembre-Décembre 2014, WCS/RAPAC/ICCN/ECOFAC, 109 p
- 
- 26 Mohneke M., Fruth B. (2008). Bonobo (*Pan paniscus*) Density Estimation in the SW-Salonga National Park, Democratic Republic of Congo: Common Methodology Revisited. In: Furuichi T., Thompson J. (eds) *The Bonobos. Developments in Primatology: Progress and Prospects*. New York: Springer, pp. 151-166.
- 
- 27 Mossoun, A., Calvignac-Spencer, S., Anoh, A. E., Pauly, M. S., Driscoll, D. A., Michel, A. O., Nazaire, L. G., Pfister, S., Sabwe, P., Thiesen, U., Vogler, B. R., Wiersma, L., Muyembe-Tamfum, J.-J., Karhemere, S., Akoua-Koffi, C., Couacy-Hymann, E., Fruth, B., Wittig, R. M., Leendertz, F. H. and Schubert, G. (2017). Bushmeat hunting and zoonotic transmission of simian T-lymphotropic virus 1 in tropical West and Central Africa. *Journal of Virology*, 91, e02479-16. Available at: [doi.org/10.1128/JVI.02479-16](https://doi.org/10.1128/JVI.02479-16) (Accessed: 10 July 2019).
- 
- 28 Plan d’affaires décennal 2016 - 2025, 43 p.
- 
- 29 Reinartz, G.E., Bila Isia, I., Ngamankosi, M. and Wema, L.W. (2006). Effects of forest type and human presence on bonobo (*Pan paniscus*) density in the Salonga National Park. *International Journal of Primatology*, 27(2), pp.603-634.
- 
- 30 Salonga National Park. (2020). Our Work [online] Available at: <https://salonga.org/our-work/> (Accessed 10 July 2020).
-



**Nº References**

- 
- 31 State Party of the Democratic Republic of Congo. (2018). Report of the State Party to the World Heritage Committee on the state of conservation of the Salonga National Park (Democratic Republic of Congo). [online] Institut Congolais pour la Conservation de la Nature (ICCN). Available at: <https://whc.unesco.org/en/list/280/documents/> (Accessed 19 September 2019).
- 
- 32 State Party of the Democratic Republic of Congo. (2019). Report of the State Party to the World Heritage Committee on the state of conservation of the Salonga National Park (Democratic Republic of Congo). [online] Institut Congolais pour la Conservation de la Nature (ICCN). Available at: <https://whc.unesco.org/en/list/280/documents/> (Accessed 19 September 2019).
- 
- 33 State Party of the Democratic Republic of Congo. (2020). Report of the State Party to the World Heritage Committee on the state of conservation of the Salonga National Park (Democratic Republic of Congo). [online] Institut Congolais pour la Conservation de la Nature (ICCN). Available at: <https://whc.unesco.org/en/list/280/documents/> (Accessed 5 March 2020).
- 
- 34 State Party of the Democratic Republic of Congo. (2020). Report of the State Party to the World Heritage Committee on the state of conservation of the Salonga National Park (Democratic Republic of Congo). [online] Institut Congolais pour la Conservation de la Nature (ICCN). Available at: <https://whc.unesco.org/en/list/280/documents/> (Accessed 5 March 2020).
- 
- 35 UGPNS (2018) - Rapport d'auto-évaluation de la mise en oeuvre de l'accord de cogestion du PNS : période 2015-2018 - Auto-évaluation par l'Unité de Gestion du PNS, Août 2018, 45 p
- 
- 36 UICN, Mars 1984 - Résumé sur la proposition d'inscription sur la Liste du patrimoine mondial du Parc national de la Salonga, n° d'ordre 280 - Dace de réception par le Secrétariat : 12.4.83, 4p
- 
- 37 UNESCO. (2018). Report on the State of Conservation of Salonga National Park, Democratic Republic of Congo. State of Conservation Information System of the World Heritage Centre. [online] Paris, France: UNESCO World Heritage Centre. Available at: <https://whc.unesco.org/en/soc/3814> (Accessed 19 September 2019).
- 
- 38 UNESCO. (2019). Report on the State of Conservation of Salonga National Park, Democratic Republic of Congo. State of Conservation Information System of the World Heritage Centre. [online] Paris, France: UNESCO World Heritage Centre. Available at: <https://whc.unesco.org/en/soc/3846> (Accessed 19 September 2019).
- 
- 39 WWF. (2019). Statement on safeguarding human rights in conservation, and addressing allegations of human rights abuse. [online] 10 July. Available at: [https://wwf.panda.org/wwf\\_news/wwf\\_independent\\_review\\_/?349...](https://wwf.panda.org/wwf_news/wwf_independent_review_/?349...) (Accessed 19 September 2019).
- 
- 40 World Heritage Committee. (2012). Decision: 36 COM 8E. Adoption of retrospective Statements of Outstanding Universal Value. Salonga National Park Democratic, Republic of the Congo. Context of Decision WHC-12/36.COM/8E [online] Saint Petersburg, Russian Federation: Publisher, pp.15-16. Available at: [Accessed 11 March 2019].
- 
- 41 World Heritage Committee. (2017). Decision: 41 COM 7A.10 Salonga National Park (Democratic Republic of the Congo) [online] Krakow, Poland: Publisher, pp.24-25. Available at: [Accessed 11 March 2019].
- 
- 42 World Heritage Committee. (2018). Decision WHC/18/42.COM/7A.52. General Decision on the properties of the Democratic Republic of the Congo (DRC). [online] Manama, Bahrain: World Heritage Committee. Available at: <https://whc.unesco.org/archive/2018/whc18-42com-18-en.pdf> (Accessed 27 September 2019).
- 
- 43 Zapiti, K ; et Kapuku, M., 2018 - Evaluation de l'efficacité de gestion du PNS. Rapport de l'IMET 2018, ICCN, 43 p
- 
- 44 Zapiti, K ; et Kapuku, M., 2018 - Evaluation du niveau de la capitalisation des résultats IMET dans la planification opérationnelle du PNS. Rapport de l'évaluation, octobre 2018, 11 p
-

**No**   **References**

---

45   Zoological Society of Milwaukee (2017). MOV for Mammal Surveys and Wildlife Biomonitoring Activities. Annual Report to WWF/CAFEC, FY17.

---

46   Zoological Society of Milwaukee (2018a). MOV for Law Enforcement Monitoring (LEM): Evaluation of Etate, Lotulo, Biondo Biondo and Watsi Kengo Long-Distance Patrols. Annual Report to WWF-CAFEC, FY18.

---

47   Zoological Society of Milwaukee (2018b). MOV for Mammal Surveys and Biomonitoring Activities. Annual Report to WWF-CAFEC, FY18.