

**AFRICA**

**W-ARLY-PENDJARI COMPLEX**  
**(extension of W Niger)**

**BENIN / BURKINA FASO**



Cheetah, Pendjari National Park – photo from the nomination dossier

# WORLD HERITAGE NOMINATION – IUCN TECHNICAL EVALUATION

## W-ARLY-PENDJARI COMPLEX (BENIN / BURKINA FASO) – ID N° 749 Bis

**IUCN RECOMMENDATION TO WORLD HERITAGE COMMITTEE:** To inscribe the property under natural criteria.

**Key paragraphs of Operational Guidelines:**

Paragraph 77: Nominated property meets World Heritage criteria.

Paragraph 78: Nominated property meets integrity, protection and management requirements.

**Background note:** The W-Arly-Pendjari Complex (WAP) is nominated under criteria (ix) and (x) as an extension of W National Park of Niger (WNP-Niger). WNP-Niger was inscribed on the World Heritage list under then natural criteria N(ii) and N(iv), now considered equivalent to criteria (ix) and (x). In its report to the World Heritage Committee, IUCN, at the time, had concluded that the nominated property in only Niger did not have Outstanding Universal Value as its characteristics were commonly found throughout the region and surpassed in importance in existing nearby World Heritage sites. Following a lengthy debate the Committee inscribed WNP-Niger in the World Heritage list through a majority vote at its 20<sup>th</sup> session in 1996 (Decision CONF 201 VIII.A).

Since the addition of WNP-Niger onto the list in 1996 there have been a series of nominations, IUCN evaluations and Committee decisions related to this trinational complex of protected areas. In 2002, the State Party of Benin presented a joint nomination of Pendjari National Park (Pendjari NP) and W National Park of Benin (WNP-Benin) under criteria (vii) and (x). In its report to the 26<sup>th</sup> session of the World Heritage Committee, IUCN concluded that the site did not meet these criteria. The Committee referred the site back to the State Party to confirm that it considered this nomination as an extension of the WNP-Niger and to seek the approval of the Niger authorities for such an extension.

Burkina Faso intended in 2009 to nominate Arly National Park (Arly NP) and Singou Wildlife Reserve with adjacent hunting reserves as a third extension of the WNP-Niger. The Committee encouraged the three concerned States Parties to coordinate across the entire trinational complex to configure one natural World Heritage property.

In 2010, the State Party of Benin submitted a nomination of only Pendjari NP as an extension of WNP-Niger under only criteria (x). Following IUCN's recommendation, the Committee deferred the examination of the nomination and recommended that Benin resubmit the property as an extension of WNP-Niger under identical criteria to the existing inscribed property, namely natural criteria (ix) and (x) (Decision 35 COM 8B.5).

State of Conservation reporting on WNP-Niger has also, in the past, called for collaboration in finalizing proposals to extend the property in Niger into a transboundary property between the three countries (for example Decision 29COM 7B.3 of 2005).

### 1. DOCUMENTATION

**a) Date nomination received by IUCN:** 24 March 2016

**b) Additional information officially requested from and provided by the States Parties:** Following the IUCN World Heritage Panel, a progress report was sent to the States Parties on 20 December 2016. This letter advised on the status of the evaluation process and sought responses/clarifications on a range of issues including the resource condition and management regime in the corridor areas between the two component areas of the proposed serial extension (the Pendjari and Arly NPs complex in the southwest and the WNP's complex in the northeast). The corridors were excluded from the originally nominated area due to a perceived incompatibility between hunting and World Heritage status. Additional information was therefore sought on the management and sustainability of hunting in these proposed buffer zones and the views of the States Parties on the possible inclusion of these corridors within the

nominated area to improve protection and connectivity. In addition, the States Parties were requested to confirm if there are additional national level buffer zones in place and their function; to provide more detail on the implementation of anti-poaching measures; and to provide more information on the management of fire in the nominated property. Specific additional information was sought from Burkina Faso on traditional transhumance patterns, their impact and management. The information in response was received from the States Parties on 7 February 2017.

**c) Additional literature consulted:** IUCN's previous evaluations of properties within the WAP Complex have generated good reference material which was reviewed. Various sources consulted in this evaluation including: MacKinnon, J. and MacKinnon K. (1986) *Review of the protected areas system in the Afrotropical Realm Scoring system*. UNEP/IUCN Rue Mauverney 28, Gland Switzerland 1196 (275pp). Bouché, P., Lungren, C.G., Hien, B. and Omondi, P. (2004) *Aerial total count of the "W"-Arly-Pendjari-Oti-Mandouri-Keran (WAPOK) ecosystem in West Africa:*

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**d) Consultations:** 13 desk reviews received. The mission met with representatives and staff of various authorities concerned in Burkina Faso and Benin including regional organizations such as the Economic Community of West African States (Union Economique et Monétaire Ouest Africaine - UEMOA), authorities concerned with the management of national parks and

hunting zones - the National Office of Protected Areas in Burkina Faso (Office National des Parcs et Réserves - OFINAP) and the National Centre for the Management of Wildlife Reserves in Benin (Centre National de Gestion des Réserves de Faune - CENAGREF). The mission also met with representatives of scientific organizations such as the National Centre for Scientific and Technical Research (CNRST), NGOs, technical staff from Gesellschaft für Internationale Zusammenarbeit (GIZ), the Programme d'Appui aux Parcs de l'Entente (PAPE) project, local authorities and village associations such as the Association Villageoise de Gestion des Réserves de Faune (AVIGREF). Representatives from WNP-Niger were met; however, the site was not visited during the mission.

**e) Field Visit:** Thierry Lefebvre, 16 - 26 October 2016

**f) Date of IUCN approval of this report:** April 2017

## 2. SUMMARY OF NATURAL VALUES

The W-Arly-Pendjari Complex (WAP Complex) is located in West Africa and, with the inclusion of the W National Park of Niger, spans the borders of all three countries: The Republic of Niger, Burkina Faso and the Republic of Benin. The nominated property is a transnational (Benin, Burkina Faso) extension to WNP-Niger inscribed in 1996. As originally nominated, the property was configured as a transnational serial extension to WNP-Niger partitioned in two component parts and comprising four protected areas (WNP-Benin and Pendjari NP both in Benin and WNP-Burkina Faso and Arly NP both in Burkina Faso). The States Parties in their supplementary information of January 2017 have advised a reconfigured nomination which adds four additional protected areas (hunting zones) to the nominated area thus creating a contiguous extension to the existing WNP-Niger. Two “zones cynégétiques” (Konkombri and Mékrou) in Benin which were previously within the proposed buffer zone have been added to the nominated area. In Burkina Faso two “zones villageoises d'intérêt cynégétique” (ZOVIC) have similarly been added to the nominated area from the previous buffer zone: Koakrana and Kourtiagou ZOVICs. As a consequence, the total extension area nominated is now 1,494,831 ha and a reconfigured buffer zone of 1,101,221 ha surrounds these areas within Benin and Burkina Faso. Table 1 shows the amended configuration and areas of the nominated extension to WNP-Niger. The nominated property is submitted based on the same two criteria as the existing WNP-Niger [criteria (ix) and (x)] and IUCN has evaluated the property as reconfigured.

The State Party of Niger has provided a letter of support to the nomination and the proposed change of name should the extension be approved. Niger noted it has been engaged with Benin and Burkina Faso since 2000 on conservation and management of the Complex, and indicated in the letter that all three States Parties share the strong wish for the property to be an extension to WNP-Niger.

State Party	Protected Area	Nominated Area (ha)	Buffer Zone Area (ha)
Benin	Pendjari National Park	275,000	458,921
	W National Park of Benin	563,280	
	Konkombri Zone Cynégétiques	25,621	
	Mékrou Zones Cynégétiques	102,000	
Burkina Faso	Arly National Park	217,930	642,300
	W National Park of Burkina Faso	235,000	
	Koakrana ZOVIC	25,000	
	Kourtiagou ZOVIC	51,000	
<b>TOTAL for proposed extension</b>		<b>1,494,831</b>	<b>1,101,221</b>
Niger	W National Park of Niger (ix) & (x) inscribed 1996	220,000	No buffer zone
<b>TOTAL if extension approved</b>		<b>1,714,831</b>	<b>1,101,221</b>

Table 1 Nominated extension to W National Park of Niger (Niger) as amended through supplementary information, February 2017

Climatically the WAP Complex is influenced by a pronounced dry season from November to April and a rainy season from June to October. The nominated property sits astride the watersheds of the Volta and Niger Rivers and four main rivers flow through the area (the Niger, Pendjari, Mekrou and Alibori Rivers). Numerous other significant watercourses cross the Complex.

Located in the transition zone between the Sudanese and the forested Guinean regions, the nominated property lies at the heart of the most extensive protected area block in the West African Woodlands / Savanna Biogeographical Province and includes the largest and most important continuum of terrestrial, semi-aquatic and aquatic ecosystems in the West African savanna belt. The WAP Complex constitutes the largest transboundary protected area mosaic in West Africa and this area is also included in the “W Transfrontier Biosphere Reserve” shared between Niger, Benin and Burkina Faso. It forms a part of the continent wide ‘Green Belt of Africa’ or ‘Great Green Wall’ initiative which stretches 7,100 km from Djibouti to Dakar and aims to address climate change and desertification issues including halting the spread of the Sahara Desert.

The WAP Complex is a major expanse of intact Sudano-Sahelian savanna, with numerous and diverse vegetation types including grasslands, shrub lands, wooded savannah, and extensive gallery and riparian forests. The vegetation of the nominated property has been shaped by the long-term effects of fire, linked to human occupation and perhaps dating back some 50,000 years. Fire frequency and intensity strongly influences the character of the vegetation communities and maintains the diversity of vegetation types such as grasslands, shrublands, woodlands, gallery and riparian forests which in turn provide habitat for the property’s characteristic wildlife. The nomination dossier reports some 684 plant species in 89 families distributed throughout the Complex according to climatic and topographic influences.

The nominated property hosts a rich and varied fauna including top predators and rare and endangered species characteristic of the Sudanese biome. The WAP Complex is a refuge for many of the emblematic wildlife species which have disappeared or are highly

threatened across West Africa. The nomination notes 70 species of mammals have been recorded including 10 species of antelope; four of Africa’s “Big Five” charismatic fauna: Lion (VU)<sup>1</sup>, Elephant (VU), Buffalo (LC) and Leopard (VU); and three species of primates. The WAP Complex is also home to 460 bird species, 80 reptiles and 120 fish species and has a notable insect diversity. The IUCN field mission noted some inconsistency in the reported species numbers within the Complex. For example, 110 species of mammals were reported in some meetings. The mission confirmed more precisely that 77 species of large mammals are found inside the Complex but this may not include some small rodents and some bats.

A total of 8,900 elephants have been recorded in the WAP Complex, representing 85% of the region’s savanna elephants. The Complex also harbours the only viable population of lions in the area (416 individuals) and probably the only population of cheetahs (VU) in West Africa. Monitoring of elephant and buffalo populations reveals that movements occur mainly between the two protected area blocks (the WNP and the Pendjari-Arly NPs) and rarely outside. The movement of lions through the Complex is however, more challenging to monitor. The vast majority of species are found in all the protected areas making up the nominated property including the hunting zones which reinforces the importance of large range areas and connectivity to many of these species.

The Complex assures the survival of many rare and endemic species including the Topi antelope (LC), especially the subspecies *Damaliscus korrigum korrigum*, Leopard, Cheetah, Red-fronted gazelle (VU), Lappet-faced vulture (EN), Messenger sagittarius or Secretarybird (VU), and the African manatee (VU), all of which are rare in West Africa. The Gobnangou Cliffs provide critical habitat for the only breeding colony of the critically endangered Ruepell’s Vulture (CR) in Burkina Faso. The nominated property exhibits particularly high levels of endemism among fish species and is home to seven of the nine endemic fish species reported in the Volta Basin.

<sup>1</sup> These codes reflect the conservation status of each species as recorded in the IUCN Red List of Threatened Species at the time of the evaluation; for more information please visit <http://www.iucnredlist.org>

The nominated property is uninhabited as is the case with all national parks and hunting reserves in Benin and Burkina Faso. However, traces of prehistoric settlements can be found in the Complex (mounds, ceramics, evidence of iron metallurgy). The prehistoric migration of populations from the area was probably caused by disease epidemics and/or climate change. The few inhabitants who remained in the area were relocated by the colonial authorities from 1926 to 1954, to establish a park refuge and then the national park of zone W in 1954. At the time of their creation, the national parks were in a good state of conservation due to low levels of human impact and there remains little legacy of past land use. There are however three transhumance corridors, ancient seasonal grazing routes, affecting the nominated property: in the west, a corridor runs across Arly NP, while the other two cross the buffer zone to the west and east of the complex of WNPs in the northeast.

### 3. COMPARISONS WITH OTHER AREAS

The nomination is a proposed extension to the WNP-Niger. IUCN notes that the nominated property therefore must make a case as to how it adds attributes of Outstanding Universal Value to the existing property and/or how it significantly improves integrity and/or protection and management effectiveness. As noted above, there have been various previous nominations of proposed extensions to the WNP-Niger which have emanated from within this complex of protected areas. Several past IUCN evaluations (1996, 2002, 2011) have variously assessed the comparative natural values of component parts of the complex.

The comparative analysis within the nomination dossier is relatively brief. The WAP Complex is compared to six World Heritage properties inscribed in the Tropical and Subtropical Grasslands, Savannas, and Shrubland biome. Comparisons have been made on habitat specificities and species diversity against the Manovo-Gounda St Floris National Park (Central African Republic), the Comoé National Park (Ivory Coast), the Niokolo-Koba National Park (Senegal), the Mount Nimba Strict Nature Reserve (Guinea, Ivory Coast), the Sangha Trinational site (Cameroon, Central African Republic, Congo) and the Serengeti National Park (Tanzania). Apart from one site in Chad noted below, no other comparable Tentative Listed sites have been considered. The nomination dossier mixes values and attributes between both biodiversity criteria (ix) and (x). In addition, the global comparative analysis is mainly focused on criterion (x) attributes, and the viability of faunal populations is not well analyzed.

The nomination references a 1986 IUCN study which reviewed the protected area system in the Afrotropical Realm. This study used a scoring system to assess the relative contribution to conservation of various protected areas in West Africa. The scoring system is based on a combination of size, protection objectives and management effectiveness. The dossier revisits this analysis and compares the WAP Complex against

five other protected areas in the same biogeographic province, four existing World Heritage sites and one Tentative Listed site: Zakouma National Park in Chad. In this analysis, the WAP Complex scores highest and has the second largest area of the compared sites. The analysis also concludes that the WAP Complex has the best level of conservation of the sites. Although this study is now over 30 years old and uses a methodology that has been superseded by more sophisticated data sets and analytic tools, IUCN considers that the findings remain valid. The WAP Complex persists as one of the best protected large-scale systems in West Africa. The nominated property's contribution to conservation within the Region has likely, in fact, to have increased given the progressive loss of habitat and increasing pressure on the emblematic wildlife of West Africa over the past 30 years. Expert reviewers generally support this premise observing that the WAP ecosystem represents a jewel in West Africa. Whilst pointing out that there are comparatively very few endemic species, the area hosts the last viable or most viable populations for several species in West Africa. For example, when considering species such as cheetah, the subspecies *Acinonyx jubatus hecki* found in West and North Africa is different from the one found in other parts of Africa and is consequently critically endangered. The only viable population of this species in West Africa is in the WAP ecosystem. The situation is similar for the lion where the subspecies in West and Central Africa is different from the one in other parts of Africa.

Additional spatial analysis by IUCN and WCMC notes seven other World Heritage properties occur within Udvardy's West African Woodland Savanna Province, six of which are listed for biodiversity values. In addition, 16 natural Tentative Listed sites are found in the same Province, nine of these on the basis of their biodiversity values. 19 other biodiversity World Heritage sites and more than 65 Tentative Listed sites occur within the larger Afrotropic - Tropical and Subtropical Grasslands, Savannas, and Shrublands Terrestrial realm/biome combination. It is clear that the WAP Complex lies within biogeographic contexts which are well-represented on the World Heritage List and with a large number of potential new nominations in same biogeography. This analysis also reveals the nominated property does not overlap with any broad scale global conservation priority systems but does correspond to three Important Bird Areas (Arly - W - Singou Complex; W du Bénin NP; and Pendjari NP).

The key question relates to what additional values and integrity improvements the proposed extension adds to WNP-Niger. In overall terms the species composition across the WAP Complex is similar, however notwithstanding some variability in data, additional numbers of species are added through the extension (potentially 184 additional plant species, at least seven additional mammal species and 93 additional bird species, although the data is not very clear). The integration of Arly and Pendjari NPs also adds substantially to the habitat diversity, for example the addition of gallery forest ecosystems and a rare semi-deciduous Bondjagou/Pendjari forest. The numbers and density of rare and endangered species is

reportedly higher in Arly and Pendjari NPs than in the WNP's cluster, and the addition of the hunting reserves, which also contain similar natural values, ensures vital connectivity for these species.

The IUCN/WCMC comparative analysis undertaken in 2011 in support of the evaluation of Pendjari NP as an extension to WNP-Niger stated on criterion (x) that "In conclusion, Pendjari NP's inscription would add significant biodiversity values to the existing World Heritage property (WNP-Niger)." This is consistent with IUCN's 1996 evaluation of WNP-Niger in which IUCN noted that "WNP-Niger on its own was only of national significance, whereas a transnational site with Benin and Burkina Faso would be of regional significance." On criterion (ix) the values were considered less distinctive from other World Heritage sites in the same Udvardy biogeographic province but WCMC concluded it would assist the balance and integrity of the WNP-Niger.

In summary, many of the species occurring within the WAP Complex are also included within other existing World Heritage properties in the same biogeographic context. However, many of these sites are under severe threat and a disproportionate percentage is on the World Heritage in Danger List (50% of the biodiversity sites in the Udvardy West African Woodland/Savanna Province). One can conclude from this that the value of the WAP Complex rests on its size, intactness and viability as a refuge for a range of biodiversity and ecosystems which were formerly found across wider areas of the West African Region. IUCN in past evaluations has concluded that the various protected areas which comprise the WAP Complex have been unable to demonstrate Outstanding Universal Value in their own right, but as a large mosaic of protection, the Complex offers a globally significant refuge for these emblematic species. The nominated property as an extension to WNP-Niger adds attributes of Outstanding Universal Value hence strengthening the range and diversity of values that occur within WNP-Niger. The reconfigured and now contiguous nominated property extends the area of WNP-Niger by more than sevenfold appreciably improving the integrity of the overall complex and creating a system with greatly enhanced ecological connectivity and resilience.

## 4. INTEGRITY, PROTECTION AND MANAGEMENT

### 4.1. Protection

Four of the protected areas within the nominated extension are national parks (Pendjari NP, Arly NP, WNP-Benin and WNP-Burkina Faso) considered to be IUCN Protected Area Management Category II. Protected areas which permit controlled hunting - called "zones cynégétiques" in Benin and "zones villageoises d'intérêt cynégétique" (ZOVIC) in Burkina Faso - surround the national parks and in some cases form parts of the World Heritage buffer zone. Four hunting zones have been included within the nominated area: Konkombri and Mékrou Zones Cynégétiques in Benin and Koakrana and Kourtiagou

ZOVICs in Burkina Faso. A range of relevant laws and decrees constitutes the legislative basis of protection across all protected areas in the Complex and is considered adequate in each country. The States Parties in supplementary information have reconfirmed that the hunting zones enjoy the same legal protection as national parks, the only difference being that sustainable hunting is permitted under strict control. IUCN considers the hunting zones are equivalent to IUCN Category VI.

The Pendjari NP and the WNP's are also jointly recognized as biosphere reserves, which enable co-management with the surrounding populations. In 2007, a tripartite agreement for the management of the cross-border reserve was signed between Benin, Burkina Faso and Niger. The mission observed during the field visit that these various legal protections are effectively implemented and applied.

The protected areas within the Complex are also subject to numerous national policies, strategies and plans. The area of the WAP Complex has a long history of protection having been designated since colonial times as a refuge zone in 1926. Both Benin and Burkina Faso have established protected areas progressively since the 1950s increasing protection through the various legal instruments referred to above.

All land in the four national parks is publicly owned (it is the case across all three concerned States Parties). There is also no private ownership within hunting zones and this activity is managed under concessions. Public authorities manage the nominated property: in Benin by the Centre National de Gestion des Réserves de Faune (CENAGREF) and in Burkina Faso, Arly NP is managed by the Office National des Parcs et Réserves (OFINAP) and WNP-Burkina Faso by the State forestry administration: Direction Générale des Forêts et de la Faune (DGFF).

At local level, people are aware of the boundaries of national parks and hunting zones. The national parks are not subject to any traditional resource use. Illegal use of land (anarchic cultivation, presence of pastoralists) is declining thanks to the development of peripheral pastoral areas, control and awareness. The States Parties have provided additional information on the management of the hunting zones indicating a system of quotas set each year and carefully monitored. Data has been provided indicating that these quotas from 2014-2016 have not been exceeded (or indeed reached) for any species over the past three years. The sport hunting concessions provide local people with employment and access to benefits. IUCN considers that the activity appears to be ecologically sustainable and therefore consistent with the potential Outstanding Universal Value of the area in accordance with Paragraph 90 of the Operational Guidelines.

IUCN believes that the protection levels inside the WAP Complex, including the hunting zones, is adequate to protect the Outstanding Universal Value and therefore considers the protection status of the

nominated extended property meets the requirements of the Operational Guidelines.

## 4.2 Boundaries

Boundaries are specified in the nomination and clearly demarcated on maps. As noted the States Parties have proposed amended boundaries to include within the nominated area four hunting zones which were previously within the World Heritage buffer zone proposed in the nomination. These hunting zones provide a functional link between the Complex elements and contain additional habitats for wildlife species. They also host savanna ecosystems and wildlife densities equivalent to those within the national parks. In its Decision 35 COM 8B.5 related to the nomination of the Pendjari NP, the World Heritage Committee recommended to the State Party of Benin to “confirm that there are effective means to provide connectivity and buffer zones between the Pendjari National Park and W National Park of Niger, and to consider identifying relevant hunting zones and other protected areas as either part of the nomination, or as buffer zones to a serial property”. IUCN welcomes the inclusion of these linking lands within the nominated area as they greatly improve the connectivity and wholeness of the proposed extension. These areas perform a much more central ecological and watershed function for wide ranging wildlife than that of a buffer zone and are thus considered an important contributory element to the Outstanding Universal Value of the WAP Complex.

In addition, the supplementary information confirms that the State Parties wish to present a reconfigured World Heritage buffer zone that would add connecting areas, creating a buffer zone that now surrounds the proposed extension. The States Parties have also confirmed that national regulations already define a buffer zone around the boundaries of all national parks, varying in width from 5 to 7 km depending on the country, and so the additional areas correspond to areas that already exist and are functioning. The IUCN mission, however, reported some concerns about implementation and enforcement of national buffer zone regulations which seems to be variable. The locations of the buffer zone are explained in the supplementary information, although it will be important that the States Parties submit further maps to the World Heritage Centre to indicate the precise boundaries and areas of the buffer zones adjacent to the central portion of the property.

Much of the perimeter of the resulting nominated property coincides with that of national parks, whose boundaries were defined in the 1950s in some cases. Whilst these boundaries are broadly known to the local populations, the management regime within the World Heritage buffer zone should be explicit as far as prohibited and permissible activities and development. IUCN notes that with this reconfiguration of the proposed WAP Complex, the only protected area lacking a buffer zone will become the WNP-Niger.

IUCN considers that the boundaries of the nominated property meet the requirements of the Operational Guidelines.

## 4.3 Management

As referred to above, the management of Benin's two national parks and wildlife reserves is carried out by CENAGREF, an autonomous authority set up in 1998. In Burkina Faso, there is a dichotomy between the management of the WNP-Burkina Faso provided directly by the forestry administration DGFF, while the Arly NP is administered by OFINAP, established in 2008 along the model of CENAGREF. The mission highlighted some concerns regarding coordination between the agencies in charge of the management of protected areas and the administrations responsible for agricultural development.

A master plan called “schéma directeur d'aménagement et de gestion concertée pour l'ensemble du complexe WAPO” has been defined for the entire complex (SDA, 2014-2033) including Togo. This regulatory planning document provides guidance for cross-border actions, in particular ecological monitoring, tourism development, and planning and communication. It also proposes an extension of the UNESCO Biosphere Reserve to the entire complex so it would simplify management if boundaries can be harmonized with any World Heritage property. All the national parks within the Complex have harmonized decennial management plans (2014-2024), which have been updated taking into account the SDA objectives. The management system is generally effective and is supported by several international cooperation projects since 2001 as outlined below. The main management activities are focused on water supply for fauna, controlled burning of some grassland areas, anti-poaching and co-management with communities living outside the boundaries of the national parks.

The WAP Complex is of a size which permits unimpeded ecological function and the overall integrity of the system is good compared to the rest of West Africa, where the most emblematic sites have been degraded by anthropogenic pressures. Except the Topi Antelope, all species under biological monitoring are increasing in the Complex. Despite poaching pressure, elephant population is increasing. Nearly 4,500 elephants were observed by aerial counting in the Complex in 2003 and 8,900 by sampling in 2015, which represents an annual growth rate of 6%. Kilometric index and population size assessed in the WNP-Benin between 2002 and 2016 shows a significant increase in the populations of Roan antelope (15 to 75; LC), Kob (1 to 14; LC), Common warthog (5 to 29; LC) and African buffalo (4 to 54). The same trend for these species has been observed in the Pendjari NP, which has now between 250 and 350 lions, around 5,000 elephants, 44,137 buffaloes, 9,438 Hippotrague antelopes, 27,021 Topi antelope. Supplementary information confirms a system of monitored quotas within the hunting zones ensures that key wildlife populations are maintained in good health.

Conservation financing is based on the contribution of the States and on tourism incomes. The establishment of autonomous entities to manage protected areas (CENAGREF in Benin, OFINAP in Burkina Faso) has improved staffing and funding stability and these organizations are effective. Nonetheless, the WAP Complex remains highly dependent on external aid, which provides nearly half of the operating budget. The operational budget of the Pendjari NP for example amounts to 350 million Central African Francs (XAF) (c.EUR 530m), of which XAF 100m is provided by tourism incomes, XAF 75m correspond to State subsidies and the rest is provided through partnerships.

Tourism is an important source of income, through entry fees and service charges, but due to the security concerns in the sub region, tourism has been decreasing since 2014-2015. Tourism has also declined in Burkina Faso since December 2015 following the attacks in Ouagadougou. These factors have affected the tourism incomes on which the operating budgets of the parks and the revenues of hunting zones depend.

Since 2001, three successive international cooperation projects have supported the management of the entire WAP Complex. The regional Park Program W/ECOPAS (Ecosystèmes Protégés en Afrique Soudano-Sahélienne) laid the foundation for regional cooperation in the W Regional Park (2001-2008) and has enabled the development of tourist infrastructure, water points and trails, as well as joint ecological monitoring and planning projects. The regional project WAP (Renforcer l'efficacité et catalyser la durabilité du système des aires protégées du W-Arly-Pendjari) (2008-2013) expanded and intensified these efforts across the WAP Complex. The "Programme d'appui aux parcs de l'entente" (PAPE) (2011-2016) has played a key role in the development of quadripartite management agreements, through the articulation of a master plan, common management tools, a regional database for ecological monitoring and the development of water points. In addition, other national projects have played an important role in strengthening the management of the two national parks of Benin and Arly NP in Burkina Faso.

In view of decreasing international contributions, States established in 2012 a foundation to ensure financial autonomy for the management of protected areas and to support sustainable development activities in neighbouring areas. The West African Savannah Foundation (FSOA) is now endowed with a fund of EUR 20m (an estimated EUR 30m is needed for sustainability). The FSOA has just begun activities in Benin's two national parks and is expected to become a source of funding for the entire WAP Complex. To be eligible for this funding, the parks must be managed by autonomous structures and have business plans. There is a roadmap for the roll out of FSOA, but the process is slow. It is also considered that neither the FSOA nor the state budget will be sufficient to finance the implementation of long-term management activities, making the longer-term

support provided by international cooperation necessary.

Staffing levels and skills are outlined in the nomination dossier. Overall for the WAP Complex some 266 staff are noted but this includes administrative and support staff. The staffing system is functionally structured around management administration; surveillance and facilities; ecological monitoring; tourism promotion; community engagement; and finance plus various support functions. 118 eco-guards are employed across the Complex.

Ecological monitoring is effective. Aerial and ground inventories of wildlife were set up within the Complex from 2002 through the ECOPAS program and Monitoring Illegal Killing of Elephants (MIKE). Carnivores have been monitored since 2012 within the entire WAP Complex. Since 2013, Pendjari NP and WNP-Benin monitor four species (Buffon, African buffalo, Roan antelope and Common warhog). The annual growth rate of other species is also known.

At the time of finalisation of the IUCN evaluation it was noted that the management of the Pendjari component of the property was reported to be transferred by Benin to African Parks Network (APN), an NGO with experience of managing many protected areas in Africa. IUCN understands this concession will be structured as a public-private-partnership with co-management governance shared between APN and the Government of Benin. At the time of the evaluation, details are not clear but it will be important to ensure that any change in the management system continues to prioritise the protection of Outstanding Universal Value and does not jeopardize the eligibility of Pendjari NP to sustainable long-term conservation funding as discussed above. IUCN notes that the accountability for delivering the management as outlined in the World Heritage nomination, and according to the Convention's *Operational Guidelines*, remains the responsibility of the State Parties.

Despite concerns regarding dependency on international technical support, IUCN considers the management of the nominated property meets the requirements of the Operational Guidelines.

#### 4.4 Community

There is no private ownership of land and no inhabitants inside the nominated property. The nomination dossier notes some 350 villages in surrounding buffer zone areas with a total population of 900,000 people (700,000 in Benin; 200,000 in Burkina Faso). A dozen ethnic groups surround the Complex, four of which are considered the most important (Gourmantché, Djerma, Dendi and Fulani people). These people are nomadic pastoralists engaged in the transhumance activities noted above. Although people were relocated from national parks in the 1920s, the IUCN mission did not detect any contemporary rights issues.

The IUCN mission found that communities surrounding the nominated property had been informed of the nomination process and all the villagers met during the mission expressed their support for the nomination, and more generally for the conservation actions carried out by park managers. Many villages adjacent to the national parks in Benin have formed “Associations Villageoises de Gestion des Réserves de Faune” (AVIGREF) which enable villagers to share in decision-making relating to the national parks.

Supplementary information provided by the States Parties has elaborated on the system of sport hunting practiced within the hunting zones of the Complex. These programmes are established in collaboration with local people and are designed to balance wildlife conservation with community development, with 30% of the hunting profits distributed equitably among the surrounding villages.

Cultural values are important for surrounding populations (and archeological heritage is mentioned in the dossier several times) who consider the WAP Complex to be their place of origin. However, cultural heritage management considerations appear to be poorly represented in the management system.

#### 4.5 Threats

The main anthropogenic threats occur outside the national park boundaries and are linked to increasing human density and growing demand for agricultural land in the Sahelian region. Since 1990, the estimated population within 30kms of the WAP Complex has more than doubled to reach 3.5 million people. Advance of agricultural front, poaching, transhumance grazing and illegal exploitation of non-timber resources produce growing pressures on wildlife. Several reviewers also highlighted this growing external pressure from population growth. The mission concluded that measures are currently effective in limiting these pressures. However, more capacity will be needed to address this looming external threat and achieve balanced conservation and development outcomes.

Wildlife poaching has, and continues to be, a significant threat in this region and for the WAP Complex. Poaching of elephants concerns their entire distribution in Benin and Burkina Faso where nearly 1,000 elephants have been killed since 2011. Most of the poachers come from other countries and their entry into the WAP Complex is difficult to control, especially at the end of the wet season. The incidents of poaching have been decreasing since 2015 due to a successful international effort. Strengthened patrols, the mobilization of better military and community support and plans for more effective aerial surveillance programs are combating the threat. Additional information has been provided on anti-poaching measures, equipment and personnel. IUCN however considers the effectiveness of these actions is limited by poorly maintained trails, training deficiencies and resources which remain inadequate for the task at hand [communication equipment (radios), transport equipment (vehicles, motorcycles, bikes), weapons

and ammunition]. These issues have also arisen through state of conservation monitoring of the existing WNP-Niger property (<http://whc.unesco.org/document/139968>).

Illegal livestock grazing and agriculture generally occurs outside the property in the buffer zone and needs good management with the local communities. With the exception of the hunting zones, there is no traditional resource use within the nominated property. Illegal use of land (anarchic cultivation, presence of pastoralists) is declining thanks to the development of peripheral pastoral areas, control and awareness. A combination of boundary patrols, law enforcement, incentive and education programmes are deployed to manage these threats.

In West Africa, a transhumance of hundreds of thousands of cattle takes place every year, looking for forage resources and water points. Since 1998, improved transnational coordination has authorized stock movements between affected countries according to defined routes, in particular to limit impacts on biodiversity, but these corridors are not fully respected. Livestock movements can impact ecological connectivity disrupting wildlife passages, but also through competition for food resources and risk of epizootics transmission. Three transhumance corridors affect the Complex: in the west, a corridor runs across Arly NP, while the other two cross the buffer zone to the west and east of the WNP cluster. In supplementary information, the States Parties have highlighted the need to better understand the impacts of climate change on transhumance activities. Internationally supported projects since 2013 are investigating this threat and have implemented a range of measures in response. It will be important to maintain this focus and adapt management in response to any escalation in the threat.

To prevent the evolution of savannas to dry forests and the disappearance of large ungulates, controlled management fires are set up in a coordinated manner between the parks each year from end of October to May. In each component, 70% of the national parks areas are progressively burnt depending on the grasslands drying rates. The application of fire in this landscape is an ancient practice which has shaped the vegetation and ecosystems. IUCN's 2011 evaluation of the nomination of Pendjari NP in Benin as an extension to WNP-Niger noted that “the long-term use of fire, in the course of human use in the area for perhaps 50,000 years ago has greatly influenced the vegetation to favour fire tolerant species and there are local impacts on vegetation patterns around villages in other areas”. The States Parties provided additional information on fire regimes and management including a map of fire free zones within the Complex and detail on ecological monitoring. Fire is used as a management tool to deliver both ecological (maintenance of ecological structure and game) and cultural / socio-economic outcomes (support tourism, provide benefits for local people). The States Parties stress the importance of planned application of fire in maintaining a dynamic ecological equilibrium. Unplanned wildfires are effectively controlled and not

considered a significant threat to the property probably in part due to the controlled burning programme.

The semi-arid Sahelian context is particularly sensitive to the effects of climate change. Increasing droughts can have negative impacts on fauna and floristic populations by sandblasting water points (some ponds dry out as early as December). However, hydric stress is not a limiting factor insofar as adaptive responses exist through solar powered boreholes, which come into action at the end of the rainy season. The close links between climate, fire behavior and impact need to be better researched to understand these dynamics and adapt if necessary traditional burning regimes.

In summary, the nominated extension substantially adds to the integrity of the inscribed property (WNP-Niger) by increasing the size more than sevenfold (779%) and adding several important attributes of Outstanding Universal Value. The inclusion of the interconnecting hunting zones between the two clusters of national parks creates a contiguous property further strengthening the overall property's coherence. In contrast to many other protected areas within this region, the WAP Complex remains in good condition and does not suffer from the adverse effects of poaching and other impacts. The Complex is well managed with workable coordination mechanisms between its different parts although improvements could be made. Ongoing attention to buffer zone management issues is warranted.

IUCN considers that the integrity, protection and management of the nominated extension meet the requirements of the Operational Guidelines.

## 5. ADDITIONAL COMMENTS

Transboundary collaboration remains essential to effective management and coordination across the mosaic of protected areas, managing institutions and the three concerned States Parties. There has been a history of cooperation dating from the first anti-poaching agreement signed in 1984 between Benin and Burkina Faso and extended to Niger in 1986. Coordination efforts also focused on the management of transhumance corridors and more generally on joint management of the WAP Complex and the Africa's first transboundary biosphere reserve, comprising the W Regional Park and adjacent reserves, was created in 2002. In parallel to the World Heritage nomination, the three States are preparing a project to create a transboundary biosphere reserve across the Complex, which will allow harmonization of management tools.

The system of transboundary governance is organized at two levels, both considered adequate to manage the nominated property. Within the framework of the tripartite management agreement (now quadripartite with the integration of Togo into the WAPO), different governance structures have been put in place to ensure cohesive management of the components of the property. A Technical Follow-up Committee assumes the function of executive secretariat to manage the Complex with national administrations and

deal with regional issues. The "Conseil Ministériel d'Orientation" brings together the Ministers responsible for wildlife in the three countries to take the strategic decisions. Regular meetings of managers and scientists aim to coordinate monitoring missions and common management issues (transhumance, anti-poaching activities).

Despite the development of joint activities, there is a scope for further improving harmonized management on issues such as monitoring, knowledge exchange, shared capacity building, fire management and the strategic development of tourism.

## 6. APPLICATION OF CRITERIA

The **W-Arly-Pendjari Complex** has been nominated as an extension to W National Park, Niger and is nominated under natural criteria (ix) and (x).

### **Criterion (ix): Ecosystems/communities and ecological/biological processes**

Stretching across three countries, W-Arly-Pendjari Complex is the largest and most important continuum of terrestrial, semi-aquatic and aquatic ecosystems in the West African savanna belt. Situated within the Volta River basin it comprises a dynamic system, where the ebb and flow of water with alternating wet and dry seasons creates a rich variety of plant communities and associated fauna. The Complex is a major expanse of intact Sudano-Sahelian savanna, with numerous and diverse types of vegetation such as grassland, shrub, wooded savannah, open forests and extensive gallery and riparian forests as well as the rare semi-deciduous forest of Bondjagou within Pendjari National Park. The long-term effects of fire linked to human occupation and perhaps dating back some 50,000 years, have shaped the vegetation of the property and the continued traditional use of fire maintains the diversity of vegetation types, which in turn provide habitat for the property's characteristic wildlife.

IUCN considers that the nominated property as a contiguous extension to the W National Park of Niger meets criterion (ix).

### **Criterion (x): Biodiversity and threatened species**

The nominated property and the broader landscape are a refuge for species of fauna that have disappeared or are highly threatened in most of the rest of West Africa. The W-Arly-Pendjari Complex is particularly crucial to the conservation of the last healthy populations of mammals belonging to the Sahelian and Sudanian domains. The Complex includes the largest and most ecologically secure elephant population in West Africa, representing 85% of the region's savanna elephants. It also protects almost the complete assemblage of characteristic flora and fauna, providing crucial habitat for most of the large mammal species typical of West Africa, such as African manatee, Cheetah, Lion, Leopard, African wild dog and Topi antelope. It harbours the only viable population of lion in the area and probably the only population of cheetah in West Africa. The nominated

property exhibits particularly high levels of endemism among fish species and is home to seven of the nine endemic fish species reported in the Volta Basin.

IUCN considers that the proposed extension meets criterion (x).

## 7. RECOMMENDATIONS

IUCN recommends that the World Heritage Committee adopts the following draft decision:

The World Heritage Committee,

1. Having examined Documents WHC/11/35 8B.5, WHC/17/41.COM/8B and WHC/17/41.COM/INF.8B2;

2. Approves the extension of the W National Park of Niger (Niger), to become the **W-Arly-Pendjari Complex (Benin/Burkina Faso/Niger)** under natural criteria (ix) and (x).

3. Adopts the following Statement of Outstanding Universal Value:

### **Brief synthesis**

*The W-Arly-Pendjari Complex is a transnational property shared between the Republic of Niger, Burkina Faso and the Republic of Benin in West Africa. Located in the transition zone between the savannas of the Sudanese region and the forested Guinean region, the W-Arly-Pendjari Complex lies at the heart of the most extensive and protected area block in the West African Woodlands/Savanna Biogeographical Province and includes the largest and most important continuum of terrestrial, semi-aquatic and aquatic ecosystems in the West African savanna belt. The property encompasses 1,714,831 ha and is a contiguous mosaic of nine protected areas. It includes the trinational complex of W National Park (shared between Benin, Burkina Faso and Niger), Arly National Park (Burkina Faso), Pendjari National Park (Benin) and the hunting reserves of Koakrana, Kourtiagou (Burkina Faso) and Konkombri and Mékrou (Benin).*

### **Criteria**

#### **Criterion (ix)**

*Stretching across three countries, W-Arly-Pendjari Complex is the largest and most important continuum of terrestrial, semi-aquatic and aquatic ecosystems in the West African savanna belt. Situated within the Volta River basin it comprises a dynamic system, where the ebb and flow of water with alternating wet and dry seasons creates a rich variety of plant communities and associated fauna. The Complex is a major expanse of intact Sudano-Sahelian savanna, with numerous and diverse types of vegetation such as grassland, shrub, wooded savannah, open forests and extensive gallery and riparian forests as well as the rare semi-deciduous forest of Bondjagou within Pendjari National Park. The long-term effects of fire linked to human occupation, perhaps dating back some 50,000 years, have shaped the vegetation of the*

*property, and the continued traditional use of fire maintains the diversity of vegetation types, which in turn provide habitat for the property's characteristic wildlife.*

#### **Criterion (x)**

*The property and the broader landscape are a refuge for species of fauna that have disappeared or are highly threatened in most of the rest of West Africa. The W-Arly-Pendjari Complex is particularly crucial to the conservation of the last healthy populations of mammals belonging to the Sahelian and Sudanian domains. The Complex includes the largest and most ecologically secure elephant population in West Africa, representing 85% of the region's savanna elephants. It also protects almost the complete assemblage of characteristic flora and fauna, providing crucial habitat for most of the large mammal species typical of West Africa, such as African Manatee, Cheetah, Lion, Leopard, African Wild Dog and Topi Antelope. It harbours the only viable population of lion in the area and probably the only population of cheetah in West Africa. The site exhibits particularly high levels of endemism among fish species and is home to seven of the nine endemic fish species reported in the Volta Basin.*

#### **Integrity**

*The W-Arly-Pendjari Complex is of sufficient size to permit unimpeded ecological function and the overall integrity of the system is good amongst protected areas in West Africa, many of which have suffered significant degradation from anthropogenic pressures. Covering a comparatively large area of 1,714,831 ha, the trinational property contains a representative suite of Sudanian ecosystems that are in good condition. It includes a large variety of habitats indispensable for the survival of characteristic species and is large enough to support the healthy populations of large mammal species such as elephant and lion which range over wide territories.*

*The W National Park and the Arly-Pendjari National Park complexes are connected through the four hunting reserves, allowing for connectivity across the property and free movements of animals in the complex. Hunting within the hunting reserves has, to date, been sustainably managed and these reserves include natural systems and habitat that are regarded as being of a similar quality to that within the national parks, thereby enhancing resilience. The hunting reserves would be considered equivalent to IUCN Category VI and the activity, at the levels at the time of inscription, does not appear to be negatively impacting on the property's Outstanding Universal Value as a whole.*

*The buffer zone of W-Arly-Pendjari Complex consists of areas of different protection status (hunting reserves, wildlife reserves, and special legally designated buffer zones) all established by national laws and covers a total area of 1,101,221 ha. The buffer zones are designed to strengthen integrity and are managed as to mitigate impacts from surrounding human activities.*

### **Protection and management requirements**

The property benefits from long-term legal protection through national laws and receives financial and technical support from the States and some development partners. Five of the protected areas making up the W-Arly-Pendjari Complex are protected as national parks (managed as IUCN Category II). The four hunting reserves within Benin and Burkina Faso are also managed under the same regime as national parks, noting that sustainable hunting is permitted. The hunting in these reserves is regulated through annual quotas, closely monitored and aimed at generating benefits for local communities and conservation.

Although the boundaries of the property are clearly defined, known by the surrounding population and regulated, there are threats such as poaching, illegal grazing and encroachment of agricultural land which persist. Adequate measures must be undertaken to address these threats including working closely with agricultural development sectors to regulate, incentivize and raise awareness among communities surrounding the property. Monitoring of the scale of transhumance activities, which are a long-standing use, is important to ensure so that it remains sustainable in relation to the property's Outstanding Universal Value.

The property is managed in Benin by the Centre National de Gestion des Réserves de Faune (CENAGREF); and in Burkina Faso, Arly National Park is managed by the Office National des Parcs et Réserves (OFINAP) and W National Park, Burkina Faso by the State forestry administration: Direction Générale des Forêts et de la Faune (DGFF). The W National Park, Niger is managed by the Direction Générale des Eaux et Forêts (DGEF), Ministère de l'Environnement, de la Salubrité Urbaine et du Développement Durable (MESU/DD). The multi-agency responsibilities across the three States Parties require considerable and sustained effort to ensure effective coordination and harmonization of protected area policies and practice. All national parks in the Complex have a 10-year management plan all following a joint "Schéma Directeur d'Aménagement du complexe" to foster coordination. A workable system of transboundary governance is in place under a tripartite management agreement (now quadripartite with the integration of the State Party of Togo). However, ongoing efforts are needed to improve the levels of transnational cooperation for the property.

Ongoing attention is needed to ensure that the traditional application of fire continues to support fire regimes which maintain Outstanding Universal Value, particularly under the influence of climate change. Similarly the three States Parties should work cooperatively with UEMOA (Union Economique et Monétaire Ouest Africaine) to plan, monitor and act such that transhumance movements taking place in the property and its buffer zones do not adversely impact on the Outstanding Universal Value.

There is also a need to sustain long-term adequate funding for the W-Arly-Pendjari Complex. The States

Parties should ensure that adequate government funding is provided to manage the Complex and the necessary coordination. The West African Savannah Foundation (FSOA) created in 2012 is an endowment fund which requires further investment to ensure sustainability. It is critical that the FSOA becomes a source of funding for the entire Complex and continues to be supported and grow. Furthermore, it is important that all protected areas within the Complex are eligible to access this endowment fund.

4. Recommends that the States Parties of Benin, Burkina Faso and Niger within their adopted joint management framework:

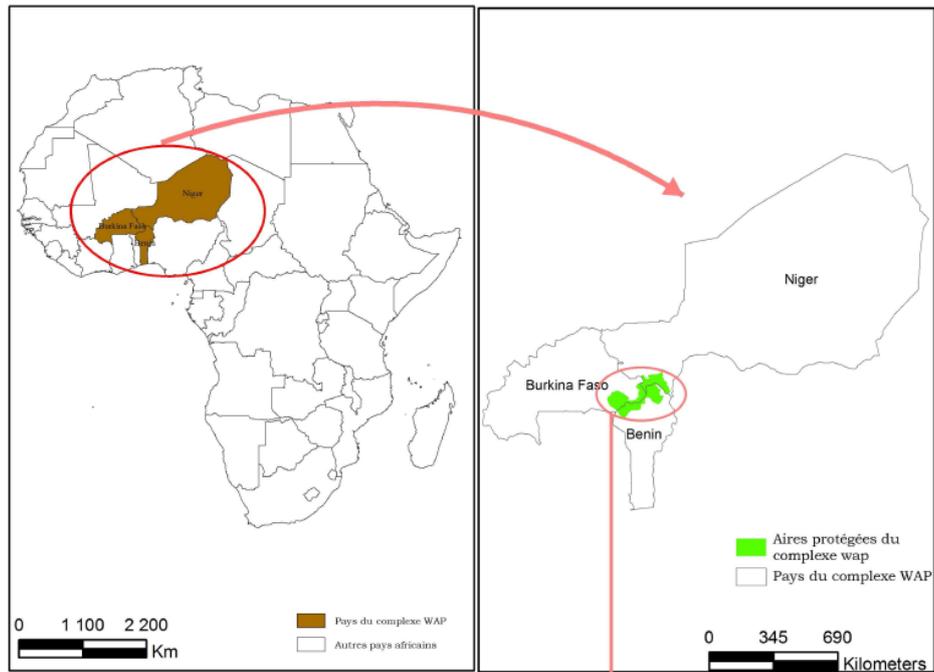
- a) Continue to strengthen and coordinate the measures to control the threat of wildlife poaching and other illegal activities including through the provision of adequate equipment and training of rangers and patrols;
- b) Monitor the impacts of climate change on the ecosystems of the property, in particular to understand and anticipate any changes to the ecological outcomes resulting from the traditional application of fire and to ensure that the use of fire is based on robust ecologically-based conservation objectives;
- c) Improve institutional coordination between the agencies in charge of the management of the property and the administrations responsible for agricultural development, in order to avoid potential negative impacts on the Outstanding Universal Value of the property;
- d) Develop a long-term strategy for the sustainable financing of the property including strengthening the viability of the Fondation des savanes ouest-africaines (FSOA) and ensuring that all the protected areas within the property are eligible to access the funding of the FSOA;
- e) Work closely with UEMOA (Union Economique et Monétaire Ouest Africaine) to plan, monitor and implement activities as described in the property's management plan concerning transhumance taking place within the property and its buffer zones, in order to support these activities at sustainable levels and to ensure that they are not negatively impacting the property's Outstanding Universal Value.

5. Requests the States Parties of Benin and Burkina Faso to submit a new map of the buffer zone boundaries at 1:50,000 scale to the World Heritage Centre.

6. Recommends the State Party of Niger consider designating the buffer zones which exist for the W National Park, Niger as formal World Heritage buffer zones to provide a consistent approach to buffer zones across the W-Arly-Pendjari Complex as a whole.

7. Commends the efforts of the States Parties of Benin, Burkina Faso and Niger, working with partners, for the high quality of conservation management that has been achieved in the protected areas of the Complex, and encourages these efforts to continue to improve the conservation of the property.

**Map 1:** Location of the nominated property in Africa



**Map 2:** Nominated property and buffer zone, as amended through supplementary information, February 2017

